Intermatic Product Catalog

Lighting Controls | Surge Protection | Weatherproof Covers | Pool & Spa Solutions
Timers | HVAC/R Solutions | Photocontrols

GRÄSSLIN
by INTERMATIC

INTERMATIC®

125 Years of Reliability, Growth and Innovation… And Counting

The Intermatic name has been synonymous with quality and reliability for more than a century. As technology evolves, we're committed to developing progressive solutions that are crafted with this same standard of quality and care. We draw on extensive customer feedback and set the highest expectations for our electrical, mechanical and software engineers.

Further, on-site CSA and UL-Certified labs support an iterative design philosophy that helps us get products into the hands of customers faster while maintaining rigorous design standards. On a given day, you might find our team simulating outdoor conditioning (surge testing) or observing the effects of a torrential rainstorm (NEMA 3R testing) in the pursuit of the perfect solution.

Progressive Solutions Built to Withstand the Test of Time

Throughout our 125-year history, Intermatic has built a reputation for delivering robust solutions that help customers save money through faster installation, reduce energy waste and extend equipment life, all while integrating seamlessly into projects. Quality, reliability and value are at the heart of everything we do. Elevate your work with progressive, time-tested solutions from Intermatic.

Catalog Highlights

- **Tech-Forward Approach:** Take advantage of tech-forward features, such as Bluetooth® connectivity and smartphone programming, as we continue to expand our portfolio of connected, mobile-friendly solutions.
- **LED Compatibility:** Optimize energy savings and reduce maintenance needs with our suite of LED-compatible lighting controls, designed specifically to match the life expectancy of LED fixtures.
- **Simplified Installations:** Boost productivity on the job site with streamlined solutions, such as the Ascend™ In-Wall Timer, that help reduce installation time by up to 15 minutes.
- **Comprehensive Surge Protection:** Keep valuable equipment safe from harm with an array of comprehensive Surge Protective Devices, including the AG3000 and Compressor Defender™.
- **Tailored Options:** Customizable solutions like our NightFox™ Pro Series Photocontrols and Pro Series Contactor Box can be built to match a wide range of specifications, making them an ideal fit for municipal projects, co-ops and more.

Crossing Borders. Building the Future

Manufacturing – Our reach is not constrained by borders and our products are built in our state-of-the-art manufacturing facilities in Juarez, Mexico and Peterzell, Germany. We provide OEM opportunities to drive down the cost of our customers' products with our iterative design process, quality engineering and excellent manufacturing capabilities. Our supply chain experts in North America, Europe and Asia have excellent relationships with leading component and material manufacturers worldwide.

Investing in the Future to Serve You Better

A lot has changed since Intermatic introduced its first mechanical time switch more than 70 years ago. However, the same core principles that helped make our signature yellow dial an industry staple are guiding our teams forward as we develop exciting new solutions that align with emerging trends across the globe.

From smart home technology and mobile resources to LED-rated lighting controls and advanced programming options, we're investing in the future to ensure our customers always have the solutions and resources they need to succeed in the digital world.

Look for continued product innovation with a focus on time-saving design and easy-to-use mobile tools that offer value to contractors and consumers alike.

Connecting Opportunities to Boost Efficiency

Whether it's a home, office, outdoor park or manufacturing facility, modern buildings are becoming more complex and connected to the digital world. As a result, contractors, facility managers and owners can benefit from installing reliable Intermatic solutions that automate processes and offer an extra level of convenience and control.

By the same token, a growing list of customizable and vertical-specific solutions make it easy to tailor Intermatic products to meet your requirements. Rather than integrating a single time switch or surge protective device, we're helping customers take a holistic approach to projects as a means to boost efficiency and provide a higher level of service.

Local Values, Global Impact

Local values and global perspective help Intermatic develop impactful solutions that are tailored to fit the unique needs of a diverse and growing customer base. From our North American headquarters in Spring Grove, Illinois our team connects with customers, associates and partners from every part of the world.

Moreover, our state-of-the-art manufacturing facility in Juarez, Mexico gives OEMs the ability to keep production costs low without sacrificing quality. This is bolstered by supply chain experts in North America, Europe and Asia who have excellent relationships with leading component manufacturers worldwide.
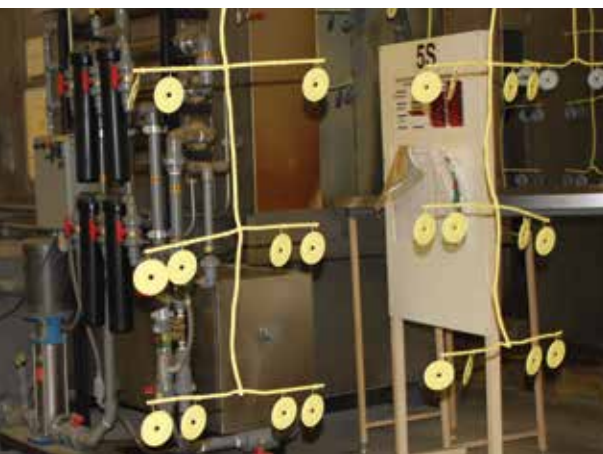
Inside this Catalog

Our product catalog is designed to provide you with all of the necessary information you need to make a purchasing decision.

Easily find the product category with color-coded sections.

Product description, applications & features

Photos

Other helpful information such as dimensional drawings and wiring diagrams

Refer to the product index in the back of the book for a complete list by Model #

Ratings and ordering charts

Any required or additional accessories are listed on the page

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Mechanical Time Switches
24-Hour

T100 Series
24-Hour

The T100 Series mechanical time switch has proven it can stand the test of time. These dependable time switches can handle electrical loads up to 40 A per pole and allow for up to 12 ON/OFF operations per day. A manual override switch provides added convenience.

Applications
- Indoor/Outdoor lighting • Signs • Filters • Electric fences • Fans
- Conveyers • Pool heaters • Blowers • Pumps
- Other electrical loads

Features
- Direct 24-hour control of most loads
- Up to 12 ON/OFF operations each day with minimum ON/OFF times of one hour
- Manual override
- One ON and one OFF tripper included

Ratings

Resistive	40 A @ varying voltages
Inductive	40 A @ varying voltages
Electronic Ballast	16 A, 277 VAC
Tungsten	40 A @ varying voltages
Pilot Duty	1000 VA @ varying voltages
Motor	2 HP, 24 FLA @ 120 VAC; 5 HP, 28 FLA @ 240 VAC
Max Power Consumption	3 W
Operating Temperature	-40° F to 130° F (-40° C to 54° C)
Enclosure Dimensions H x W x D	
Metal Indoor	7 ¾" x 5 ½" x 3 ¼" (200 mm x 130.2 mm x 87.3 mm)
Metal Indoor/Outdoor	10 ¼" x 6 ½" x 3 ¾" (257.2 mm x 165.1 mm x 92.1 mm)
Plastic Indoor/Outdoor	10" x 6 ½" x 4" (254 mm x 165.1 mm x 101.6 mm)
Knockout Dimensions	
Side/Back	(1) ½" and ¾" combination
Bottom	(2) ½" and ¾" combination
Wire Size	#8 - #14 AWG
Warranty	1-year

For enclosure options and dimensions, see pages 166-167

Accessories/Replacement

Extra/replacement trippers	156T1978A
1 ON and 1 OFF	

Extra/replacement motors:

WG1570-10D	for T101, T101P3, T103, T105, 120 VAC, 60 Hz
WG1571-10D	for T101, T103, T105, 120 VAC, 50 Hz
WG1573-10D	for T102, T104, T106R 208-277 VAC, 60 Hz
WG1574-10D	for T104-50, 208-277 VAC, 50 Hz
Replacement Insulators	see pages 170-171

Voltage Ratings
For more details on model numbers / voltage ratings, scan the QR code with your smartphone or tablet.

Model #	Switch	Input Voltage
Metal Indoor Enclosure		
T101	SPST	120 VAC, 60 Hz
T102	SPST	208-277 VAC, 60 Hz
T103	DPST	120 VAC, 60 Hz
T104	DPST	208-277 VAC, 60 Hz
T104-50	DPST	208-277 VAC, 50 Hz
T101B*	SPST	120 VAC, 60 Hz
T105 **	1 NO/1 NC	120 VAC, 60 Hz
Metal Indoor/Outdoor Enclosure		
T101R	SPST	120 VAC, 60 Hz
T102R	DPST	208-277 VAC, 60 Hz
T103R	DPST	120 VAC, 60 Hz
T104R	DPST	208-277 VAC, 60 Hz
T106R**	1 NO/1 NC	208-277 VAC, 60 Hz
T1205R	DPST	480 VAC, 60 Hz
Plastic Indoor/Outdoor Enclosure		
T101P	SPST	120 VAC, 60 Hz
T102P	SPST	208-277 VAC, 60 Hz
T103P	DPST	120 VAC, 60 Hz
T104P	DPST	208-277 VAC, 60 Hz
Plastic Indoor/Outdoor Enclosure with See-Through Door		
T101PCD82	DPST	120 VAC, 60 Hz
T103PCD82	DPST	120 VAC, 60 Hz
T104PCD82	DPST	208-277 VAC, 60 Hz
Mechanism Only		
T101M	SPST	120 VAC, 60 Hz
T103M	DPST	120 VAC, 60 Hz
T104M	DPST	208-277 VAC, 60 Hz
T106M **	1 NO/1 NC	208-277 VAC, 60 Hz

*Separate clock motor terminals for switching circuits not on line voltage.
**Can be wired as SPDT.

Mechanical Time Switches
24-Hour with Skip-a-Day

T170, T1400, and T1800 Series
24-Hour with Skip-a-Day

Similar to the T100 Series, these time switches can also handle electrical loads up to 40 A per pole. The T170 Series time switches allow for up to 10 ON/OFF settings per day, but give you the additional capability of skipping days in which the loads may not be needed. Each time switch will come with one set of ON/OFF trippers as well as three skipper screws to omit the schedule for at least three days.

Applications
- For commercial, industrial and residential applications
- Indoor/Outdoor lighting • Signs • Filters • Electric fences • Fans
- Conveyers • Pool heaters • Blowers • Pumps
- Various other electrical loads

Features
- Controls loads up to 40 A per pole
- Direct 24-Hour control of most loads
- Up to 10 ON/OFF operations each day
- Minimum ON/OFF times of one hour
- Manual override
- One ON and one OFF tripper and three day-skipper screws included

Models with Carry-Over (T171CR, T173CR, T174CR, T1471BCR)
- Minimum of 16 hours carry-over operation
- Carry-over automatically rewinds and only takes one hour for every two hours of power loss
- 4PST models are ideal for 3-phase load control

Model #	Switch	Input Voltage
Metal Indoor Enclosure		
T171	SPST	120 VAC, 60 Hz
T172	SPST	208-277 VAC, 60 Hz
T173	DPST	120 VAC, 60 Hz
T174	DPST	208-277 VAC, 60 Hz
T175**	1NO/1NC	120 VAC, 60 Hz
T176**	1NO/1NC	208-277 VAC, 60 Hz
Metal Outdoor Enclosure		
T173R	DPST	120 VAC, 60 Hz
T174R	DPST	208-277 VAC, 60 Hz
T1471BR*	4PST	120 VAC, 60 Hz
T1472BR*	4PST	208-277 VAC, 60 Hz
T1475BR*	4PST	480 VAC, 60 Hz
T1871BR* †	2NO/2NC	120 VAC, 60 Hz
T171CR	DPST	120 VAC, 60 Hz
T173CR	DPST	120 VAC, 60 Hz
T174CR	DPST	208-277 VAC, 60 Hz
T1471BCR*	4PST	120 VAC, 60 Hz

*Separate clock motor terminals for switching circuits not on line voltage.
**Can be wired as SPDT.
† Can be wired as DPDT.

Ratings

Resistive	40 A @ varying voltages
Inductive	40 A @ varying voltages
Electronic Ballast	16 A, 277 VAC
Tungsten	40 A @ varying voltages
Pilot Duty	1000 VA @ varying voltages
Motor: T170 Series	2 HP, 24 FLA @ 120 VAC; 5 HP, 28 FLA @ 240 VAC
Motor: T1400 and T1800 Series	
Single Phase	2 HP, 24 FLA @ 120 VAC; 5 HP, 28 FLA @ 240 VAC
Three Phase	7 1/2 HP, 28 FLA @ 208 VAC; 10 HP, 28 FLA @ 240 VAC
Max Power Consumption	3 W
Operating Temperature	-40° F to 130° F (-40° C to 54° C)
Enclosure Dimensions H x W x D	
Metal Indoor	7 ¾" x 5 ½" x 3 ¼" (200 mm x 130.2 mm x 87.3 mm)
Metal Outdoor	10 ¼" x 6 ½" x 3 ¾" (257.2 mm x 165.1 mm x 92.1 mm)
Knockout Dimensions	
Side/Back	(1) ½" and ¾" combination
Bottom	(2) ½" and ¾" combination
Wire Size	#8 - #14 AWG
Warranty	1-year

For enclosure options and dimensions, see pages 166-167

Accessories/Replacement

Extra/replacement Trippers,	156T1948A
1 ON and 1 OFF	

Extra/replacement Motors:

WG1570-10D	for T171, T173, T175, 120 VAC, 60 Hz
WG1571-10D	for T171, T173, T175, 120 VAC, 50 Hz
WG1573-10D	for T172, T174, T176, 208-277 VAC, 60 Hz
WG430-20D	for T1471BR, T1871BR, T14718CR, 208-277 VAC, 60 Hz
WG433-20D	for T1472BR, 208-277 VAC, 60 Hz
Replacement Insulators	see pages 170-171

Voltage Ratings
For more details on model numbers / voltage ratings, scan the QR code with your smartphone or tablet.

At Your Fingertips Online

We are always available to serve you through our Intermatic.com website and our mobile apps for tablets and smartphones.

Website – Our site is continually being updated to provide you with the most current information on products, including new releases and accessories. In addition to specifications and installation sheets, you'll find case studies and articles that detail Intermatic products in-use, solving problems at facilities like yours.

- This entire catalog is available digitally at www.intermatic.com/catalogs.
- Need to quickly cross-reference a product to an Intermatic solution? Check out our Cross-reference Tool by visiting: http://www.intermatic.com/en/ProductResources/ProductCrossReference
- Our iPad App - download from the App Store
  Browse and order from the convenience of anywhere

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INTERMATIC

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ENTER

ESC

INTERMATIC®
ET90000 Series

Circuits

3
ON/OFF

4
ON/O

Electronic Controls

Stamp out energy waste and take command of complex lighting systems with our robust lineup of Electronic Controls. Designed to support commercial buildings, school districts, retail stores and more, our flexible 24-hour, 7-day, 365-day and dusk-to-dawn electronic controls can satisfy nearly any price point, schedule or feature set need.

Ranging from the Electronic Timer (ET) Basic Series, which handles simple ON/OFF and Astronomic schedules, to the more comprehensive ET Basic+ Series and ET Advanced Series, our electronic controls make it easy to cater to specific occupant needs while taking an active approach to energy management. Better still, helpful features like holiday exceptions make it a snap to create dynamic program-specific schedules without putting an undue burden on facility management.

Contents

ET91615CR

ET90215CRE

ET90115C

ET90000
365-Day Astronomic Time Switches

The ET90000 Series combines powerful and intuitive scheduling with truly maintenance-free convenience. The PC App and Mobile App provide real-time remote control, and the USB connection and Ethernet capabilities enable in-field updates.

Applications
• School Districts • Banks • Small Hotels • Franchises • Retail Stores
• Municipalities • Parking Lots • Offices

Features
• Automatic input voltage selection from 120 to 277 VAC, 50/60 Hz;
• Over 2,000 events plus holiday schedules
• Advanced scheduling including relative dating, such as fourth Thursday of November or first week of year
• 30 A rated contacts; 100-hour supercapacitor eliminates the need for batteries
• USB connection for uploading, downloading and transferring programs
• Easy-to-follow on-screen menus for programming to-the-minute accuracy
• Non-volatile memory protects programming indefinitely
• Firmware can be upgraded in-field via USB or Ethernet
• Internally expandable, in 4-circuit increments, up to 16-circuits for 4, 8, and 12-circuit models
• PC App for easy scheduling or control, either remotely or through USB flash drive
• Mobile app for real time status and overrides

Load Type	NO (Normally Open)	NC (Normally Closed)
General Purpose	30 A, 12-240 VAC, 50/60 Hz	10 A, 12-240 VAC, 50/60 Hz
Resistive	20 A, 28 VDC; 30 A, 12-240 VAC, 50/60 Hz	10 A, 28 VDC; 10 A, 12-240 VAC, 50/60 Hz
Magnetic Ballast	20 A, 120-277 VAC, 50/60 Hz	3 A, 120-277 VAC, 50/60 Hz
Tungsten	5 A, 12-120 VAC, 50/60 Hz	–
Pilot Duty	470 VA, 120-240 VAC, 50/60 Hz	275 VA, 120-240 VAC, 50/60 Hz
Motor	1 HP, 120 VAC, 50/60 Hz; 2 HP, 240 VAC, 50/60 Hz	¼ HP, 120 VAC, 50/60 Hz; ½ HP, 240 VAC, 50/60 Hz

Ratings	
Wire Size	#20 AWG - #6 AWG
Min ON/OFF Times	1 Sec
Max ON/OFF Times	365 Days
Operating Temperature	-40° F to 104° F (-40° C to 40° C)
Warranty	3-year limited

Model #	Circuits	Enclosure	Ethernet
ET90115C	1	Indoor Type 1 Metal	Ethernet Optional
ET90115CE	1	Indoor Type 1 Metal	Ethernet Included
ET90115CR	1	Outdoor Type 3R Metal	Ethernet Optional
ET90115CRE	1	Outdoor Type 3R Metal	Ethernet Included
ET90115M*	1	Mechanism Only	N/A
ET90215C	2	Indoor Type 1 Metal	Ethernet Optional
ET90215CE	2	Indoor Type 1 Metal	Ethernet Included
ET90215CR	2	Outdoor Type 3R Metal	Ethernet Optional
ET90215CRE	2	Outdoor Type 3R Metal	Ethernet Included
ET90215M*	2	Mechanism Only	N/A
ET90415CR	4	Outdoor Type 3R Metal	Ethernet Included
ET90815CR	8	Outdoor Type 3R Metal	Ethernet Included
ET91215CR	12	Outdoor Type 3R Metal	Ethernet Included
ET91615CR	16	Outdoor Type 3R Metal	Ethernet Included

*Replacements for 1 & 2 circuits only.
Note: The electronic mechanism snaps into the standard Intermatic enclosure for easy upgrading of mechanical mechanisms, if desired.

Accessories
Door Assembly	ET9100
Ethernet Module	ET9232
Relay Module	ET9250

Selection Guide

Scan the QR code with your smartphone or tablet for a side-by-side comparison of our electronic control features.

INTERMATIC®

Enclosure Dimensions

Type 1, 1-2 Circuit

5.7" [144 mm]
6.7" [169 mm]
7.8" [198 mm]
2.5" [64 mm]
5.1" [128 mm]
3.0" [76 mm]

CONDUIT KNOCKOUT SIZES	
SIZES	QTY
DUAL ¾" & ½"	5

Type 3R, 1-2 Circuit

8.6" [219 mm]
9.6" [243 mm]
3.3" [83 mm]
5.7" [145 mm]
3.6" [91 mm]

CONDUIT KNOCKOUT SIZES	
SIZES	QTY
DUAL ¾" & ½"	5

Type 3R, 4-16 Circuit

5.0" [127 mm]
18.5" [470 mm]
17.9" [454 mm]
2.5" [64 mm]
12.7" [322 mm]
5.4" [138 mm]

CONDUIT KNOCKOUT SIZES	
SIZES	QTY
DUAL 1" & ¾"	6
DUAL ¾" & ½"	8
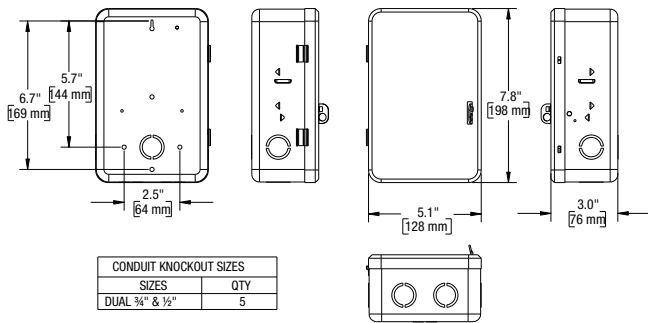
Wiring Diagrams
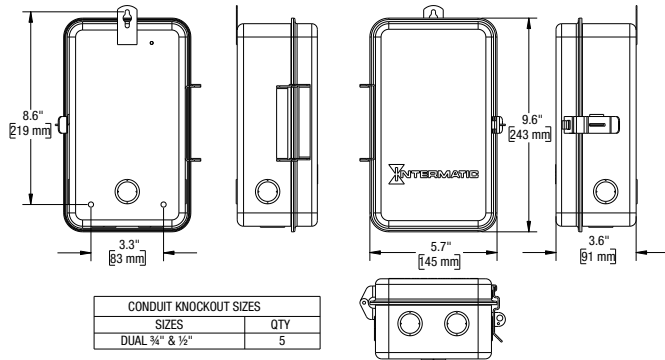
BELL
NEUTRAL
LOAD POWER
HOT / LINE
NC
NO
COM
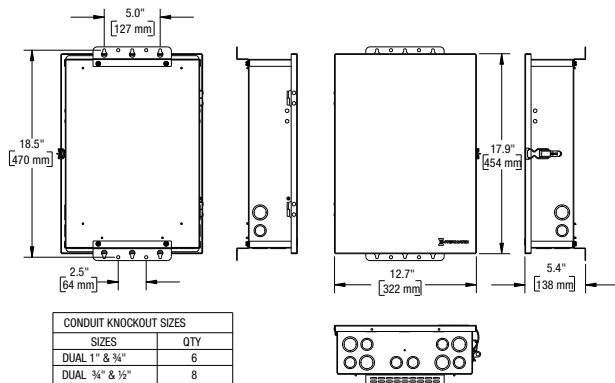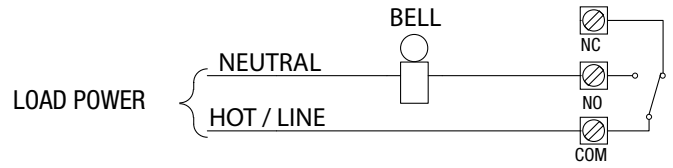
Typical bell, buzzer, or ringing installation. Multiple loads may be wired concurrently, within the maximum output ratings for the circuit.

LIGHTING
NEUTRAL
LOAD POWER
HOT / LINE
NC
NO
COM
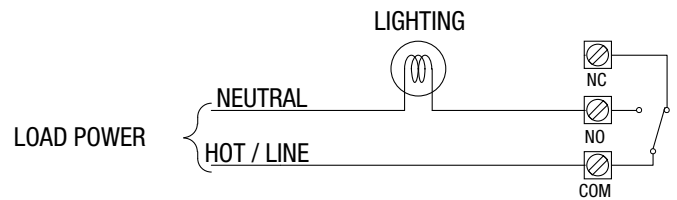
Typical lighting installation. Multiple loads may be wired concurrently, within the maximum output ratings for the circuit.

PHOTOCONTROL
OUTDOOR LIGHTING
NEUTRAL
LOAD POWER
HOT / LINE
NC
NO
COM
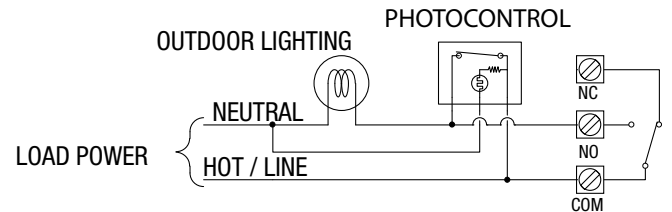
Typical installation for photocontrol in parallel with time switch contacts. Either the time switch OR the photocontrol must be ON to power the load. Ideal for improved safety. Loads will activate at the scheduled times, at night, or during low-light conditions such as a storm.

ET90000 Apps

ET90000 PC App

The ET90000 PC App enables real-time remote control of each ET90000 device from the convenience of your laptop. It's a great tool for creating schedules before, during, or after installation. Plus, with the PC App you can control circuits, perform firmware updates, or download events, zones, and holidays from wherever you are working. The ET90000 PC App is available at Intermatic.com.

ET90000 Mobile App

Use the ET90000 Mobile App to check the status of your circuits in real-time from your smartphone or tablet. The remote override feature allows you to conveniently make quick changes to currently running schedules. Available on the Google Play store.

GET IT ON
Google Play

Electronic Controls

ET2105C

ET2705C

ET2725CP

ET2845CR

ET2000 Series
Basic Plus Electronic Time Switches

The ET2000 Series offers an easy-to-use interface, while still allowing to-the-minute scheduling capabilities for nearly any application. This series provides 50 holiday blocks with independent scheduling to ensure the loads are always in the proper ON/OFF state. This series also includes 96 ON/OFF events for even the most demanding schedules. The scheduling capabilities, configurable outputs, and a 100-hour backup without the need of batteries, make this series ideal for nearly any application.

Applications
• Interior Lighting • Exterior Lighting • Electric Pumps
• Electric Motor Control • Various Other Electrical Loads

Features
• 100-hour supercapacitor eliminates the need for batteries
• Up to 96 set points or events
• Up to 50 holiday blocks with schedule capabilities
• Automatic input voltage selection from 120 to 277 VAC, 60 Hz
• Additional mode of operation turns the ON/OFF buttons into 2-hour overrides
• Configurable outputs allow the control of various voltages and applications
• Relays incorporate zero-crossing technology to extend the life of the control
• Non-volatile EEPROM memory protects programming indefinitely
• LED compatible
• USB port makes transferring and saving of schedules easy
• 2-year limited warranty

24-Hour Schedule

Model #	Enclosure
1-Circuit SPST Switch	
ET2105C	Indoor Type 1 Metal
ET2105CP	Outdoor Type 3R Plastic
ET2105CR	Outdoor Type 3R Metal
1-Circuit SPDT Switch	
ET2115C	Indoor Type 1 Metal
ET2115CP	Outdoor Type 3R Plastic
ET2115CR	Outdoor Type 3R Metal
2-Circuit SPST Switch	
ET2125C	Indoor Type 1 Metal
ET2125CP	Outdoor Type 3R Plastic
ET2125CR	Outdoor Type 3R Metal
4-Circuit SPST Switch	
ET2145C	Indoor Type 1 Metal
ET2145CP	Outdoor Type 3R Plastic
ET2145CR	Outdoor Type 3R Metal

Note: The electronic mechanism snaps into the standard Intermatic enclosure for easy upgrading of mechanical mechanisms, if desired. For outdoor rated metal enclosures contact Intermatic.

7-Day Schedule

Model #	Enclosure
1-Circuit SPST Switch	
ET2705C	Indoor Type 1 Metal
ET2705CP	Indoor/Outdoor Type 3 Plastic with See-Through Door
ET2705CR	Outdoor Type 3R Metal
1-Circuit SPDT Switch	
ET2715C	Indoor Type 1 Metal
ET2715CP	Indoor/Outdoor Type 3 Plastic with See-Through Door
ET2715CR	Outdoor Type 3R Metal
2-Circuit SPST Switch	
ET2725C	Indoor Type 1 Metal
ET2725CP	Indoor/Outdoor Type 3 Plastic with See-Through Door
ET2725CR	Outdoor Type 3R Metal
4-Circuit SPST Switch	
ET2745C	Indoor Type 1 Metal
ET2745CP	Indoor/Outdoor Type 3 Plastic with See-Through Door
ET2745CR	Outdoor Type 3R Metal

7-Day Astronomic Schedule

Model #	Enclosure
1-Circuit SPST Switch	
ET2805C	Indoor Type 1 Metal
ET2805CP	Indoor/Outdoor Type 3 Plastic with See-Through Door
ET2805CR	Outdoor Type 3R Metal
1-Circuit SPDT Switch	
ET2815C	Indoor Type 1 Metal
ET2815CP	Indoor/Outdoor Type 3 Plastic with See-Through Door
ET2815CR	Outdoor Type 3R Metal
2-Circuit SPST Switch	
ET2825C	Indoor Type 1 Metal
ET2825CP	Indoor/Outdoor Type 3 Plastic with See-Through Door
ET2825CR	Outdoor Type 3R Metal
4-Circuit SPST Switch	
ET2845C	Indoor Type 1 Metal
ET2845CP	Outdoor Type 3R Plastic
ET2845CR	Outdoor Type 3R Metal

Selection Guide

Scan the QR code for a side-by-side comparison of our electronic control features.

INTERMATIC®

Timer Power

TIMER POWER

AC IN

L1
L2/N

POWER TO TIMER
120/208/240/277 VAC
(AUTO VOLTAGE, NO JUMPERS REQUIRED)

1-Circuit

TIMER POWER   CIRCUIT 1

AC IN   NO-1   COM1

L1
L2/N
LOAD 1
N   L

OUTPUT CONFIGURATION: IND
(120/277 VAC LOAD)

1-Circuit SPDT

TIMER POWER   CIRCUIT 1

AC IN   NO-1   COM1   NC-1

L1
L2/N
LOAD1   LOAD2

OUTPUT CONFIGURATION - SPDT

2-Circuit

TIMER POWER   CIRCUIT 1   CIRCUIT 2

AC IN   NO-1   COM1   NO-2   COM2

L1
L2/N
LOAD 1   LOAD 2
N   L3   N   L4

OUTPUT CONFIGURATION: IND

TIMER POWER   CIRCUIT 1   CIRCUIT 2

AC IN   NO-1   COM1   NO-2   COM2

L1
L2
LOAD 1

TIMER CONFIGURATION FOR 240 VAC DPST
OUTPUT CONFIGURATION: SIM

TIMER POWER   CIRCUIT 1   CIRCUIT 2

AC IN   NO-1   COM1   NO-2   COM2

L1
L2/N
LOAD 1

OUTPUT CONFIGURATION: PUL (BELL RINGING)

TIMER POWER   CIRCUIT 1   CIRCUIT 2

AC IN   NO-1   COM1   NO-2   COM2

L1
L2/N
COM   CLOSE   OPEN

TIMER CONFIGURATION FOR CONTACTOR CONTROL
OUTPUT CONFIGURATION: PUL

4-Circuit

TIMER POWER   CIRCUIT 1   CIRCUIT 2   CIRCUIT 3   CIRCUIT 4

AC IN   NO-1   COM1   NO-2   COM2   NO-3   COM3   NO-4   COM4

L1
L2
LOAD 1   LOAD 2

TIMER CONFIGURATION FOR TWO 208/240 VAC DPST
OUTPUT CONFIGURATION: SIM - CIRCUIT 1 AND 2
OUTPUT CONFIGURATION: SIM - CIRCUIT 3 AND 4

TIMER POWER   CIRCUIT 1   CIRCUIT 2   CIRCUIT 3   CIRCUIT 4

AC IN   NO-1   COM1   NO-2   COM2   NO-3   COM3   NO-4   COM4

L1
L2/N
LOAD 1   LOAD 2   LOAD 3
N   L3   N   L4   L5   L6

TIMER CONFIGURATION FOR COMBINATION MODE
OUTPUT CONFIGURATION: IND - CIRCUIT 1 AND 2 (120/277 VAC LOAD)
OUTPUT CONFIGURATION: SIM - CIRCUIT 3 AND 4 (208/240 VAC LOAD)

TIMER POWER   CIRCUIT 1   CIRCUIT 2   CIRCUIT 3   CIRCUIT 4

AC IN   NO-1   COM1   NO-2   COM2   NO-3   COM3   NO-4   COM4

L1
L2/N
LOAD1   LOAD2   LOAD3
N   L3   N   L4

TIMER CONFIGURATION FOR COMBINATION MODE
OUTPUT CONFIGURATION: PUL - CIRCUIT 1 AND 2 (BELL RINGING)
OUTPUT CONFIGURATION: IND - CIRCUIT 3 AND 4

TIMER POWER   CIRCUIT 1   CIRCUIT 2   CIRCUIT 3   CIRCUIT 4

AC IN   NO-1   COM1   NO-2   COM2   NO-3   COM3   NO-4   COM4

L1
L2/N
LOAD 1   LOAD 2   LOAD 3   LOAD 4
N   L3   N   L4   N   L5   N   L6

4 - INDIVIDUAL 120/277 VAC LOADS
OUTPUT CONFIGURATION: IND - CIRCUIT 1 AND 2
OUTPUT CONFIGURATION: IND - CIRCUIT 3 AND 4

TIMER POWER   CIRCUIT 1   CIRCUIT 2   CIRCUIT 3   CIRCUIT 4

AC IN   NO-1   COM1   NO-2   COM2   NO-3   COM3   NO-4   COM4

L1
L2/N
COM   CLOSE   OPEN   COM   CLOSE   OPEN

TIMER CONFIGURATION FOR TWO CONTACTOR CONTROLS
OUTPUT CONFIGURATION: PUL - CIRCUIT 1 AND 2
OUTPUT CONFIGURATION: PUL - CIRCUIT 3 AND 4

TIMER POWER   CIRCUIT 1   CIRCUIT 2   CIRCUIT 3   CIRCUIT 4

AC IN   NO-1   COM1   NO-2   COM2   NO-3   COM3   NO-4   COM4

L1
L2/N
LOAD 1   LOAD 2   LOAD 3
L3   L5   N   L6   N   L7

TIMER CONFIGURATION FOR COMBINATION MODE
OUTPUT CONFIGURATION: SIM - CIRCUIT 1 AND 2 (208/240 VAC LOAD)
OUTPUT CONFIGURATION: IND - CIRCUIT 3 AND 4 (120/277 VAC LOAD)

TIMER POWER   CIRCUIT 1   CIRCUIT 2   CIRCUIT 3   CIRCUIT 4

AC IN   NO-1   COM1   NO-2   COM2   NO-3   COM3   NO-4   COM4

L1
L2/N
LOAD1   LOAD 2

240VAC

TIMER CONFIGURATION FOR COMBINATION MODE
OUTPUT CONFIGURATION:PUL - CIRCUIT 1 AND 2 (BELL RINGING)
OUTPUT CONFIGURATION: SIM - CIRCUIT 3 AND 4 (208/240 VAC LOAD)

Ratings - SPDT	
Input Voltage	120-277 VAC, 60 Hz
Switch Type	SPDT
Resistive (NO)	20 A, 28 VDC; 20 A, 120-240 VAC, 60 Hz
Resistive (NC)	10 A, 28 VDC; 10 A, 120-240 VAC, 60 Hz
Inductive (NO)	20 A, 120-240 VAC, 60 Hz
Inductive (NC)	10 A, 120-240 VAC, 60 Hz
Magnetic Ballast (NO)	20 A, 120-277 VAC, 60 Hz
Magnetic Ballast (NC)	3 A, 120-277 VAC, 60 Hz
Electronic Ballast (NO)	10 A, 120/277 VAC, 60 Hz
Motor (NO)	1 HP, 120 VAC, 60 Hz; 2 HP, 240 VAC, 60 Hz
Motor (NC)	¼ HP, 120 VAC, 60 Hz; ½ HP, 240 VAC, 60 Hz
Operating Temperature	-40° F to 104° F (-40° C to 40° C)
Min ON/Off Times	1 Min
Max ON/Off Times	Indefinite
Warranty	2-year limited

Ratings - SPST	
Input Voltage	120-277 VAC, 60 Hz
Switch Type	SPST
Resistive (NO)	20 A, 28 VDC; 30 A, 120-240 VAC, 60 Hz
Inductive (NO)	30 A, 120-240 VAC, 60 Hz
Magnetic Ballast (NO)	20 A, 120-277 VAC, 60 Hz
Electronic Ballast (NO)	10 A, 120/277 VAC, 60 Hz
Motor (NO)	1 HP, 120 VAC, 60 Hz; 2 HP, 240 VAC, 60 Hz
Tungsten	5 A, 120-277 VAC, 60 Hz
Operating Temperature	-40° F to 104° F (-40° C to 40° C)
Min ON/Off Times	1 Min
Max ON/Off Times	Indefinite
Warranty	2-year limited

Enclosure	
Enclosure Dimensions Indoor Type 1 Metal,	Indoor Type 1 Metal, 7.8" X 5.1" X 3" (198 mm x 128 mm x 76 mm)
Enclosure Dimensions Indoor/Outdoor Type 3 Plastic with See-Through Door	Indoor/Outdoor Type 3 Plastic with See-Through Door, 10" X 6.5" X 4" (254 mm x 165.1 mm x 101.6 mm)
Enclosure Dimensions Outdoor Type 3R Metal	Outdoor Type 3R Metal, 10.125" X 6.5" X 3.625" (257.2 mm x 165.1 mm x 92.1 mm)

For enclosure line drawings and knockout locations, see pages 166-167.

INTERMATIC®

Electronic Controls

ET1725CPD82   ET8415CR

ET1100, ET1700, ET8000 Series

Basic Electronic Time Switches

This series offers an easy way to upgrade from a basic mechanical time switch to an electronic time switch. These timers will allow for up-to-the-minute programming, battery backup for power loss, up to 28 events total, and automatic daylight saving time corrections without the need of user interaction. They come in standard 24-hour, 7-day and 7-day astronomic versions.

Applications
- Interior Lighting • Exterior Lighting • Electric Pumps • Electric Motor Control
- Various Other Electrical Loads

Features
- Selector switch to determine input voltage between 120-277 VAC, 50/60 Hz
- Up to 28 events total
- To-the-minute accuracy
- Temporary override or permanent manual override
- Automatic Daylight Saving Time adjustment
- Astronomic models enable dusk-to-dawn scheduling

24-Hour Schedule

Model #	Enclosure
1-Circuit SPST Switch	
ET1105C	Indoor Type 1 Metal
ET1105CPD82	Outdoor Type 3R Plastic
1-Circuit SPDT Switch	
ET1115C	Indoor Type 1 Metal
ET1115CPD82	Outdoor Type 3R Plastic
2-Circuit SPST Switch	
ET1125C	Indoor Type 1 Metal
ET1125CPD82	Outdoor Type 3R Plastic

7-Day Schedule

Model #	Enclosure
1-Circuit SPST Switch	
ET1705C	Indoor Type 1 Metal
ET1705CPD82	Outdoor Type 3R Plastic
1-Circuit SPDT Switch	
ET1715C	Indoor Type 1 Metal
ET1715CPD82	Outdoor Type 3R Plastic
2-Circuit SPST Switch	
ET1725C	Indoor Type 1 Metal
ET1725CPD82	Outdoor Type 3R Plastic

7-Day Astronomic Schedule

Model #	Enclosure
1-Circuit SPST Switch	
ET8015C	Indoor Type 1 Metal
ET8015CPD82	Outdoor Type 3R Plastic
1-Circuit SPDT Switch	
ET8115C	Indoor Type 1 Metal
ET8115CPD82	Outdoor Type 3R Plastic
2-Circuit SPST Switch	
ET8215C	Indoor Type 1 Metal
ET8215CPD82	Outdoor Type 3R Plastic
4-Circuit SPST Switch	
ET8415CR*	Outdoor Type 3R Metal

Ratings SPST	
Input Voltage	120-277 VAC, 60 Hz
Switch Type	SPST
Resistive NO	20 A, 28 VDC; 30 A, 120/240 VAC, 60 Hz
Inductive NO	30 A, 120/240 VAC, 60 Hz
Magnetic Ballast NO	20 A, 120-277 VAC, 60 Hz
Tungsten NO	5 A, 120/240 VAC, 60 Hz
Motor NO	1 HP, 120 VAC, 60 Hz; 2 HP, 240 VAC, 60 Hz
Operating Temperature	-40° F to 104 ° F (-40° C to 40° C)
Wiring Terminals	#8 AWG
Min ON/Off Times	1 min
Max ON/Off Times	Indefinite
Warranty	1-year limited

Ratings SPDT	
Input Voltage	120-277 VAC, 60 Hz
Switch Type	SPDT
Resistive NO	20 A, 28 VDC; 20 A, 120-240 VAC, 60 Hz
Resistive NC	10 A, 28 VDC; 10 A, 120-240 VAC, 60 Hz
Inductive NO	20 A, 120-240 VAC, 60 Hz
Inductive NC	10 A, 120-240 VAC, 60 Hz
Magnetic Ballast NO	20 A, 120-277 VAC, 60 Hz
Magnetic Ballast NC	3 A, 120-277 VAC, 60 Hz
Motor NO	1 HP, 120 VAC, 60 Hz; 2 HP, 240 VAC, 60 Hz
Motor NC	¼ HP, 120 VAC, 60 Hz; ½ HP, 240 VAC, 60 Hz
Operating Temperature	-40° F to 104 ° F (-40° C to 40° C)
Wiring Terminals	#8 AWG
Min ON/OFF Times	1 min
Max ON/OFF Times	Indefinite
Warranty	1-year limited

Enclosure	
Enclosure Dimensions Indoor Type 1 Metal	Indoor Type 1 Metal, 7.875" x 5.125" x 3.4375" (200 mm x 130.2 mm x 87.3 mm)
Enclosure Dimensions Outdoor Type 3R Plastic	Outdoor Type 3R Plastic, 10" x 6.5" x 4" (254 mm x 165.1 mm x 101.6 mm)
Enclosure Dimensions Outdoor Type 3R Metal	Outdoor Type 3R Metal, 10.125" x 6.5" x 3.625" (257.2 mm x 165.1 mm x 92.1mm)
Knockout Dimensions **Side/Back**	(1) combination 1/2" - 3/4"
Bottom	(2) combination 1/2" - 3/4"

Note: The electronic mechanism snaps into the standard Intermatic enclosure for easy upgrading of mechanical mechanisms, if desired. For outdoor rated metal enclosures contact your Intermatic representative.

* ET8415CR is UL Listed and includes automatic voltage detection between 120-277 VAC, 50/60Hz.

Selection Guide

Scan the QR code for a side-by-side comparison of our electronic control features.

INTERMATIC®

ET1100, ET1700, ET8000 Series

Timer Power

Single Circuit 120 VAC-SPST

Timer Power

2-Circuit Pulse 2x SPST

Timer Power

SPDT (ETXX15 models) (load switching)

Timer Power

2-Circuit (SIM)

Timer Power

2-Circuit (Per Bell Ringing)

Timer Power

2-Circuit (IND)
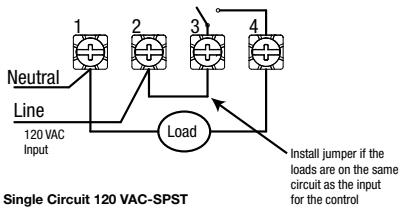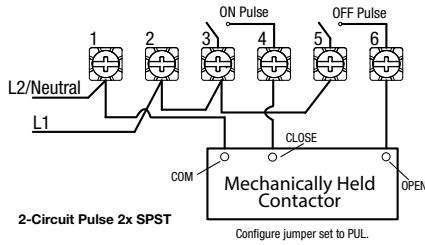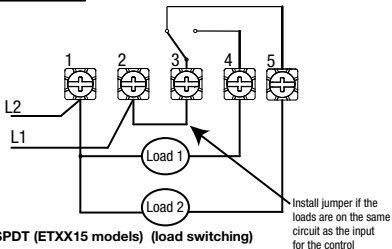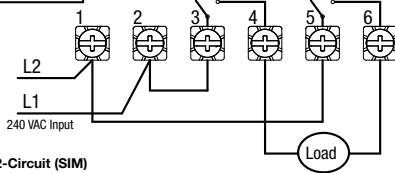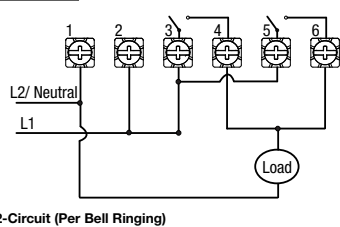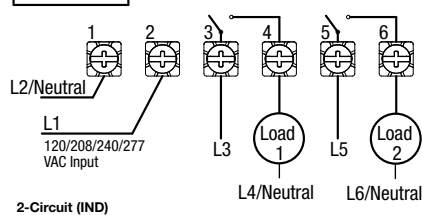
ET8415CR Wiring Diagrams

There are many different ways to set the relays on the ET8415CR Time Switch. The four relays can be used individually or in pairs of two. Refer to the table below for a complete list of ways to set the relays and illustrations for some of the common wiring installations.

Possible switching configurations		
IND/IND	SIM/IND	PUL/IND
IND/SIM	SIM/SIM	PUL/SIM
IND/PUL	SIM/PUL	PUL/PUL

Note:
IND= Independent SIM= Simultaneous PUL= Pulse

2x DPST
Operation Mode set to SIM for both sets of contacts, input and output voltage are the same.
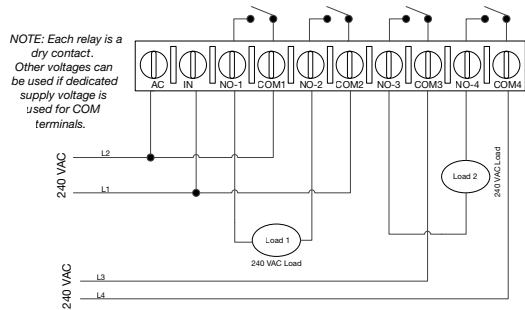
4x SPST
Operation Mode set to IND, input and output voltage are the same.
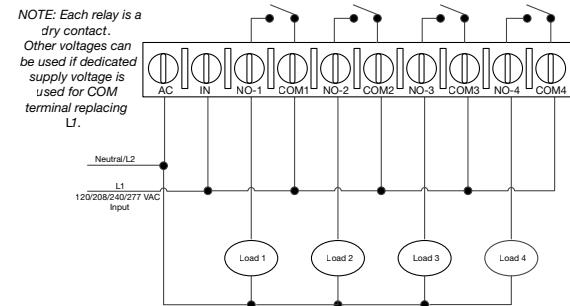
2x Pulse
Operation mode set to PUL for both sets of contacts, each ON and OFF event for circuit 1 will ring the bell. Each ON event for Circuit 3 will close contactor and each OFF event will open contactor.
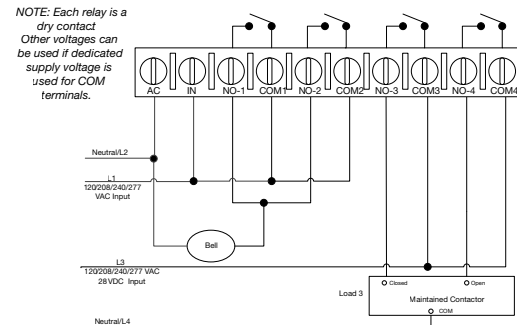
INTERMATIC

17

Grässlin Electronic Controls

Work smarter, not harder with our diverse set of Grässlin Electronic Controls. Designed to help electricians streamline installations and improve efficiency, Grässlin Electronic Controls are a prime fit for a range of applications, including outdoor signage, landscape lighting, fans, hydroponics, parking lots and more. Offering a variety of helpful features and scheduling options, these versatile time controls can be used in new installations, OEM settings or retrofit projects to control various loads.

Leading the way, the talento smart™ Digital Timer employs Bluetooth® technology, a user-friendly mobile app and a seamless device interface to significantly reduce time spent on installation and setup. The innovative control boasts 365-day programming options, memory for up to 500 events and multiple event types to ensure electricians and facility managers always stay in command of time switch schedules.

Contents

Whether you're retrofitting an existing space or breaking new ground, finding the right time switch to match your project's needs is a crucial step in the building process. Now, thanks to the widespread use of DIN rail technology, the choice is simple. DIN rail time switches, like the talento smart™ product family, add progressive functionality to projects while boosting efficiency and reducing labor costs.

What is DIN Rail?

DIN rail refers to a standardized mount used to install circuit breakers and other types of controls within a building's equipment rack. It serves as a modular platform to add components to for a variety of different applications.

The technology was first developed in Germany by the Deutsches Institut fur Normung, hence the D-I-N acronym. Today, it's recognized as a European (EN) and international (IEC) electrical standard.

Save Time Using DIN Rail

One of the biggest benefits of DIN rail technology is that it saves time. In a traditional building setup, electricians need to use a contactor box that includes terminal strips, fuses, contactors and other components. This requires several different parts to be installed, any of which might break down and require maintenance.

On the other hand, DIN rail allows builders to install components straight out of the box and mitigate long-term maintenance issues. The snap-on installation process doesn't require additional drilling or special tools, and in many cases, time switches can be installed and programmed within minutes.

INTERMATIC®

Work Smarter, Not Harder
with talento smart™

The new talento smart product family was developed with electricians at its core. Its compact DIN rail design helps streamline the installation process while the intuitive talento smart mobile app makes it easy to save time programming the device.

With 365-day scheduling, up to 500 event options and available dusk-to-dawn functionality, it's the perfect DIN rail time switch to manage energy costs in both commercial and residential settings.

What makes the talento smart truly unique is that it is the world's first DIN rail time switch to integrate Bluetooth® wireless connectivity. This helps electricians better manage programs and allows users to update the time switch using either the onboard interface or the talento smart mobile app.

Common talento smart applications:

• Outdoor Signage and Billboards

• Parking Lots

• Community Sports Fields

• Indoor Growing and Hydroponics

• Office Lighting

• Fountains and Pond Pumps

Solid Features and Technical Specs to Back it Up

Using easy-to-follow presets, electricians can create the time schedules they need without repeating steps. The practical programing functions of talento smart, such as Calendaring, Templates, Holiday Wizard and Astro help take the guess work out of device setup.

Though relatively small in size, talento smart packs a powerful punch in terms of hardware. It's designed using the same trusted electrical wiring as other Intermatic/Grässlin models, which provides a strong foundation for advanced digital functions. It also employs zero-cross relay switching technology, commonly found in Intermatic photocontrols, to help eliminate incidents of high inrush current damage.

Grässlin Electronic Controls

talento smart B15

CH1   CH2
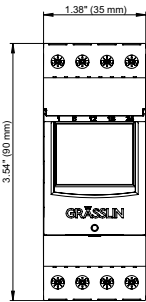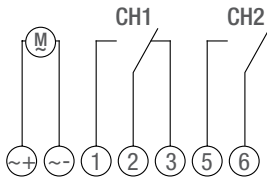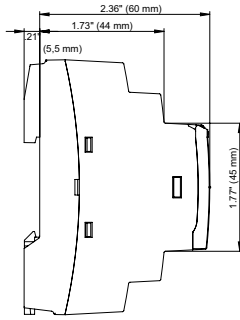
talento smart™

Digital DIN Rail Time Switches

Bluetooth® connectivity and mobile programming tools make the talento smart Series a perfect choice for a variety of time switch tasks. Its compact, DIN rail mountable design allows for quick installation into existing infrastructures, while Bluetooth integration makes it easy to program the time switch without opening the control cabinet. Boost productivity by updating schedules from a smartphone or tablet using the complimentary talento smart mobile app, available on Google Play and the App Store. Available Astronomic dusk-to-dawn timing functionality with Automatic Geolocation provides fast and accurate control.

Applications
- Hydroponic Systems • Sports Fields • Ponds • Parking Lots
- Retail Stores • Fountains • Outdoor Signage • Indoor Lighting

Features
- Wireless Bluetooth 4.0 Connectivity
- Zero-Crossing Technology
- Mobile Programming via the talento smart App
- Easy and fast installation
- Optimal tamper protection through PIN code protection
- Optimal tamper protection through sealable housing
- Auto Daylight Saving Time feature
- 365-Day Scheduling
- Up to 500 Events (on "C" models only)
- Astronomic Control (on "C" models only)

Model #	No. of Circuits	Program	Memory
talento smart B15	1	1 Date-Dependent Program (Holiday/Annual Program), 10 Date-Independent Programs (Weekly Program), Free Weekday Block Formation, OFF, ON	100
talento smart B25	2	2 Date-Dependent Programs (Holiday/Annual Program), 10 Date-Independent Programs (Weekly Program), Free Weekday Block Formation, OFF, ON	100
talento smart C15	1	50 Date-Dependent Programs (Holiday/Annual Program), 50 Date-Independent Programs (Weekly Program), Astro Function, Cycle, Free Weekday Block Formation, Impulse, OFF, ON, Random OFF, Random ON	500
talento smart C25	2	50 Date-Dependent Programs (Holiday/Annual Program), 50 Date-Independent Programs (Weekly Program), Astro Function, Cycle, Free Weekday Block Formation, Impulse, OFF, ON, Random OFF, Random ON	500

Ratings	
Input Voltage	120-240 VAC, 50/60 Hz
Switch Type	SPDT
Resistive	15 A, 120 VAC, 10 A, 240 VAC
Inductive Load	10 A, 240 VAC
Motor	1/2 HP @ 120 VAC, 1 HP @ 240 VAC
Magnetic Ballast	10 A, 240 VAC
Power Consumption	< 1 VA
Accuracy	± 0,3 Second /Day at 20°C
Power Reserve	8 Years, Programs Saved in EEPROM
Wiring Connections	Screw Terminals #16 AWG - #12 AWG
Operating Temperature	-4° F to 131° F (-20° C to 55° C)
Weight	0.22 lbs (0.11 kg)
Warranty	1-year

talento smart App

Transfer Data Wirelessly and Program From a Smartphone or Tablet with the talento smart Mobile App

Enjoy talento smart's quick installation and easy-to-use smart phone interface for scheduling building controls. Wireless setup, transfer and export of programs, without the need for any additional hardware. Existing program details can be exported or copied quickly and completely to a smartphone from a time switch to a smartphone and vice versa, even when the cabinet door is closed.

Available for both iOS and Android.

INTERMATIC®

Talento882
Digital DIN Rail Time Switches

The Talento882 Pro Electronic Time Switch provides time-of-day control for lighting, heating, air conditioning, pumps, motors or general electrical circuits. The time control offers 24-hour/7-day, astronomic, and 365-day programming with holiday capability. An attractive backlit LCD display indicates the load status, time of day, seasonal indicator, and a service notification when the load-monitoring hour counter function is activated. The units can be mounted to a standard DIN rail or within a Grässlin enclosure for stand-alone installations (enclosure sold separately). In addition to the conventional ON/OFF programming format, these units offer pulse and cycle functions. A pulse is simply an ON or OFF event with a duration of one or more seconds. The cycle function provides for a repeating ON event within a selectable total cycle. Both the ON duration and the total cycle duration are independently programmable in minutes or seconds. In addition, the cycle function can be set to repeat indefinitely or to occur within a time and/or date range. A channel assignable external override input is provided to execute an override switching command. The override remains in effect until the button is pressed again, the next automatic switching command begins, or when the programmable countdown timing duration (MIN 30 sec/MAX 90 min) expires.

Applications
- Lighting • Heating • Air Conditioning • Pumps • Motors
- General Electrical Circuits

Features
- Cumulative load-monitoring hour counter with service indicator keeps track of runtime for maintenance schedules
- Automatically detects and adjusts input voltages (24 VAC/VDC - 240 VAC)
- Non-volatile memory (EEPROM)
- Random program switching function
- Assignable external input for countdown, override, or pulse function
- Weekly, annual, and holiday scheduling (ON/OFF, pulse, cycle)
- Backlit LCD with load status indicator
- Automatic Daylight Saving Time adjustment
- Astronomic control
- 400 memory spaces
- Replaceable battery provides backup with a 10-year carry-over
- Shortest switching time: 1-second
- Manual switch: automatic/override/fixed ON/OFF
- Security features include lockable keypad cover and PIN code
- 2-Circuit independent programming
- Optional PC data transfer via IR remote interface (Talento Taxxi-P)

Model #	Circuits	Programs	Mounting Type
TALENTO882	2	400	DIN Rail

Accessories

Handheld PC Programming Tool	Talento Taxxi-P
Plastic Type 3R Enclosure with DIN	E200DIN

Talento882
with E200DIN Enclosure

Talento882

Enclosure Dimensions

6.5" [16.5 cm]
5.54" [14.1cm]
10" [25.4 cm]
8.64" [21.9 cm]
3.74" [9.5 cm]

Dimensions

35 mm 1.37"
44 mm 1.73"
85 mm 3.34"
60 mm 2.36"
44 mm 1.73"

Wiring Diagrams

CH 1   CH 2

#E10694

Ratings	
Supply Voltage	24 VDC/VAC, 120-240 VAC, 50/60 Hz
Switch Type	
1-circuit	SPDT
2-circuit	SPST
Switch Ratings (NO/NC Contacts)	
General Purpose	10 A, 240 VAC, 50/60 Hz
Resistive	16 A, 240 VAC, 50/60 Hz
Ballast	8 A, 240 VAC, 50/60 Hz
Tungsten	10 A, 240 VAC, 50/60 Hz
Pilot Duty	B300, 240 VAC, 50/60 Hz
Operating Temperature	14° F to 131° F (-10° C to 55° C)
Screw Terminals	#16 AWG - #12 AWG
Warranty	1-year limited

Grässlin Electronic Controls

Dimensions

6.61"
[16.79 cm]

5.73"
[14.55 cm]

8.88"
[22.56 cm]

3"
[7.62 cm]

GM40AVE-RD89

Wiring Diagrams

Typical wiring diagram 208/240 VAC

TIMER
T

L1 L2/N NC NO COM NC2 NO2 COM2

LOAD

L1 ⟷ L2
208/240 VAC

Typical wiring diagram 120/277 VAC

TIMER
T

L 1 L 2/N NC NO COM NC 2 NO 2 COM2

LOAD #1   LOAD #2

L N
120/277 VAC

patent #6,563,237

RoHS
Compliant
2002/95/CE

GM40AVE-RD89
40 A Auto-Voltage General Purpose
Electronic Time Switch

The GM40AVE-RD89 is a universal, electronic time switch designed for general purpose residential and commercial applications. The robust 40 A time control automatically detects the input voltage without the use of a DIP switch or selector pins. The time switch automatically selects any voltage between 120 VAC and 277 VAC. The mechanism is mounted in a compact UL Type 3R outdoor enclosure and can also be easily retrofitted into other Intermatic enclosure types. The time control features a DPDT switching configuration standard (i.e. two normally open and two normally closed contacts).

Applications
• Lighting Control • Access Control • Commercial Refrigeration
• General Electrical Circuits • Pump Control • Motor Control
• Fan Control

Features
• Heavy-duty 40 A contact rating
• Automatically adjusts voltages between 120-277 VAC
• 24-Hour/7-day flexible scheduling
• Power and status LED indicators
• DPDT switching configuration (2 NO and 2 NC Contacts)
• 14 Setpoint programs
• Manual override with load status indication
• Self-recharging battery with back up protection up to 2500 hours
• Type 3R outdoor enclosure with lockable hasp
• To-the-minute accuracy

Model #	Input Voltage	Battery Backup
GM40AVE-RD89	120-277 VAC, 50/60 Hz	Yes, 7-yr carry-over

SPECIFIERS GUIDE
Furnish and install a Grässlin GM40AVE-RD89 Auto-Voltage 24-Hour/7-Day Electronic Time Switch with digital display. Input voltage shall be 120-208/240 or 277 VAC that the unit automatically detects and selects. All units shall incorporate DPDT contacts that shall be rated at 40 A, 2 HP @ 277 VAC. To set the starting time and to provide time indication, the unit shall have 24-Hour/7-Day to-the-minute programming and also offer 7 ON and 10 OFF setpoint programs and include 5 preset block programs to allow a selection of any combination of days for different weekday schedules. LED indicators shall provide power and status feedback. Enclosure shall be UL Type 3R suitable for both indoor/outdoor installation. The time switch shall contain a manual override for temporary ON/OFF to the next scheduled event and load status indication in LCD. The time switch shall have a 2500 hour carry-over.

Ratings	
Supply Voltage	120-277 VAC, 50 Hz, 120-277 VAC, 60 Hz
Switch Type (2 NO/NC Contacts)	DPDT
Switch Ratings (NO Contacts)	
Resistive (NO)	40 A, 120-277 VAC, 50/60 Hz
Ballast (NO)	30 A, 120 VAC, 50/60 Hz; 20 A, 277 VAC, 50/60 Hz
Tungsten (NO)	15 A, 120 VAC, 50/60 Hz
Switch Ratings (NC Contacts)	
Resistive (NC)	30 A, 120-277 VAC, 50/60 Hz
Ballast (NC)	10 A, 277 VAC, 50/60 Hz
Tungsten (NC)	2 A, 120 VAC, 50/60 Hz
Motor	
Motor (NO)	1 HP, 16 FLA, 90 LRA @ 120 VAC 2 HP, 12 FLA, 52 LRA @ 208-277 VAC
Motor (NC)	1 HP, 12 FLA, 30 LRA @ 120 VAC, 50/60 Hz; 2 HP, 10 FLA, 30 LRA @ 240 VAC, 50/60 Hz
Operating Temperature	-40° F to 131° F -40° C to 55° C
Humidity Range	0-95% RH, non-condensing
Wiring Terminals	Screw Box Lug
Electrical Life	50,000 operations at full load
Shipping Weight	1.83 lbs (0.83 kg)
Warranty	1-year limited

INTERMATIC®

GMXFM Series

16 A General Purpose 1 and 2-Circuit Electronic Time Controls

Universal GMXFM Electronic Series Time Controls are a low-cost alternative for applications that do not require more than 16 A. The timer is mounted in a UL Type 1 indoor or 3R outdoor enclosure.

Applications
- Lighting Control • Access Control • Commercial Refrigeration
- General Electrical Circuits • Pump Control • Motor Control • Fan Control

Features
- 24-Hour or 7-day applications
- Finger-safe terminals
- Manual Daylight Saving Time adjustment (D20 Models)
- Auto Daylight Saving Time adjustment (D50 Models)
- Manual override with load status indication
- GMXFM1D50 & GMX2FM2D50 models available in seven languages: English, German, French, Italian, Spanish, Dutch, and Portuguese
- Heavy-duty relay contacts for switching low or line voltage loads
- Non-metallic enclosure provides space for field added contactor or other accessories
- Available in 2-circuit

Dimensions
6.5" [16.5 cm], 5.54" [14.1cm], 10" [25.4 cm], 8.64" [21.9 cm], 3.74" [9.5 cm]

GMX

Model # 20 Setpoints 7 Years Battery Backup	Model # 50 Setpoints 3 Years Battery Backup	Input Voltage	Enclosure
1-Circuit			
GMXFM1D20-I-24	–	24 VAC/VDC, 50/60 Hz	Indoor Type 1 Plastic
–	GMXFM1D50-I-12	12 VAC/VDC, 50/60 Hz	
–	GMXFM1D50-I-24	24 VAC/VDC, 50/60 Hz	
–	GMXFM1D50-I-120	120 VAC, 50/60 Hz	
–	GMXFM1D50-I-240	240 VAC, 50/60 Hz	
–	GMXFM1D50-O-12	12 VAC/VDC, 50/60 Hz	Outdoor Type 3R Plastic
–	GMXFM1D50-O-120	120 VAC, 50/60 Hz	
GMXFM1D20-O-240	–	240 VAC, 50/60 Hz	
GMXFM1D20-O-120	–	120 VAC, 50/60 Hz	
GMXFM1D20-O-24	–	24 VAC/VDC, 50/60 Hz	
GMXFM1D20-I-240	–	240 VAC, 50/60 Hz	Indoor Type 1 Plastic
GMXFM1D20-I-120	–	120 VAC, 50/60 Hz	
2-Circuit			
–	GMX2FM2D50I-24	24 VAC/VDC, 50/60 Hz	Indoor Type 1 Plastic
–	GMX2FM2D50I-240	240 VAC, 50/60 Hz	
–	GMX2FM2D50I-120	120 VAC, 50/60 Hz	
–	GMX2FM2D50O-120	120 VAC, 50/60 Hz	Outdoor Type 3R Plastic

SPECIFIERS GUIDE
Furnish and install a Grässlin GMXFM1_____ (1 circuit) or GMX2FM_____ (2 circuit) 24-Hour/7-Day Electronic Time Switch. Both 1 and 2-circuit controls shall have 24-Hour/7-Day programming, and also offer 10 ON and 10 OFF (D20 Series), or 25 ON and 25 OFF (D50 Series) setpoint programs and include two preset block programs (D50 Series) or 3 preset block programs (D20 Series) to allow a selection of any combination of days for different weekday schedules. Each circuit on the 2-circuit models shall be independently programmable. The LCD shall display time of day in AM/PM or 24-Hour (military time) format and provide load status indication. A Daylight Saving Time button shall be provided (D20 series), or an Auto Daylight Saving Time Adjustment shall be provided (D50 Series). The time switch will be programmable to-the-minute and offer a manual override for ON/OFF to the next scheduled event. The SPDT relay output will be rated for 16 A Resistive @ 277 VAC. Reserve carry-over shall be 7 years (D20 series) and 3 years (D50 series) non-replaceable, non-rechargeable battery. The enclosures shall be UL Type 3R or UL Type 1, suitable for indoor or outdoor applications.
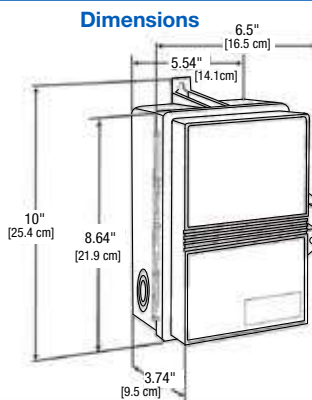
1-Circuit Wiring Diagrams
120 VAC Timer, 120 VAC Load
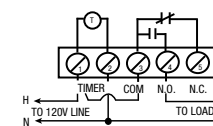
208/240 VAC Timer, 208/240 VAC Load
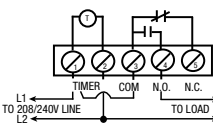
120 VAC Timer, 24 VAC, 120 VAC, or 240 VAC Load
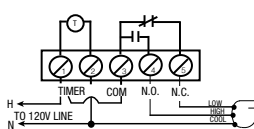
120 VAC, Two Speed Fan
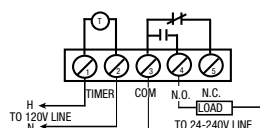
2-Circuit Wiring Diagrams
NO & NC Switching Configuration
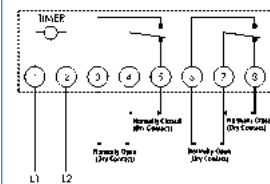
24 VAC/VDC
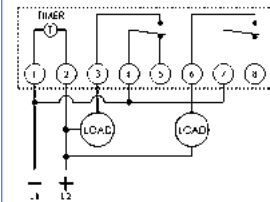
120 VAC
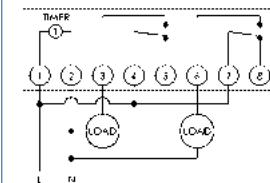
240 VAC
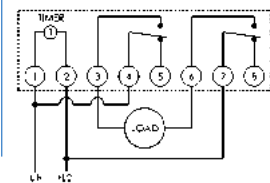
Ratings

Ratings	
Supply Voltage	See Model Chart
Power Consumption VA	4 VA
Switch Type	SPDT
Contact Ratings (NO)	
Resistive	16 A, 277 VAC
Ballast	12 A, 120 VAC, 8 A, 240 VAC
Tungsten	600 W, 120 VAC, 1000 W, 240 VAC
Pilot Duty	360 VA, 120 VAC, 720 VA, 240 VAC
Motor	1/2 HP, 120 VAC, 1 HP, 240 VAC
Contact Ratings (NC)	
Resistive	16 A, 277 VAC, 8 A, 24 VDC
Pilot Duty	360 VA, 120 VAC
Operating Temperature	-13º F to 131º F (-25º C to 55º C) (limited display function at -13˚F)
Wiring Terminals	Screw Box Lug
Weight	1.587 lb (0.72 kg)
Warranty	1-year limited

INTERMATIC

Grässlin Electronic Controls
Grässlin Panel, Surface/DIN Rail or Flush Mount - 24-Hour or 7-Day

FM1D14

Wiring Diagrams
Typical Wiring
(24-277 VAC Application)
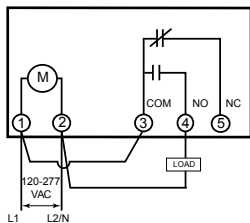
Typical Wiring
(12/24 VDC Application)

NO & NC Switching Configuration

#E10694
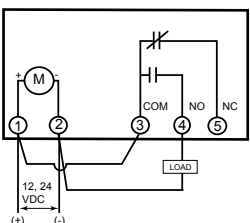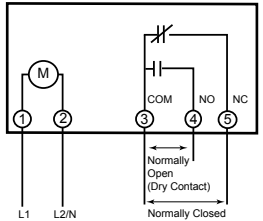
Dimensions
FM1D14 Panel Mount

2.36 in. [60 mm]
2.13 in. [54 mm]
2.36 in. [60 mm]
.14 in [3.56 mm]
1.26 in. [32 mm]
.14 in [3.56 mm]
1 2 3 4 5
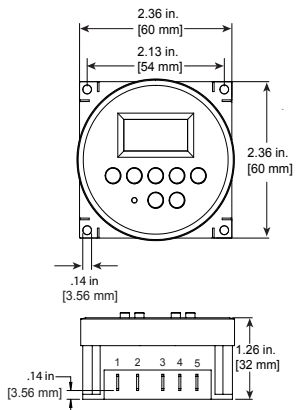
FM1D14A Surface/DIN Rail
with Clear Dust Cover

2.83" [72 mm]
2.06" [52 mm]
1.56" [39.5 mm]
4.00" [102.5 mm]
2.60" [66 mm]
1.50" [38 mm]
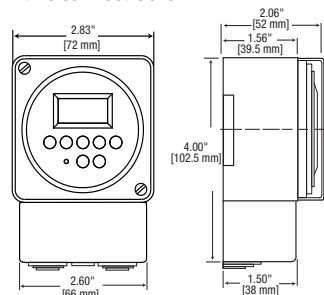
FM1D14E Flush Mount
with Clear Dust Cover

2.83" [72 mm]
2.83" [72 mm]
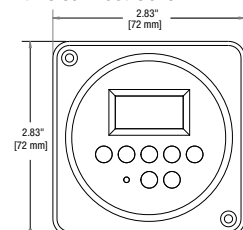
FM1D14 Series

15 A, 1-Circuit Timer Module

The FM1D14 Series is a great value electronic time-based control solution for ventilating, heating, cooling, lighting or other electrical loads in commercial and industrial applications. These one-channel time switches are programmable for 24-hour or 7-day schedules. The FM1D14 Series is intended for either panel, surface, flush or DIN rail mounting. Flush and surface/DIN rail (A & E models) are completely enclosed in a plastic housing and include a terminal cover, dust cover and subbase for installation and hard wiring.

Applications
• Generator Exercising
• Scheduling Occupied/Unoccupied Ventilation System Operation
• Parts Washer • Commercial Refrigeration • Pump Control
• Motor Control • Fan Control • HVAC Control Circuits
• Photovoltaic Control • Landscape Lighting • Security Gates

Features
• 24-Hour or 7-day applications
• 14 Setpoint programs
• Easy to program
• Manual override with status indication
• Self-recharging battery with backup protection up to 2500-hours
• LCD display
• 5 Preset adjustable block programs
• A & E models come with clear dust cover

Model #	Mounting	Input Voltage	Programs
FM1D14-12U	Panel	12 VDC, 50/60 Hz	14
FM1D14-24U		24 VAC/VDC, 50/60 Hz	14
FM1D14-AV-U		120-277 VAC, 50/60 Hz	14
FM1D14A-12	Surface/ DIN Rail	12 VDC, 50/60 Hz	14
FM1D14A-24		24 VAC/VDC, 50/60 Hz	14
FM1D14A-AV		120-277 VAC, 50/60 Hz	14
FM1D14E-12	Flush	12 VDC, 50/60 Hz	14
FM1D14E-24		24 VAC/VDC, 50/60 Hz	14
FM1D14E-AV		120-277 VAC, 50/60 Hz	14

Accessories

Surface/DIN Rail Mount Kit	FM-SU
Flush Mount Kit	FM-FU
Clear Dust Cover for Panel Mount Timers	DC-FME

SPECIFIERS GUIDE
Furnish and install a Grässlin FM1D14____24-Hour/7-Day Electronic Time Switch. This 1-circuit control shall have 24-Hour/7-Day programming, 7 ON and 7 OFF setpoint programs, and five preset block programs to allow a selection of any combination of days for different weekday schedules. The LCD shall display time of day in AM/PM format. A Daylight Saving Time Adjustment button shall also be provided. The time switch will be programmable to-the-minute and also offer a manual override for temporary ON/OFF to the next scheduled event. The LCD shall provide load status indication. The SPDT relay output will be rated for 15 A General Use @ 277 VAC. For carry-over, the timer module shall have a self-recharging battery with 2500 hour reserve carry-over. The time switch shall be_____(Panel) (Surface/DIN Rail), or (Flush) Mountable.

Ratings	
Supply Voltage	See Model Chart
Power Consumption VA	4
Switch Type	SPDT
Contact Ratings (NO)	
General Purpose	15 A, 277 VAC
Tungsten (NO)	1000 W, 120 VAC
Ballast (NO)	8 A, 277 VAC
Pilot Duty (NO)	B300
Electronic Ballast (NO)	4.9 A, 120 VAC
Motor (NO)	½ HP @ 120 VAC, 10 FLA, 60 LRA @ 250 VAC, 1 HP @ 250 VAC
Contact Ratings (NC)	
General Purpose (NC)	15 A, 277 VAC
Resistive (NC)	12 A, 24 VDC
Ballast (NC)	8 A, 120 VAC
Motor (NC)	½ HP @ 120/240 VAC, 10 FLA, 60 LRA @ 250 VAC
Operating Temperature	-40° F to 131° F (-40° C to 55° C)
Cut-out Dimensions H x W	2 ⅝" x 2 ⅝" (66 mm x 66 mm)
Wiring Terminals	¼" Quick Connect Terminals; Screw terminals for #24 to #10 AWG Wire (A models)
Shipping Weight	FM1D14 - 0.238 lbs (0.108 kg), FM1D14A - 0.529 lbs (0.24 kg), FM1D14E- 0.529 lbs (0.24 kg)
Warranty	1-year limited

INTERMATIC

FM1D20 Series
16 A, 1-Circuit Timer Modules

The FM1D20 Series Electronic Time Controls are for ventilating, heating, cooling, lighting or other electrical loads in commercial and industrial applications. These one-channel time switches are programmable for 24-hour or 7-day schedules. They are intended for either panel, surface, flush, or DIN rail mounting. Flush and surface/DIN rail (A & E models) are completely enclosed in a plastic housing and include a terminal cover, dust cover and subbase for installation and hard wiring.

Applications
- Generator Exercising
- Scheduling Occupied/Unoccupied Ventilation System Operation
- Parts Washer • Commercial Refrigeration • Pump Control
- Motor Control • Fan Control • HVAC Control Circuits
- Lighting Control • Landscape Lighting • Security Gates

Features
- 24-Hour or 7-day applications
- 20 Setpoint programs
- Three preset adjustable block programs
- Easy-to-follow menu driven programming
- Manual override with status indication
- Battery backup
- Large LCD
- Daylight Saving Time adjustment
- A & E models come with clear dust cover

Model #	Mounting	Input Voltage	Programs
FM1D20-24U	Panel	24 VAC/VDC, 50/60 Hz	20
FM1D20-120U		120 VAC, 50/60 Hz	20
FM1D20-240U		240 VAC, 50/60 Hz	20
FM1D20A-24	Surface/ DIN Rail	24 VAC/VDC, 50/60 Hz	20
FM1D20A-120		120 VAC, 50/60 Hz	20
FM1D20A-240		240 VAC, 50/60 Hz	20
FM1D20E-24	Flush	24 VAC/VDC, 50/60 Hz	20
FM1D20E-120		120 VAC, 50/60 Hz	20
FM1D20E-240		240 VAC, 50/60 Hz	20

Accessories

Surface/DIN Rail Mount Kit	FM-SU
Flush Mount Kit	FM-FU
Clear Dust Cover for Panel Mount Timers	DC-FME

SPECIFIERS GUIDE
Furnish and install a Grässlin FM1D20_____24-Hour/7-Day Electronic Time Switch. This 1-circuit control shall have 24-Hour/7-Day programming, 10 ON and 10 OFF setpoint programs, and three preset block programs to allow a selection of any combination of days for different weekday schedules. The LCD shall display time of day in AM/PM or 24-Hour (military time) format. A Daylight Saving Time Adjustment button shall also be provided. The time switch will be programmable to-the-minute and also offer a manual override for temporary ON/OFF to the next scheduled event. The LCD shall provide load status indication. The SPDT relay output will be rated for 16 A Resistive @277 VAC. Reserve carry-over of 7 years (non-replaceable, non-rechargeable battery). The time switch shall be_____(Panel), (Surface/DIN Rail) or (Flush) Mountable.

Dimensions
FM1D20 Panel Mount
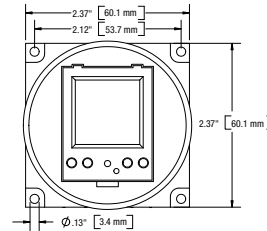
FM1D20A Surface/DIN Rail with Clear Dust Cover
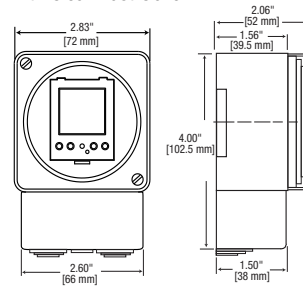
FM1D20E Flush Mount with Clear Dust Cover

FM1D20
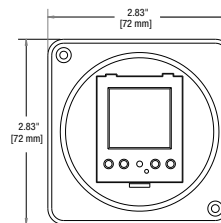
Wiring Diagrams
NO/NC Switch Configuration
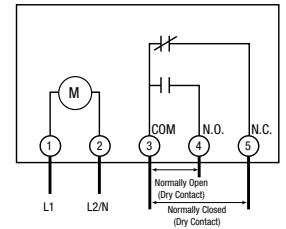
Typical wiring
24-120 VAC application
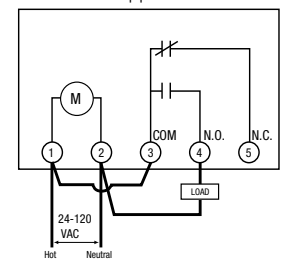
Typical wiring
24 VDC application
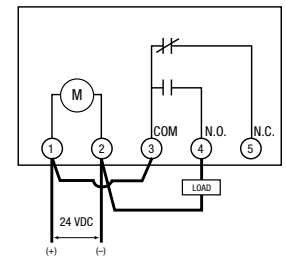
#E10694 RoHS Compliant 2002/95/CE

Ratings	
Supply Voltage	See Model Chart
Power Consumption VA	4 VA
Switch Type	SPDT
Contact Rating (NO)	
Resistive (NO)	16 A, 277 VAC
Tungsten (NO)	600 W, 120 VAC, 1000 W, 240 VAC
Ballast (NO)	8 A, 240 VAC, 12 A, 120 VAC
Pilot Duty (NO)	360 VA, 120 VAC, 720 VA, 240 VAC
Motor (NO)	1 HP, 240 VAC, 1/2 HP, 120 VAC
Contact Rating (NC)	
Resistive (NC)	16 A, 277 VAC, 8 A, 24 VDC
Pilot Duty (NC)	360 VA, 120 VAC
Operating Temperature	-13° F to 131° F (-25° C to 55° C)
Cut-out Dimensions (Flush) H x W	2 ⅝" x 2 ⅝" (66 mm x 66 mm)
Wiring Terminals	FM1D20 & FM1D20E ¼" Quick Connect Terminals, FM1D20A- Screw terminals for #24 to #10 AWG Wire,
Shipping Weight	FM1D20- 0.1 lbs (0.045 kg), FM1D20A- 0.529 lbs (0.24 kg), FM1D20E- 0.269 lbs (0.122 kg)
Warranty	1-year limited

Grässlin Electronic Controls
Grässlin Panel, Surface/DIN Rail or Flush Mount - 24-Hour or 7-Day

FM1D50

Wiring Diagrams
NO/NC Switching Configuration
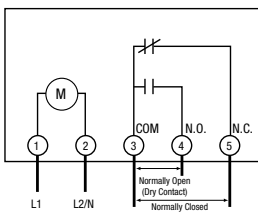
Typical wiring
12 - 24 VDC application

Typical wiring
24-120 VAC application

#E10694
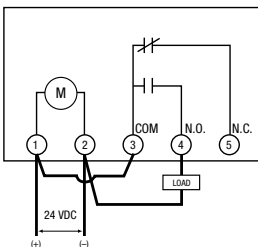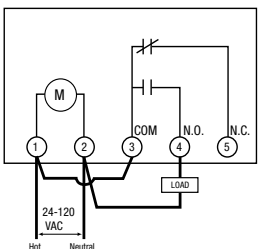
Dimensions
FM1D50 Panel Mount
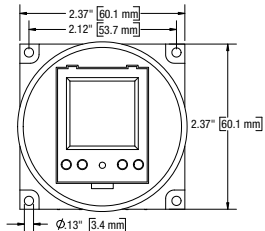
FM1D50A Surface/DIN Rail
with Clear Dust Cover
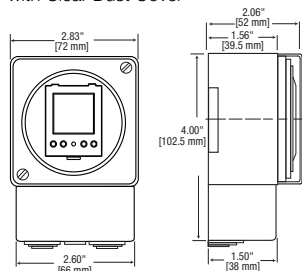
FM1D50E Flush Mount
with Clear Dust Cover
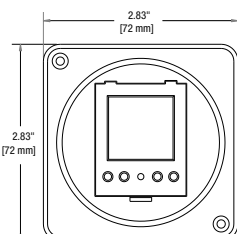
FM1D50 Series
16 A, 1-Circuit Timer Modules

The FM1D50 Series Electronic Time-Based Controls enable switching of ventilation, heating, cooling, lighting or other electrical loads in commercial and industrial applications. These one-channel time switches are programmable for 24-hour or 7-day schedules. They are intended for panel, surface, flush or DIN rail mounting. Flush and surface/DIN rail models (A & E models) are completely enclosed in a plastic housing and include a terminal cover, dust cover and subbase for installation and hard wiring.

Applications
- Generator Exercising
- Scheduling Occupied/Unoccupied Ventilation System Operation
- Parts Washer • Commercial Refrigeration • Pump Control
- Motor Control • Fan Control • HVAC Control Circuits
- Photovoltaic Control • Landscape Lighting • Security Gates

Features
- 24-Hour or 7-day applications
- 50 Setpoint programs
- Two preset adjustable block programs
- Easy-to-follow menu driven programming
- Manual override with status indication
- Battery backup
- Large LCD
- Seven available languages: English, German, French,Italian, Spanish, Portuguese and Dutch
- Auto Daylight Saving Time feature
- A & E Models come with clear dust cover

Model #	Mounting	Input Voltage	Programs
FM1D50-12U	Panel	12 VAC/VDC, 50/60 Hz	50
FM1D50-24U		24 VAC/VDC, 50/60 Hz	50
FM1D50-120U		120 VAC, 50/60 Hz	50
FM1D50-240U		240 VAC, 50/60 Hz	50
FM1D50A-12	Surface/DIN Rail	12 VAC/VDC, 50/60 Hz	50
FM1D50A-24		24 VAC/VDC, 50/60 Hz	50
FM1D50A-120		120 VAC, 50/60 Hz	50
FM1D50A-240		240 VAC, 50/60 Hz	50
FM1D50E-12	Flush	12 VAC/VDC, 50/60 Hz	50
FM1D50E-24		24 VAC/VDC, 50/60 Hz	50
FM1D50E-120		120 VAC, 50/60 Hz	50
FM1D50E-240		240 VAC, 50/60 Hz	50

Accessories

Surface/DIN Rail Mount Kit	FM-SU
Flush Mount Kit	FM-FU
Clear Dust Cover for Panel Mount Timers	DC-FME

SPECIFIERS GUIDE
Furnish and install a Grässlin FM1D50___ 24-Hour/7-Day Electronic Time Switch. This 1-circuit control shall have 24-Hour/7-Day programming. The timer shall also offer 25 ON and 25 OFF setpoint programs and include two preset block programs to allow a selection of any combination of days for different weekday schedules. The LCD shall display time-of-day in AM/PM or 24-Hour (military time) format and provide load status indication. Auto Daylight Saving Time Adjustment provided. The time switch will be programmable to-the-minute and also offer a manual override for ON/OFF to the next scheduled event. The SPDT relay output will be rated for 16 A Resistive @ 277 VAC. Reserve carry-over of 3 years (non-replaceable, non-rechargeable battery). The time switch shall be_(Panel) (Surface/DIN Rail) or (Flush) Mountable.

Ratings	
Supply Voltage	See Model Chart
Power Consumption VA	4 VA
Switch Type	SPDT
Contact Ratings (NO)	
Resistive (NO)	16 A, 277 VAC
Tungsten (NO)	600 W, 120 VAC, 1000 W, 240 VAC
Ballast (NO)	8 A, 240 VAC, 12 A, 120 VAC
Pilot Duty (NO)	360 VA, 120 VAC, 720 VA, 240 VAC
Motor (NO)	1 HP, 240 VAC, 1/2 HP, 120 VAC
Contact Ratings (NC)	
Resistive (NC)	16 A, 277 VAC
Pilot Duty (NC)	8 A, 24 VDC, 360 VA, 120 VAC
Operating Temperature	-13° F to 131° F (-25° C to 55° C)
Cut-out Dimensions (Flush) H x W	2 5/8" x 2 5/8" (66 mm x 66 mm)
Wiring Terminals	FM1D50- ¼" Quick Connect Terminals, FM1D50A- Screw terminals for #24 to #10 AWG Wire, FM1D50E- ¼" Quick Connect Terminals
Shipping Weight	FM1D50- 0.1 lbs (0.045 kg), FM1D50A- 0.529 lbs (0.24 kg),
Warranty	1-year limited

INTERMATIC®

FM2D50 Series
16 A, 2-Circuit Timer Modules

The FM2D50 Series provides 2-circuit, time-based control of ventilation, heating, cooling, lighting or other electrical loads in commercial and industrial applications. These one-channel time switches are programmable for 24-hour or 7-day schedules. They are intended for surface, flush or DIN rail mounting. The control is completely enclosed in a plastic housing and includes a terminal cover, dust cover and subbase for installation and hard wiring.

Applications
- Generator Exercising
- Scheduling Occupied/Unoccupied Ventilation System Operation
- Parts Washer • Commercial Refrigeration • Pump Control
- Motor Control • Fan Control • HVAC Control Circuits • Lighting Control
- Landscape Lighting • Security Gates

Features
- 24-Hour or 7-day applications
- Auto Daylight Saving Time (DST) feature
- 2-Circuit independent programming
- 50 Setpoint programs
- Two preset adjustable block programs
- Easy-to-follow, menu-driven programming
- Seven available languages: English, German, French, Italian, Spanish, Portuguese and Dutch
- Surface, Flush or DIN rail mounting (for DIN rail mounting, order MB-DIN base, sold separately below)
- Manual override with status indication
- Battery backup
- Large LCD
- Clear dust cover

FM2D50

Dimensions

Wiring Diagrams

NO/NC Switching Configuration
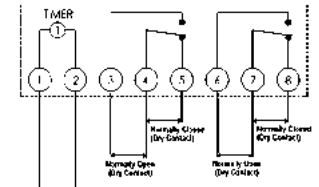
Typical wiring 24 VAC/VDC application
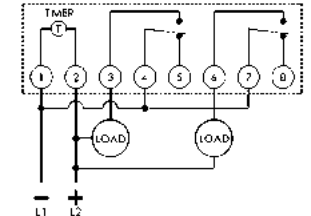
Typical wiring 120 VAC

Typical wiring 240 VAC

Model #	Input Voltage	Programs	Mounting
FM2D50-24	24 VAC/VDC, 50/60 Hz	50	Flush, Surface, DIN Rail
FM2D50-120	120 VAC, 50/60 Hz	50	Flush, Surface, DIN Rail
FM2D50-240	240 VAC, 50/60 Hz	50	Flush, Surface, DIN Rail

Accessories

DIN Rail Mounting Base	MB-DIN
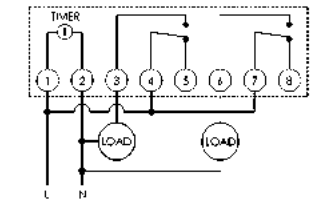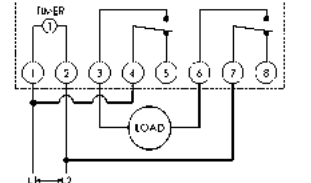
#E10694

SPECIFIERS GUIDE
Furnish and install a Grässlin FM2D50_____24-Hour/7-Day Electronic Time Switch. This 2-circuit control shall have 24-Hour/7-Day programming and also offer 25 ON and 25 OFF setpoint programs and include two preset block programs that allow selection of any combination of days for different weekday schedules. Each channel shall be independently programmable. The LCD shall display time of day in AM/PM or 24-Hour (military time) format and provide load status indication. Auto Daylight Saving Time Adjustment provided. The time switch will be programmable to the minute and also offer a manual override for ON/OFF to the next scheduled event. The SPDT relay output will be rated for 16 A resistive @ 277 VAC. Reserve carry-over of three years (non-replaceable, non-rechargeable battery). The time switch shall be surface or flush mountable with a DIN Rail mounting base optional.

Ratings	
Supply Voltage	See Model Chart
Power Consumption VA	4 VA
Switch Type	2xSPDT
Contact Ratings (NO/NC)	
Resistive	16 A, 277 VAC
Tungsten	600 W, 120 VAC, 1000 W, 240 VAC
Ballast	8 A, 240 VAC, 12 A, 120 VAC
Motor	1 HP, 240 VAC, 1/2 HP, 120 VAC
Operating Temperature	-13° F to 131° F (-25° C to 55° C)
Operating Humidity	0-95% RH, Non-condensing
Cut-out Dimensions (Flush)	2 ⅝" x 2 ⅝" (66 mm x 66 mm)
Wiring Terminals	Screw terminals for #24 to #10 AWG Wire
Shipping Weight	0.1 lbs (0.045 kg)
Warranty	1-year limited
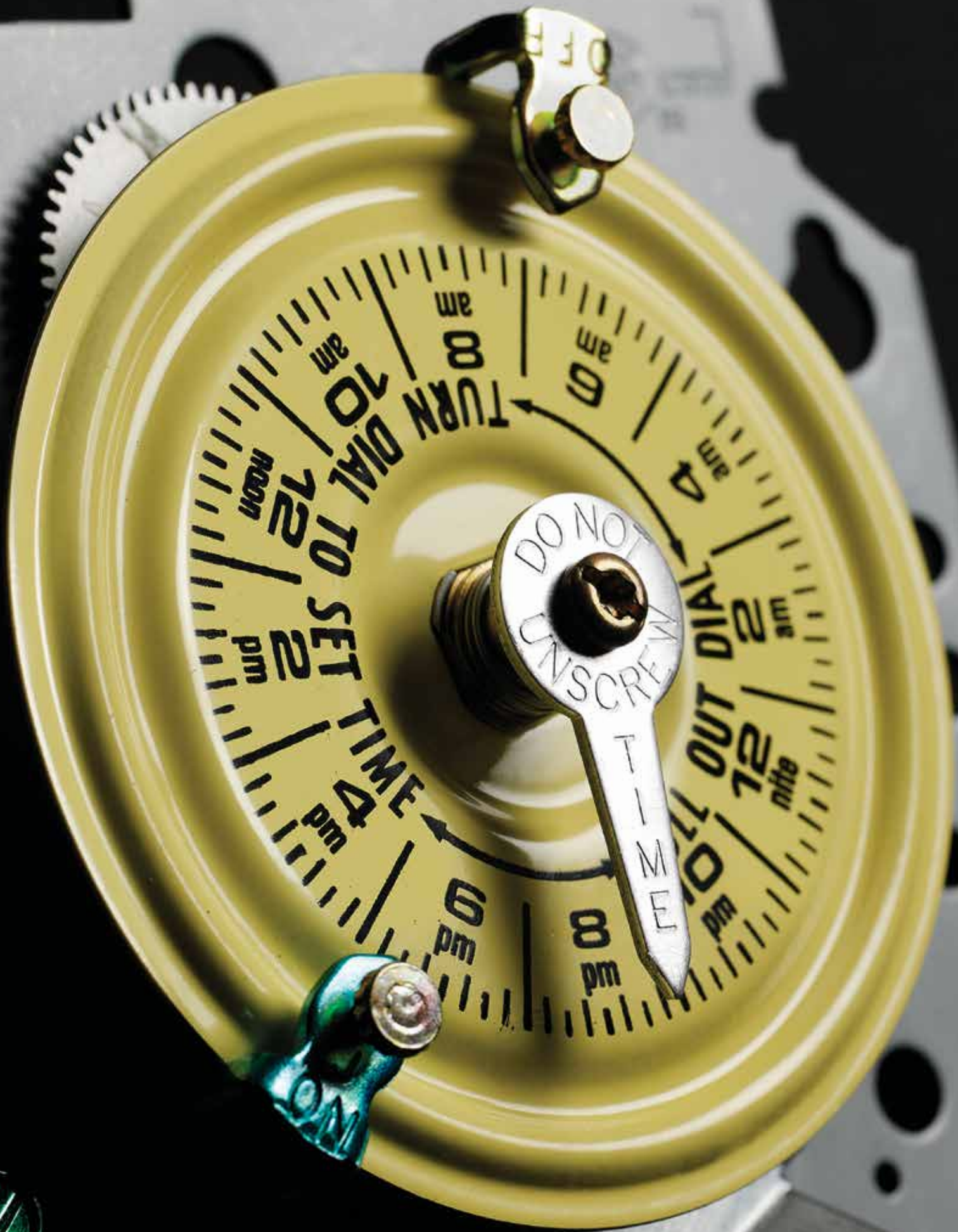
Mechanical Time Switches

Ever since Intermatic introduced its first mechanical time switch more than 70 years ago, customers have applauded our controls for their reliability, long-term value and innovative design. Though our catalog has expanded and evolved over time, the same tried and true yellow dial that helped lift the Intermatic name remains a trusted staple for projects of all types to this day.

Whether you're controlling water pumps, lights, water heaters or other types of electrical loads, our full line of market-leading Mechanical Time Switches is up to the task. A wide variety of input voltage, mounting, enclosure and scheduling options, including both 24-hour and 7-day programming, make it easy to find the perfect control to fit your project's needs.

Contents

T101R   T101M

T100 Series
24-Hour

The T100 Series Mechanical Time Switch has proven it can stand the test of time. These dependable time switches can handle electrical loads up to 40 A per pole and allow for up to 12 ON/OFF operations per day. A manual override switch provides added convenience.

Applications
• Indoor/Outdoor Lighting • Signs • Filters • Electric Fences • Fans
• Conveyors • Pool Heaters • Blowers • Pumps

Features
• Direct 24-hour control of most loads
• Up to 12 ON/OFF operations each day with minimum ON/OFF times of one hour
• Manual override
• One ON and one OFF tripper included

Ratings	
Resistive	40 A @ Varying Voltages, 60 Hz
Inductive	40 A @ Varying Voltages, 60 Hz
Electronic Ballast	16 A, 277 VAC, 60 Hz
Tungsten	40 A @ Varying Voltages, 60 Hz
Pilot Duty	1000 VA @ Varying Voltages, 60 Hz
Motor	2 HP, 24 FLA @ 120 VAC, 60 Hz 5 HP, 28 FLA @ 240 VAC, 60 Hz
Max Power Consumption	3 W
Operating Temperature	-40° F to 130° F (-40° C to 54° C)
Enclosure Dimensions H x W x D	
Metal Indoor	Indoor Type 1 Metal, 7 $\frac{7}{8}$" x 5 $\frac{1}{8}$" x 3 $\frac{7}{16}$" (200 mm x 130.2 mm x 87.3 mm)
Metal Indoor/Outdoor	Outdoor Metal, 10 $\frac{1}{8}$" x 6 $\frac{1}{2}$" x 3 $\frac{5}{8}$" (257.2 mm x 165.1 mm x 92.1 mm)
Plastic Indoor/Outdoor	Plastic Outdoor, 10" x 6 $\frac{1}{2}$" x 4" (254 mm x 165.1 mm x 101.6 mm)
Knockouts	
Side/Back	(1) combination $\frac{1}{2}$" - $\frac{3}{4}$"
Bottom	(2) combination $\frac{1}{2}$" - $\frac{3}{4}$"
Wire Size	#14 AWG - #8 AWG
Warranty	1-year

For enclosure options and dimensions, see pages 166-167

Voltage Ratings

For more details on model numbers/voltage ratings, scan the QR code with your smartphone or tablet.

Model #	Switch	Input Voltage
Indoor Type 1 Metal Enclosure		
T101	SPST	120 VAC, 60 Hz
T102	SPST	208-277 VAC, 60 Hz
T103	DPST	120 VAC, 60 Hz
T104	DPST	208-277 VAC, 60 Hz
T104-50	DPST	208-277 VAC, 50 Hz
T101B*	SPST	120 VAC, 60 Hz
T105**	1 NO/1 NC, SPDT	120 VAC, 60 Hz
Indoor/Outdoor Type 3R Metal Enclosure		
T101R	SPST	120 VAC, 60 Hz
T102R	SPST	208-277 VAC, 60 Hz
T103R	DPST	120 VAC, 60 Hz
T104R	DPST	208-277 VAC, 60 Hz
T106R**	1 NO/1 NC, SPDT	208-277 VAC, 60 Hz
T1205R	DPST	480 VAC, 60 Hz
Indoor/Outdoor Type 3R Plastic Enclosure		
T101P	SPST	120 VAC, 60 Hz
T102P	SPST	208-277 VAC, 60 Hz
T103P	DPST	120 VAC, 60 Hz
T104P	DPST	208-277 VAC, 60 Hz
Indoor/Outdoor Type 3 Plastic with See-Through Door		
T101PCD82	SPST	120 VAC, 60 Hz
T103PCD82	DPST	120 VAC, 60 Hz
T104PCD82	DPST	208-277 VAC, 60 Hz
Mechanism Only		
T101M	SPST	120 VAC, 60 Hz
T103M	DPST	120 VAC, 60 Hz
T104M	DPST	208-277 VAC, 60 Hz
T106M**	1 NO/1 NC, SPDT	208-277 VAC, 60 Hz

Separate clock motor terminals for switching circuits not on line voltage.
**Can be wired as SPDT.*

INTERMATIC®

T170, T1400 and T1800 Series
24-Hour with Skip-a-Day

Similar to the T100 Series, these time switches can also handle electrical loads up to 40 A per pole. The T170 Series Time Switches allow for up to 10 ON/OFF settings per day, but give you the additional capability of skipping days in which the loads may not be needed. Each time switch will come with one set of ON/OFF trippers as well as three skipper screws to omit the schedule for at least three days.

Applications
• Indoor/Outdoor Lighting • Pool Heaters • Pumps • Blowers
• Conveyors • Electric Fences • Fans • Filters • Signs
• Various Other Electrical Loads • Commercial • Industrial • Residential

Features
• Controls loads up to 40 A per pole
• Direct 24-hour control of most loads
• Up to 10 ON/OFF operations each day
• Minimum ON/OFF times of one hour
• Manual override
• One ON and one OFF tripper and three day-skipper screws included

Models with Carry-Over (T171CR, T173CR, T174CR, T1471BCR)
• Minimum of 16 hours Carry-over operation
• Carry-over automatically rewinds and only takes one hour for every two hours of power loss
• 4PST models are ideal for 3-phase load control

Model #	Switch	Input Voltage
Indoor Type 1 Metal Enclosure		
T171	SPST	120 VAC, 60 Hz
T172	SPST	208-277 VAC, 60 Hz
T173	DPST	120 VAC, 60 Hz
T174	DPST	208-277 VAC, 60 Hz
T175**	1 NO/1 NC	120 VAC, 60 Hz
T176**	1 NO/1 NC	208-277 VAC, 60 Hz
Outdoor Type 3R Metal Enclosure		
T173R	DPST	120 VAC, 60 Hz
T174R	DPST	208-277 VAC, 60 Hz
T171CR	SPST	120 VAC, 60 Hz
T173CR	DPST	120 VAC, 60 Hz
T174CR	DPST	208-277 VAC, 60 Hz
T1471BR*	4-SPST	120 VAC, 60 Hz
T1472BR*	4-SPST	208-277 VAC, 60 Hz
T1475BR*	4-SPST	480 VAC, 60 Hz
T1471BCR*	4-SPST	120 VAC, 60 Hz
T1871BR*†	2 NO/2 NC	120 VAC, 60 Hz

*Separate clock motor terminals for switching circuits not on line voltage.
**Can be wired as SPDT.
† Can be wired as DPDT.

T171CR

Ratings	
Resistive	40 A @ Varying Voltages, 60 Hz
Inductive	40 A @ Varying Voltages, 60 Hz
Electronic Ballast	16 A, 277 VAC, 60 Hz
Tungsten	40 A @ Varying Voltages, 60 Hz
Pilot Duty	1000 VA @ Varying Voltages, 60 Hz
Motor: T170 Series	2 HP, 24 FLA @ 120 VAC, 60 Hz 5 HP, 28 FLA @ 240 VAC, 60 Hz
Motor: T1400 and T1800 Series	
Single Phase	2 HP, 24 FLA @ 120 VAC, 60 Hz; 5 HP, 28 FLA @ 240 VAC, 60 Hz
Three Phase	7 ½ HP, 28 FLA @ 208 VAC, 60 Hz; 10 HP, 28 FLA @ 240 VAC, 60 Hz
Max Power Consumption	3 W
Operating Temperature	-40° F to 130° F (-40° C to 54° C)
Enclosure Dimensions H x W X D	
Metal Indoor	7 7/8" x 5 1/8" x 3 7/16" (200 mm x 130.2 mm x 87.3 mm)
Metal Outdoor	10 1/8" x 6 ½" x 3 5/8" (257.2 mm x 165.1 mm x 92.1 mm)
Knockout Dimensions	
Side/Back	(1) ½" and ¾" combination
Bottom	(2) ½" and ¾" combination
Wire Size	#14 AWG - #8 AWG
Warranty	1-year

For enclosure options and dimensions, see pages 166-167

Accessories/Replacements

Extra/replacement Trippers, 1 ON and 1 OFF	156T1978A

Extra/replacement Motors:	
WG1570-10D	for T171, T173, T175, 120 VAC, 60 Hz
WG1571-10D	for T171, T173, T175, 120 VAC, 50 Hz
WG1573-10D	for T172, T174, T176, 208-277 VAC, 60 Hz
WG430-20D	for T1471BR, T1871BR, T1471BCR, 208-277 VAC, 60 Hz
WG433-20D	for T1472BR, 208-277 VAC, 60 Hz
Replacement Insulators	see pages 170-171

Voltage Ratings

For more details on model numbers / voltage ratings, scan the QR code with your smartphone or tablet.

Mechanical Time Switches (sidebar)

T1905P

T1900 and T1970 Series
24-Hour with 15-Minute Interval

This series of mechanical time switches offers more flexible scheduling capabilities by offering 15-minute intervals. These units also come with trippers that slide in or out easily for fast and accurate settings. All units can control up to 20 A of electrical load and have a single pole, double throw switch.

Applications
- Poultry Feeders • Filters • Heaters • Blowers • Dairy Equipment
- Foggers • Fans • Lighting • Electrical Pumps • Motors

Features
- Provides up to 96 operations (48 ON/48 OFF) every 24 hours
- Models with skipper wheel allow for operations to be omitted on selected days of the week
- 15-minute intervals
- Captive trippers slide in and out of dial for fast, accurate setting

Ratings	
Resistive	20 A, 125-480 VAC, 60 Hz
Motor	½ HP, 125 VAC, 60 Hz; 1 HP, 250 VAC, 60 Hz
Max Power Consumption	3 W
Operating Temperature	-40° F to 130° F (-40° C to 54° C)
Enclosure Dimensions H x W x D	
Metal Indoor	7 $\frac{7}{8}$" x 5 $\frac{1}{8}$" x 3 $\frac{7}{16}$" (200 mm x 130.2 mm x 87.3 mm)
Metal Outdoor	10 $\frac{1}{8}$" x 6 ½" x 3 $\frac{5}{8}$" (257.2 mm x 165.1 mm x 92.1 mm)
Plastic Indoor Outdoor	10" x 6 ½" x 4" (254 mm x 165.1 mm x 101.6 mm)
Knockout Dimensions	
Side/Back	(1) ½" and ¾" combination
Bottom	(2) ½" and ¾" combination
Wire Size	#14 AWG - #12 AWG
Warranty	1-year

For enclosure options and dimensions, see pages 166-167

Model #	Switch	Input Voltage	Skipper Wheel
Indoor Type 1 Metal Enclosure			
T1905*	SPDT	125 VAC, 60 Hz	No
T1905E*	SPDT	480 VAC, 60 Hz	No
T1906*	SPDT	208-277 VAC, 60 Hz	No
T1975†	SPDT	125 VAC, 60 Hz	Yes
T1976†	SPDT	208-277 VAC, 60 Hz	Yes
T1975E†	SPDT	480 VAC, 60 Hz	Yes
Outdoor Type 3R Metal Enclosure			
T1975R†	SPDT	125 VAC, 60 Hz	Yes
T1976R†	SPDT	208-277 VAC, 60 Hz	Yes
T1975ER†	SPDT	480 VAC, 60 Hz	Yes
Indoor/Outdoor Type 3 Plastic Enclosure			
T1905P*	SPDT	125 VAC, 60 Hz	No

Accessories/Replacements

*Replacement Snap Switch	133T701A
†Replacement Snap Switch	133T698A

INTERMATIC®

T1905HD and T1975HD

24-Hour Heavy-Duty

These heavy-duty time switches are designed to handle the toughest environments and have fully encapsulated motors to prevent dust or debris from entering the motor. The ON/OFF trippers are permanently attached to the metal dial to avoid the accidental loss of a tripper. These time switches offer 15-minute intervals, providing up to 96 operations each day.

Applications
• Oil Well Pumps • Silo Unloaders • Process Equipment
• Harsh Environment Electrical Loads • Electrical Pumps, Motors

Features
• Heavy-duty metal dial and metal enclosure withstands the most punishing environmental conditions
• Models with skipper wheel allow for operations to be omitted on selected days of the week
• Easy-to-set trippers rotate in/out for fast, accurate setting
• Up to 96 operations (48 ON/48 OFF) every 24 hours
• 15-minute intervals between events
• Fully encapsulated motor with protected gears

T1975EHD

Model #	Switch	Input Voltage	Skipper Wheel
Indoor Type 1 Metal Enclosure			
T1905HD	SPDT	125 VAC, 60 Hz	No
T1975EHD	SPDT	480 VAC, 60 Hz	Yes
Outdoor Type 3R Metal Enclosure			
T1905HDR	SPDT	125 VAC, 60 Hz	No
T1975HDR	SPDT	125 VAC, 60 Hz	Yes
T1975EHDR	SPDT	480 VAC, 60 Hz	Yes
Mechanism Only			
T1905HDM	SPDT	125 VAC, 60 Hz	No
T1975HDM	SPDT	125 VAC, 60 Hz	Yes
T1975EHDM	SPDT	480 VAC, 60 Hz	Yes

Ratings	
Resistive	20 A, 125-480 VAC, 60 Hz
Motor	½ HP, 125 VAC, 60 Hz 1 HP, 250 VAC, 60 Hz
Max Power Consumption	3 W
Operating Temperature	-40° F to 130° F (-40° C to 54° C)
Enclosure Dimensions H x W x D	
Metal Indoor	7 ⅞" x 5 ⅛" x 3 ⁷⁄₁₆" (200 mm x 130.2 mm x 87.3 mm)
Metal Outdoor	10 ⅛" x 6 ½" x 3 ⅝" (257.2 mm x 165.1 mm x 92.1 mm)
Knockout Dimensions	
Side/Back	(1) ½" and ¾" combination
Bottom	(2) ½" and ¾" combination
Wire Size	#14 AWG - #12 AWG
Warranty	1-year

T7401B

T7000B Series
7-Day

These 7-Day Mechanical Time Switches offer the capability of having a different schedule for each day of the week. They can handle up to 40 A of electrical loads per circuit and have separate terminals for powering the clock motor. These time switches can handle up to four loads per clock, providing a single control for easier installation. Each time switch comes with 7 ON and 7 OFF trippers, allowing for at least one ON/OFF operation each day.

Applications
• Heating • Air Conditioning • Pumps • Indoor/Outdoor Lighting • Motors • Signs • Filters • Fans

Features
• Different ON/OFF programs each day of the week
• True 7-day load control with minimum ON/OFF time of 3 ½ hours
• Separate clock motor terminals for switching loads not on line voltage
• Carry-over automatically rewinds when power resumes
• Minimum of 16-hour carry-over for maintaining preset schedules during power failures
• Available with Type 3R rated outdoor metal enclosure or Type 1 rated indoor metal in gray finish with separate grounding terminal

Ratings	
Resistive	40 A, 120-480 VAC, 60 Hz
Inductive	40 A, 120-277 VAC, 60 Hz
Tungsten	40 A, 120-277 VAC, 60 Hz
Electronic Ballast	16 A, 277 VAC, 60 Hz
Pilot Duty	1000 VA, 120-277 VAC, Per Pole, 60 Hz
Motor	
Single Phase	2 HP, 24 FLA @ 120 VAC, 60 Hz; 5 HP, 28 FLA @ 240 VAC, 60 Hz
Three Phase	7 ½ HP, 28 FLA @ 208 VAC, 60 Hz; 10 HP, 28 FLA @ 240 VAC, 60 Hz
Operating Temperature	-40° F to 130° F (-40° C to 54° C)
Enclosure Dimensions H x W x D	
Metal Indoor	13.125" X 9" X 3.75" (333.3 mm x 228.9 mm x 95.25 mm)
Metal Outdoor	12.5" x 9" x 4" (317.5 mm x 228.9 mm x 101.6 mm)
Knockout Dimensions	
Side/Back	(1) ½" and ¾" combination
Bottom	(2) ½", ¾" and 1" combination
Wire Size	#14 AWG - #8 AWG
Warranty	1-year

Model #	Switch	Input Voltage
Indoor Type 1 Metal Enclosure Without Carry-Over		
T7401B	4-SPST/NO	120 VAC, 60 Hz
T7402B	4-SPST/NO	208-277 VAC, 60 Hz
T7801B*	2 NO/2 NC	120 VAC, 60 Hz
T7802B*	2 NO/2 NC	208-277 VAC, 60 Hz
Indoor Type 1 Metal Enclosure With Spring Wound Carry-over		
T7401BC	4-SPST/NO	120 VAC, 60 Hz
T7402BC	4-SPST/NO	208-277 VAC, 60 Hz
T7801BC*	2 NO/2 NC	120 VAC, 60 Hz

*Can be wired as (2) DPDT.
Note: All models have separate clock motor terminals for switching circuits not on line voltage. They may be used with 24 V systems if wired in accordance with NEC regulations.

T2000 Series
7-Day

These compact 7-Day Mechanical Time Switches offer the capability of having a different schedule for each day of the week. They can handle up to 20 A of resistive loads and up to six ON/OFF settings per day.

Applications
• Pumps • Lighting • Motors • Ventilation systems
• Fans • Various other electrical loads

Features
• Minimum 2-hour timing intervals
• Up to 42 ON/OFF operations per week
• Type 1 rated metal indoor enclosure

T2005

Model #	Switch	Input Voltage
T2005	SPDT	120 VAC, 60 Hz
T2006	SPDT	208-277 VAC, 60 Hz

Ratings	
Resistive	20 A, 125, 208-277 VAC, 60 Hz
Motor	½ HP, 125 VAC, 60 Hz; 1 HP, 250 VAC, 60 Hz
Operating Temperature	-40° F to 130° F (-40° C to 54° C)
Enclosure Dimensions H x W x D	7.875" X 5.125" X 3.4375" (200 mm x 130.2 mm x 87.3 mm)
Knockout Dimensions	
Side/Back	(1) ½" and ¾" combination
Bottom	(2) ½" and ¾" combination
Wire Size	#14 AWG - #12 AWG
Warranty	1-year

Specialty Time Switches

Give unique projects a boost with a wide variety of Specialty Time Switches from Intermatic. Timer controls like the Intermatic EH40, an Electronic Water Heater Time Switch that can be used to reduce utility costs, help expand options and add new functionality to projects.

Moreover, Percentage Cycle Time Switches are an excellent choice for ventilation and misting systems, processing equipment and feeding equipment. Other specialty switches include Mechanical Astronomic Controls and Irrigation Controls, which are ideal for agricultural and landscape needs.

Contents

Enclosure Dimensions

CT2000

3 5/16"

6 5/8"

1 3/4"

3 1/2"
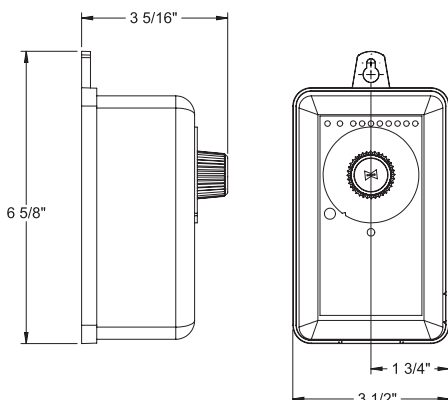
CT2000
Percentage Cycle Time Switch

The CT2000 Percentage Cycle Time Switch is a field adjustable timer, offering true flexibility for repetitive cycle times via an upfront control button. The timer provides repetitive cycling for short-cycle applications. The timer enclosure includes two slotted mounting holes on 5" centers and a ½" knockout for conduit connection.

Applications
• Ventilating Fans • Fogging Equipment • Process Equipment
• Poultry & Livestock Feeders • Misting Systems

Features
• Provides 8 field-selectable cycle durations of 30 seconds, 1, 3, 5, 10, 30 minutes and 1 or 4 hours
• Front cover button enables true flexibility for repetitive cycle times
• Temporary and permanent manual overrides
• 30 separate positions enable precise percentage ON time selection
• User settings stored in non-volatile memory
• No DIP switches to program cycle time
• Type 3R indoor/outdoor aluminum enclosure

Ratings	
Switch Type	SPST
General Purpose	20 A, 240 VAC, 60 Hz
Resistive	20 A, 28 VDC
Ballast (Fluorescent)	10 A, 277 VAC, 60 Hz
Tungsten (Incandescent)	5 A, 240 VAC, 60 Hz
Pilot Duty	470 VA, 240 VAC, 60 Hz
Motor	1 HP, 120 VAC, 60 Hz, 2 HP, 240 VAC, 60 Hz
Wire Leads 8"	
Red	#12 AWG
Black	#18 AWG
White	#18 AWG
Warranty	1-year

Model #	Input Voltage
CT2000	120/240 VAC, 60 Hz

INTERMATIC®

R8800 and T8800 Series

Sprinkler/Irrigation Time Switches with 14-Day Skipper

These irrigation timers are designed to permit one to 44 "ON" operations every 24 hours and provide watering increments down to 12 minutes or up to 20 hours and 45 minutes to ensure proper watering increments. These models also allow for biweekly scheduling with the convenient 14-day skipper for maximum water conservation and odd/even day compliance.

Applications

- Multi-Station Hydro-Indexing Valves • Greenhouses • Lawn Sprinklers
- Irrigation Control • Drip Irrigation Systems

Features

- Up to 44 ON/OFF settings per day
- Water metering increments from 12 minutes to 20 hours and 45 minutes
- 14-Day skipper enables irrigation to be omitted on selected day(s)
- Allows for alternate-day scheduling
- ON/OFF/AUTO switch enables shutdown during rainy days and extended watering during dry periods without disturbing the cycle set on dial
- Type 3R plastic indoor/outdoor enclosure

T8845PV

Model #	Switch	Clock Motor Voltage	Load Voltages	Amps (per pole)	HP
Mechanism Only					
T8805M101C	DPST	125 VAC, 60 Hz	125 VAC, 60 Hz	15 A	1/2
R8806M101C	DPST	240 VAC, 60 Hz	240 VAC, 60 Hz	30 A	3
Indoor/Outdoor Type 3R Plastic Enclosure					
T8805P101C	SPST	125 VAC, 60 Hz	125 VAC, 60 Hz	15 A	1/2
T8845PV**	SPST	110/125 VAC, 60 Hz	24 VAC, 60 Hz	20 VA	-
R8806P101C	DPST	208/277 VAC, 60 Hz	240 VAC, 60 Hz	30 A	3
R8815P101C*	DPST	125 VAC, 60 Hz	120 VAC, 60 Hz	30 A	1 ½
R8816P101C*	DPST	208/277 VAC, 60 Hz	240 VAC, 60 Hz	30 A	3

Provided with a slide switch to enable/disable a Rain Sensor (not included).
**Includes 24 Volt, 20 VA transformer.*

Ratings	
Operating Temperature	-40° F to 130° F (-40° C to 54° C)
Enclosure H x W x D	
Plastic Indoor/Outdoor	10" X 6.5" X 4" (25 4 mm x 165.1 mm x 101.6 mm)
Knockout Dimensions	
Side/Back	(1) ½" and ¾" combination
Bottom	(2) ½" and ¾" combination
Warranty	1-year limited

For enclosure line drawings and knockout locations, see pages 166 - 167.

Accessories/Replacement

Extra/Replacement Trippers	156T1950A pack of 12
Extra/Replacement Switch	133T700A
Additional Skipper Pins	156T1954A pack of 14

Specialty Time Switches

Enclosure Dimensions

6.61" [16.79 cm]
5.73" [14.55 cm]
8.88" [22.56 cm]
3" [7.62 cm]

WHAVQ4

WHAVQ Series
24-Hour/7-Day with Battery Backup
Autovoltage Electric Water Heater Timers

WHAVQ Series Water Heater Timers are designed for control of residential or commercial electric water heaters up to 10,000 Watts capacity running at 240 VAC. The unit is mounted in a UL Type 3R Outdoor enclosure and can be placed in basements or mechanical rooms.

Application
• Electric Hot Water Heaters

Features
• 40 A rating
• Self-recharging battery backup with 7-day carry-over
• Captive trippers - cannot be lost
• 24-hour or 7-day models available
• Three-way ON/OFF/AUTO manual override
• Power and status LED indicators
• Rainproof UL Type 3R enclosure
• Saves energy by shutting water heaters OFF during "off peak periods"
• Autovoltage selection 120-240 VAC
• Easy-to-read clock face

Wiring Diagrams

TIMER
T
L 1 | L 2/N | NC | NO | COM | NC 2 | NO 2 | COM2
L N LOAD #1 LOAD #2
2 - 120 VAC water heaters

T
TIMER
L 1 | L 2/N | NC | NO | COM | NC 2 | NO 2 | COM2
L1 L2 LOAD #1
1 - 240VAC Water Heater
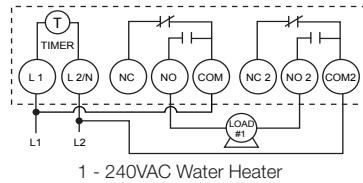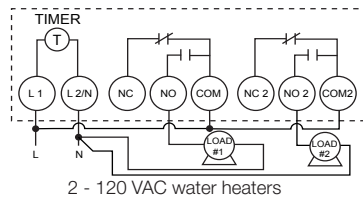
c(UL)us   **RoHS** Compliant   Patent# 6,563,237

Ratings	
Switch Configuration	DPDT
Switch Rating for NO Resistive	40 A, 250 VAC, 10,000 W
Switch Rating for NC Resistive	30 A, 250 VAC, 7500 W
Operating Temperature	-4° F to 104° F (-20° C to 40° C)
Operating Humidity	0-95% RH, Non-condensing
Electrical Life	50,000 per operations at full load
Reserve Carry-over	7-Day Battery
Weight	1.9 lbs (.45 kg)
Warranty	1-year limited

Model #	Voltage	Timing
WHAVQ4	120-240 VAC, 50/60 Hz	24-Hour with Battery Backup Autovoltage Electric Water Heater Timer
WHAVQ7	120-240 VAC, 50/60 Hz	7-Day (Skip-a-Day) with Battery Backup Autovoltage Electric Water Heater Timer

SPECIFIERS GUIDE
Furnish and install a Grässlin WHAVQ____ electric water heater time switch with captive trippers and a quartz drive with 7-day reserve carry-over from a rechargeable battery. Input voltage shall be 120-277 VAC on all models. Output shall be (DPDT) rated at 40 A, 120-240 VAC, NO contacts. 30 A, 120-240 VAC, NC contacts. To set starting time and to provide time indication, the unit shall have an authentic clock face with hour and minute hands. Enclosure shall be UL Type 3R rainproof. For carry-over, the time controls shall have quartz drive with 7-day reserve carry-over from a rechargeable battery.

Water Heater Timers

Utilities in many areas of the country offer two electric rates for residential or commercial customers. One rate has the regular daytime electrical rate, the other is the "off-peak" rate. The "off-peak" rate provides customers with lower priced electricity during the nighttime and weekend periods.

INTERMATIC®

EH10 and EH40
Electronic Water Heater Time Switches

The EH Series Electronic Time Switches provide control for electric water heaters with to-the-minute accuracy in programming and time-keeping. The use of a water heater timer allows the customer to shift electricity use to "off-peak" time periods to reduce utility costs. These time switches can be programmed for repeat daily scheduling, 5-day work week scheduling, weekend scheduling or individual day scheduling. Models are available for both 120 and 240 VAC applications.

Applications
- Residential • Institutional • Industrial • Commercial
- Military Facilities • Schools

Features
- 42 ON/OFF events per week
- 7-day scheduling
- To-the-minute programming and time-keeping accuracy
- External override switch
- LED load indicator
- Replaceable battery backup

EH10

Model #	Input Voltage	Switch	Watts	Enclosure
EH10	120 VAC, 60 Hz	SPST	3600	Indoor Type 1 Metal
EH40	240 VAC, 60 Hz	DPST	7200	Indoor Type 1 Metal

Ratings	
Switch Rating for EH10	30 A Inductive, 30 A Resistive, 5 A Tungsten, 1 HP, 120 VAC, 60 Hz
Switch Rating for EH40	30 A Inductive, 30 A Resistive, 5 A Tungsten, 1 1/2 HP, 240 VAC, 60 Hz
Knockout Dimensions Side/Back Bottom	½" and ¾" combination (2) ½" and ¾" combination
Warranty	1-year limited

For enclosure line drawings and knockout locations, see pages 166-167.

T104-20 and WH40
Mechanical Water Heater Time Switches

With the easy-to-set "Yellow Dial," these time switches allow for basic control of electric water heaters. These time switches offer a minimum ON/OFF time of one hour, and are available for 208-250 VAC applications. With the proven reliability of our mechanical line, these time switches provide dependable electric water heater control.

Applications
- Residential • Institutional • Industrial • Commercial • Military Facilities • Schools

Features
- Two sets of ON/OFF trippers
- Enables shifting electricity use into off-peak hours to reduce energy costs
- Convenient external override switch
- Up to 12 ON/12 OFF events

T104-20

Model #	Switch Type	Clock Motor	Amps per pole	Watts Resistive	External Override
T104-20	DPST	208/277 VAC, 60Hz	40 A	10000	No
WH40	DPST	208/277 VAC, 60Hz	40 A	10000	Yes

Ratings	
Power Consumption	3 W
Operating Temperature	-40° F to 130° F (-40° C to 54° C)
Enclosure	
Metal Indoor	7 ⅞" x 5 ⅛" x 3 ⁷⁄₁₆" (200 mm x 130.2 mm x 87.3 mm)
Knockout Dimensions Side/Back Bottom	½" and ¾" combination (2) ½" and ¾" combination
Warranty	1-year limited

For enclosure line drawings and knockout locations, see pages 166-167.

12

6

GRÄSSLIN

10 11 12 1 2 3 4

Grässlin Mechanical Time Switches

Economical and dependable, Grässlin Mechanical Time Switches are the perfect match for an array of 24-hour and 7-day interval-based time switch applications. Tailored to meet the demands of multiple industries and environments, they offer a space-saving design that's well suited for industrial control panels, circuit boards and system manufacturers. What's more, Grässlin mechanical controls can be easily integrated into OEM applications or retrofitted to upgrade existing projects.

Common applications include commercial refrigeration, water treatment systems, pool and spa, filtering installations, landscape lighting, insect and pest control, hot water pump circulation and more. Control input voltages range from 12 VDC/VAC to 240 VAC for added versatility, as well as to consolidate stocking investments.

Contents

Grässlin Mechanical Time Switches
Grässlin Electromechanical, 24-Hour or 7-Day

GM40AV

Captive Trippers
can't be lost

GM40AV Series
40 A Autovoltage General Purpose Time Control

The GM40AV Time Switch is a universal, electromechanical time switch designed for general purpose residential and commercial applications. The robust 40 A time switch automatically detects the input voltage without the use of a DIP switch or selector pins. The time switch automatically selects any voltage between 120-277 VAC. The mechanism is mounted in a compact UL Type 3R outdoor enclosure and can also be easily retrofitted into other Intermatic enclosure types. The time switch features a DPDT switching configuration standard (i.e. two normally open and two normally closed contacts).

Applications
• Lighting Control • Access Control • Commercial Refrigeration
• General Electrical Circuits • Pumps • Motors • Fan Control

Features
• Autovoltage selection 120 VAC-277 VAC
• Captive trippers - trippers cannot be lost
• 40 A rating
• Self-recharging battery backup, "Q" models feature 7-day carry-over
• Power and status LED indicators
• 24-Hour or 7-day models available
• Up to 48 ON/OFF operations per 24-hour period or 42 ON/OFF operations per week on "W" models
• DPDT switching configuration standard (2 NO and 2 NC Contacts)
• Manual three-way ON/OFF/AUTO override switch
• Easy-to-read clock face
• Type 3R outdoor enclosure

Model #	Autovoltage	Switch Type	Enclosure	Battery Backup	Timing
GM40AV	120-277 VAC, 60 Hz	DPDT	Indoor/Outdoor Type 3 Plastic	No	24-hours, 15-min Intervals
GM40AV-Q*	120-277 VAC, 50/60 Hz	DPDT	Indoor/Outdoor Type 3 Plastic	Yes	24-hours, 15-min Intervals
GM40AV-M	120-277 VAC, 60 Hz	DPDT	Mechanism Only	No	24-hours, 15-min Intervals
GM40AV-W	120-277 VAC, 60 Hz	DPDT	Indoor/Outdoor Type 3 Plastic	No	7-days, 2-hour Intervals
GM40AV-QW*	120-277 VAC, 50/60 Hz	DPDT	Indoor/Outdoor Type 3 Plastic	Yes	7-days, 2-hour Intervals

Q models are Title 20 listed.

#E10694   #E10694   RoHS Compliant 2002/95/EC   TITLE 20 CA LISTED   patent #6,563,237

Ratings	
Supply Voltage	See Table Above
Switch Type (2 NO/NC Contacts)	DPDT
Switch Ratings (NO Contacts)	
Resistive (NO)	40 A, 120-277 VAC
Ballast (NO)	30 A, 120 VAC; 20 A, 277 VAC
Tungsten (NO)	15 A, 120 VAC
Pilot Duty (NO)	300 VA, 120-240 VAC
Switch Ratings (NC Contacts)	
Resistive (NC)	30 A, 120-277 VAC
Ballast (NC)	10 A, 277 VAC
Tungsten (NC)	2 A, 120 VAC
Motor	
Motor (NO)	1 HP, 16 FLA, 90 LRA @120 VAC; 2 HP, 12 FLA, 52 LRA @ 208-277 VAC
Motor (NC)	1 HP, 12 FLA, 30 LRA @ 120 VAC; 2 HP, 10 FLA, 30 LRA @ 240 VAC
Operating Temperature	-40° F to 131° F (-40° C to 55° C)
Operating Humidity	0-95% RH, Non-condensing
Maximum Power Consumption	7 VA
Wiring Terminals	Screw Box Lug
Electrical Life	50,000 operations at full load
Shipping Weight	1.83 lbs. (.83 Kg)
Warranty	1-year limited

INTERMATIC

Enclosure Dimensions

6.61"
[16.79 cm]

5.73"
[14.55 cm]

8.88"
[22.56 cm]

3"
[7.62 cm]
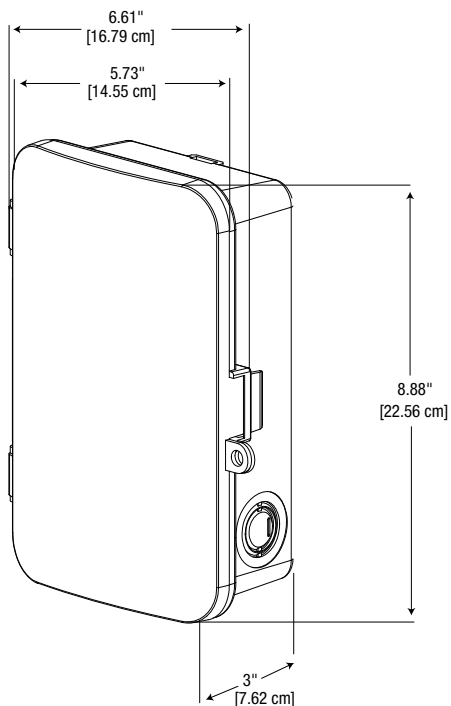
GM40AV Product Dimensions

Wiring Diagram

TIMER
T
L 1 L 2/N NC NO COM NC 2 NO 2 COM2
L N
LOAD #1
LOAD #2

120/277 VAC

TIMER
T
L 1 L 2/N NC NO COM NC 2 NO 2 COM2
L1 L2
LOAD #1
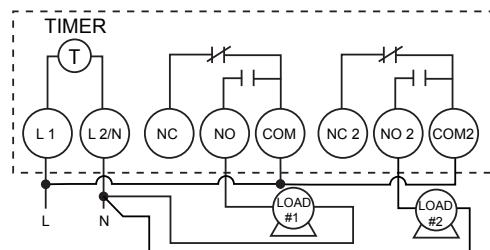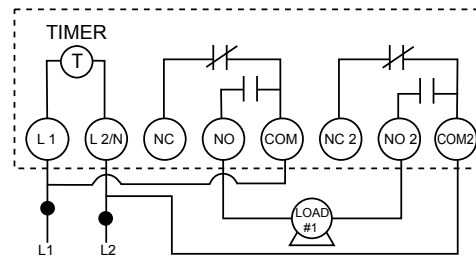
208/240 VAC

SPECIFIERS GUIDE
Furnish and install a Grässlin GM40AV_____Auto-Voltage 24-Hour or 7-Day Time Switch with captive trippers. Input voltage shall be 120-277 VAC which the unit detects and selects automatically. All units shall incorporate DPDT contacts that shall be rated at 40 A, 2 HP @ 208-277 VAC. To set the starting time and provide time indication, the unit shall have an authentic clock face with hour and minute hands and 15-minute or 2-hour (W models only) interval captive trippers. LED indicators shall provide power and status feedback. The enclosure shall be UL Type 3R suitable for both indoor or outdoor installation. The time switch shall contain a 3-way ON/OFF/AUTO manual override switch. For carry-over: "Q" Models shall have a quartz drive with self-recharging battery backup providing 7-day carry-over.

Grässlin Mechanical Time Switches

GMXSW-O-120

GMX Series

21 A, General Purpose, 1-Circuit Electronic Time Switches

The GMX series time switches are universal mechanical time switches. They are a low cost alternative for applications that do not require more than 21 A or 2 HP @ 240 VAC. The timer is mounted in a UL Type 1 indoor or Type 3R outdoor plastic enclosure. The GMX is a light-duty commercial time switch ideal for 24, 120 or 208/240 VAC single-phase general applications.

Applications
- Lighting Control • HVAC • Pumps/Motor/Fan Control
- General Electrical Circuits • Commercial Refrigeration

Features
- 21 A SPDT Switch
- UL Type 1 indoor or Type 3R outdoor plastic enclosure
- Manual 3-way override
- Captive trippers with 15-minute intervals on 24-hour models and 2-hour intervals on 7-day models
- True clock face, easy to set
- Finger-safe terminals
- Enclosure provides space for field-added contactor or other accessories
- Synchronous drive or quartz drive ("Q" models) with self-charging battery backup

#E10694   RoHS Compliant 2002/95/EC   TITLE 20 LISTED

Model # Synchronous	Model # Quartz w/ Battery Backup (7-Day Carry-over)	Voltage	MIN ON/OFF Time	Enclosure
24-Hour				
GMXST-I-120	GMXQT-I-120*	120 VAC, 60 Hz	ON/OFF 15-Minutes	Indoor Type 1 Plastic
GMXST-I-240	**	208/240 VAC, 60 Hz	ON/OFF 15-Minutes	Indoor Type 1 Plastic
GMXST-O-24	**	24 VAC, 60 Hz	ON/OFF 15-Minutes	Outdoor Type 3R Plastic
GMXST-O-120	GMXQT-O-120*	120 VAC, 60 Hz	ON/OFF 15-Minutes	Outdoor Type 3R Plastic
GMXST-O-240	**	208/240 VAC, 60 Hz	ON/OFF 15-Minutes	Outdoor Type 3R Plastic
7-Day				
GMXSW-I-120	**	120 VAC, 60 Hz	ON/OFF 2-Hours	Indoor Type 1 Plastic
GMXSW-O-24	**	24 VAC, 60 Hz	ON/OFF 2-Hours	Outdoor Type 3R Plastic
GMXSW-O-120	GMXQW-O-120 *	120 VAC, 60 Hz	ON/OFF 2-Hours	Outdoor Type 3R Plastic
GMXSW-O-240	GMXQW-I-240 *	208/240 VAC, 60 Hz	ON/OFF 2-Hours	Outdoor Type 3R Plastic
**	GMXQW-I-24*	12-24 VAC, 50/60 Hz	ON/OFF 2-Hours	Indoor Type 1 Plastic

*Quartz models operate on 12-24 VAC/VDC, 120 or 208/240VAC, and 50/60 Hz and are Title 20 listed.
**Considered upon request

Ratings	
Supply Voltage	See Model Chart
Quartz Models	See Model Chart
Power Consumption	1 VA
Switch Type	SPDT
Resistive	21 A, 250 VAC, 60 Hz
Motor	1 HP, 120 VAC; 2 HP, 250 VAC
Operating Temperature	-40° F to 185° F (-40° C to 85° C) -4° F to 131° F (-20° C to 55° C) with battery backup
Operating Humidity	0 to 95%, Non-condensing
Battery Backup Option	7-Day carry-over "Q" Quartz Models
Wiring Connections	Screw terminal accepts up to #12 AWG wire
Shipping Weight	1.607 lbs (0.729 kg)
Warranty	1-year limited

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Wiring Diagrams

Typical Wiring for GMX Series

120 V Timer and Load

208/240 V Timer and Load
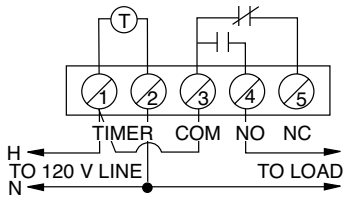
Wiring Diagrams

Typical Wiring for GMX Series

120 V Timer 24-240 V Load
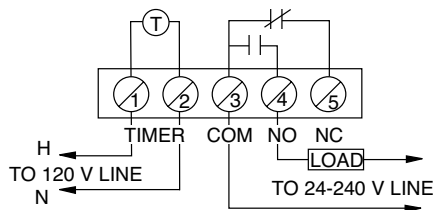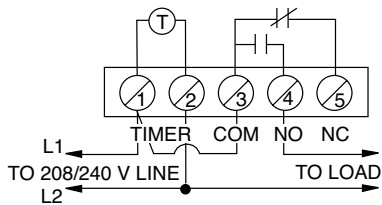
120 V Two Speed Fan

Enclosure Dimensions

6.5" [16.5 cm]
5.54" [14.1cm]
10" [25.4 cm]
8.64" [21.9 cm]
3.74" [9.5 cm]
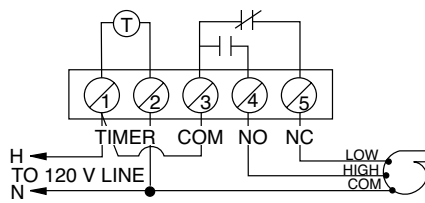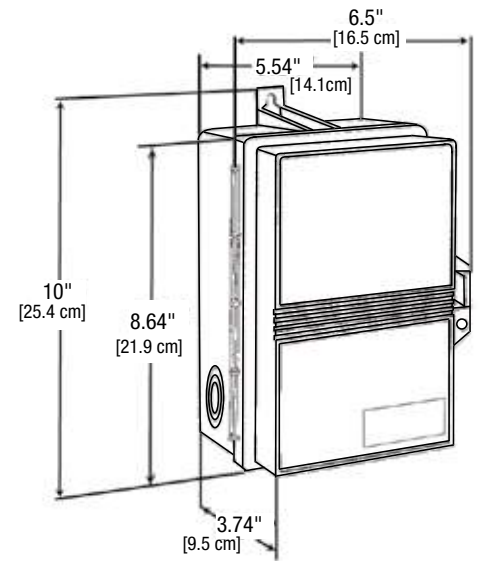
Terminal Connections

Off position with trippers pushed in (trippers pushed out will close contacts 3 and 4 and turn load on)
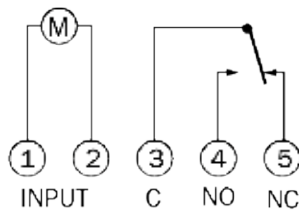
3-way manual override switch

I = permanent ON
☐ = automatic
0 = permanent OFF

(1) (2) (3) (4) (5)
INPUT C NO NC
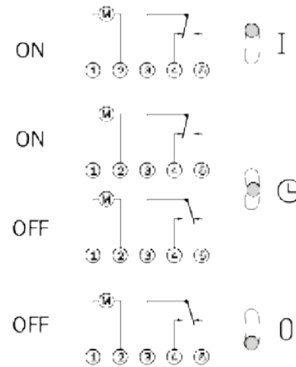
SPECIFIERS GUIDE
Furnish and install a Grässlin GMX_____ (24-Hour) (7-Day) Time Switch with_____(15-Minute) (2-Hour) captive trippers and_____(Quartz)(Synchronous) drive. Input voltage shall be_____(12) (24) VDC, (12) (24) (120) (220) (208/240) VAC, and SPDT contacts shall be rated at 21 A, 2 HP @ 240 VAC. To set the starting time and provide time indication, the unit shall have an authentic clock face with hour and minute hands. Enclosure to be_____(UL Type 1) (UL Type 3R). The time switch shall contain a 3-way ON/OFF/AUTO manual override. (The time switch shall have a quartz drive with 7-Day reserve carry-over from a self-recharging battery).

MIL72A

MIL72E

Wiring Diagrams
12-24 VAC/VDC & 120 VAC application

MIL72 Series

Dimensions
MIL72E Flush Mount with Clear Dust Cover

MIL72A Surface Mount/DIN Rail Mount with Clear Dust Cover

LR3730   #E10694   RoHS Compliant 2002/95/EC   TITLE 20 CA LISTED
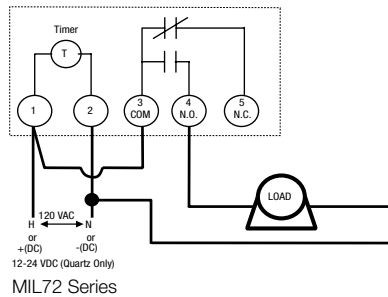
MIL72 Series, 24-Hour
21 A, 1-Circuit, 24-Hour Timer Modules

The MIL72 series time switches are designed to be mounted inside a control panel and can accommodate surface/DIN rail or flush panel mounting. The MIL72 series is a light duty commercial time switch for 12-24 VAC/VDC, 120 or 208/240 VAC single-phase applications.

Applications
- Commercial Refrigeration • Pumps/Motor/Fan Control
- Hydroponic Systems • Aerobic Wastewater Treatment Systems
- Boilers • Generator Exercising

Features
- 21 A SPDT switch
- Synchronous drive or quartz drive (Q Models) with self-recharging battery backup
- 7-Day carry-over battery backup on Q models
- Captive trippers with 15-minute intervals
- Available with or without override
- True clock face, easy-to-set
- Surface/DIN rail or flush mount
- Clear plastic dust cover
- Compact size

Model # Flush Mount (MIL72E)	Model # Surface Mount/DIN Rail (MIL72A)	Volts AC	MIN ON/OFF Time	Override
Synchronous				
MIL72ESTUZ-24	**MIL72ASTUZ-24**	24 VAC, 60 Hz	ON/OFF 15-Minutes	No
MIL72ESTUZ-120	**MIL72ASTUZ-120**	120 VAC, 60 Hz		
MIL72ESTUZ-240	**MIL72ASTUZ-240**	208/240 VAC, 60 Hz		
MIL72ESTUZH-24	**MIL72ASTUZH-24**	24 VAC, 60 Hz	ON/OFF 15-Minutes	Yes
MIL72ESTUZH-120	**MIL72ASTUZH-120**	120 VAC, 60 Hz		
–	**MIL72ASTUZH220**	220 VAC, 60 Hz		
MIL72ESTUZH-240	**MIL72ASTUZH-240**	208/240 VAC, 60 Hz		
Quartz with Battery Backup				
MIL72EQTUZH-24*	**MIL72AQTUZH-24***	12-24 VDC/VAC, 50/60 Hz	ON/OFF 15-Minutes	Yes
MIL72EQTUZH-120*	**MIL72AQTUZH-120***	120 VAC, 50/60 Hz		
MIL72EQTUZ-24*		12-24 VDC/VAC, 50/60 Hz	ON/OFF 15-Minutes	No
MIL72EQTUZ-120*	**MIL72AQTUZ-120***	120 VAC, 50/60 Hz		
MIL72EQTUZ-240*	**MIL72AQTUZ-240***	208/240 VAC, 60 Hz		

*Quartz Models operate on 12-24 VAC/VDC, 120 or 208/240 VAC, and 50/60 Hz and are Title 20 listed.

Terminal Connections

Ratings	
Supply Voltage	See Model Chart
Quartz Models	See Model Chart
Power Consumption	
24 VAC	0.1 VA
120 VAC	0.5 VA
240 VAC	1 VA
Switch Type	SPDT
Resistive	21 A, 250 VAC
Tungsten	1350 W, 120 VAC
Motor	1 HP, 120 VAC; 2 HP, 250 VAC
Operating Temperature	-40° F to 185° F (-40° C to 85° C)
	-4° F to 131° F (-20° C to 55° C) with Battery Backup
Battery Backup Option	7-Day Carry-over "Q" Models
Flush Mount Cutout Dimensions	2 ⅝" X 2 ⅝" (66 mm x 66 mm)
Wiring Connections	
MIL72A	Screw terminal accepts up to #12 AWG wire
MIL72E	1/4" Quick Connect
Weight	0.289 lbs (.131 kg)
Warranty	1-year limited

SPECIFIERS GUIDE
Furnish and install a Grässlin MIL72 _____ (24-Hour) Time Switch with_____(15-Minute) interval captive trippers and_____(Quartz) (Synchronous) drive. Input voltage shall be_____(12) (24) VDC, (12) (24) (120) (220) (208/240) VAC, and SPDT switch contacts shall be rated at 21 A Resistive, 2 HP @ 250 VAC. To set the starting time and provide time indication, the unit shall incorporate an authentic clock face. Installation available for surface, flush and DIN Rail mounting. The time switch shall contain a 3-way ON/OFF/ AUTO override. (For carry-over: the time switch shall have a quartz drive with 7-day reserve carry-over from a self-recharging battery.)

INTERMATIC®

MIL72 Series, 7-Day

21 A, 1-Circuit, 7-Day Timer Modules

The MIL72 series time switches are designed to be mounted inside a control panel and can accommodate surface/DIN rail or flush panel mounting. The MIL72 series is a light duty commercial time switch for 12-24 VAC/VDC, 120 or 208/240 VAC single-phase applications.

Applications
• Commercial Refrigeration • Pumps/Motor/Fan Control
• Hydroponic Systems • Aerobic Wastewater Treatment Systems
• Boilers • Generator Exercising

Features
• 21 A SPDT switch
• Synchronous drive or quartz drive (Q Models) with self-recharging battery backup
• 7-Day carry-over battery backup on Q models
• Captive trippers with 2-hour intervals
• Available with or without override
• True clock face, easy to set
• Surface/DIN rail or flush mount
• Clear plastic dust cover
• Compact size

Wiring Diagrams
12-24 VDC & 120 VAC application
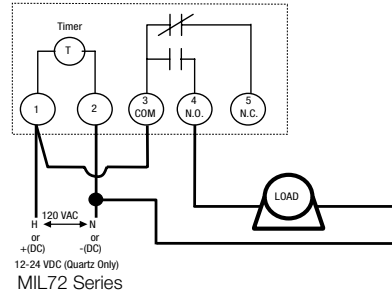
MIL72 Series

MIL72A

MIL72E

Dimensions
MIL72E Flush Mount with Clear Dust Cover

2.83" [72 mm]
2.60" [66 mm]
.80" [20.5 mm]
1.36" [34.5 mm]

MIL72A Surface Mount with Clear Dust Cover

2.83" [72 mm]
2.06" [52 mm]
1.56" [39.5 mm]
4.00" [102.5 mm]
2.60" [66mm]
1.50" [38 mm]

Model # Flush Mount (MIL72E)	Model # Surface Mount/DIN Rail (MIL72A)	Volts AC	MIN ON/OFF Time	Override
Synchronous				
MIL72ESWUZ-24	MIL72ASWUZ-24	24 VAC, 60 Hz	ON/OFF 2-Hours	No
MIL72ESWUZ-120	MIL72ASWUZ-120	120 VAC, 60 Hz		
MIL72ESWUZ-240	MIL72ASWUZ-240	208/240 VAC, 60 Hz		
MIL72ESWUZH-24	MIL72ASWUZH-24	24 VAC, 60 Hz	ON/OFF 2-Hours	Yes
MIL72ESWUZH-120	MIL72ASWUZH-120	120 VAC, 60 Hz		
MIL72ESWUZH-240	MIL72ASWUZH-240	208/240 VAC, 60 Hz		
Quartz with Battery Backup				
MIL72EQWUZH-24*	MIL72AQWUZH-24*	12-24 VDC/VAC, 50/60 Hz	ON/OFF 2-Hours	Yes
MIL72EQWUZH-120*	MIL72AQWUZH-120*	120 VAC, 50/60 Hz		
MIL72EQWUZH-240*	MIL72AQWUZH-240*	208/240 VAC, 60 Hz		
MIL72EQWUZ-120*	MIL72AQWUZ-120*	120 VAC, 50/60 Hz	ON/OFF 2-Hours	No
–	MIL72AQWUZ-240*	208/240 VAC, 50/60Hz		

*Quartz Models operate on 12-24 VAC/VDC, 120 or 208/240 VAC, and 50/60 Hz and are Title 20 listed.

CSP us LR3730   cULus #E10694   CE   RoHS Compliant 2002/95/EC   TITLE 20 LISTED

Terminal Connections

(M)
① ② ③ ④ ⑤
INPUT C NO NC

Ratings	
Supply Voltage	See Model Chart
Quartz Models	See Model Chart
Power Consumption	
24 VAC	0.1 VA
120 VAC	0.5 VA
240 VAC	1 VA
Switch Type	SPDT
Resistive	21 A, 250 VAC
Tungsten	1350 W, 120 VAC
Motor	1 HP, 120 VAC; 2 HP, 250 VAC
Operating Temperature	-40° F to 185° F (-40° C to 85° C)
	-4° F to 131° F (-20° C to 55° C) with Battery Backup
Battery Backup Option	7-Day Carry-over "Q" Models
Flush Mount Cutout Dimensions	2 ⅝" X 2 ⅝" (66 mm x 66 mm)
Wiring Connections	
MIL72A	Screw terminal accepts up to #12 AWG wire
MIL72E	1/4" Quick Connect
Shipping Weight	0.289 lbs (0.131 kg)
Warranty	1-year limited

SPECIFIERS GUIDE
Furnish and install a Grässlin MIL72 _____ (7-Day) Time Switch with_____ (2-Hour) interval captive trippers and_____(Quartz)(Synchronous) drive. Input voltage shall be_____ (12) (24) VDC, (12) (24) (120) (220) (208/240) VAC, and SPDT switch contacts shall be rated at 21 A Resistive, 2 HP, 250 VAC. To set the starting time and provide time indication, the unit shall incorporate an authentic clock face. Installation available for surface, flush and DIN Rail mounting. The time switch shall contain a 3-way ON/OFF/AUTO override. (For carry-over: the time switch shall have a quartz drive with 7-Day reserve carry-over from a self-recharging battery.)

INTERMATIC®

Grässlin Mechanical Time Switches
Grässlin Panel Mount, 24-Hour or 7-Day

FM1SWUZH
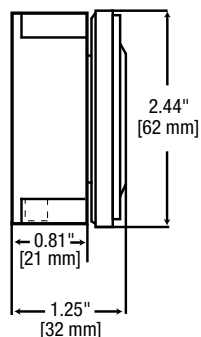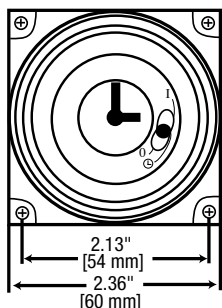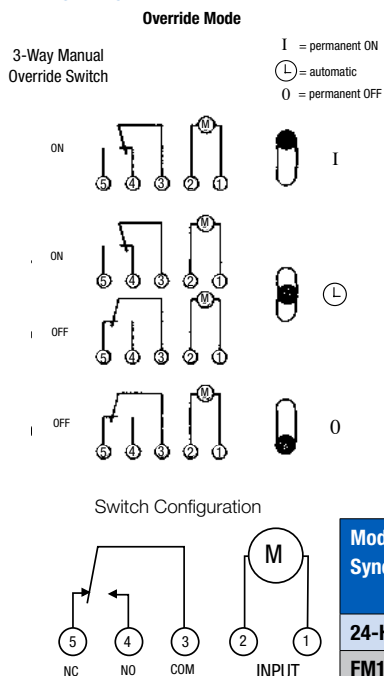
FM1 Series
21 A, 1-Circuit, Panel Mount Timer Modules

The FM1 series timer modules are designed to be integrated inside of a machine control panel, circuit board, or other equipment. They are a simple and low cost alternative for applications that do not require more than 21 A or 2 HP, 240 VAC. The FM1 is designed for 24-hour or 7-day control or overriding a functional typical state of a heating, ventilation, refrigeration, lighting, security, or pump system. The FM1 series is ideal for 12, 24 VAC/VDC,120 or 208/240VAC single-phase general applications.

Applications
- Commercial Refrigeration • Pool & Spa • Ventilation
- Hot Water Pump Circulation • Hydroponic Systems
- Lighting Panel Control • Landscape Lighting
- Bug and Pest Control Systems • Aerobic Waste Water Systems

Features
- 21 A SPDT Switch
- Captive trippers with 15-minute intervals on 24-hour models and 2-hour intervals on 7-day models
- 7-Day carry-over battery backup on Q models
- Noise immune – ideal for robust applications
- Synchronous drive or quartz drive Q models with self-recharging battery backup
- True clock face, easy to set
- Available with or without override
- Compact size
- Clear plastic cover (DC-FME-A), sold separately below
- Standalone or with indoor/outdoor enclosure, sold separately below

Dimensions
FM1 Panel Mount Series

2.13" [54 mm]
2.36" [60 mm]
2.44" [62 mm]
0.81" [21 mm]
1.25" [32 mm]

Wiring Diagrams

Override Mode

I = permanent ON
(L) = automatic
0 = permanent OFF

3-Way Manual Override Switch

ON — I
ON / OFF — (L)
OFF — 0

Switch Configuration

5 — NC
4 — NO
3 — COM
2
1 — INPUT
M

CSA c us LR3730
c UL us #E10694
CE
RoHS Compliant 2002/95/EC
TITLE 20 LISTED

Ratings	
Supply Voltage	See Model Chart
Quartz Models	See Model Chart
Power Consumption	1 VA
Switch Type	SPDT
Resistive	21 A, 250 VAC
Tungsten	1350 W, 120 VAC
Motor	1 HP, 120 VAC; 2 HP, 250 VAC
Operating Temperature	-40° F to 185° F (-40° C to 85° C)
	-4° F to 131° F (-20° C to 55° C)
Battery Backup Option	7-Day Carry-over "Q" Models
Wiring Connections	¼" Quick Connect
Shipping Weight	.14 lbs (.06 kg)
Warranty	1-year

Accessories

Clear Dust Cover	DC-FME-A
Surface/DIN Rail Mount	FM-SU
Flush Mount Kit	FM-FU
Outdoor Enclosure	E200
Indoor Enclosure	E150

Model # Synchronous	Model # Quartz w/ Battery Backup	Input Voltage	Override	MIN ON/OFF Time
24-Hour				
FM1STUZ-24U	FM1QTUZ-24U*	24 VAC, 60 Hz	No	15-Min
FM1STUZ-120U	FM1QTUZ-120U*	120 VAC, 60 Hz	No	
FM1STUZ-240U	FM1QTUZ-240U*	208/240 VAC, 60 Hz	No	
FM1STUZ220/50	–	220 VAC, 50 Hz	No	
FM1STUZH-24U	FM1QTUZH-24U*	24 VAC, 60 Hz	Yes	
FM1STUZH-120U	FM1QTUZH-120U*	120 VAC, 60 Hz	Yes	
FM1STUZH-240U	–	208/240 VAC, 60 Hz	Yes	
FM1STUZH220/50	–	220 VAC, 50 Hz	Yes	
7-Day				
FM1SWUZ-24U	–	24 VAC, 60 Hz	No	2-Hrs
FM1SWUZ-120U	FM1QWUZ-120U*	120 VAC, 60 Hz	No	
FM1SWUZ-240U	FM1QWUZ-240U*	208/240 VAC, 60 Hz	No	
FM1SWUZH-24U	–	24 VAC, 60 Hz	Yes	
FM1SWUZH-240U	FM1QWUZH-240U*	208/240 VAC, 60 Hz	Yes	
FM1SWUZH-120U	FM1QWUZH-120U*	120 VAC, 60 Hz	Yes	

Quartz models operate at 12-24 VAC/VDC, 120, or 208/240 VAC and are Title 20 listed.

SPECIFIERS GUIDE
Furnish and install a Grässlin FM1 _____ (24-Hour) (7-Day) Timer Module with_____ (15-Minute) (2-Hour) interval captive trippers and_____ (Quartz) (Synchronous) drive. Input voltage shall be_____ (12) (24) VDC, (12) (24) (120) (220) (208/240) VAC, and SPDT switch contacts shall be rated at: • 21 A Resistive • 2 HP @ 250 VAC. To set the starting time and to provide time indication, the unit shall incorporate an authentic clock face. For override, the timer module shall contain a 3-way ON/OFF/AUTO switch. (For carry-over, the timer module shall have a quartz drive with 7-day reserve carry-over from a self-recharging battery. Installation for panel mounting.)

INTERMATIC®

Talento 121 Series

16 A, 1-Hour Repeat Cycle Time Switch

The Talento 121 is a synchronous motor-driven electromechanical one-hour time switch intended as a low-cost repeat cycle timer for industrial processes and other applications. It provides continuous ON/OFF cycling of a load in a pattern which will repeat every hour. Captive trippers allow setting up to 24 ON and 24 OFF times in 1.25-minute increments over a one-hour period. It may be used in conjunction with a Grässlin 24-hour or 7-day time switch to provide repeat cycle timed switching only during selected periods of the day or week. It may be DIN rail mounted, or mounted in a Grässlin indoor or outdoor enclosure.

Applications
• Industrial

Features
• 1.25 minute resolution
• Up to 24 ON/OFF times per hour
• Captive trippers
• SPDT 16 A switch
• DIN rail or enclosure mounting
• 3-Way override

Dimensions

TALENTO121-120

Switch Configuration

Model #	Input Voltage	Mounting	Total Cycle Time	Timing Interval per Tripper
TALENTO 121-120	120 VAC, 60 Hz	DIN Rail	1-hr	1.25-Min
TALENTO121-240	208-240 VAC, 60 Hz	DIN Rail	1-hr	1.25-Min
GMX121-0-120	120 VAC, 60 Hz	Type 3R Enclosure	1-hr	1.25-Min
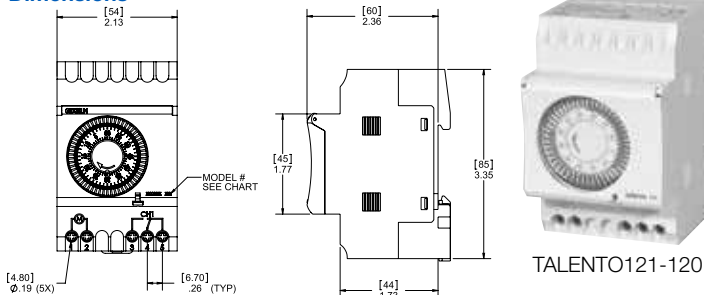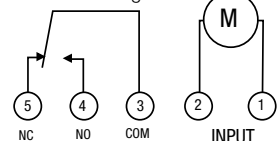
Ratings	
Supply Voltage	See Model Chart
Switch Type	SPDT
Resistive	16 A, 250 VAC
Tungsten	750 W, 250 VAC
Operating Temperature	-13° F to 130° F (-25° C to 55° C)
Operating Humidity	0-95% RH, Non-condensing
Wiring Connections	Screw terminal accepts up to #12 AWG wire
Shipping Weight	
Talento121	0.66 lbs (0.299 kg)
GMX121	0.752 lbs (1.657 kg)
Warranty	1-year limited

FM1S12HU-120U

21 A, 12-Hour Repeat Cycle Time Switch

The FM1S12HU-120U is a synchronous motor-driven electromechanical 12-hour time switch intended as a low cost repeat cycle timer for industrial processes and other applications. It provides continuous ON/OFF cycling in a pattern which will repeat every 12 hours. Captive trippers allow setting up to 48 ON and 48 OFF times in 7.5 minute increments over a 12-hour period.

Applications
• Industrial Timer Applications

Features
• 21 A SPDT switch
• Captive trippers enable up to 48 ON and 48 OFF times in 7.5-minute intervals
• Panel mount

Dimensions

FM1S12HU-120U

Switch Configuration

Model #	Input Voltage	Mounting	Total Cycle Time	Timing Interval per Tripper
FM1S12HU-120U	120 VAC, 60 Hz	Panel	12-hours	7.5-Min

Accessories

Clear Dust Cover	DC-FME-A
Surface/DIN Rail Mount	FM-SU
Flush Mount Kit	FM-FU
Outdoor Enclosure	E200
Indoor Enclosure	E150
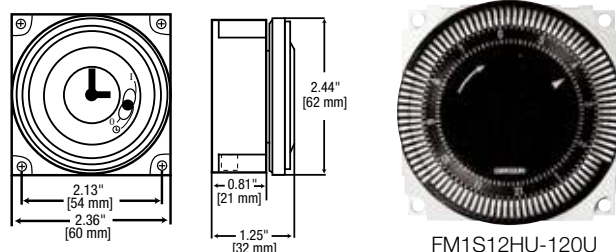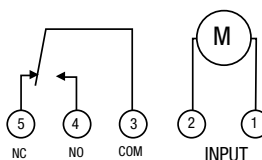
Ratings	
Supply Voltage	See Model Table
Power Consumption	1 VA
Switch Type	SPDT
Motor	1 HP, 120 VAC; 2 HP, 250 VAC
Resistive	21 A, 250 VAC, 60 Hz
Tungsten	1350 W, 120 VAC, 60 Hz
Wiring Connections	1/4" Quick Connect
Shipping Weight	0.22 lbs (0.1 kg)
Warranty	1-year
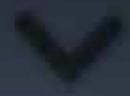
INTERMATIC®

Auto

OFF

Tue 2:07PM

Next:
ON @ Tue 7:07PM

In-Wall Timers

Elevate home design and décor with In-Wall Timers from Intermatic. Made to replace traditional light switches, our roster of in-wall timer controls offers a wealth of handy features and supports a variety of ON/OFF load types. Homeowners can take advantage of 7-day, 24-hour or countdown time schedules for added convenience and simple energy savings. Select models even include an Astronomic scheduling option which automatically adjusts the switch based on local dusk and dawn times. They're the ideal solution for applications such as outdoor lights, attic fans, water features, garage lights and more.

Leading the way, our flagship Ascend™ Smart In-Wall Timer serves as a building block for the next generation of home automation. The modern digital in-wall timer helps contractors save time and labor with installations through a streamlined mobile programming app while offering homeowners a range of tech-forward features, including voice integration with Amazon Alexa, remote smartphone access and future plans to integrate with other popular voice assistant platforms.

Contents

Ascend™

Intermatic's Next Generation 7-Day Programmable Timer

Stylish, Sensible and Simply Programmable

Ascend In-Wall Timers provide contractors and homeowners easy setup and programming for energy-efficient control:
- Quick, intuitive installation and setup
- Pre-programmed templates or fully customizable schedules
- Automatic Daylight Saving Time and Astronomic ON/OFF at dusk or dawn
- Large, backlit LCD display conveys schedule and status
- Accommodates single-pole or 3-way switches
- Neutral required

Set it once and forget it

Add convenience, security and energy savings in hallways, entryways, outdoors and common areas. Our new in-wall programmable timer is designed for convenience with three pre-programmed common schedules for quick setup.

Mobile App

Install in minutes using the **Ascend Smart Timer App**.

Connect Ascend	Sync settings and select a schedule	Programming complete

INTERMATIC®

Ascend™ Series

Ascend Smart

The Ascend Smart In-Wall Timer is a Wi-Fi enabled, 7-Day Programmable Timer. Using the Intermatic Ascend app, contractors can set up and schedule in a matter of minutes without a Wi-Fi connection. Homeowners and business owners will enjoy tech-forward features of Wi-Fi, remote access and voice integration. Additionally, the Ascend Smart In-Wall Timer offers flexibility of setup, scheduling and modification at the timer through its large LCD display or via the mobile app. Neutral required.

Applications
- Garage • Driveway • Common Area • Hallway
- Patio • Front Door • Outdoor Path • Coach Lights

Features
- Sleek, Modern Design
- Remote Access from anywhere, no hub required
- Wi-Fi not needed for initial setup and scheduling
- Fully set and schedule at the timer or via the Ascend app
- Automatic Astronomic ON/OFF dusk and dawn times to provide the most accurate lighting schedule possible
- Automatic Daylight Saving Time (DST) Adjustment
- Three pre-programmed schedule templates for convenience
- Fully customizable scheduling for flexibility
- Non-replaceable battery backup keeps time and date information in the event of a power loss
- Schedules and other settings are kept indefinitely in non-volatile memory
- Voice Assistant Integration with Alexa
- Standalone Automation

STW700W

Model #	Description	Has Wi-Fi	Color	Require Neutral
STW700W	Heavy-Duty 7-Day Programmable Timer	Yes	White	Yes

Note: For use with standard decorator plate, not included.

Ratings	
Input Voltage	120 VAC, 50/60 Hz
General Purpose	15 A
Inductive	15 A, 120 VAC, 50/60 Hz
Electronic/LED Ballast	5 A, 120 VAC, 50/60 Hz
Incandescent	8 A, 120 VAC, 50/60 Hz
Motor	1 HP, 120 VAC, 50/60 Hz
Operating Temperature	-4° F to 122° F (-20° C to 50° C)
Dimensions H x W x D	4 1/8" x 1 3/4" x 1 1/3" (104.8 mm x 44.5 mm x 33.9 mm)
Warranty	3-year limited

Note: Not for use with sunlamps, saunas or loads that could cause personal injury if timed incorrectly.

Ascend Series

Ascend Standard

The Ascend Standard In-Wall Timer is a 7-Day Programmable Timer featuring a sleek, modern design. The timer can be configured in minutes using a large backlit LCD display and includes pre-programmed templates for easy use. The Ascend Standard features Astronomic dusk-to-dawn settings and automatic Daylight Saving Time adjustments. Neutral required.

Applications
- Garage • Driveway • Common Area • Hallway
- Patio • Front Door • Outdoor Path • Coach Lights

Features
- Sleek, Modern Design
- Automatic Astronomic
- Automatic Daylight Saving Time (DST) Adjustment
- Intuitive Setup
- Three pre-programmed schedule templates for convenience
- Fully customized scheduling for flexibility
- Program up to 42 unique events
- Large LCD Display
- Non-replaceable battery backup keeps time and date information in the event of a power loss
- Schedules and other settings are kept indefinitely in non-volatile memory

ST700W

Model #	Description	Has Wi-Fi	Color	Require Neutral
ST700W	Heavy-Duty 7-Day Programmable Timer	No	White	Yes

Note: For use with standard decorator plate, not included.

Ratings	
Input Voltage	120 VAC, 50/60 Hz
General Purpose	15 A
Inductive	15 A, 120 VAC, 50/60 Hz
Electronic/LED Ballast	5 A, 120 VAC, 50/60 Hz
Incandescent	8 A, 120 VAC, 50/60 Hz
Motor	1 HP, 120 VAC, 50/60 Hz
Operating Temperature	-4° F to 122° F (-20° C to 50° C)
Dimensions H x W x D	4 1/8" x 1 3/4" x 1 1/3" (104.8 mm x 44.5 mm x 33.9 mm)
Warranty	3-year limited

ST01

White

Ivory

Light Almond

EI600 and ST01 Series

Heavy-Duty 7-Day Programmable Timers

Highly versatile Heavy-Duty Timers are ideal for any application that requires a simple or complex ON/OFF schedule, regardless of load. No neutral connection is required.

Features
- Versatile 7-day programmable schedules with up to 40 ON/OFF events
- Astronomic clock feature determines dawn and dusk times
- Automatic Daylight Saving Time (DST) adjustment
- Random mode varies ON/OFF schedule to provide a "lived-in" appearance
- Single or 3-way switch compatible installation
- Incandescent/fluorescent/CFL/LED compatible
- Isolated switch allows timer to be used with any load type, including AC and DC loads
- Replaceable CR2 lithium battery provides up to three years of operation
- No neutral wire connection enables easy retrofitting and quicker installation

Ratings	
Operating Voltage	120-277 VAC, 50/60 Hz
Resistive	
ST01	15 A, 120-277 VAC, 50/60 Hz
EI600	20 A, 120-277 VAC, 50/60 Hz
Inductive Ballast	
ST01	8 A, 120 VAC, 50/60 Hz; 4 A, 208-277 VAC, 50/60 Hz
EI600	16 A, 120-277 VAC, 50/60 Hz
Incandescent	15 A, 120 VAC, 50/60 Hz; 6 A, 208-277 VAC, 50/60 Hz
Motor	1 HP, 120 VAC, 50/60 Hz; 2 HP, 240 VAC, 50/60 Hz
DC Loads	4 A, 12 VDC; 2 A, 28 VDC
Operating Temperature	32° F to 104° F (0° C to 40° C)
Dimensions H x W x D	4.125" X 1.75" X 1.8125"
	(104.8mm x 44.5mm x 46mm)
Warranty	
ST01	1-year limited
EI600	5-year limited

Note: Not for use with sunlamps, saunas, or loads that could cause personal injury if timed incorrectly.

White	Ivory	Light Almond	Max Load Handling Capability
EI600WC	EI600C	EI600LAC	20 A
ST01	–	ST01A	15 A

Note: For use with standard decorator plate, not included

7-Day/24-Hour Timer Applications

- Entryway lighting • Deck and landscape light controls • Attic fans • Pumps
- Small commercial – signage and store lighting • Hallway lighting

INTERMATIC®

EI500 Series

Standard 7-Day Programmable Timers - 15 A

For installation on 15 A circuits, this timer provides 24-hour or 7-day programming of lights, fans, pumps and other medium-duty loads.

Features
- 7-day programmable schedules with 14 ON/OFF events
- Automatic Daylight Saving Time (DST) adjustment
- Random mode varies ON/OFF schedule to provide a "lived-in" appearance
- Single-pole circuit
- Incandescent/fluorescent/CFL/LED compatible
- Built-in rechargeable, non-serviceable battery backup
- Requires neutral connection
- Backlit LCD display

White

Ivory

Light Almond

EI500WC

White	Ivory	Light Almond
EI500WC	EI500C	EI500LAC

Note: For use with standard decorator plate, not included.

Ratings	
Operating Voltage	125 VAC, 60 Hz
General Purpose	15 A, 125 VAC, 60 Hz
Resistive	15 A, 125 VAC, 60 Hz
Inductive Ballast (Fluorescent)	1000 VA, 125 VAC, 60 Hz
Electronic/LED Ballast	500 VA, 125 VAC, 60 Hz
Incandescent	1000 W, 125 VAC, 60 Hz
Motor	¼ HP, 125 VAC, 60 Hz
Operating Temperature	32° F to 104° F (0° C to 40° C)
Dimensions H x W x D	4.125" X 1.75" X 1.4375" (104.8 mm x 44.5 mm x 36.5 mm)
Warranty	1-year limited

Note: Not for use with sunlamps, saunas, or loads that could cause personal injury if timed incorrectly.

EJ600 Series

Standard 7-Day Programmable Timers - 12 A

A 12 A rated timer that provides full 7-day programming capabilities with dusk-to-dawn functionality, ideal for use with medium to low power loads.

Features
- 7-day programmable schedules with 7 ON/OFF events
- Astronomic clock feature determines dawn and dusk times
- Automatic Daylight Saving Time (DST) adjustment
- Random mode varies ON/OFF schedule to provide a "lived-in" appearance
- Single or 3-way switch compatible installation
- Incandescent/fluorescent/CFL/LED compatible
- Built-in rechargeable, non-serviceable battery backup
- Requires neutral connection

White

Light Almond

EJ600

White	Light Almond
EJ600	EJ600A

Note: For use with standard decorator plate, not included.

Ratings	
Operating Voltage	120 VAC, 60 Hz
Resistive	12 A, 120 VAC, 60 Hz
Inductive Ballast	500 VA, 120 VAC, 60 Hz
Incandescent Single-Gang	15 A, 120 VAC, 60 Hz
Multi-Gang	12 A, 120 VAC, 60 Hz
Motor	½ HP, 120 VAC, 60 Hz
Operating Temperature	32° F to 104° F (0° C to 40° C)
Dimensions H x W x D	4.125" X 1.75" X 1.4375" (104.8 mm x 44.5 mm x 36.5 mm)
Warranty	1-year limited

Note: Not for use with sunlamps, saunas, or loads that could cause personal injury if timed incorrectly.

E1010   E1020

Ratings	
Operating Voltage	125 VAC, 60 Hz
Resistive	15 A, 125 VAC, 60 Hz
Incandescent	1500 W, 125 VAC, 60 Hz
Motor	12 FLA, 125 VAC, 60 Hz
Dimensions H x W x D	4.25" X 3.25" X 1.375" (108mm x 82.6mm x 34.9mm)
Warranty	1-year limited

E1000 Series
Heavy Duty Mechanical In-Wall Timers - 15 A

These Heavy-Duty In-Wall Timers are ideal for turning on lights, fans, pumps and other heavy duty loads for energy savings, security and convenience. The timer provides up to 12 ON and 12 OFF operations per day..

Features
- E1010 includes one ON/OFF permanently attached tripper for single ON/OFF control per 24-hour period
- E1020 includes two ON/OFF trippers and can accommodate up to 12 ON/OFF trippers
- Programmable in 30-minute intervals
- Turns ON/OFF heavy-duty loads for energy savings, security and convenience
- Mounts to any standard junction box
- Requires neutral connection

Model #	Description
E1010	White with Permanent Trippers
E1020	White with Removable Trippers

Accessories and Replacement

Trippers for E1020 (two-pack)   156EB1945A

INTERMATIC®

KM2 Series
Heavy-Duty Mechanical In-Wall Timers - 20 A

For installing on circuits up to 20 A, this timer provides automatic 24-hour ON/OFF control of outdoor/indoor lighting, fans, pumps, office equipment and other types of loads.

Features
• 72 trippers provide 36 ON/OFF events per 24-hour period
• Captive trippers with 20-minute switching intervals
• 3-way (SPDT) switch available
• 3-position ON/OFF/AUTO override provides continuous
  ON or OFF operation
• Reliable synchronous timer motor
• Multiple wall plates available
• Easy wiring and installation
• Heavy-Duty 20 A rating
• Requires neutral connection

KMS2T-IG

Model #	Wall Plate Configuration	
Single Pole Single Throw Switch		
KM2ST-1G	Timer Only	
KM2ST-2G	Timer + Toggle Switch	2-Gang
KM2ST-3G	Timer + Toggle Switch	3-Gang
KM2ST-4G	Timer + Toggle Switch	4-Gang
KM2ST-2D	Timer + Decorator Switch	2-Gang
KM2ST-3D	Timer + Decorator Switch	3-Gang
KM2ST-2R	Timer + Receptacle	2-Gang
Single Pole Double Throw Switch		
KM2STU-1G	Timer Only	

Accessories/Replacement

Faceplates	See page 172 for full list

Wiring Diagrams

Standard Installation

HOT (BLACK)   LOAD (RED)   LOAD
NEUTRAL (WHITE)

3-Way Installation

HOT (BLACK)   (RED)   3-Way Switch
NEUTRAL (WHITE)   (BLUE)   LOAD
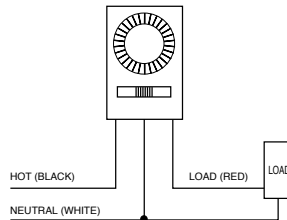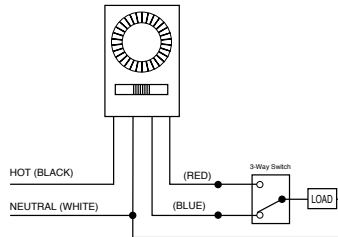
Timer Toggle Switch Plate

2-Gang   3-Gang

4-Gang

Timer and Decorator Switch Plate

2-Gang   3-Gang

Timer and Receptacle Plate

2-Gang

Ratings	
Operating Voltage	120 VAC, 60 Hz
Resistive	20 A, 120 VAC, 60 Hz
Incandescent	1350 W, 120 VAC, 60 Hz
Motor	1 HP, 120 VAC, 60 Hz
Inductive	8 A, 120 VAC, 60 Hz
Operating Temperature	-40° F to 180° F (-40° C to 82° C)
Operating Humidity	0 to 95%, Non-condensing
Wiring Terminals	
SPST	SPST (3) #14 AWG color coded
SPDT	SPDT (4) #14 AWG color coded
Warranty	1-year limited

EI400WC

White

Ivory

Light Almond

EI400 Series
Programmable Electronic Countdown Timer

Offering a programmable countdown time between one second and 24 hours, this versatile timer can handle any application, regardless of load type. No neutral connection is required.

Features
- Programmable countdown time interval from one second to 24 hours
- Settings stored in non-volatile memory
- Optional audible and/or visual warning of impending load switch OFF
- Lockable settings help avoid unintended changes
- Single-pole or 3-way switch compatible installation
- Incandescent/fluorescent/CFL/LED compatible
- Isolated switch allows timer to be used with any load type including AC and DC loads
- Replaceable CR2 lithium battery provides up to three years of operation
- No neutral wire connection enables easy retrofitting and quicker installation
- 24-hour programming allows for continuous operation

White	Ivory	Light Almond
EI400WC	EI400C	EI400LAC

Note: For use with standard decorator plate, not included

Ratings	
Operating Voltage	120-277 VAC, 50/60 Hz
Resistive	20 A, 120-277 VAC, 50/60 Hz
Incandescent	15 A, 120 VAC, 50/60 Hz; 6 A, 208-277 VAC, 50/60 Hz
Inductive Ballast	16 A, 120-277 VAC, 50/60 Hz
Motor	1 HP, 120 VAC, 50/60 Hz; 2 HP, 240 VAC 50/60 Hz
DC Loads	4 A, 12 VDC; 2 A, 28 VDC
Operating Temperature	32° F to 122° F (0° C to 50° C)
Dimensions H x W x D	4.125" X 1.75" X 1.1875" (104.8mm x 44.5mm x 30.2mm)
Warranty	5-year limited

Note: Not for use with sunlamps, saunas, or loads that could cause personal injury if timed incorrectly.

Countdown Timer Applications

• Bathroom fans • Spas • Hot tubs • Storage closets • Garage lights

INTERMATIC®

In-Wall Timers

EI200 Series

Electronic Countdown Timers with Preset Times

This timer requires no programming; preset countdown times are activated by pressing a single button. Silent operation makes this timer ideal for applications where the noise of mechanical countdown timers is of concern.

Features
• Provides silent operation in time ranges from five minutes to 12 hours
• Single-button time selection, with some models having a HOLD mode, for continuous ON operation
• Replaces single-pole switches in a variety of applications
• Incandescent/fluorescent/CFL/LED compatible
• For use with decorator-style wall plate (not included)
• Requires neutral connection

White

Ivory

Light Almond

Without HOLD
EI235W

With HOLD
EI200W

White	Ivory	Light Almond	Preset Times
Without HOLD			
EI205W	EI205	EI205LA	5 min, 15 min, 30 min, 45 min, 1 hr
EI215W	EI215	EI215LA	15 min, 30 min, 1 hr, 2 hr, 4 hr
EI235W	EI235	–	15 min, 30 min, 45 min, 1 hr, 2 hr
With HOLD			
EI200W	EI200	EI200LA	5 min, 10 min, 15 min, 30 min
EI210W	EI210	EI210LA	10 min, 20 min, 30 min, 60 min
EI220W	EI220	EI220LA	1 hr, 2 hr, 4 hr, 8 hr
EI230W	EI230	EI230LA	2 hr, 4 hr, 8 hr, 12 hr

Ratings	
Operating Voltage	120 VAC, 60 Hz
Resistive	15 A, 1800 W, 60 Hz
Inductive Ballast	8 A, 1000 VA, 60 Hz
Electronic Ballast	500 VA, 60 Hz
Incandescent	8.3 A, 1000 W, 60 Hz
Motor	1/4 HP, 60 Hz
Operating Temperature	32° F to 122° F (0° C to 50° C)
Dimensions H x W x D	4.125" X 1.6875" X 1.4375" (104.8mm x 42.93mm x 36.5mm)
Warranty	1-year limited

Note: Not for use with sunlamps, saunas, or loads that could cause personal injury if timed incorrectly.

Without HOLD
FD60MWC

With HOLD
FD6HHW

White

Ivory

Light Almond

FD Series

Spring Wound Countdown Timers -
Decorator Style

The FD Series Decorator Countdown Timers are designed to replace any standard or decorator style wall switch, single- or multi-gang. These mechanical timers do not require electricity to operate. They automatically limit the ON times for fans, lighting, motors, heaters and other energy consuming loads.

Features
- No electricity required to operate
- Replaces any standard or decorator single- or multi-gang wall switch
- Automatically limits ON time for energy consuming loads
- Quick and easy installation
- Time-saving up front terminal connection with teeter-type terminals
- Models available from 5 minute to 12 hour countdown time intervals
- Incandescent/fluorescent/CFL/LED compatible
- No neutral connection is required

Ratings	
Operating Voltage	125-277 VAC, 50/60 Hz
Resistive	20 A, 125 VAC, 50/60 Hz; 10 A, 250/277 VAC, 50/60 Hz
Tungsten/Incandescent	7 A, 125 VAC, 50/60 Hz
Motor	1 HP, 125 VAC, 50/60 Hz; 2 HP, 250 VAC, 50/60 Hz
Operating Temperature	32° F to 104° F (0° C to 40° C)
Dimensions H x W x D	4.125" X 1.75" X 1.25" (104.8mm x 44.5mm x 31.8mm)
Warranty	1-year limited

Note: Not for use with sunlamps, saunas, or loads that could cause personal injury if timed incorrectly.

	Without HOLD			With HOLD		Maximum Time	Switch Type
	White	Ivory	Light Almond	White	Ivory		
SPST							
	FD5MW	FD5M	–	–	–	5 min	
	FD15MWC	FD15MC	FD15MAC	FD15MHW	FD15MH	15 min	
	FD30MWC	FD30MC	FD30MAC	FD30MHW	FD30MH	30 min	
	FD60MWC	FD60MC	FD60MAC	FD60MHW	FD60MH	60 min	**SPST** Configuration
	FD2HW	FD2H	–	–	–	2 hr	
	FD4HW	FD4H	–	–	–	4 hr	
	FD6HW	FD6H	–	FD6HHW	FD6HH	6 hr	
	FD12HWC	FD12HC	–	FD12HHW	FD12HH	12 hr	
2-Circuit (1) NO + (1) NC							
	FD32HW	FD32H	–	–	–	2 hr	
	FD34HW	FD34H	–	–	–	4 hr	*For **SPDT** Configuration Jumper L1 & L2 Together
	FD36H	–	–	–	–	6 hr	
DPST							
	–	FD415M	–	–	–	15 min	
	FD430MW	FD430M	–	–	–	30 min	
	FD460MW	FD460M	–	–	–	60 min	**DPST** Configuration
	FD46HW	FD46H	–	–	–	6 hr	

Note: For use with decorator or toggle-style switch plates (not included).

Accessories/Replacement

Knob Wall Switch FD Series - Ivory	146MT573
Knob Wall Switch FD Series - White	146MT574
Knob Wall Switch FD Series - Almond	146MT575
Faceplates	See page 172

INTERMATIC®

FF Series
Spring Wound Countdown Timers - Commercial

The FF Series Commercial Countdown Timers are designed to replace any standard wall switch and do not require electricity to operate. These energy-efficient switches automatically limit the ON times for fans, lighting, motors, heaters, and other energy consuming loads. A commercial "brushed metal" look plate (plastic construction) meets NEC requirements.

Features
• No electricity required to operate
• Replaces any standard or decorator single-gang wall switch
• Automatically limits ON time for energy consuming loads
• Quick and easy installation
• Time-saving up front terminal connection with teeter-type terminals
• Brushed metal look switch plate meets NEC requirements
  (plate is included)
• Incandescent/fluorescent/CFL/LED compatible;
• No neutral connection is required
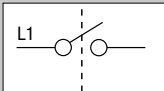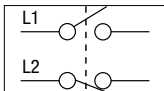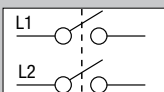
Without HOLD
FF5M

With HOLD
FF6HH

Without HOLD	With HOLD	Maximum Time	Switch Type
SPST			
FF5M	FF5MH	5 min	
FF15MC	FF15MH	15 min	
FF30MC	FF30MH	30 min	
FF60MC	FF60MHC	60 min	
FF2H	–	2 hr	L1
FF4H	–	4 hr	**SPST** Configuration
FF6H	FF6HH	6 hr	
FF12HC	FF12HHC	12 hr	
2-Circuit (1) NO + (1) NC			
FF315M	–	15 min	
FF330M	–	30 min	
FF360M	–	60 min	L1
FF32H	FF32HH	2 hr	L2
FF34H	FF34HH	4 hr	*For **SPDT** Configuration
FF36H	–	6 hr	Jumper L1 & L2 Together
FF312H	FF312HH	12 hr	
DPST			
FF415M	–	15 min	
FF430M	–	30 min	L1
FF460M	–	60 min	L2
FF46H	–	6 hr	**DPST** Configuration
FF412H	–	12 hr	

Accessories/Replacement

Knob Wall Switch FF Series - White	146MT577
Knob Wall Switch FF Series - Black	146MT579
Faceplates	See page 172

Ratings	
Operating Voltage	125-277 VAC, 50/60 Hz
Resistive	20 A, 125 VAC, 50/60 Hz; 10 A, 250/277 VAC, 50/60 Hz
Incandescent	7 A, 125 VAC, 50/60 Hz
Motor	1 HP, 125 VAC, 50/60 Hz; 2 HP, 250 VAC, 50/60 Hz
Operating Temperature	32° F to 104° F (0° C to 40° C)
Dimensions H x W x D	4.125" X 1.75" X 1.25" (104.8mm x 44.5mm x 31.8mm)
Warranty	1-year limited

Note: Not for use with sunlamps, saunas, or loads that could cause personal injury if timed incorrectly.

Plug-In Timers

Reduce energy waste and simplify routine tasks with Intermatic Plug-in Timers. Our easy-to-use timers help homeowners automate everyday lighting needs and boost the efficiency of household appliances in minutes. From landscape and holiday lighting displays to air conditioners and water pumps, they serve as a quick and cost-effective upgrade.

Our versatile product lineup includes mechanical, digital, indoor and outdoor plug-in timers. They feature flexible scheduling options and user-friendly programming, making them a snap to install and straightforward to update over time. Better still, our variety of timer designs and options ensures solutions fit seamlessly into daily life without being a hassle for homeowners.

Contents

HB113

HB112

HB114

HB110 Series

HB110 Series
Heavy-Duty Appliance Plug-In Timers

Plug-in timers provide 24-hour ON/OFF scheduling for high power appliances, such as window mounted air conditioners, by accepting their specialized NEMA plugs.

Features
• 2 ON/2 OFF settings per day with removable trippers, more ON/OFF events with addition of extra trippers
• Minimum 30-min ON/OFF time
• Manual ON/OFF Override
• Grounded 125 and 240 V NEMA receptacle and plug
• Plugs directly into wall outlet

Model #	Voltage	Rect/Plug	
HB113	20 A, 125 VAC, 60 Hz	5-20	
HB112	15 A, 240 VAC, 60 Hz	6-15	
HB114	20 A, 240 VAC, 60 Hz	6-20	

Accessories/Replacements

ON Tripper - Red	107SB189
OFF Tripper - Black	107SB192

Ratings	
Operating Voltage	
HB113	125 VAC, 60 Hz
HB112, HB114	240 VAC, 60 Hz
Resistive	
HB114	20 A, 240 VAC, 60 Hz
HB113	20 A, 125 VAC, 60 Hz
HB112	15 A, 240 VAC, 60 Hz
Inductive Ballast	
HB113	8 A, 125 VAC, 60 Hz
HB112, HB114	8 A, 240 VAC, 60 Hz
Tungsten (HB113)	1250 W, 125 VAC, 60 Hz
Pilot Duty	
HB113	576 VA, 125 VAC, 60 Hz
HB112, HB114	768 VA, 240 VAC, 60 Hz
Motor	
HB113	1 HP, 125 VAC, 60 Hz
HB112, HB114	2 HP, 240 VAC, 60 Hz
Air Conditioner	
HB113	12 A, 125 VAC, 60 Hz
HB112, HB114	8 A, 240 VAC, 60 Hz
Dimensions H x W x D	4 ¼" X 3" X 2 ⅛" (108 mm x 76 mm x 54 mm)
Warranty	1-year

Indoor Applications

• Lamps • Appliances • Electronics • Heaters • Window Air Conditioning • Chargers

INTERMATIC®

TN311 Series

Heavy-Duty 24-Hour Mechanical Plug-In Timer

The TN311 Series provides a quick and easy way to automate ON/OFF schedules and plugs directly into standard wall outlets.

Features
• 3 ON/3 OFF settings per day with removable trippers, more
  ON/OFF events with addition of extra trippers
• Minimum 30-min ON/OFF time
• Grounded receptacle and 3-prong plug
• Plugs directly into wall outlet

TN311

1x
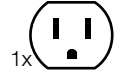
Model #	Voltage	Rect/Plug	
TN311	15 A, 125 VAC, 60 Hz	5-15	

Accessories/Replacements

ON Tripper - Turquoise	107TN222
OFF Tripper - Red	107TN221

Ratings	
Operating Voltage	125 VAC, 60 Hz
Resistive	15 A, 125 VAC, 60 Hz
Inductive Ballast	15 A, 125 VAC, 60 Hz
Tungsten/Incandescent	1875 W, 125 VAC, 60 Hz
Motor	1/3 HP, 125 VAC, 60 Hz
Dimensions H x W x D	3 ⅛" X 3" X 2" (79 mm x 76 mm x 51 mm)
Warranty	1-year

DT620 Series

Heavy-Duty 7-Day Digital Plug-In Timer

Full feature plug-in timer provides full 7-day programming with astronomical clock and Daylight Saving Time (DST) adjustment in a convenient plug-in for quick and easy automation.

Features
• 28 ON/OFF programmable events
• Full 7-day programming options, including astronomical clock,
  automatic DST adjustment, and random mode
• Two grounded receptacles and 3-prong plug
• LR44 battery backup (included)
• Plugs directly into wall outlet

DT620

2x
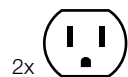
Model #	Voltage	Rect/Plug	
DT620	15 A, 120 VAC, 60 Hz	5-15	

Ratings	
Input Voltage	120 VAC, 60 Hz
Resistive	15 A, 120 VAC, 60 Hz
Inductive Ballast	12 A, 120 VAC, 60 Hz
Tungsten/Incandescent	1000 W, 120 VAC, 60 Hz
Motor	½ HP, 120 VAC, 60 Hz
Dimensions H x W x D	3 ⅕" X 3 ⅓" X 2 ¼" (81 mm x 84 mm x 57 mm)
Warranty	1-year

INTERMATIC

P1101   P1121   P1131

P1100 Series

Outdoor Mechanical Plug-In Timers With Built-In Enclosure

These plug-in timers are grounded and utilize a flip-open enclosure rated for outdoor use. Great for providing timer function to pumps, landscaping or holiday lighting.

Features
- 2 ON/2 OFF settings per day with removable trippers, more ON/OFF events with addition of extra trippers
- Minimum 30-min ON/OFF time
- Built into outdoor rated enclosure with clear or black flip cover
- Grounded standard or locking type style NEMA plug and receptacle
- Plugs directly into wall outlet

Ratings	
Operating Voltage	120 VAC, 60 Hz
Resistive	
P1101, P1121	15 A, 120 VAC, 60 Hz
P1131	20 A, 120 VAC, 60 Hz
Tungsten/Incandescent	1800 W, 120 VAC, 60 Hz
Motor	1 HP, 120 VAC, 60 Hz
Dimensions H x W x D	
P1101, P1131	5 ⅜" X 5 ⅛" X 2 ½" (137 mm x 130 mm x 64 mm)
P1121	3 ⅝" X 5 ⅛" X 3 ¼" (143 mm x 92 mm x 83 mm)
Warranty	1-year limited

Model #	Voltage	Rcpt/Plug	Cord Length	Cover
P1101	15 A, 120 VAC, 60 Hz	5-15	22"	Clear
P1121	15 A, 120 VAC, 60 Hz		13"	Black
P1131	20 A, 120 VAC, 60 Hz	L5-20	22"	Clear

Accessories/Replacements

ON Tripper - Red	107TN221
OFF Tripper - Turquoise	107TN222
Kit - Two ON and two OFF Trippers	156PB10398A

TN111RM40   1x

TN111RM40

Heavy-Duty Outdoor Mechanical Plug-In Timers

Plug-in timer rated for installation into a Type 3R outdoor low voltage transformer enclosure. Simple implementation of ON/OFF schedule.

Features
- 2 ON/2 OFF settings per day with removable trippers, more ON/OFF events with addition of extra trippers
- Minimum 30-min ON/OFF time
- Rated for outdoor use in a Type 3R outdoor enclosure
- Manual override dial

Ratings	
Operating Voltage	125 VAC, 60 Hz
Resistive	9 A (1125 W), 125 VAC, 60 Hz
Inductive Ballast	9 A, 125 VAC, 60 Hz
Dimensions H x W x D	3 ⅛" X 3" X 2" (79 mm x 76 mm x 51 mm)
Warranty	1-year limited

Model #	Voltage	Rect/Plug
TN111RM40	9 A (1125 W), 125 VAC, 60 Hz	1-15

Accessories/Replacements

ON Tripper - Red	107TN221
OFF Tripper - Turquoise	107TN222
Kit - Two ON and two OFF Trippers	156PB10398A

── Outdoor Applications ──

- Pumps • Water Fountains • Aerators • Landscape/Holiday Lighting • Engine Block Heaters

INTERMATIC®

HB880R
Heavy-Duty 7-Day Outdoor Digital Plug-In Timers

Full feature plug-in timer provides 7-day programming in a weatherproof enclosure with astronomical clock and Daylight Saving Time (DST) adjustment in a convenient plug-in for quick and easy automation.

Features
• 14 ON/OFF programmable events
• Full 7-day programming options, including astronomical clock, automatic DST adjustment, and random mode
• Rainproof, outdoor rated enclosure with two grounded receptacles
• 3-prong plug on a 24" long cord
• Incandescent/fluorescent/CFL/LED compatible
• AA battery backup (included)
• Plugs directly into wall outlet

Model #	Voltage	Rect/Plug	
HB880R	15 A, 120 VAC, 60 Hz	5-15	

2x   HB880R

Ratings	
Operating Voltage	120 VAC, 60 Hz
Resistive	15 A, 120 VAC, 60 Hz
Inductive Ballast	8.3 A, 120 VAC, 60 Hz
Electronic/ LED Ballast	500 VA, 60 Hz
Tungsten/Incandescent	1000 W, 120 VAC, 60 Hz
Motor	1/2 HP, 120 VAC, 60 Hz
Dimensions H x W x D	5 ⅜" X 5" X 1 ⅞" (137 mm x 129 mm x 48 mm)
Warranty	1-year limited

DT200LT Series
Digital Landscape Timer

Digital 7-day landscape timer with DST, rated for use in low voltage transformers up to 1200W featuring ON programming at Dusk or predetermined time and OFF at Dawn or predetermined time.

Features
• Factory set AUTO DST option takes the hassle out of Daylight Saving Time adjustments
• One push, programming override for homeowner convenience
• Rated for use in low voltage transformers up to 1200 W
• An operating temperature range of -40° F to 122° F (-40° C to 50° C) for steady performance in all types of climates
• Two included LR44 batteries retain the correct time and settings for up to three months without power
• Use with UL Certified Type 3R enclosure (sold separately)
• Intermatic Linesync technology provides accurate timing for years

Model #	Voltage	Rect/Plug	
DT200LT	15 A, 120 VAC, 60 Hz	5-15	

DT200LT

2x

Ratings	
Operating Voltage	120 VAC, 60 Hz
Resistive	15 A, 120 VAC, 60 Hz
Inductive Ballast	12 A, 120 VAC, 60 Hz
Tungsten/Incandescent	1000 W, 120 VAC, 60 Hz
Motor	½ HP @ 120 VAC, 60 Hz
Dimensions H x W x D	3 ³⁄₁₆" X 3 ⁵⁄₁₆" X 2 ¼" (81 mm x 84 mm x 57 mm)
Warranty	1-year

INTERMATIC

Occupancy Sensors

Install savings in motion with Occupancy Sensors and Vacancy Sensors from Intermatic. Our broad selection of in-wall and ceiling mount sensors utilize both Passive Infrared (PIR) and Dual (PIR and Ultrasonic) Technology to add convenience and energy savings to nearly any indoor setting. PIR sensors provide great value in simple, open spaces with clear sight lines, whereas Dual Technology sensors offer an added level of accuracy and are best used in partitioned areas, such as bathrooms and cubicles.

The easy-to-install controls are a straightforward way to increase efficiency in homes, offices, commercial spaces and municipal buildings while giving occupants one less thing to worry about - turning off the lights. Moreover, Intermatic sensors are California Title 20 compliant and can be used to achieve LEED certification. Other common applications include industrial settings, warehouses, supply closets, schools, hospitals, medical facilities and more.

Contents

Occupancy Sensors

IOS-CMP-DT-LV

Ratings	
Operating Voltage	24 VDC
Current Consumption	20 mA
Power Supply	IOS-PP24
Coverage Pattern	360°, 1600 ft^2 PIR, 1000 ft^2 Ultrasonic
Adjustable Light Level	10 fc - Daylight
Adjustable Time Delay	5 sec - 30 min
Operating Temperature	32° F to 122° F (0° C to 50° C)
Dimensions H x Dia	1 ⅜" x 4 ⁹⁄₁₆ (35 mm x 116 mm)
Warranty	2-year limited

IOS-CMP-DT-LV
Low-Voltage Ceiling Mount Dual Tech Sensor

This ceiling mount sensor detects presence using a combination of Passive Infrared (PIR) and ultrasonic technologies, and in conjunction with a remote power pack unit, turns the load ON and OFF when presence is detected.

Applications
• Partitioned Restroom • Storage Rooms • Waiting Rooms

Features
• Ultrasonic and PIR sensing for presence detection, even in areas with partitions and/or with small movements
• Low-voltage, ceiling mounted sensor
• Coverage: 360°, 1600 ft^2 PIR, 1000 ft^2 Ultrasonic mounted on 8 to 11 ft ceiling
• Adjustable time delay
• Adjustable ambient light sensor override
• Powered by IOS-PP24 power pack, sold separately

Model #	Description	Technology
IOS-CMP-DT-LV	Low-Voltage Ceiling Mount Dual Tech Sensor	Dual Technology (PIR/Ultrasonic)

IOS-CMP-LV

Ratings	
Operating Voltage	24 VDC
Power Supply	IOS-PP24
Coverage Pattern	360°, 1600 ft^2
Adjustable Light Level	10 fc - 150 fc
Adjustable Time Delay	15 sec - 30 min
Operating Temperature	32° F to 122° F (0° C to 50° C)
Dimensions H x Dia	1 ⅜" x 4 ⁹⁄₁₆" (35 mm x 116 mm)
Warranty	2-year limited

IOS-CMP-LV
Low-Voltage Ceiling Mount PIR Sensor

This ceiling mount sensor detects presence using Passive Infrared (PIR) technology and, in conjunction with a remote power pack unit, turns the load ON and OFF when presence is detected.

Applications
• Conference Room • Classroom • Large Open Areas • Breakroom

Features
• PIR sensing for presence detection
• Low-voltage, remote-mounted sensor
• Coverage: 1200 ft^2 when mounted on 8 to 11 ft ceiling
• Adjustable time delay
• Adjustable ambient light sensor override
• Powered by IOS-PP24 power pack, sold separately

Model #	Description	Technology
IOS-CMP-LV	Low-Voltage Ceiling Mount PIR Sensor	PIR (Passive Infrared)

IOS-PP24

Ratings	
Operating Voltage	120-277 VAC, 50/60 Hz
Inductive Ballast	20 A, 120/240/277 VAC, 50/60 Hz
Incandescent	15 A, 120 VAC, 50/60 Hz
Motor	1 HP, 120/240 VAC, 50/60 Hz
Operating Temperature	32° F to 131° F (0° C to 55° C)
Dimensions H x W x D	2 ¾" x 1 ¹⁵⁄₁₆" x 1 ⅝" (70 mm x 49 mm x 41 mm)
Warranty	2-year limited

IOS-PP24
Low-Voltage Power Pack

Applications
• For use with Low-Voltage Occupancy Sensors IOS-CMP-LV and IOS-CMP-DT-LV

Features
• Controls up to six low-voltage sensors
• Zero-crossing technology for long life and performance
• Incandescent/Fluorescent/CFL/LED compatible

Model #	Description	Technology
IOS-PP24	Low-Voltage Power Pack	Zero-crossing

INTERMATIC

IOS-CMP-DT-U

Line Voltage Ceiling Mount Dual Tech Sensor

This ceiling mount unit turns lights ON and OFF when presence is detected using a combination of Ultrasonic and Passive Infrared (PIR) sensing technologies.

Applications
- Partitioned Restroom • Office Space w/Cubicles • Storage Rooms
- Libraries • Waiting Rooms

Features
- Ultrasonic and PIR sensing improves presence detection while avoiding false triggers, even in areas with partitions and/or small movements
- Zero-crossing technology for long life and performance
- Coverage: 360°, 1600 ft2 PIR, 1000 ft2 Ultrasonic mounted on 8 to 11 ft ceiling
- Adjustable ambient light sensor override
- Requires neutral connection
- Incandescent/Fluorescent/CFL/LED compatible

IOS-CMP-DT-U

Ratings	
Operating Voltage	120-277 VAC, 50/60 Hz
Ballast	5 A, 120/277 VAC, 50/60 Hz
Incandescent	800 W, 120 VAC, 50/60 Hz
Motor	¼ HP, 120 VAC, 50/60 Hz
Coverage Pattern	360°, 1600 ft² PIR, 1000 ft² Ultrasonic
Adjustable Light Level	10 fc - Daylight
Adjustable Time Delay	5 sec - 30 min
Operating Temperature	32° F to 122° F (0° C to 50° C)
Dimensions H x Dia	1 ³⁄₈" x 4 ⁹⁄₁₆" (35 mm x 116 mm)
Warranty	2-year limited

Model #	Description	Technology
IOS-CMP-DT-U	Line Voltage Ceiling Mount Dual Tech Sensor	Dual Technology (PIR/Ultrasonic)

IOS-CMP-U

Line Voltage Ceiling Mount PIR Sensor

Using Passive Infrared (PIR) sensing technology, this ceiling mount unit turns lights ON and OFF when presence is detected in a room without partitions or obstructions.

Applications
- Conference Room • Classroom • Large Open Areas • Breakroom

Features
- PIR technology sensing for presence detection
- Coverage: 1200 ft2 when mounted on 8 to 11 ft ceiling
- Zero-crossing technology for long life and performance
- Adjustable ambient light sensor override
- Requires neutral connection
- Incandescent/Fluorescent/CFL/LED compatible

IOS-CMP-U

Ratings	
Operating Voltage	120-277 VAC, 60 Hz
Resistive	10 A, 120 VAC, 60 Hz
Electronic Ballast	800 VA, 120 VAC, 60 Hz, 1600 VA, 277 VAC, 60 Hz
Tungsten / Incandescent	800 W, 120 VAC, 60 Hz
Motor	¼ HP, 120 VAC, 60 Hz
Coverage Pattern	360°, 1200 ft²
Adjustable Light Level	10 fc - 150 fc
Adjustable Time Delay	15 sec - 30 min
Operating Temperature	32° F to 131° F (0° C to 55° C)
Dimensions H x Dia	1 ³⁄₈" x 4 ⁹⁄₁₆" (35 mm x 116 mm)
Warranty	2-year limited

Model #	Description	Technology
IOS-CMP-U	Line Voltage Ceiling Mount PIR Sensor	PIR (Passive Infrared)

IOS-HB-U

High Bay/Fixture Mount Sensor

For installation on High Bay Light Fixtures. Provides ON/OFF control of lights by presence in warehouses and other industrial spaces.

Applications
- Warehouse • Manufacturing

Features
- Passive Infrared (PIR) sensing for presence detection
- Two lenses included;Coverage: 1200 ft2 (Lens 1) or 2800 ft2 (Lens 2) when mounted at 15 to 50 ft
- Zero-crossing technology for long life and performance
- Adjustable ambient light sensor override
- Incandescent/Fluorescent/CFL/LED compatible

Lens 2

IOS-HB-U

Ratings	
Operating Voltage	120-277 VAC, 60 Hz
Resistive	10 A, 120 VAC, 60 Hz
Electronic Ballast	800 VA, 120 VAC, 60 Hz, 1600 VA, 277 VAC, 60 Hz
Tungsten/Incandescent	800 W, 120 VAC, 60 Hz
Motor	¼ HP, 120 VAC, 60 Hz
Coverage Pattern	360°, 1200 ft² (lens 1) 2800 ft² (lens 2)
Adjustable Light Level	10 fc - 150 fc
Adjustable Time Delay	15 sec - 30 min
Operating Temperature	32° F to 131° F (0° C to 55° C)
Dimensions H x Dia	2 3/4" x 4" (70 mm x 102 mm)
Warranty	2-year limited

Model #	Description	Technology
IOS-HB-U	High Bay/Fixture & Ceiling Mount PIR Sensor	PIR (Passive Infrared)

IOS-DOV-DT-WH

IOS-DOV-DT-WH

Line Voltage In-Wall Dual Tech Switch

This Occupancy/Vacancy in-wall switch unit can be used as a replacement to a standard wall switch to turn lights ON and OFF when presence is detected by a combination of Ultrasonic and PIR sensing technologies.

Applications
- Partitioned Restroom • Office Space with Cubicles • Storage Rooms
- Libraries • Waiting Rooms

Features
- Ultrasonic and Passive Infrared (PIR) sensing for presence detection, even in areas with partitions and/or with small movements
- Coverage: 180°, 1200 ft^2 PIR, 400 ft^2 Ultrasonic
- Zero-crossing technology for long life and performance
- Adjustable time delay
- Optional walk-through detection mode
- Adjustable ambient light sensor override
- Incandescent/Fluorescent/CFL/LED compatible
- Requires neutral connection
- Fits standard decorator wall plate (included)

Ratings	
Operating Voltage	120/277 VAC, 50/60 Hz
Electronic Ballast	5 A, 120/277 VAC, 50/60 H
Incandescent	800 W, 120 VAC, 50/60 Hz
Motor	¼ HP, 120 VAC, 50/60 Hz
Coverage Pattern	180°, 1200 ft^2 PIR, 400 ft^2 Ultrasonic
Adjustable Light Level	10 fc - Daylight
Adjustable Time Delay	15 sec - 30 min
Operating Temperature	32° F to 122° F (0° C to 50° C)
Dimensions H x W x D	1 ¾" x 1 ⁵⁄₁₆" x 2 ⅝" (44 mm x 33 mm x 67 mm)
Warranty	2-year limited

Model #	Description	Technology
IOS-DOV-DT-WH	Line Voltage In-Wall Dual Tech Switch	Dual Technology (PIR/Ultrasonic)

IOS-DOV-WH   IOS-DDR-WH

Ivory

IOS-DSR/DOV/DDR Series

Self-Adaptive In-Wall PIR Sensor Switch

These in-wall switches detect presence using PIR sensing technology. They have a self-adjusting feature that optimizes delay-off time based on actual occupancy.

Applications
- Laundry Room • Private Office • Copy Room

Features
- Passive Infrared (PIR) sensing for presence detection
- Coverage: 180°, 1200 ft^2 with non-obstructed views
- User-selectable Vacancy or Occupancy switch mode
- Zero-crossing technology for long life and performance
- Automatic self-adaptive time delay based on occupancy patterns
- IOS-DSR/DDR models feature optional walk-through detection mode
- Adjustable ambient light sensor override
- Incandescent/Fluorescent/CFL/LED compatible
- IOS-DOV models require a neutral connection
- Fits standard decorator wall plate (included)

Ratings	IOS-DOV	IOS-DDR
Operating Voltage	120 VAC, 60 Hz	120-277 VAC, 60 Hz
Resistive	800 W, 120 VAC, 60 Hz	800 W, 120 VAC, 60 Hz
Inductive Ballast	800 VA, 120 VAC, 60 Hz	800 VA, 120 V, 1600 VA, 277 V, 60 Hz
Incandescent	800 W, 120 VAC, 60 Hz	
Motor	¼ HP, 120 VAC, 60 Hz	
Coverage Pattern	180°, 1200 ft^2	
Adjustable Light Level	30 lux - Daylight	
Adjustable Time Delay	15 sec - 30 min	
Operating Temperature	32° F to 131° F (0° C to 55° C)	
Dimensions H x W x D	1 ¾" x 1 ⁵⁄₁₆" x 2 ⅝" (44 mm x 33 mm x 67 mm)	
Warranty	5-year limited	

Model #		Circuits	Require Neutral	Nightlight
White	Ivory			
IOS-DSR-WH	IOS-DSR-IV	1	No	No
IOS-DOV-WH	IOS-DOV-IV	1	Yes	No
IOS-DOV-NL-WH	IOS-DOV-NL-IV	1	Yes	Yes
IOS-DDR-WH	–	2	No	No

INTERMATIC

IOS-DPB Series

Residential Grade In-Wall PIR Vacancy and Occupancy Sensor Switches

These in-wall switches detect presence using PIR sensing technology. They provide manual ON and automatic OFF (vacancy switches) or ON/OFF (occupancy switches) for small to medium size rooms.

Applications
- Laundry Room • Closets • Kitchen • Home Office • Bathrooms

Features
- Passive Infrared (PIR) sensing for presence detection
- Adjustable PIR sensitivity
- Adjustable time delay 15 sec to 30 min
- Adjustable ambient light sensor override for occupancy switch models
- Coverage: 150º, 980 ft^2 with non-obstructed views
- IOS-DPBIF and IOS-DPBV models are Incandescent/Fluorescent/CFL/ LED compatible and require a neutral connection
- 'No neutral' models offered for retrofit applications
- Fits standard decorator wall plate (included)

Ivory

IOS-DPBIF-WH

Model #		Switch Type	Requires Neutral
White	Ivory		
IOS-DPBIF-WH	IOS-DPBIF-IV	Occupancy	Yes
IOS-DPBIMF-WH*	IOS-DPBIMF-IV*	Occupancy	No
IOS-DPBV-WH	–	Vacancy	Yes

*Note: *Not compatible with LED load, only incandescent and inductive loads.*
Min 25 W load required.

Ratings	
Operating Voltage	120 VAC, 60 Hz
Resistive	500 W, 120 VAC, 60 Hz
Inductive Ballast	500 VA, 120 VAC, 60 Hz
Incandescent	500 W, 120 VAC, 60 Hz
Motor	⅛ HP, 120 VAC, 60 Hz
Coverage Pattern	150°, 980 ft^2
Adjustable Light Level	30 lux - Daylight
Adjustable Time Delay	15 sec - 30 min
Operating Temperature	32° F to 131° F (0° C to 55° C)
Dimensions H x W x D	1 ⅝" x 1 ⁷⁄₁₆" x 2 ¾" (41 mm x 37 mm x 70 mm)
Warranty	2-year limited

IOS-DSI Series

Residential Grade Occupancy Switch with Manual Override

These in-wall switches detect presence using PIR sensing technology to automatically turn lights ON/OFF for small to medium size rooms. These models provide users with a manual ON/OFF/AUTO override switch.

Applications
- Laundry Room • Closets • Kitchen • Home Office • Bathrooms

Features
- Passive Infrared (PIR) sensing for presence detection
- Adjustable PIR sensitivity
- Adjustable time delay 15 sec to 30 min
- Adjustable ambient light sensor override
- Coverage: 150º, 980 ft^2 with non-obstructed views
- IOS-DSIF models are Incandescent/Fluorescent/CFL/LED compatible and require a neutral connection
- 'No neutral' models offered for retrofit applications
- Fits standard decorator wall plate (included)

Ivory

IOS-DSIF-WH

Model #		Switch Type	Requires Neutral
White	Ivory		
IOS-DSIF-WH	IOS-DSIF-IV	Occupancy	Yes
IOS-DSIMF-WH*	IOS-DSIMF-IV*	Occupancy	No

*Note: *Not compatible with LED load, only incandescent and inductive loads.*
Min 25W load required.

Ratings	
Operating Voltage	120 VAC, 60 Hz
Resistive	500 W, 120 VAC, 60 Hz
Inductive Ballast	500 VA, 120 VAC, 60 Hz
Incandescent	500 W, 120 VAC, 60 Hz
Motor	⅛ HP, 120 VAC, 60 Hz
Coverage Pattern	150°, 980 ft^2
Adjustable Light Level	30 lux - Daylight
Adjustable Time Delay	15 sec - 30 min
Operating Temperature	32° F to 131° F (0° C to 55° C)
Dimensions H x W x D	1 ⅝" x 1 ⁷⁄₁₆" x 2 ¾" (41 mm x 37 mm x 70 mm)
Warranty	2-year limited

INTERMATIC

Photocontrols

Boost energy efficiency and promote safety in outdoor spaces with Intermatic Photocontrols. Our adaptable lineup of thermal and electronic solutions offers reliable dusk-to-dawn ON/OFF control of outdoor lights, making them a terrific fit for street light, parking lot, pedestrian walkway and landscape applications. Available in both fixed mount and locking type configurations, our photocontrols are capable of handling HID, incandescent, LED and induction lighting loads with ease.

Contents

Intermatic, a leading supplier of photocontrols, provides lighting controls that best meet your needs and budget. Our comprehensive portfolio includes:

Traditional Thermal Switch Photocontrols

Thermal Photocontrols are electromechanical switches that are based on a Cadmium Sulphide (CdS) photosensor and a bimetallic, thermally sensitive switch mechanism. These simple switches provide a very cost-effective means for dusk-to-dawn control of traditional HID and incandescent lighting loads. In conventional installations, Intermatic photocontrols match the life of the lamp, helping to avoid extra maintenance costs.

- **Low Initial Cost**

- **3- to 5-Year Design Life**

- **1- to 2-Year Product Warranty**

NightFox™ Electronic Photocontrols

Today's long-lasting lighting installations require lighting controls that are equal to the task. Our NightFox Electronic Photocontrols meet the extended life expectations of new light fixtures, including those associated with LED and induction lighting technologies. NightFox Photocontrols include a solid-state light sensor and relays that feature zero-crossing technology for more precise control and extended service life. These premium photocontrols help maximize the cost-savings and productivity benefits of maintenance-free installations.

- **Tested to Ensure up to 15,000+ ON/OFF Cycles for Maximum ROI**

- **10 to 20-Year Design Life**

- **6 to 12-Year Product Warranty**

Applications

- Street lighting • Perimeter lighting
- Landscape lighting • Parking Lot lighting • Pathway lighting • Park and Recreational lighting

INTERMATIC®

Button and Wall Mount Thermal Photocontrols
K4000 Series

These photocontrols install within lighting fixtures, post lamps, or in-wall boxes to provide dusk-to-dawn ON/OFF control of outdoor lighting.

Features
- Mechanical bimetal switch with Cadmium Sulfide photocell
- Compact size fits into standard outlet box, post lamp, wall pack and other lighting fixtures
- Delay feature prevents unwanted OFF switching
- ⅜"-18 NPSM, ¾" long stem with locking nut and washer gasket

K4021C

K4321C

Model #	Style	Voltage	Tungsten	Ballast
K4021C	Button	120 VAC, 50/60 Hz	1800 W	1000 VA
K4023C	Button	208-277 VAC, 50/60 Hz	3100-4150 W	1700-2300 VA
K4027*	Button	347 VAC, 50/60 Hz	5205 W	2880 VA
K4035†	Button	480 VAC, 50/60 Hz	7200 W	4000 VA
K4321C	In-Wall	120 VAC, 50/60 Hz	1800 W	1000 VA

*Note: *K4027 is only CSA. †K4035 is not UL/CSA certified*

Accessories
Light Shield	6LV1352
Wall Plate Kit	K43-WP-KIT
Lens Stickers (12 pack)	LGLBL
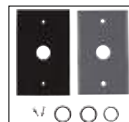
6LV1352   K43-WP-KIT

Ratings	
Operating Voltage	See Model Table
Inductive Ballast	8.3 A
Incandescent	15 A
Activation On	1 to 5 fc
Activation Off	3 to 15 fc
Operating Temperature	-40° F to 158° F (-40° C to 70° C)
Wire Leads	#18 AWG, 9" L
Dimensions H x W x D	1 ¹³⁄₁₆" X ¹⁵⁄₁₆" X ¹³⁄₁₆" (46mm x 23.8mm x 20.6mm)
Warranty	2-year limited

Screw-In Lamp Photocontrol
NE1C

This photocontrol screws into a standard light socket to provide quick installation of dusk-to-dawn photocontrol to any lamp fixture.

Features
- For interior or external lights
- ON at dusk, OFF at dawn
- Accommodates any incandescent light up to 150 W
- Not compatible with LED or CFL bulbs

NE1C

Model #	Style
NE1C	Screw-In Lamp

Ratings	
Operating Voltage	120 VAC, 60 Hz
Incandescent	150 W, 120 VAC, 60 Hz
Activation On	1 to 5 fc
Activation Off	3 to 15 fc
Operating Temperature	-40° F to 158° F (-40° C to 70° C)
Warranty	1-year limited

INTERMATIC®

Photocontrols
Fixed Mount Thermal

K4121C   K4423M

K4221C   K4251

Stem Mount Thermal Photocontrols
K4100 and K4400 Series

These photocontrols install on standard outdoor light fixtures and electrical boxes with ½"-14 NPSM thread or ⅞" knock-out holes for dusk-to-dawn ON/OFF control of outdoor lighting.

Features
- Mechanical bimetal switch with Cadmium Sulfide photocell
- Delay feature prevents unwanted OFF switching
- Plastic and die-cast metal housing options
- ½"-14 NPSM threaded stem
- Washer gasket and locking nut included
- #18 AWG, 9" wire leads

Model #	Voltage	Tungsten	Ballast	Housing
K4121C	120 VAC, 50/60 Hz	1800 W	1000 VA	Polycarbonate
K4141C†	120 VAC, 50/60 Hz	3000 W	3000 VA	
K4123C	208-277 VAC, 50/60 Hz	3100-4150 W	1700-2300 VA	
K4127*	347 VAC, 50/60 Hz	5205 W	2880 VA	
K4135†	480 VAC, 50/60 Hz	7200 W	4000 VA	
K4421M	120 VAC, 50/60 Hz	1800 W	1000 VA	Die-Cast Zinc
K4423M	208-277 VAC, 50/60 Hz	3100-4150 W	1700-2300 VA	

*Note: *K4127 is only CSA. †K4135 is not UL/CSA certified.*

Stem and Swivel Mount Thermal Photocontrols
K4200 Series

These photocontrols are provided with a swivel arm for easy and flexible installation to standard outdoor light fixtures or electrical boxes.

Features
- Mechanical bimetal switch with Cadmium Sulfide photocell
- Delay feature prevents unwanted OFF switching
- High strength, UV resistant plastic housing
- Swivel with ½"-14 NPSM threaded stem
- Washer gasket and locking nut included
- #18 AWG, 6" wire leads

Model #	Voltage	Tungsten	Ballast	Sensor Location
K4221C	120 VAC, 50/60 Hz	1800 W	1000 VA	Side
K4223C	208-277 VAC, 50/60 Hz	3100-4150 W	1700-2300 VA	
K4235†	480 VAC, 50/60 Hz	7200 W	4000 VA	
K4227*	347 VAC, 50/60 Hz	5205 W	2880 VA	
K4236C	120-277 VAC, 50/60 Hz	1800-4150 W	1000-2300 VA	
K4251*	120 VAC, 50/60 Hz	1800 W	1000 VA	Top
K4253*	208-277 VAC, 50/60 Hz	3100-4150 W	1700-2300 VA	

*Note: *K4227, K4253, K4251 is only CSA.*

†K4235 is not UL/CSA certified.

For all Models Above

Ratings	
Operating Voltage	See Model Table
Inductive Ballast	
All Models	8.3 A
K411C	25 A
Incandescent	
All Models	15 A
K411C	25 A
Activation On	1 to 5 fc
Activation Off	3 to 15 fc
Operating Temperature	-40° F to 158° F (-40° C to 70° C)
Wire Leads	#18 AWG, 9"
Dimensions H x W x D	3" X 1 9/16" X 1 9/16" (76.2mm x 39.7mm x 39.7mm)
Warranty	2-year limited; 1-year limited for K4251, K4253 & K4141C

Accessories

Light Guard	22LG116
Swivel Arm	K42-SW-A
Light Shield	6LV1352

22LG116   K42-SW-A   6LV1352

INTERMATIC®

LC4521

LC2100

Locking Type Thermal Photocontrols
LC4500 Series

These photocontrols install on light fixtures with ANSI C136.10 NEMA receptacles commonly found on street light fixtures. Locking type design facilitates fast installation and replacement of photocontrol.

Features
- Mechanical bi-metal switch with Cadmium Sulfide photocell
- Integral high impact thermoplastic housing
- Locking type plug for quick installation and changeover
- Delay feature prevents unwanted OFF switching
- Complies with ANSI C136.10 standard
- Tested to 3,650 ON/OFF cycles

Model #	Voltage	Tungsten	Ballast	Protection
LC4521C	120 VAC, 50/60 Hz	1800 W	1000 VA	None
LC4523	208-277 VAC, 50/60 Hz	3100-4150 W	1700-2300 VA	
LC4527*	347 VAC, 50/60 Hz	5205 W	2880 VA	
LC4535	480 VAC, 50/60 Hz	7200 W	4000 VA	
LC4536C	120-277 VAC, 50/60 Hz	1800-4155 W	1000-2300 VA	
LC4521LA	120 VAC, 50/60 Hz	1800 W	1000 VA	Spark Gap Surge Arrestor
LC4523LA	208-277 VAC, 50/60 Hz	3100-4150 W	1700-2300 VA	
LC4535LA	480 VAC, 50/60 Hz	7200 W	4000 VA	
LC4536LAC	120-277 VAC, 50/60 Hz	1800-4155 W	1000-2300 VA	

*Note: *LC4527 is only CSA.*

Ratings	
Operating Voltage	See Model Table
Inductive Ballast	8.3 A
Incandescent	15 A
Activation On	5 fc
Activation Off	15 fc
Operating Temperature	-40° F to 158° F (-40° C to 70° C)
Dimensions H x Dia	2 ¾" x 3" (69.9mm x 76.2 mm)
Warranty	2-year limited

Low-Cost Multivoltage Locking Type Thermal Photocontrols
LC2000 Series

This model combines a silicon diode photosensing element with thermal switch to provide a multivoltage, cost-effective photocontrol.

Features
- Mechanical bimetal switch with Silicon Diode photocell
- Thermoplastic housing with window
- Multivoltage covers 120 to 277 VAC applications
- Complies with ANSI C136.10

Model #	Voltage	Tungsten	Ballast
LC2100	120-277 VAC, 50/60 Hz	1800 W	1000 VA

Ratings	
Operating Voltage	See Model Table
Inductive Ballast	1800 VA, 120-277 VAC, 50/60 Hz
Incandescent	1000 W, 120-277 VAC, 50/60 Hz
Activation On	1.5 fc
Activation Off	6 fc
Operating Temperature	-40° F to 158° F (-40° C to 70° C)
Dimensions H x Dia	2 ⁷⁄₃₂" x 3" (56.4mm x 76.2 mm)
Warranty	2-year limited

For all Models Above

Accessories

Shorting Plug, Rating: 15 A, 480 VAC Max	K4500
ANSI C136.10 Locking Type Receptacle, (9" lead)	K121
ANSI C136.10 Locking Type Receptacle, (30" lead)	K121-30
Sealed Locking Type Receptacle with Pole Bracket	K122

K4500   K121/K121-30   K122

INTERMATIC®

EK4036S

EK4336S

EK4136S

EK4436SM

EK4236S

EK4736S

Fixed Mount Electronic Photocontrols

NightFox™ EK4000 Series

8 YEAR Limited Warranty

These electronic photocontrols permanently install on outdoor electrical boxes, in-wall boxes, or outdoor lighting fixtures. Ideal for LED and induction fixtures with long-life expectations.

Features
- Non-drift silicon light sensor with IR filter
- DC relay with zero-crossing circuitry for extended life
- Conformal coated PCB
- 15-year design life
- Exceeds 10,000 ON/OFF switching cycles
- Fail ON mode
- Ideal for single or multifixture HID and LED installations (up to 1,650 W @ 277 VAC)
- 255 J MOV surge protection element
- ½"-14 NPSM threaded stem fits standard outlet boxes and wall packs
- #18 AWG wire leads

Model #	Style	Lens Location	Voltage	Wire Lead (in)
EK4036S	Button	Front	120-277 VAC, 50/60 Hz	9"
EK4336S	In-Wall	Front	120-277 VAC, 50/60 Hz	9"
EK4136S	Stem Mount	Side	120-277 VAC, 50/60 Hz	9"
EK4436SM	Stem Mount	Side	120-277 VAC, 50/60 Hz	9"
EK4236S	Stem, Swivel Mount	Side	120-277 VAC, 50/60 Hz	6"
EK4736S	Stem, Swivel Mount	Top	120-277 VAC, 50/60 Hz	6"

Accessories

Light Shield	6LV1352
Light Guard	22LG0120
Wall Plate Kit	K43-WP-KIT
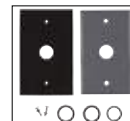
6LV1352   K43-WP-KIT   22LG0120

Induction   HID

Ratings	
Operating Voltage	120-277 VAC, 50/60 Hz
Inductive Ballast	1800 VA, 120-277 VAC, 50/60 Hz
Electronic Ballast	6 A, 120-277 VAC, 50/60 Hz
Incandescent	1000 W, 120-277 VAC, 50/60 Hz
Activation On	1.5 fc
Activation Off	2.25 fc
Time Delay	2 sec to 5 sec
MOV*	255 J MOV, 5,000 A Surge
Fail Mode	ON
Operating Temperature	-40° F to 158° F (-40° C to 70° C)
Wire Leads	#18 AWG
Dimensions H x W x D	
Button	2 ¼" X 1 ⁵⁄₁₆" X 1 ¼" (57.2 mm x 33.3 mm x 31.8 mm)
Stem Plastic	2 ¼" X 1 ⁵⁄₁₆" X 1 ¼" (57.2 mm x 33.3 mm x 31.8 mm)
Stem Metal	2 ¹¹⁄₁₆" x 1 ¾" x 2 ³⁄₁₆" (68.3 mm x 44.5 mm x 55.6 mm
Stem & Swivel	5 ⅝" x 1 ⁵⁄₁₆" x 1 ¼" (142.9 mm x 33.3 mm x 31.8 mm)
Warranty	8-year limited

MOV* Metal Oxide Varistor

INTERMATIC

12 YEAR Limited Warranty

8 YEAR Limited Warranty

6 YEAR Limited Warranty

NightFox™ Specifier Series
LED4536SC
LED4537SC

Photocontrol specifically designed for 20-year service to match the life expectancy of long-life LED and new induction fixtures.

Features
- Non-drift silicon light sensor with IR filter
- DC relay with zero-crossing circuitry for extended life
- All components meet 20-year life expectancy
- Conformal coated PCB
- Exceeds 15,000 ON/OFF switching cycles
- Ideal for single or multi-fixture HID and LED installations (up to 2,220 W @ 277 VAC)
- 510 J MOV surge protection

NightFox™ Select Series
EK4536
EK4537

Designed to meet a 15-year service life, this photocontrol is LED-compatible and backed by an 8-year warranty.

Features
- Non-drift silicon light sensor with IR filter
- DC relay with zero-crossing circuitry for extended life
- All components meet 15-year life expectancy
- Conformal coated PCB
- Exceeds 10,000 ON/OFF switching cycles
- Ideal for single or multifixture HID and LED installations (up to 1,650 W @ 277 VAC)
- 510 J MOV surge protection

NightFox™ Standard Series
ELC4536

LED-compatible photocontrol features a 10-year life expectancy. Ideal for single fixture control of smaller LED fixtures that require a cost-effective solution.

Features
- Non-drift silicon light sensor with IR filter
- All components meet over 10-year life expectancy
- Exceeds 5,000 ON/OFF switching cycles
- Ideal for single HID and LED fixtures (up to 550 W @ 277 VAC)
- Power-up ON delay (45-60 sec) for easy installation verification and troubleshooting
- 510 J MOV surge protection

For all Models above

Model #	Warranty	Voltage	Inductive Ballast	Electronic Ballast	Incandescent
LED4536SC	12-year limited	120-277 VAC, 50/60 Hz	1800 VA, 120-277 VAC, 50/60 Hz	8 A, 120-277 VAC, 50/60 Hz	1000 W, 120-277 VAC, 50/60 Hz
LED4537SC	12-year limited	347/480 VAC, 50/60 Hz	1800 VA, 347/480 VAC, 50/60 Hz	8 A, 347/480 VAC, 50/60 Hz	1000 W, 347/480 VAC, 50/60 Hz
EK4536	8-year limited	120-277 VAC, 50/60 Hz	1800 VA, 120-277 VAC, 50/60 Hz	6 A, 120-277 VAC, 50/60 Hz	1000 W, 120-277 VAC, 50/60 Hz
EK4537	8-year limited	347/480 VAC, 50/60 Hz	1800 VA, 347/480 VAC, 50/60 Hz	8 A, 347/480 VAC, 50/60 Hz	1000 W, 347/480 VAC, 50/60 Hz
ELC4536	6-year limited	120-277 VAC, 50/60 Hz	1800 VA, 120-277 VAC, 50/60 Hz	2 A, 120-277 VAC, 50/60 Hz	1000 W, 120-277 VAC, 50/60 Hz

TITLE 20 CA LISTED   L E D   Induction   HID

Accessories

Shorting Plug, Rating: 15 A, 480 V max	K4500
ANSI C136.10 Locking Type Receptacle, (9" lead)	K121
ANSI C136.10 Locking Type Receptacle, (30" lead)	K121-30
Sealed Locking Type Receptacle with Pole Bracket	K122

K4500   K121/K121-30   K122

Ratings	
Operating Voltage	See Model Table
Inductive Ballast	See Model Table
Electronic Ballast	See Model Table
Incandescent	See Model Table
Activation On	1.5 fc
Activation Off	2.25 fc
Time Delay	2 sec to 5 sec
Operating Temperature	-40° F to 158° F (-40° C to 70° C)
Dimensions H x Dia	2 ¾" x 3 ¾" (69.9 mm x 85.8 mm)
Warranty	See Model Table

INTERMATIC®

Customizable Lighting Controls

Tailored Intermatic solutions are an excellent fit for municipality, utility and co-op lighting projects. Our customizable NightFox™ Pro Series Photocontrols and made-to-order Pro Series Lighting Contactor Controls can be designed to meet a wide range of specifications, making it easy to adhere to state and local ordinances, as well as accommodate unique project needs.

NightFox Pro Series Locking Type Photocontrols offer reliable dusk-to-dawn ON/OFF control while matching the long 10- to 20-year service life expectancy of common LED lighting fixtures. This allows municipalities to maximize the cost savings and benefits of maintenance-free lighting installations.

Made-to-order Pro Series Lighting Contactor Controls simplify the implementation of lighting projects. The turnkey solution comes pre-assembled and is always built to meet exact project requirements.

Contents

NightFox™ Pro Series
Customizable Electronic Photocontrols
Your way, always

NightFox Pro Photocontrols can be customized to meet the exact needs and specifications developed by Municipalities, Utilities, and Co-Ops.

Many Municipalities, Utilities and Co-Ops have developed specifications based on their own best practices, experience and particular needs. With the NightFox Pro Series Portfolio, there's no need to compromise. We'll build our photocontrols according to your specifications.

Features
- 10- to 20-year design life
- Tested to full ON/OFF lifecycles under LED and induction loads per NEMA 410
- Tested up to 15,000 life cycles
- Up to 12-year warranties
- 120-277 or 347-480 voltage ranges
- Zero-crossing electronic circuitry minimizes the impact of inrush current
- Conformal coated PCB assemblies
- Non-drift silicon light sensor with IR filter
- Enhanced customizable surge protection with up to 1020 J MOV components
- Meet or exceed ANSI C136.10 and UL/CSA requirements
- Fail ON or Fail OFF options
- North-facing or omni-directional light sensor location options
- Nine ANSI C136.10 color-coded covers available
- NEMA 3 or IP67 enclosures
- ON/OFF from 1.0 to 8.0 foot-candle activation levels for overall energy saving potential

Configurable Options

1. Model Series — Choose the base model that best meets your application.
- Standard Grade (ELC series)
    - 6-year warranty, 10-year design life, 2 A LED driver rating, +5,000 ON/OFF switching cycles
- Select Grade (EK series)
    - 10-year warranty, 15-year design life, 6 A LED driver rating, zero-crossing technology, +10,000 ON/OFF switching cycles
- Specifier Grade (LED series)
    - 12-year warranty, 20-year design life, 8 A LED driver rating, zero-crossing technology, +15,000 ON/OFF switching cycles

2. Configuration — Select the enclosure type and sensor mount location.
- NEMA 3 or IP65 Enhanced Water Ingress Protection Enclosure
- North-Facing or Omni-Directional Light Sensor Location

3. Voltage Ratings — 120-277 V or 347-480 V

4. Fail Mode — Fail ON or Fail OFF modes

5. Load Ratings — See Model Series

6. Custom ON and OFF Light Activation Levels
- Adjustable to any ON or OFF light activation level from 1.0 to 8.0 foot-candles

7. Surge Protection — select between two levels:
- 510 J MOV / ANSI C136.2 'Enhanced' surge protection level
- 1020 J MOV / ANSI C136.2 'Extreme' surge protection level

8. Cover Colors — 9 cover color options.

Intermatic®

Pro Series Lighting Contactors
Customizable Lighting Control Boxes

Your way, always

Professionally designed and built lighting contactor boxes provide a pre-configured, high quality control box for a quick field installation and deployment of your lighting project.

Our Lighting Contactor Controls are a simple, integrated solution to fit your specific indoor and outdoor lighting applications, including switching of LED or Ballast lamp loads. Made in the USA.

Configurable Options
- 30 A-400 A
- 1-4 Poles
- NEMA 4X Enclosure (metal, non-metal)
- Line voltage 120 V-600 V or Multiple-in-One (120/240 V & 277/480 V)
- Photocontrol and receptacle
- Circuit protection
- Surge protection
- Zero-cross solid state relay (30 A & 60 A)
- Separate control voltage
- talento smart™ control

Applications
- New LED Projects • Industrial plants • Street lighting
- Commercial Shopping Centers • Billboards • Hospitals • Stadiums
- Schools, Universities and Community Colleges • Roadways • Parking Lots
- Residential • Automobile Dealerships • Airports • Substations

Interested?

Contact your Intermatic utility representative today to discuss selecting options, pricing and lead time.

GRÄSSLIN

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CSA US

UWZ 48 - L

24-30V ~ 60Hz

1 2 3 4

Grässlin by Intermatic Hour Meters

Ensure accurate run time and load usage measurements for years to come with Grässlin by Intermatic Hour Meters. Our time-tested suite of hour meters, including the FWZ, GZ, RZ and UWZ Series, helps facility managers keep track of preventative maintenance needs while reliably monitoring component output and activity.

As a pioneer of hour meter technology, Grässlin by Intermatic Hour Meters include a wealth of helpful features, such as yellow tenths and hundredths numerals for better visibility and multiple mounting options. Great for both internal and external applications, they're an excellent choice for monitoring industrial control panels, pumps, machinery, heaters and other applications which require load usage monitoring.

Contents

Grässlin Hour Meters

Grässlin AC Hour Meters (Non-Reset Type)

The FWZ Series AC Hour Meters are designed to fit into tight locations. They are non-resettable and flush panel mounted with watertight/dust-tight sealed bezels designed to withstand IP54 environmental rating (with use of a gasket). All models are black plastic (except FWZ72B which is blue-silver on colorless frosted polycarbonate) with white numerals on a black background. Tenths and hundredths numerals are yellow. Bulk packaging may be available upon request.

Black   Blue Silver

FWZ53 Series

Flush Panel Mount

Ratings	
Voltage Available	24, 120 or 220 VAC
Frequency	60 Hz, 50 Hz available on 120, 220 VAC only
Power Consumption	1 VA
Bezel HxW	1.02" x 2.09" (26 mm x 53 mm)
Capacity	99999.99 hours
Numerals	0.16" high numerals
Operating Temperature	-40° F to 160° F (-40° C to 72° C)
Electrical Connection	Combination ¼" Spade and Screw Clamp
Panel Opening HxW	1" x 1.5" (38 mm x 25 mm)
Mounting	Flush panel retainer mounted (2) 0.150" holes for #6 screws
Material	Black, Plastic
Weight	0.15 lbs (0.068 kg)
Gasket Model #	G-53U (sold separately)
Warranty	1-year limited
Ordering Information	FWZ53 + Desired Voltage + Frequency + U

FWZ55 Series

Flush Panel Mount

Ratings	
Voltage Available	120, 220 or 240 VAC
Frequency	60 Hz, 50 Hz available on 220 VAC only
Power Consumption	1 VA
Bezel HxW	1.18" x 2.17" (30 mm x 60 mm)
Capacity	99999.99 hours
Numerals	0.16" high numerals
Operating Temperature	-40° F to 160° F (-40° C to 72° C)
Electrical Connection	Combination 1/4" Spade and Screw Clamp, Rear access screw terminals available (Model "K")
Panel Opening	1.08" x 2.06" (27.5 mm x 52 mm)
Mounting	Flush panel retainer mounted with slip-on retaining bracket
Material	Black, Plastic
Weight	0.17 lbs (0.077 kg)
Gasket Model #	G-55U (sold separately)
Warranty	1-year limited
Ordering Information	FWZ55 + K* + Desired Voltage + Frequency + U

* Rear access screw terminals

FWZ72 Series

Flush Panel Mount

Ratings	
Voltage Available	24, 120 or 240 VAC
Frequency	60 Hz
Power Consumption	1 VA
Bezel	2.83 round (72 mm), 3-Hole
Capacity	99999.99 hours
Digits	0.16" (4.1 mm) high numerals
Operating Temperature	-40° F to 160° F (-40° C to 72° C)
Electrical Connection	Combination ¼" Spade and Screw Clamp, Rear access screw terminals available (Model "K")
Panel Opening Round	1.75" (44.4 mm)
Rectangular	1" x 1.5" (24 mm x 38 mm)
Mounting	Flush panel retainer mounted (3) 0.185" holes for #8 screws
Material FWZ72	24 or 120 VAC Black Plastic
FWZ72K	240 VAC Black Plastic
FWZ72B	120 or 240 VAC Blue and Silver on Frosted Clear Polycarbonate
FWZ72C	120 VAC Frosted Clear Polycarbonate
Weight	0.22 lbs (0.1 kg)
Gasket Model #	G-72U (sold separately)
Ordering Information	FWZ72 + Suffix K*, B, or C + Desired Voltage + Frequency + U
Warranty	1-year limited

* Rear access screw terminals

Dimensions
FWZ53
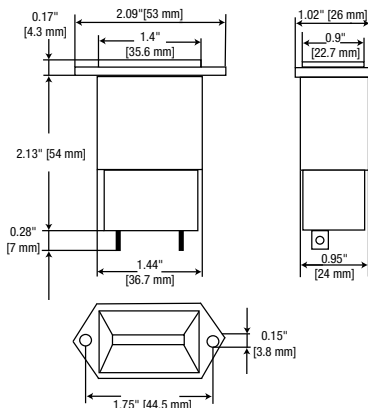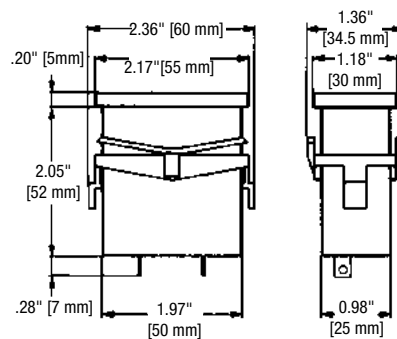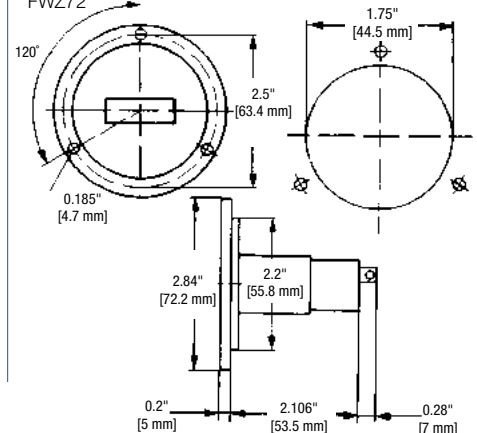
0.17" [4.3 mm]
2.09"[53 mm]
1.4" [35.6 mm]
1.02" [26 mm]
0.9" [22.7 mm]
2.13" [54 mm]
0.28" [7 mm]
1.44" [36.7 mm]
0.95" [24 mm]
0.15" [3.8 mm]
1.75" [44.5 mm]

RoHS Compliant
2002/95/EC
C CSA US #151753
UL #E22587
CE

Dimensions
FWZ55

2.36" [60 mm]
.20" [5mm]
2.17"[55 mm]
1.36" [34.5 mm]
1.18" [30 mm]
2.05" [52 mm]
.28" [7 mm]
1.97" [50 mm]
0.98" [25 mm]

Dimensions
FWZ72

120°
1.75" [44.5 mm]
2.5" [63.4 mm]
0.185" [4.7 mm]
2.84" [72.2 mm]
2.2" [55.8 mm]
0.2" [5 mm]
2.106" [53.5 mm]
0.28" [7 mm]

Ordering Example:

To build a model #, choose the Hour Meter Series at the frequency you want. Add a "K" suffix for rear access screw terminals (on applicable models). Then specify voltage. Only 50 Hz models need to be denoted in the model #. Non "U" models indicate bulk pack. Voltages not currently available will be considered on a case by case basis.

Series	+	VAC	+	Hz	+	Unit Pack	=	Model #
FWZ53	+	220	+	/50	+	U	=	FWZ53-220/50U

INTERMATIC®

The Grässlin GZ Series DC Hour Meters are the answer to applications requiring low power load usage metering. Compact, tamperproof GZ40 meters are sealed against the environment (IP rated up to IP66) to provide years of service. Accumulated load usage hours are stored in the mechanical indicating counter; therefore, no battery is required to maintain elapsed time. An input diode provides polarity protection. A quartz crystal time base ensures accurate, long-term timekeeping.

GZ40AU
Flush Mount

Ratings	
Voltage Available	10-80 VDC
Power Consumption	.03 W, 12 VDC, .7 W, 48 VDC
Bezel	2.31" (59 mm) SAE
Capacity	99999.9 hours
Digits/Display	(6) 0.125" (3.2 mm) high numerals
Hours Color	White on Black
Tenths Color	Red on White
Vibration Resistance	1-8 g, 10-75 Hz
Operating Temperature	-22° F to 150° F (-30° C to 65° C)
Electrical Connection	1/4" Spade Termination
Mounting	Flush with Bracket
Protected From	Reverse Polarity, Inductive Switching
Environmental Rating	IP66
Weight	0.19 lbs (0.086 kg)
Model #	GZ40AU
Warranty	1-year limited

Dimensions
GZ40AU
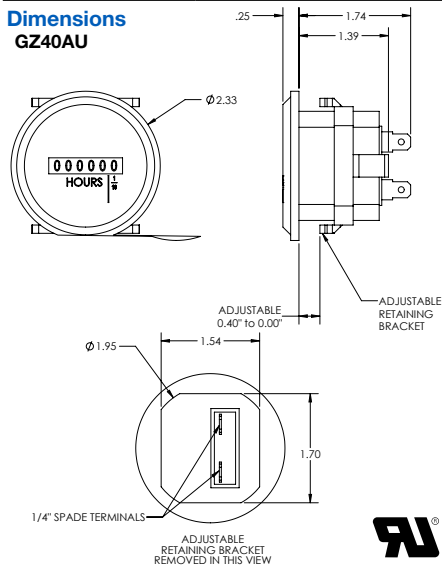
GZ40BU
Flush Mount

Ratings	
Voltage Available	10-80 VDC
Power Consumption	.03 W, 12 VDC, .7 W, 48 VDC
Bezel	2.8" (72 mm) 3-Hole
Capacity	99999.9 hours
Digits/Display	(6) 0.125" (3.2mm) high numerals
Hours Color	White on Black
Tenths Color	Red on White
Vibration Resistance	1-8 g, 10-75 Hz
Operating Temperature	-22° F to 150° F (-30° C to 65° C)
Electrical Connection	1/4" Quick Connectors
Mounting	Flush
Protected From	Reverse Polarity, Inductive Switching
Environmental Rating	IP66
Weight	0.19 lbs (0.086 kg)
Model #	GZ40BU
Warranty	1-year limited

Dimensions
GZ40BU
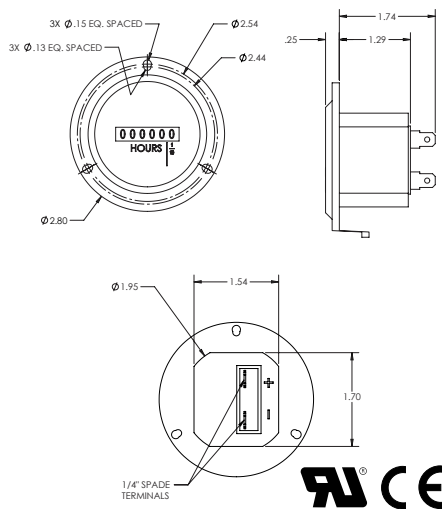
GZ52BU
Flush Mount

Ratings	
Voltage Available	8-30 VDC
Power Consumption	.03 W, 12 VDC
Bezel	2.2 round (55.9mm),
Mechanical Movement	2 Phase Step Motor
Capacity	99999.9 hours
Digits/Display	0.125" (3.2mm) high numerals
Hours Color	White on Black
Tenths Color	Red on White
Vibration Resistance	DIN EN60068-2-64
Accuracy	± 0,5 Second /Day at 20°C
Operating Temperature	-40° F to 185° F (-40° C to 85° C)
Electrical Connection	1/4" Quick Connectors
Mounting	Flush Bracket (Screw Type)
Protected From	Reverse Polarity, Inductive Switching
Environmental Rating	IP65
Weight	0.21 lbs (0.095 kg)
Model #	GZ52BU
Warranty	1-year limited

Dimensions
GZ52BU
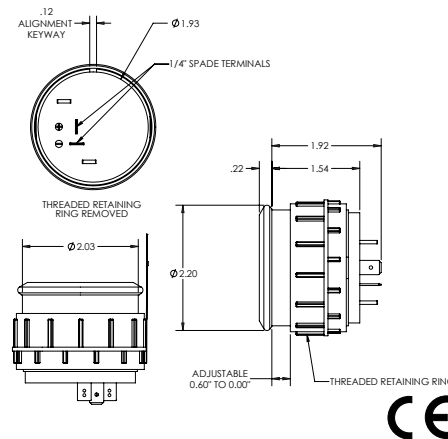
No electrical connection required. The RZ Series Vibration Hour Meters convert vibrations into energy to drive the minute hand. This sensitive hour meter can operate from the slightest vibrations, such as a moving car. Horizontal or vertical mounting position to 45°.

Mounting Angles

h-horizontal

v-vertical

Dimensions

RZ52HU

RZ52 Series
Flush Mount Vibratory Hour Meters
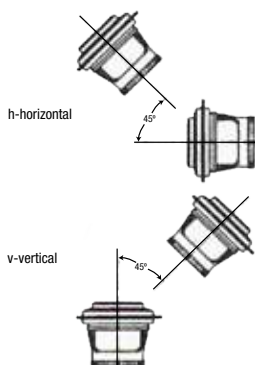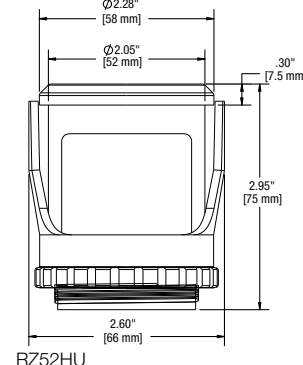
Ratings	
Capacity	99999.99 hours
Digits/Display	0.125" (mm) high numerals
Vibration Sensitivity	.18 g at 15 hz
Accuracy	± 3% at uninterrupted operation
Operating Temperature	-20° F to 140° F (-28° C to 60° C)
Dimensions Dia x D	2.2" x 0.125" (55.9 x mm)
Panel Cutouts	2.04" (52mm)
Mounting Depth	2.95" (75 mm)
Mounting Position	See Mounting Angles
Environmental Rating	IP65
Weight	0.417lbs
Model #	
Horizontal Mount	RZ52HU
Vertical Mount	RZ52VU
Warranty	1-year limited

Grässlin Hour Meters
Grässlin AC Hour Meters (Non-Reset Type)

The UWZ Series AC Hour Meters are designed to meet IP20 environmental ratings for indoor applications. All models are light gray in color with white numerals on a black background. Tenths and hundredths numerals are yellow. An orange dial adjacent to the hundredths digit provides running indication.

UWZ48 Series
Plug-in Surface Mount

The UWZ48 Surface Mount Hour Meter uses a plug-in base where terminal protection is not necessary. The socket base is easy to install and connect. Simply plug the meter into the base and secure with a screw.

Ratings	
Voltage Available	24, 120 or 240 VAC
Frequency	60 Hz
Power Consumption	1 VA
Bezel	1.89" x 1.89" (48mm x 48 mm)
Capacity	99999.99 hours
Digits	0.16" high numerals
Operating Temperature	-40° F to 160° F (-40° C to 72° C)
Electrical Connection	Screw Lugs
Mounting	Surface
Material	Light Gray Plastic
Weight	0.2 lbs (0.091 kg)
Ordering Information	UWZ48 + Desired Voltage + U
Warranty	1-year limited
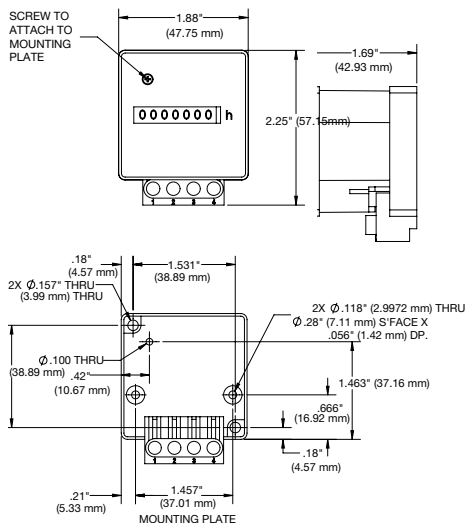
UWZ48A Series
Enclosed Surface Mount

The UWZ48A Enclosed Surface Mount is used with a terminal cover for added safety. Installation requires fixing the base to a wall or panel with two screws, wiring the base, and plugging in the meter with the terminal cover.

Ratings	
Voltage Available	24 or 120 VAC
Frequency	60 Hz
Power Consumption	1 VA
Bezel	1.89" x 1.89" (48 mm x 48 mm
Capacity	99999.99 hours
Digits	0.16" high numerals
Operating Temperature	-40° F to 160° F (-40° C to 72° C)
Electrical Connection	Screw Lugs
Mounting	Surface
Material	Light Gray Plastic
Weight	0.22 lbs (0.1 kg)
Ordering Information	UWZ48A + Desired Voltage + U
Warranty	1-year limited
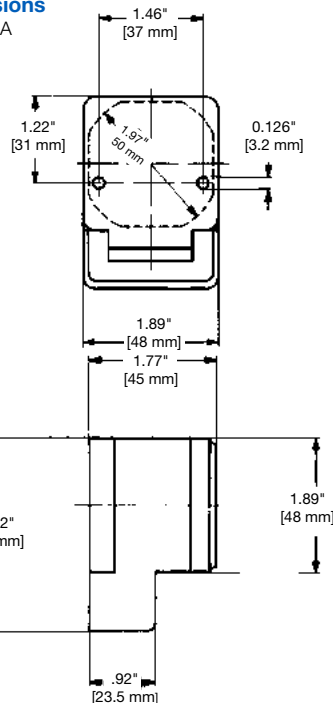
UWZ48V Series
DIN Rail Mount

A special snap-on socket base allows for fast positioning onto a DIN rail.

Ratings	
Voltage Available	24 or 120 VAC
Frequency	60 Hz
Power Consumption	1 VA
Bezel	1.89" x 1.89" (48 mm x 48 mm)
Capacity	99999.99 hours
Digits	0.16"
Operating Temperature	-40° F to 160° F (-40° C to 72° C)
Electrical Connection	Combination ¼" Spade and Screw Clamp
Mounting	DIN Rail
Material	Light Gray Plastic
Weight	0.22 lbs (0.1 k)
Ordering Information	UWZ48V + Desired Voltage + U
Warranty	1-year limited

Dimensions
UWZ48

Dimensions
UWZ48A

Dimensions
UWZ48V
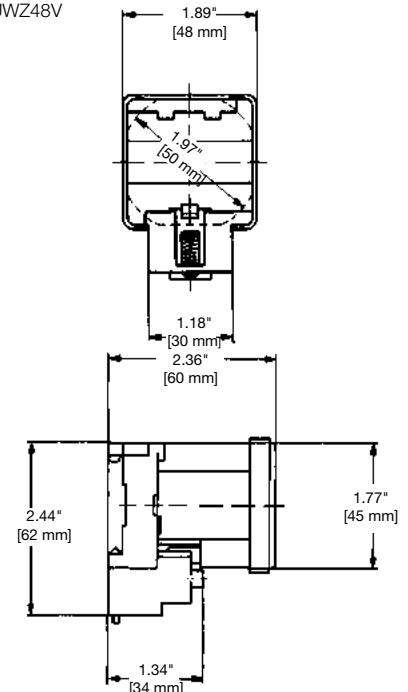
Ordering Example:
To build a model #, choose the Hour Meter Series at the voltage you need and add a U suffix. Non "U" models indicate bulk pack. All models are 60 Hz.

Series	+ VAC	+ U	= Model #
UWZ48	+ 240	+ U	= UWZ48-240U

RoHS Compliant
2002/95/EC

#151753

#E22587

INTERMATIC

UWZ Accessories

55 mm Bezel
for UWZ48E

BEZ55-GRAYU   BEZ55-BLACKU

72 mm Bezel
for UWZ48E

BEZ72U   Gray

72 mm Bezel with 3 Pins

for round 3-bolt hole opening for UWZ48E

BEZ72PU   Gray

DIN Rail Mounting Base
for UWZ48E
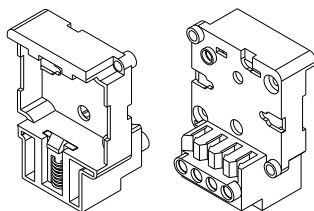
MB–48V

Flush Mount Base
for UWZ48
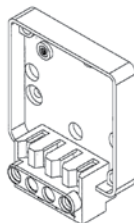
691

UWZ48E Series
Flush Mount

Flush mounted with bracket, the UWZ48E unit fits into a 1.79" x 1.79" (45.5 x 45.5 mm) cutout. The thickness of the panel for flush mounting can be up to .35" (9 mm). The unit is secured in position by a plastic slip-on retaining bracket. The unit also fits square or round openings for 72 mm with optional 72 mm bezel.

Ratings	
Voltage Available	24, 120, 220 or 240 VAC
Frequency	60 Hz, 50 Hz available on 220 VAC only
Power Consumption	1 VA
Bezel	1.89" x 1.89" (48 mm x 48 mm)
Capacity	99999.99 hours
Digits	0.16" high numerals
Operating Temperature	-40° F to 160° F (-40° C to 72° C)
Electrical Connection	¼" Spade w/Screw Clamp
Material	Light Gray Plastic
Weight	0.18" (0.082 kg)
Ordering Information	UWZ48E + Desired Voltage + Frequency + U
Warranty	1-year limited

Dimensions
UWZ48E

1.89" [48 mm]
1.22" [31 mm]
1.77" [45 mm]
1.97" [50 mm]
0.126" [3.2 mm]
1.46" [37 mm]
1.65" [42 mm]
1.93" [49 mm]
2.13" [54 mm]
1.3" [33 mm]

RoHS Compliant
2002/95/EC

CSA
C US
#151753

UL
#E22587

CE

UWZ52E Series
Flush Mount

Flush mounted with bracket, the UWZ52E with round face is fastened with a plastic slip-on retaining bracket.

Ratings	
Voltage Available	120 VAC
Frequency	60 Hz
Power Consumption	1 VA
Bezel	2.28" 58 mm
Capacity	99999.99 hours
Digits	0.16" high numerals
Operating Temperature	-40° F to 160° F (-40° C to 72° C)
Electrical Connection	¼" Spade w/Screw Clamp
Material	Light Gray Plastic
Weight	0.18" (0.082 kg)
Ordering Information	UWZ52E + Desired Voltage + Frequency + U
Warranty	1-year limited

Dimensions
UWZ52E

2.28" [58 mm]
1.16" [29.5 mm]
1.77" [45 mm]
1.97" [50 mm]
1.97" [50 mm]
1.46" [37 mm]
1.65" [42 mm]
1.93" [49 mm]
2.13" [54 mm]
1.3" [33 mm]
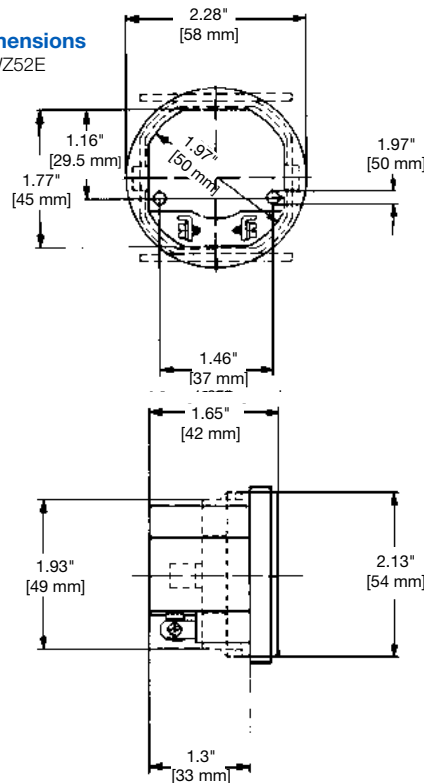
Ordering Example:
To build a model #, choose the Hour Meter Series at the frequency you want. Then specify voltage and add a U suffix. Non "U" Models indicate bulk pack. Only 50 Hz models need to be denoted in the model #.

Select:	Series	+ VAC	+ Hz	= Model #
50 Hz Models:	UWZ48E	+ 220	+ /50U	= UWZ48E-220/50U
60 Hz Models:	UWZ48E	+ 24	+ (60)	= UWZ48E-24U

INTERMATIC

- REFRIGERA
- DEFROST

Defrost Time Controls / HVAC/R

Streamline commercial defrost installations with energy-saving Grässlin by Intermatic Defrost Timer Controls. Our robust lineup of controls is designed specifically for OEM or contractor integration control of various loads within commercial refrigeration systems, specifically those which require systematic overriding of loads to defrost evaporator coils in medium (cooler) or low-temperature (freezer) conditions. Once installed, they can help eliminate redundant defrost cycles, which reduces energy consumption and lowers monthly utility costs.

A natural fit for electric heat, hot gas or compressor shutdown defrost applications, the Intermatic DTAV40 is a practical solution capable of replacing more than 40 competitive models. Simple to install in existing enclosures, it's a dependable control that contractors can trust to maintain accurate defrost time schedules.

Moreover, the ICUBE™ DDFM Adaptive Defrost Module can be retrofitted on existing DTAV40 defrost timers to create a progressive new defrost system that is capable of reducing defrost cycles by up to 40% or more per day. Likewise, the Intermatic DDT40 allows contractors to do complete field replacements of outdated mechanical timers and achieve comparable energy savings.

Contents

DTAV40

DTAV40 Inside

DTAV40 Series

Time Initiated and Temperature, Pressure or Time Terminated 40 A Autovoltage Electromechanical Defrost Control

Whether you're installing a total time clock replacement or looking for a fast retrofit, the Grässlin ICUBE™ technology is an easy-to-integrate adaptive defrost solution for commercial and industrial refrigeration systems. When ICUBE technology is used with the Grässlin DTAV40 Defrost Timer it will reduce the overall defrost frequency within the cooler or freezer by up to 40% or more. The smart-sensing technology continuously monitors evaporator coil temperatures in walk-in coolers and freezers and only allows defrosting when necessary at the next programmed timer interval.

Applications
• Medium and Low-Temperature Commercial Refrigeration Systems
• Hospitals • Universities • Convenience Stores • Restaurants
• Food Storage Warehouses • Food Processing Facilities
• Food Service Facilities • Nursing Homes
• Healthcare Facilities

Features
• Adaptive Defrost upgradable (DTAV40, DTAV40M only) (See ICUBE)
• DTAV40 Series replaces over 40 competitive models
• 40 A, 2 HP Rating
• Autovoltage automatically adjusts between 120 and 240 VAC
• Q model features self-recharging battery backup with 7-day carry-over
• Can mount in an existing enclosure – no tools required for installation
• Moisture resistant conformal-coated board
• LED indicators for defrost and refrigeration cycles
• Defrost cycles are programmed independently
• "Real-time" clock face for quick, easy and accurate setting
• Defrost times programmable in 15-minute intervals
• Captive trippers won't get lost
• Finger-safe box lug terminals

Ratings

Ratings	
Input Voltage	120-240 VAC, 60 Hz
Quartz	120-240 VAC, 50/60 Hz
Switch Type	1 SPDT, 1 NC SPST
Resistive	40 A, 120-240 VAC
Motor	1 HP, 16 FLA, 96 LRA @ 120 VAC,
	2 HP, 12 FLA, 72 LRA @ 240 VAC
Operating Temperature	-40° F to 104° F (-40° C to 40° C)
Quartz	-4° F to 104° F (-20° C to 40° C)
Operating Humidity	0-95% RH, Non-condensing
Wiring Connections	Screw box lug terminals up to one #8 AWG Wire
Enclosure/Mounting	Indoor Type 1 Metal, Outdoor Type 3R Plastic or Bracket
Min ON/OFF Times	15-min
Max ON/OFF Times	23 hours, 45 min
Electrical Life	50,000 per operations at full load
Weight	1.896 lbs (0.86 kg)
Warranty	1-year limited

For mounting & enclosure dimensions see page 101
For wiring examples see page 101

Specification
Furnish and install a Grässlin_____Defrost Control, which will automatically adjust between 120 VAC and 240 VAC operation and shall have defrost initiation times settable in 15-minute intervals with captive trippers. The defrost timer shall be housed in a UL Type 3R indoor/outdoor plastic enclosure or UL Type 1 metallic enclosure. The relay output will be rated for 40 A Resistive, 2 HP @ 240 VAC. Defrost termination to be by time (or by a remote temperature or pressure switch). For carry-over, the time controls shall have a quartz drive with (DTAV40Q) 7-Day reserve carry-over from a self-recharging battery.

Model #	Enclosure	Backup Protection Time
DTAV40	Outdoor Type 3R Plastic	None
DTAV40Q	Outdoor Type 3R Plastic	7 Days
DTAV40IM	Indoor Type 1 Metal	None
DTAV40M	Mechanism Only	None

Accessories/Replacements

Bracket Mount (material electrically isolated) mounting screws included	DT-B

Setting Defrost Times

Configure defrost times easily! Just scan the QR code with your smartphone or tablet for details on how to choose a defrost starting time.

INTERMATIC®

ICUBE™
Adaptive Defrost Control Module

Whether you're installing a total time clock replacement or looking for a fast retrofit, the Grässlin ICUBE™ technology is an easy-to-integrate Adaptive Defrost solution for commercial and industrial refrigeration systems. When ICUBE technology is used with the Grässlin DTAV40 Defrost Timer it will reduce the overall defrost frequency within the cooler or freezer by up to 40% or more. The smart-sensing technology continuously monitors evaporator coil temperatures in walk-in coolers and freezers and only allows defrosting when necessary at the next programmed timer interval.

Applications
- Medium and Low-Temperature Commercial Refrigeration Systems
- Hospitals • Universities • Convenience Stores • Restaurants
- Food Storage Warehouses • Food Processing Facilities
- Food Service Facilities • Nursing Homes
- Healthcare Facilities

Features
- Stand-alone module assembles directly into existing Grässlin DTAV40 Defrost Timers (DTAV40 Only)
- Energy-saving adaptive defrost only defrosts evaporator coils when necessary
- LED indicator conveys status and fault conditions, including efficiency mode and probe fault
- Maintains the timer's scheduling to reduce frequent defrost initiations during high usage times
- Reaches remote condensing units up to 400 ft. with typical field-used 18 gauge shielded or unshielded wire
- Four sensor inputs accommodate up to four evaporators or multiple sensor locations for larger coils
- The stand-alone module (model# DDFM) simply installs underneath the existing DTAV40 FM-Timer Module
- Sensing wire can be routed through existing conduit

DDT40   DDFM

c(UL)us #E10694

RoHS Compliant 2002/95/EC

Ratings- DDT40	
Input Voltage	120-240 VAC, 60 Hz
Switch Type	1 SPDT, 1 NC SPST
Resistive	40 A, 120-240 VAC, 60 Hz
Motor	1 HP, 16 FLA, 96 LRA @ 120 VAC, 2 HP, 12 FLA, 72 LRA @ 240 VAC
Operating Temperature	-40° F to 131° F (-40° C to 55° C)
Operating Humidity	0-95% RH, Non-condensing
Wiring Connections	Finger Safe Terminals
Min ON/OFF Times	15-min
Max ON/OFF Times	23 hours, 45 min
Enclosure/Mounting	Outdoor Type 3R Plastic
Weight	1.896 lbs (0.86 kg)
Warranty	1-year limited

For mounting & enclosure dimensions see page 101
For wiring examples see page 101

Model #	Description
DDFM	ICUBE Adaptive Defrost Refrigeration Module with Sensor
DDT40	Complete Adaptive Defrost Refrigeration Time Control with ICUBE Module, Sensor, and Type 3R Enclosure
178GR10K-1	Additional Separate Sensor Accessory (for Multiple Evaporator Applications)

Ratings- DDFM	
Thermistor*	10 K Ω @ 25° C
Wire Size	#24 AWG
Working Range	-40° F to 152° F (-40° C to 67° C)
Thermistor Probe Type	NTC
Connector Wire Length	6 ft (1.83 m)
Warranty	1-year limited

Thermistor probe connections are not an isolated Class 2 circuit.
Only use a thermistor probe specified for use with DDFM model.

DTAV40E2

DTAV40E2 Inside

#E10694

Ratings	
Input Voltage	120-240 VAC, 50/60 Hz
Switch Type	1 SPDT, 1 NC SPST
Resistive	40 A, 120-240 VAC
Motor	1 HP, 16 FLA, 96 LRA @ 120 VAC, 2 HP, 12 FLA, 72 LRA @ 240 VAC
Operating Temperature	-13° F to 104° F (-25° C to 40° C)
Operating Humidity	0-95% RH, Non-condensing
Wiring Connections	Screw box lug terminals up to one #8 AWG Wire
Enclosure/Mounting	Outdoor Type 3R Plastic or Bracket
Min ON/OFF Times	1 min
Max ON/OFF Times	23 hours, 45 min
Electrical Life	50,000 operations at full load
Weight	1.896 lbs (0.86 kg)
Warranty	1-year limited

DTAV40E2 Series

Time Initiated and Temperature, Pressure or Time Terminated 40 A Autovoltage Electronic Defrost Timer

The Grässlin DTAV40E2 Electronic Autovoltage Defrost Timer has flexible 7-day scheduling and to-the-minute defrost duration control to increase system efficiency (decrease defrost scheduling during low demand periods). It is applicable to air defrost (compressor shutdown) and electric or hot gas defrost systems where the defrost cycle is terminated by the timer. If the coil is frost-free, the timer can also be terminated by temperature or pressure switches before the programmed defrost termination time has been reached. The time termination functions as a fail-safe and cancels the defrost cycle if the temperature or pressure switch fails to do so.

Applications
• Hospitals • Universities • Convenience Stores • Restaurants
• Food Storage Warehouses • Food Processing Facilities
• Food Service Facilities • Nursing Homes
• Medium and Low-Temperature Commercial
   Refrigeration Systems • Healthcare Facilities

Features
• 24-Hour/7-Day flexible scheduling increases system efficiency
• 40 A, 2 HP rating
• DTAV40E2 replaces over 40 competitive models
• Autovoltage automatically adjusts between 120 and 240 VAC, 50/60 Hz
• Self-recharging battery backup with 2500-hour carry-over
• Can mount in an existing enclosure – no tools required for installation
• LED indicators for defrost and refrigeration cycles
• Finger-safe box lug terminals
• Simple to program electronic timer

Model #	Enclosure	Battery Backup
DTAV40E2	Outdoor Type 3R Plastic	2500 Hours

Notes: For mounting & enclosure dimensions see page 101.
For wiring examples see page 101.

Set Up System Scheduling

The electronic face and programming buttons make scheduling straightforward and easy. Just scan the QR code with your smartphone or tablet for details.

Specification
Furnish and install a Grässlin_____Defrost Control, which will automatically adjust between 120 VAC and 240 VAC operation and shall have defrost initiation times settable in 1-minute intervals with an integrated electronic timer interface. This control shall have 24-Hour/7-Day programming, 7 ON and 7 OFF setpoint programs, and 5 preset block programs to allow a selection of any combination of days for different weekday schedules. The LCD shall display time of day in AM/PM format. A daylight Saving Time adjustment button shall also be provided. The timer shall provide a manual override button to initiate a manual defrost. The defrost timer shall be housed in a UL Type 3R indoor/outdoor plastic enclosure. The relay output will be rated for 40 A Resistive, 2 HP @ 240 VAC. Defrost terminations to be by time (or by a remote temperature or pressure switch). For carry-over, the time controls shall have 2500-Hour reserve carry-over from a self-recharging battery.

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Wiring Diagrams

Wiring diagrams in powered refrigeration mode.

8145 Replacement (Retrofit)
DTAV40 Default Out of Box
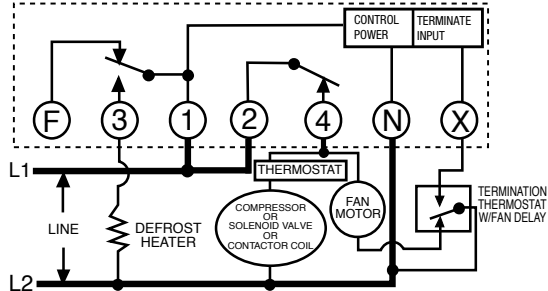
8041 Replacement (Retrofit)
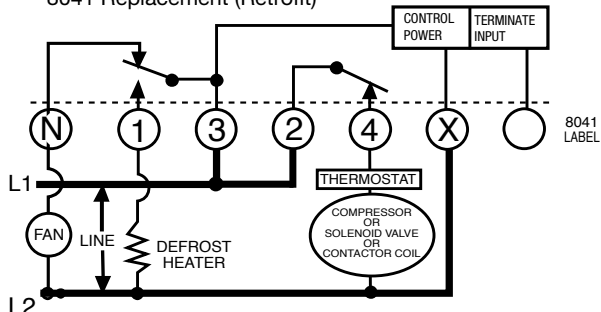
8045 Replacement (Retrofit)
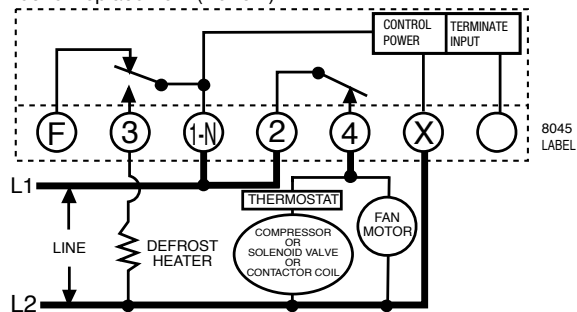
8141 Replacement (Retrofit)
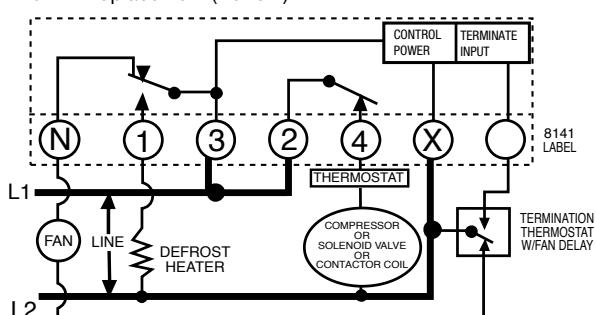
Dimensions

Type 1 Enclosure Dimensions
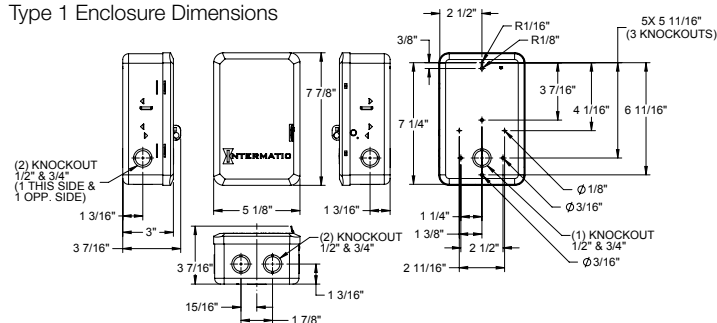
Type 3R Enclosure Dimensions
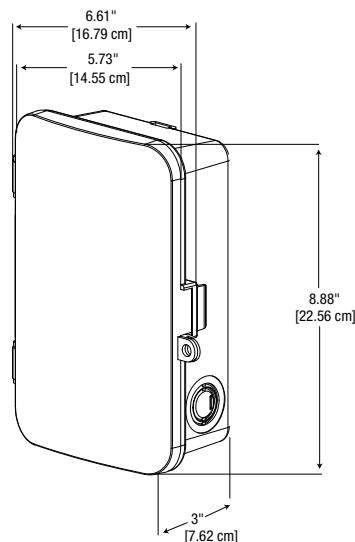
DT-B Bracket Dimensions
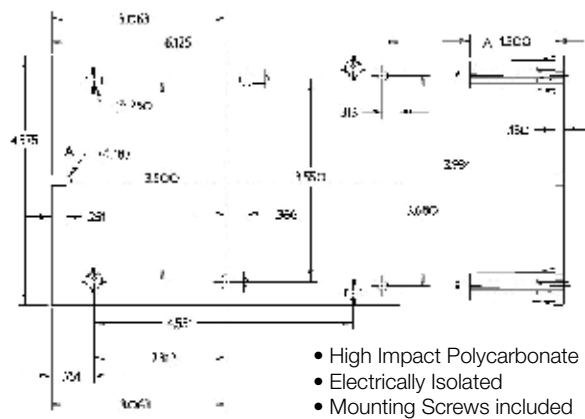
- High Impact Polycarbonate Material
- Electrically Isolated
- Mounting Screws included
- UL94HB Flame Class Rating

Universal Replacement (See wiring diagrams for examples)				
Grässlin	Paragon		Precision	
	8141-00	8143-20	6141-00	6143-20
	8143-00	8145-20	6143-00	6145-20
	8145-00	8041-20	6145-00	6041-20
DTAV40 =	8041-00	8045-20	6041-00	6045-20
	8043-00	8047-20	6043-00	6047-20
	8045-00	8245-20	6045-00	6245-20
	8047-00	8247-20	6047-00	6247-20
	8141-20		6141-20	

Note: Equivalent in function, terminal identification, and wiring allows for quick and easy installation.

G8045-00

G8000 Series

Time Initiated and Temperature, Pressure or Time Terminated 40 A Mechanical Defrost Timer

The Grässlin G8000 Series Mechanical Defrost Timer is applicable to air defrost (compressor shutdown) and electric or hot gas defrost systems where the defrost cycle is terminated by the timer. If the coil is frost-free, the timer can also be terminated by temperature or pressure switches before the programmed defrost termination time has been reached. The time termination functions as a fail-safe and terminates the defrost cycle if the temperature or pressure switch fails to do so. The encapsulated design prevents dust and dirt build-up to ensure reliable and lasting performance. The G8000 easily snaps into existing enclosures and is equivalent in function, terminal identification and wiring, allowing a quick and easy installation.

Applications
- Medium and Low-Temperature Commercial Refrigeration Systems • Hospitals • Universities • Convenience Stores
- Restaurants • Food Storage Warehouses
- Food Processing Facilities • Food Service Facilities
- Nursing Homes • Healthcare Facilities

Features
- Exceeds UL 873 Refrigeration standard for 30,000 cycle switch design
- Heavy-duty welded and silver-plated 40 A contacts
- Mounts in existing enclosures, no tools required
- Encapsulated timer module design prevents dust and dirt build-up
- Heavy-duty synchronous motor for accurate timekeeping
- Defrost durations programmable in 2-minute increments
- Up to 6 defrost cycles per day
- Works with external temperature or pressure switches
- Includes 4 trippers and spare tripper holder is built-in
- MIN defrost time: 4 minutes
- MAX defrost time: 110 minutes

SA33993   151753

UL873,UL917,CSA24,CSA117 Refrigeration Controller

Ratings	
Input Voltage	See Model Table
Switch Type	1 NO,1 NC
Resistive	40 A, 120-240 VAC
Pilot Duty	1000 V, 60 Hz
Motor	2 HP, 120-240 VAC, 60 Hz
Operating Temperature	-40° F to 104° F (-40° C to 40° C)
Operating Humidity	0-95% RH, Non-condensing
Wire Size	#18 AWG - #8 AWG
Min ON/OFF Times	4 min
Max ON/OFF Times	110 min
Electrical Life	30,000 operations at full load
Weight	2.744 lbs (1.245 kg)
Warranty	2-year limited

Model #	Description	Voltage	Enclosure
G8045-00	Time Initiated, Time Terminated	120 VAC, 60 Hz	Indoor Type 1 Metal
G8045-20	Time Initiated, Time Terminated	208-240 VAC, 60 Hz	Indoor Type 1 Metal
G8145-00	Time Initiated, Temperature, Pressure or Time Terminated	120 VAC, 60 Hz	Indoor Type 1 Metal
G8145-20	Time Initiated, Temperature, Pressure or Time Terminated	208-240 VAC, 60 Hz	Indoor Type 1 Metal

Specification
Furnish and install a Grässlin_____Defrost Control, which shall have up to 6 defrost cycles per day with initiation times settable in 2 minute increments from 4 to 110 minutes. The defrost timer shall be housed in a UL Type 1 indoor metallic enclosure. The contacts shall be 1 NO, 1 NC and rated for 40 A Resistive, 2 HP @ 240 VAC. Defrost termination to be by time (or by a remote temperature or pressure switch). Defrost Time Switch shall comply with UL Refrigeration standard UL 873.

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G8000 Series Wiring Diagrams
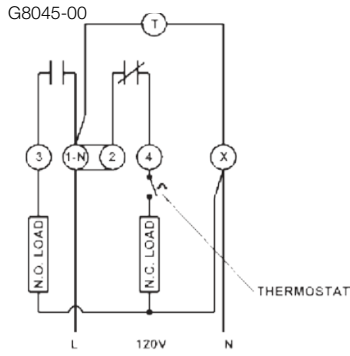
G8045-00

WIRING DIAGRAM SHOWN IN NORMAL
POSITION DURING REFRIGERATION
CONTACTS 1-3 ARE OPEN
CONTACTS 2-4 ARE CLOSED

G8045-20

WIRING DIAGRAM SHOWN IN NORMAL
POSITION DURING REFRIGERATION
CONTACTS 1-3 ARE OPEN
CONTACTS 2-4 ARE CLOSED

G8145-00

WIRING DIAGRAM SHOWN IN NORMAL
POSITION DURING REFRIGERATION
CONTACTS 1-3 ARE OPEN
CONTACTS 2-4 ARE CLOSED

G8145-20
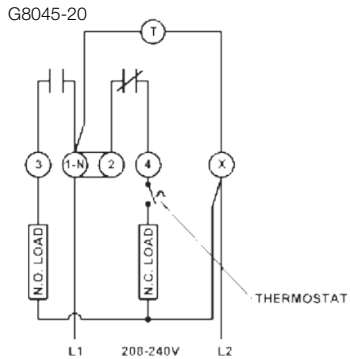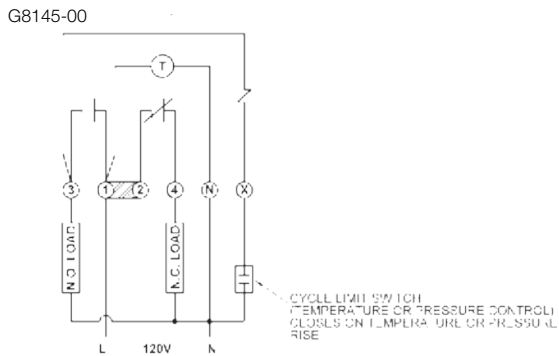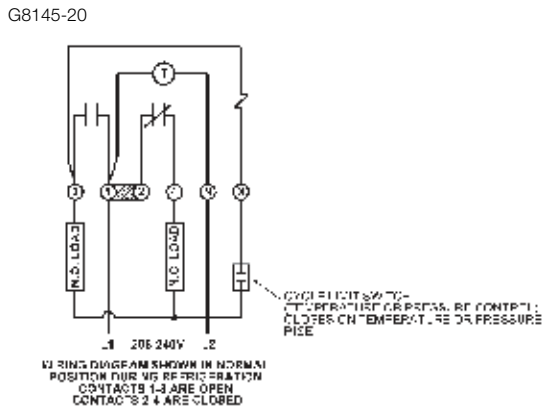
WIRING DIAGRAM SHOWN IN NORMAL
POSITION DURING REFRIGERATION
CONTACTS 1-3 ARE OPEN
CONTACTS 2-4 ARE CLOSED

G8000 Series Dimensions
Type 1 Enclosure Dimensions
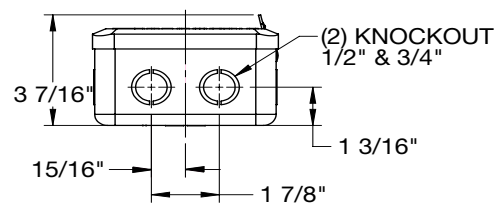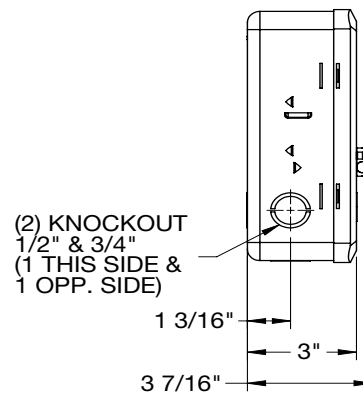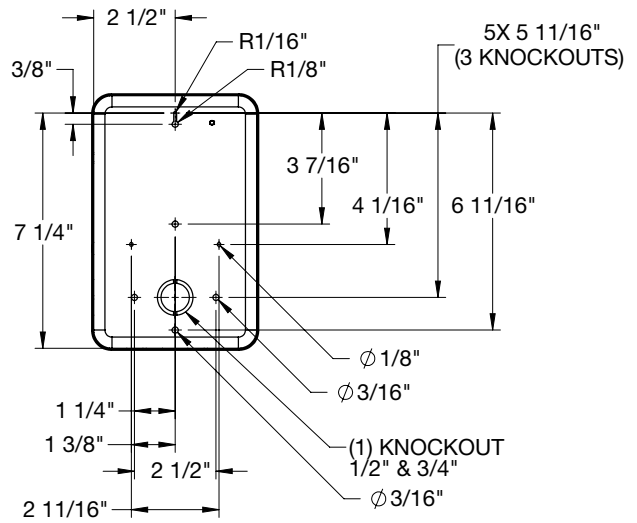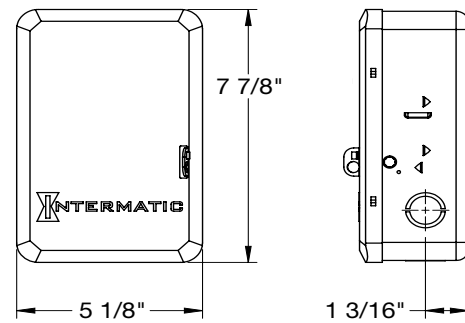
ERMATIC®

SURGE PROTECTIVE DEVICE
ANSI/UL1449 4th EDITION

LE
WITCH

CC8250

1A 2 POLE

ON
OFF

INTERMATIC
mable Surge Module

POWER

●

⧖

PROTECTION

●

ON: PROTECTED
OFF: REPLACE

INTERMATIC

POWER

●

⧖

PROTECTION

●

ON: PROTECTED
OFF: REPLACE

INTERMATIC

POWER

●

⧖

PROTECTION

●

ON: PROTECTED
OFF: REPLACE

OFF

⚠ WARNING **Risk of Electric Shock**

- Turn Module Power Switch to "OFF" position before replacing Consumable Surge Modules. Module Power Switch is NOT used as an overcurrent protection device (OCPD).
- Mettre l'interrupteur d'alimentation du module en position d'arrêt (OFF) avant de changer les modules anti-surintensité consommables. L'interrupteur d'alimentation du module ne sert PAS de dispositif de protection contre les surintensités.

⚠ WARNING **Risk of Electric Shock**

- Disconnect power to unit at power source before servicing internal wiring for installation or maintenance. Replace dead front after servicing or installation. Service to be performed by qualified personnel only.

Surge Protection

Did you know homeowners and businesses lose an estimated $250-$500 million* each year in property damage caused by power surge incidents? Avoid an unexpected disaster with trusted Surge Protection solutions from Intermatic. Our complete line of surge protective devices helps shield single-family homes, commercial office spaces, manufacturing facilities, HVAC/R equipment and more from the harmful effects of power surge events. Every modern facility can benefit from added protection.

Steadfast and dependable, our Smart Guard® Whole Home Surge Protection System helps families protect their most expensive gadgets and appliances from surge damage and is backed by an impressive 10-year warranty. Covering everything from high-definition TVs and surround sound systems to refrigerators and washing machines, it's a comprehensive yet simple solution that offers homeowners peace of mind.

National Lightning Detection Network

Contents

Causes of Power Disturbances

Electrical disturbances and downtime cost North American companies and residents more than $26 billion every year. Fluctuations in utility power (caused by grid switching, for example) are often suspected to be the main culprits. However, the overwhelming cause of power disturbances is actually from transient voltage surges from equipment inside a facility. In fact, it is estimated that 65% of all transient voltage surges are generated from inside sources, while only 35% come from outside.* Triggers of transient surges can range from the stopping and starting of motors, appliances and electronics, to even the simple action of switching lights ON and OFF.

* NEMA Surge Protection Institute

What Requires Surge Protection?

Every process and appliance within a building is controlled by electrical equipment and electronic components. Virtually all devices that are powered by electricity are vulnerable. The following types of systems will benefit from surge protection:

- Home Theater Systems
- Computers/Peripherals/Servers
- HVAC/R Systems and Controls
- Electronically Commutated Motors
- Pool and Spa Systems and Controls
- Smartphones/Tablets/Gaming Systems
- Charging Equipment for Hybrid and Electric Cars

- Variable Frequency Drives
- Security and Fire Alarm Systems
- Programmable Logic Controllers
- Network Servers/Routers/Modems
- Lighting Ballasts
- Uninterruptible Power Supplies
- Home Automation Controls

- Pumps, Motors and Related Equipment with Electronic Controls or Starters
- Telecom Equipment
- Generator Automatic Transfer Switches (ATS)

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ANSI/UL 1449, 3rd Edition, Surge Protection Compliance
UL 1449, 2nd Edition, underwent a major revision requiring additional safety testing at medium-fault current levels for Transient Voltage Surge Suppressors (TVSS). UL 1449, 3rd Edition, was published in September 2006 with compliance required by September 2009. The major differences are:

• UL 1449, 3rd Edition, is now an American National Standard (ANSI)
• Change in terminology from Transient Voltage Surge Suppressors to Surge Protective Devices (SPD)
• Voltage Protection Rating (VPR) is now tested at 6 kV/3 kA.
• Nominal Discharge Current (In) is a new addition.

Terminology Change
The full title of UL 1449, 2nd Edition, is, "Standard for Safety for Transient Voltage Surge Suppressors, UL 1449".

The new title of UL 1449, 3rd Edition, is, "Standard for Safety for Surge Protective Devices, UL 1449." "Surge Protective Devices" is a more general description and covers devices beyond what we formerly called TVSS. The term SPD also covers what are referred to as Secondary Surge Arrestors.

UL 1449, 3rd Edition, gives five designations to surge protective devices depending on where in the electrical system the device is connected. Below defines Types 1-3.

Type 1 — Permanently connected device installed before or after the service disconnect overcurrent device and intended to be installed with no external overcurrent protective device. This type of SPD most closely relates to devices that were called secondary surge arrestors prior to 3rd Edition.

Type 2 — Permanently connected device installed after the service disconnect overcurrent device. This type of SPD most closely relates to devices that were called transient voltage surge suppressors prior to 3rd Edition.

Type 3 — Point of use SPDs that are installed with a minimum of 30 feet of conductor length from the service panel. These 30 feet of conductor length does not include conductors used to attach the SPD. Some examples of Type 3 SPDs are cord connected, direct plug-in and receptacle type SPDs.
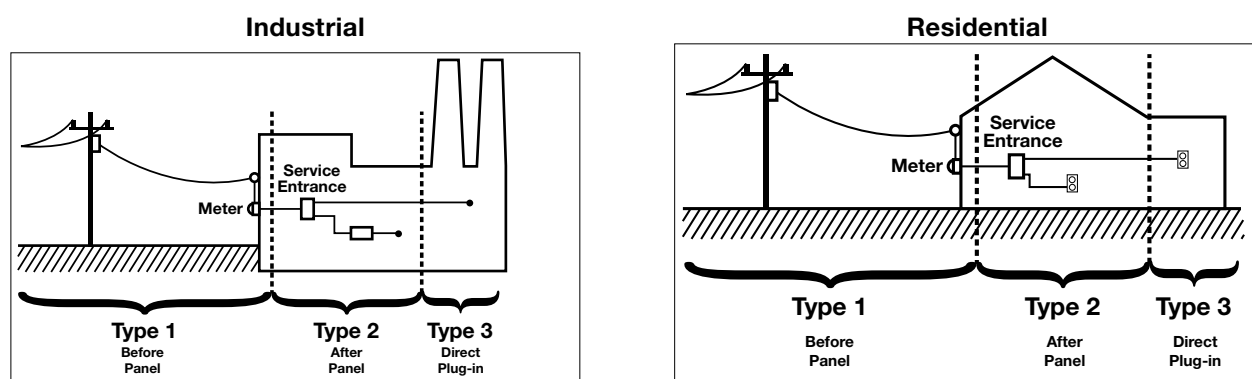
Voltage Protection Rating (VPR)
The measured limiting voltage test in UL 1449, 3rd Edition, uses a 6 kV/3 kA combination wave surge to determine the Voltage Protection Rating (VPR) of the SPD. This test is similar to the Suppressed Voltage Rating (SVR) as performed in UL 1449, 2nd Edition. The key difference between the tests in 2nd Edition and 3rd Edition is that the magnitude of the current used for the test is six times greater in 3rd Edition versus 2nd Edition. This much higher current level will mean that the Voltage Protection Rating (VPR) will likely be significantly higher.

Nominal Discharge Current (In)
The addition of the nominal discharge current test is new to UL 1449 3rd Edition. The nominal discharge current value is selected by the manufacturer and can be either 10 kA or 20 kA for a Type 1 SPD or 3 kA, 5 kA, 10 kA or 20 kA for Type 2 SPDs. The SPD is tested by being subjected to a total of 15 impulses of the manufacturer-selected nominal discharge current.

Joule Ratings

Many end users look at Joule ratings to determine which surge protector to purchase. Unfortunately, Joule ratings can be misleading according to IEEE research. When a surge protector is submitted for third party agency testing, Joule rating is not a tested parameter. Joule ratings are an unreliable measurement for determining a product's surge protection capacity because there is no clear standard for energy ratings of SPDs on Joules.

Typical Surge Protective Device (SPD) Applications

Entertainment Home Theaters, TV, Stereos

Home Office, Computers, Tablets, Printers

Home Automation, Thermostats, Security, Lighting

HVAC, Generators, Solar

Pool & Spa Equipment, Water Heater, Landscape Lighting

Mini-split, Furnace/ Air Handler, Boilers

INTERMATIC®

Common Voltage Configurations

The wiring diagrams below illustrate the common voltage configurations for Intermatic surge products. Locate the desired voltage configuration and surge protector part number, and then go to the applicable product page to order the desired item(s).

**120 VAC
Single Phase**

AG3000
AG2401C3
IG1240RC3
IG3240RC3
IG1300-2T-1C3
IG1300-4T-2C3
IG2240 Series
IG2280 Series

**120, 240 VAC
Single Phase**
(Split Phase)

AG3000
IG1240RC3
IG3240RC3
IG1300-2T-1C3
IG1300-4T-2C3
IG2240 Series
IG2280 Series

**120, 208 VAC
Three Phase Wye**

AG2083C3

**120, 240 VAC
Three Phase HLD**
(High Leg Delta)

AG2403C3

**277, 480 VAC
Three Phase Wye**

AG4803C3

**347, 600 VAC
Three Phase Wye**

AG6503C3
AG6503L3

**277, 480 VAC
Single Phase**

AG4801C3

Note: All SPDs protect against surges that travel along the electrical pathway and are not applicable to direct lightning strikes that travel down non-electrical paths. Be sure to have at least a 20 A dual pole breaker(s) to help prevent the circuits from shorting. Type 1 SPDs are normally mounted before panels, which would not include a breaker.

Surge Glossary

Maximum Continuous Operating Voltage (MCOV): The maximum RMS voltage that may be applied to each mode of a surge protection device. (Listed on the product)

Modes Of Protection: Electrical paths within a system which an SPD offers defense against surge events. Examples of protection include, Line to Neutral (L-N), Line to Ground (L-G), Line to Line (L-L) and Neutral to Ground (N-G). (Listed on the product)

Nominal Discharge Current (In): Peak value of the current through the SPD having a current wave shape of 8/20 where the SPD remains functional after 15 surges. (Listed on the product)

Nominal System Voltage: The voltage level at which a system normally operates. Nominal system voltages include, but are not limited to, 120, 208, 240, 277, 347, 480, 600 VAC. (Listed on the product)

Short Circuit Current Rating (SCCR): The measurement of how much current the electrical system can supply during a fault condition. This value determines where an SPD may be installed.
(Listed on the product)

Surge: A sudden and sharp increase of current or voltage within electric circuits.

Surge Protective Device (SPD): A device used to limit a surge on equipment by diverting or limiting it. SPDs were previously known as Transient Voltage Surge Suppressors or secondary surge arresters.

Voltage Protection Rating (VPR): The value assigned by UL which specifies the measured limited voltage value of the SPD. VPR rating is formally known as the "suppressed voltage rating". (Listed on the product)

IG2240-IMSK

IG2280-OM

IG2240-PK

IG2200 Series
SmartGuard®

Intermatic's Smart Guard® provides coverage of your customer's big investment equipment, from appliances and computers to HVAC equipment and TVs. This innovative SPD uses IMODULE™ with LED lights for quick and easy indication when protection has been compromised. A blue light indicates the SPD unit is ON and a green light indicates surge protection is active. Trusted, state-of-the-art TPMOV® (Thermally Protected Metal Oxide Varistor) surge protection technology eliminates the potentially hazardous failure modes that are commonly associated with standard MOV technology. Type 1 applications include outdoor installations before service entrances and utility meter cabinets.

Type 2 applications include installations after service entrances. UL Listed to ANSI/UL 1449, 4th Edition

Applications
• Residential • Light Commercial

Features
• Six Modes of protection
• TPMOV® surge protection technology
• Module Power Switch, included on IG2240-IMSK, enables convenient disconnection of power at the SPD when replacing with an IModule™
• Includes three IModule cartridges with LED power and protection status lights
• IModule is quick and easy to replace, eliminating the need to install a new SPD unit
• Tamper-proof IModule doors, will only open when the IModule is being inserted
• Type 3R Rainproof Enclosure for indoor/outdoor applications in metal or plastic
• 10-year product warranty
• $25,000 or $50,000 connected equipment warranty for 10 years on appliances and electronics
• UL certified to ANSI/UL 1449, 4th Edition

Ratings	
Service Voltage	120/240 VAC, 50/60 Hz
Phase	Single
Modes of Protection	6 (L1-N, L2-N, L1-G, L2-G, N-G, L1-L2)
Surge Protection Technology	TPMOV®
Operating Temperature	-31° F to 185° F (-35° C to 85° C)
# of Leads / Length	4 / 18"
Lead Gauge	#10 AWG, Tinned Copper
Dimensions H x W x D	See page 111 for dimensions
Warranty	10-year
Connected Equipment Warranty	10-year / $25,000

Accessories	In* (kA)	SCCR** (kA)	
Replacement IModule for IG2240 Series	10 kA	10 kA	IG120RSM10K
Replacement IModule for IG2280 Series	20 kA	100 kA	IG120RSM20
Flush Mount Kit for IG2240-IMSK and IG2280-IM			IG2200-FMK

IMODULE

IG2200-FMK

Model #	SPD Type	In* (kA)	SCCR** (kA)	MCOV† (V)	VPR‡ (V)	Module Power Switch
Indoor/Outdoor Type 3 Plastic						
IG2240-PK	2	10 kA	10 kA	L-N, N-G 150 V L-L, L-G 300 V	L-L 1200 V L-G 1500 V L-N 800 V N-G 700 V	No
Outdoor Type 3R Metal						
IG2280-OM	2	20 kA	100 kA	L-N, N-G 150 V L-L, L-G 300 V	L-L 1200 V L-G 1500 V L-N 800 V N-G 700 V	No
Indoor Type 1 Metal						
IG2240-IMSK	1 or 2	10 kA	10 kA	L-N, N-G 150 V L-L, L-G 300 V	L-L 1500 V L-G 1500 V L-N 800 V N-G 700 V	Yes
IG2280-IM	2	20 kA	100 kA	L-N, N-G 150 V L-L, L-G 300 V	L-L 1200 V L-G 1500 V L-N 800 V N-G 700 V	No

*Nominal Discharge Current
**Short Circuit Current Rating
†Maximum Continuous Operating Voltage
‡Voltage Protection Rating

INTERMATIC®

Dimensions for IG 2200 Series

IG2240-PK
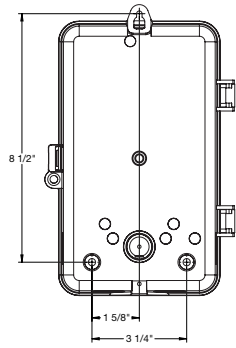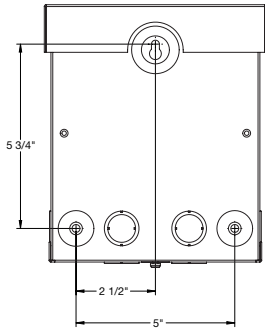
8 1/2"
1 5/8"
3 1/4"

IG2280-OM

5 3/4"
2 1/2"
5"

IG2240-IMSK and IG2280-IM

5"
2 1/2"
10 3/8"
3/4"   3/4"
1 5/8"   1 5/8"

Flush Mount Kit

7 5/8"   11"
5 5/8"
8"

Type 1 Installation

120/240 VAC Single-Phase

Service Transformer Secondary

L1 (black)
Neutral (white)
L2 (black)
GND (green)

Service Equipment Overcurrent device

SPD
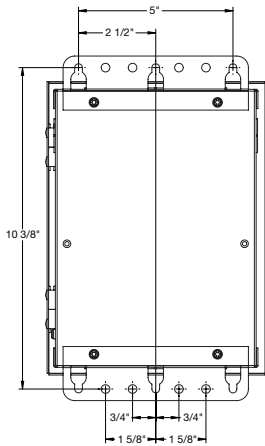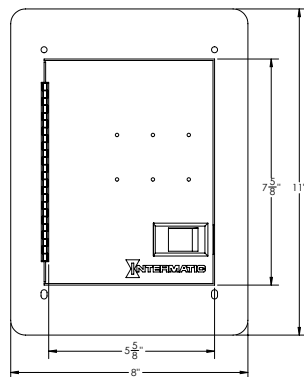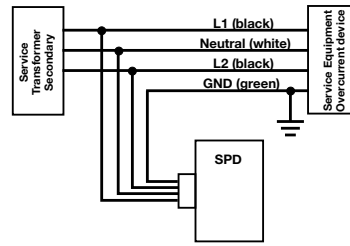
Type 2 Installation

120/240 VAC Single-Phase

*2 Pole 30 A circuit breaker in Service Panel.

*C/B
Line (black)
Neutral (white)
Line (black)
GND (green)

SPD

Main Breaker
2-Pole, 30A circuit breaker
Black (Line)
Black (Line)
SPD UNIT
Neutral (White)
Green (Ground)
Type 2 Installation

Replaceable IModule

Blue LED: Power indicator

Green LED: Status indicator
ON: Protection is being provided.
OFF: IModule™ is no longer providing protection. Replace IModule™ as soon as possible.

Alignment key of module

l

l
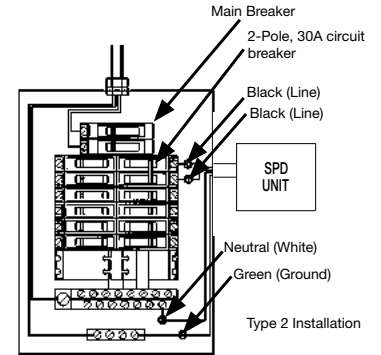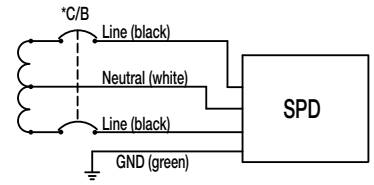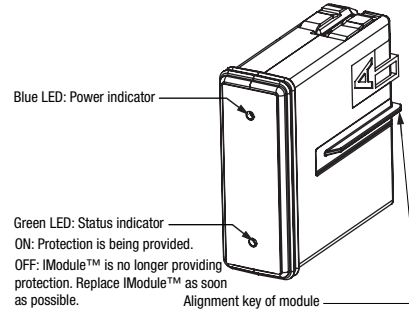
Surge Protection
Type 1 or 2 SPD for Residential and Light Commercial
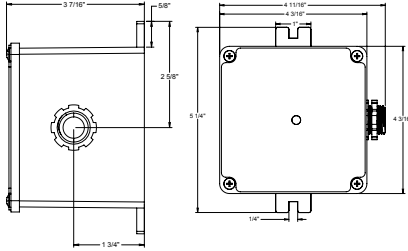
Type 2 Installation
IG1240RC3/IG3240RC3

IG3240RC3

Dimensions

IG1200RC3

Type 2 Installation
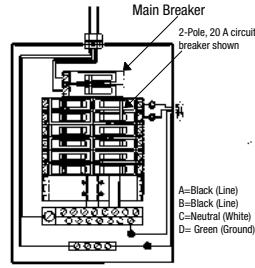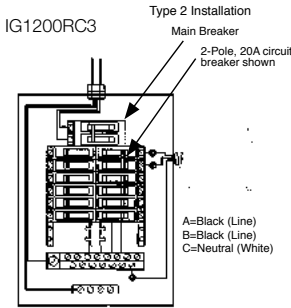
IG Series, SPD
Type 1 or Type 2 SPD

The IG Series Surge Protective Devices (SPD) are designed for a variety of applications. A green LED indicator provides status of protection. Trusted, state-of-the-art TPMOV® (Thermally Protected Metal Oxide Varistor) surge protection technology eliminates the potentially hazardous failure modes that are commonly associated with standard MOV technology. Type 1 applications include outdoor installations before service entrances and utility meter cabinets. Type 2 applications include installations after service entrances. CSA certified to ANSI/UL 1449, 3rd Edition.

Applications
• Residential • Light Commercial

Features
• Three or six modes of surge protection depending on model
• TPMOV® surge protection technology
• Green LED indicator provides status of protection
• Type 3R rainproof enclosure for indoor/outdoor applications in plastic or metal
• 3, 5 or 10-year product warranties
• $7,500, $10,000 or $25,000 connected equipment warranties on appliances and electronics
• CSA certified to ANSI/UL 1449, 3rd Edition

Type 1 Installation

IG1200RC3
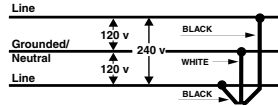
120/240 VAC Three-wire with grounded neutral.
Found at Service entrances and Meter Cans.

IG1200RC3
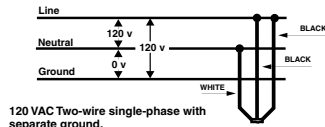
120 VAC Two-wire single-phase with separate ground.
Found at connections for individual pieces of equipment such as pumps and single-phase motors.
NOTE: Both Black wires connect to Line.

IG1200RC3
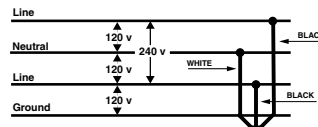
120/240 VAC Three-wire with separate ground.
Found in Main Disconnect Switches, Main Distribution panels, Load Centers Sub panels and equipment locations.

IG1240RC3/IG3240RC3
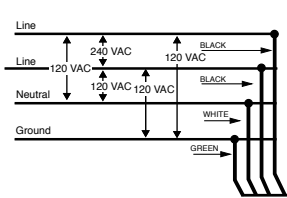
Model #	Modes of Protection	MCOV* (V)	VPR** (V)	No. of Leads/ Length	Lead Gauge	Product Warranty	Connected Equip Warranty
Outdoor Type 3R Plastic							
IG1200RC3	3 (L1-N, L2-N, L1-L2)	L1-N/G 150 V L-L 300 V	L1-N/G 700 V L-L 1200 V	3/30"	#12 AWG, Tinned Copper	3-year	3-year /$7,500
IG1240RC3	6 (L1-N, L2-N, L1-G, L2-G, N-G, L1-L2)	L-G, L-L 300 V L-N, N-G 150 V	L-L 1200 V L-G 1200 V L-N 700 V N-G 700 V	4/30"	#12 AWG, Tinned Copper	5-year	5-year /$10,000
Outdoor Type 3R Metal							
IG3240RC3	6 (L1-N, L2-N, L1-G, L2-G, N-G, L1-L2)	L-G, L-L 300 L-N, N-G 150	L-L 1200 V L-G 1200 V L-N 700 V N-G 700 V	4/30"	#12 AWG, Tinned Copper	10-year	10-year /$25,000

*Maximum Continuous Operating Voltage
**Voltage Protection Rating

LR38068 TYPE 1
LR38068 TYPE 2

Ratings	
Service Voltage	120-240 VAC, 50 Hz; 120-240 VAC, 60 Hz
Phase	Single
SPD Type	1 or 2
In†	20 kA
SCCR††	100 kA
Surge Protection Technology	TPMOV®
Operating Temperature	-31° F to 185° F (-35° C to 85° C)
Dimensions	See Drawings Above

† Nominal Discharge Current   †† Short Circuit Current Rating

Accessories

Flush Mount Kit for IG1200RC3 / IG1240RC3	IG1240FMP33
Flush Mount Kit for IG3240RC3	IG3240FMP33

IG1240FMP33   IG3240FMP33

INTERMATIC®

IG Series
Point-of-Use Surge Strips

Type 3 Point-of-Use Surge Protective Devices (SPD) are designed for heavy industrial use with 3 modes of surge protection (L-N, L-G, N-G). Features a 15 A resettable breaker and #14 AWG SJT power cord with molded plug. CSA certified to ANSI/UL 1449, 3rd Edition.

Applications
• Commercial • Industrial

Features
• Three Modes of protection
• Metal Oxide Varistor (MOV) surge protection technology
• 15 A resettable breaker
• #14 AWG SJT power cord with molded plug
• LED protection indicator
• Extruded aluminum housing
• 5-year product warranty
• $5,000, $10,000 or $25,000 connected equipment warranties on appliances and electronics
• CSA certified to ANSI/UL 1449, 3rd Edition

IG112463   IG112663

Dimensions
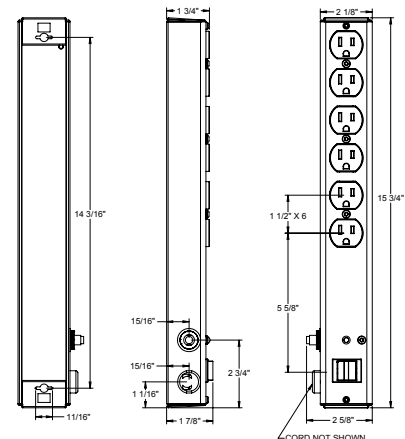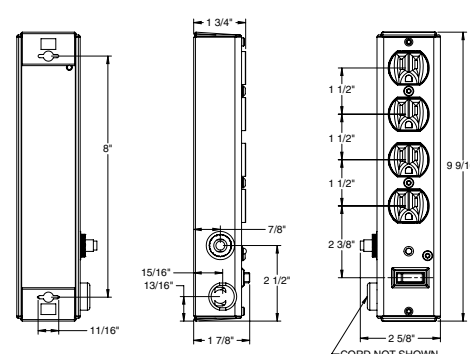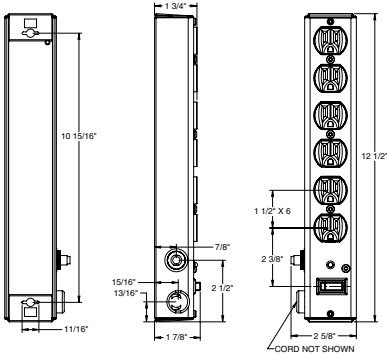
Dimensions for IG112663, IG112663BLK10

Dimensions for IG112463

Dimensions for IG206153, IG20B123, IG2012B153

Model #	Voltage Protection Rating (V)	Cord Length	Outlets	Illuminating ON/OFF Switch	EMI/RFI Noise Filtration	Color	Product Warranty	Connected Equipment Warranty
IG112463	L-N 700 V L-G 600 V N-G 600 V	6'	4	Yes	No	White	5-year limited	5-year /$10,000
IG112663		6'	6	Yes	No	White	5-year limited	5-year/ $10,000
IG112663BLK10		10'	6	Yes	No	Black	5-year limited	5-year/ $10,000
IG206153	L-N 400 V L-G 400 V N-G 500 V	15'	6	No	Yes	White	5-year limited	5-year/ $25,000
IG20B123	L-N 700 V L-G 600 V N-G 600 V	6'	6	No	Yes	White	5-year limited	5-year /$5,000
IG2012B153		15'	6	No	Yes	White	5-year limited	5-year/ $5,000

Accessories

Mounting Bracket Plate for all IG strips; Extruded Aluminum Alloy; 6" x 1 $^{15}/_{16}$" (152 mm x 50 mm)	24EG5133

24EG5133

Ratings	
Service Voltage	125 VAC, 15 A, 60 Hz
SPD	Type 3
MCOV*	130
Surge Protection Technology	MOV
Operating Temperature	-4° F to 104° F (-20° C to 40° C)
Dimensions	See dimension drawings above
Warranty	5-year limited

*Maximum Continuous Operating Voltage

INTERMATIC®

Surge Protection

IG1300-2T-1C3

CSR
C US
LR38068
TYPE 2

Ratings	
Service Voltage	120/240 VAC, 50/60 Hz
Phase	Single
SPD Type	2
Modes of Protection	6 (L-G, L-L, L-N, N-G)
In (kA)*	20 kA
SCCR (kA)**	50 kA
Surge Protection Technology	TPMOV®
Operating Temperature	-31° F to 185° F (-35° C to 85° C)
# of Leads / Length	4 / 24"
Lead Gauge	#12 AWG, Tinned Copper
Dimensions HxWxD	10" x 6.5" x 4" (254 mm x 165 mm x 102 mm)
Warranty	5-year
Connected Equipment Warranty	5-year / $10,000

*Nominal Discharge Current
**Short Circuit Current Rating

IG1300 Series
Type 2 SPD Panel Guard

The IG1300 Series provides protection for telephone and coax lines in addition to AC Power. Trusted, state-of-the-art TPMOV® (Thermally Protected Metal Oxide Varistor) surge protection technology eliminates the potentially hazardous failure modes that are commonly associated with standard MOV technology. A green LED indicator provides status of protection. The IG1300 Series Surge Protective Devices are designed for Type 2 applications for installations after service entrances. CSA certified to ANSI/UL 1449, 3rd edition, UL 497A for phone line and UL 497B for coax cable.

Applications
• Residential • Light Commercial

Features
• Six modes of protection for AC SPD
• TPMOV® surge protection technology for AC SPD
• Green LED indicator provides status of protection
• Provides telephone (analog phone line, modem or DSL) and coax line protection (cable TV, cable Internet or Satellite TV)
• Type 3R plastic rainproof enclosure for indoor/outdoor installations
• 5-year product warranty
• $10,000 connected equipment warranty on appliances and electronics
• CSA certified to ANSI/UL 1449, 3rd Edition
• UL 497A for phone line protection
• UL 497B for coax protection

Model #	Enclosure	No. of Telephone Lines Protected	No. of Coax Lines Protected	MCOV† (V)	VPR‡ (V)
IG1300-2T-1C3	Outdoor Type 3R Plastic	2	1	L-N, N-G 150 V L-L, L-G 300 V	L-L, L-G 1200 V L-N, N-G700 V
IG1300-4T-2C3		4	2		

†Maximum Continuous Operating Voltage   ‡Voltage Protection Rating

IG2TM

Accessories

2 Spare Telephone/Modem/DSL Internet Protection Modules for IG1CM, IG1CM3R	IG2T
1 Spare Coax Cable Protection Module for IG1CM, IG1C3R,	IG1C

IG2T   IG1C

C UL US
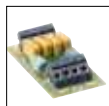
IG Series
Coax or Telephone Line Protective Devices

The IG Series Telephone Line or Coax Cable Protective Devices are designed for indoor or outdoor installations. Listed to UL 497A for phone line and UL 497B for coax cable.

Applications
• Residential • Light Commercial

Features
• Modes of protection: Tip-to-ground, tip-to-ring and ring-to-ground for telephone models
• Provides telephone (analog phone line, modem or DSL) and coax line protection (cable TV, cable Internet or satellite TV)
• #24 to #16 AWG for telephone models
• Type F Thread for coax models
• Gas tube protection
• 5-year product warranty
• $10,000 connected equipment warranty on appliances and electronics
• UL 497A for phone line protection;UL 497B is for coax protection

Model #	Enclosure Type	No. of Telephone Lines Protected	No. of Coax Lines Protected	Telephone Modes of Protection	Surge Technology
IG2TM	Indoor Type 1 Metal	2	–	Tip-to-Ground, Tip-to-Ring, Ring-to-Ground	Gas Tube Protection 350 VDC Breakdown
IG4TM		4	–		
IG1CM	Indoor Type 1 Metal	–	1 (Expandable to 2)	–	Gas Tube Protection 90 VDC Breakdown
IG1C3R	Outdoor Type 3R Plastic	–	1 (Expandable to 6)	–	

INTERMATIC®

AG Series
Type 1 or 2 SPD

The AG Series Surge Protective Devices (SPD) are designed for a variety of applications. Trusted, state-of-the-art TPMOV® (Thermally Protected Metal Oxide Varistor) surge protection technology eliminates the potentially hazardous failure modes that are commonly associated with standard MOV technology. A green LED indicator provides status of protection. Type 1 applications include outdoor installations before service entrances and utility meter cabinets. Type 2 applications include installations after service entrances. Outdoor applications include irrigation equipment, farm equipment, pumps, lighting fixtures, traffic signaling devices, HVACR controls and motors. AG2401C3/AG48013/AG6503C3/AG6503L3 are UL Listed to ANSI/UL 1449, 3rd edition. AG2083C3/AG4803C3/AG2403C3 are CSA certified to ANSI/UL 1449, 3rd Edition.

Applications
• Light Commercial • Outdoor Applications
• 3-Phase Rooftop HVAC Units

Features
• Three or six modes of protection
• TPMOV® surge protection technology
• Green LED protection indicator
• Type 4X watertight, plastic enclosure for outdoor installations
• UV-resistant polycarbonate housing
• ½" threaded nipple for ⅞" normal conduit knockout
• 1-year product warranty

AG2401C3

Wiring Diagrams for AG2401C3

120 VAC Two wire single phase with separate ground.
Found at connections for individual pieces of equipment such as pumps and single phase motors. NOTE: Both Black wires connect to Line.

120/240 VAC Three wire with separate ground.
Found in Main Disconnect Switches, Main Distribution panels, Load Centers Sub panels and equipment locations.

120/240 VAC Three wire with grounded neutral.
Found at Service entrances and Meter Cans.

CSA LR38068 TYPE 1   CSA c US LR38068 TYPE 2   UL

Model #	Service Voltage	Modes of Protection	MCOV** (V)	VPR*** (V)	Lead Length	Lead Gauge
Single Phase Models						
AG2401C3	120/240 VAC, 50/60 Hz	3 (L1-N, L2-N, L1-L2)	L-L 300 V L-G 150 V L-N 150 V	L-L 1200 V L-G 700 V L-N 700 V	18"	#12 AWG
AG48013	277/480 VAC, 50/60 Hz		L-L 640 V L-G 320 V L-N 320 V	L-L 2000 V L-G 1200 V L-N 1200 V	18"	#10 AWG (Black, White), #6 AWG (Green)
Three Phase Models						
AG2083C3	208 VAC, 50/60 Hz	6 (L1-N, L2-N, L3-N, L1-L2, L1-L3, L2-L3)	L-L 300 V L-G 150 V L-N 150 V	L-L 1200 V L-G 700 V L-N 700 V	18"	#12 AWG
AG4803C3	347/600 VAC, 50/60 Hz		L-L 640 V L-G 320 V L-N 320 V	L-L 2000 V L-G 1200 V L-N 1200 V	18"	#12 AWG
AG6503C3*	347/600 VAC, 50/60 Hz		L-L 840 V L-G 420 V L-N 420 V	L-L 2500 V L-G 1500 V L-N 1500 V	18"	#10 AWG
AG6503L3*	347/600 VAC, 50/60 Hz		L-L 840 V L-G 420 V L-N 420 V	L-L 2500 V L-G 1500 V L-N 1500 V	36"	#10 AWG
AG2403C3	120/208/240 VAC, 50/60 Hz, High Leg Delta		L1/L3-NG 150 V L2-NG 270 V L1-L3 300 V L1/L3-L2 420 V	L1/L3-NG 700 V L2-NG 1000 V L1-L3 1200 V L1/L3-L2 1500 V	18	#12 AWG

*CSA and UL Recognized
** Maximum Continuous Operating Voltage
*** Voltage Protection Rating

Ratings

Ratings	
SPD Type	1 or 2
In (kA)*	20 kA
SCCR (kA)**	50 kA
Surge Protection Technology	TPMOV®
Operating Temperature	-31° F to 185° F (-35° C to 85° C)
Dimensions H x Dia	4 ³⁄₁₆" x 3" (106.4 mm x 76.2 mm)
Warranty	1-year

*Nominal Discharge Current
**Short Circuit Current Rating

Accessories

Mounting Bracket for AG Series	AG1BRKT

AG1BRKT

Wiring Diagrams
For more details on model numbers/wiring diagrams/ratings scan the QR code with your smartphone or tablet.

...arles

...TECTIVE...

Type 4...

AG3000

GREEN INDICATOR
...GHT OPERATING CORRECTLY
...PROTECTION DIMINISHED,
REPLACE UNIT
...Serviceable Parts

HVAC Surge & Power Protection

Power disturbances can damage air conditioner compressors without warning. Let the Intermatic AG3000 and Compressor Defender™ take the hit so that your customers' central air conditioners and heat pumps are never damaged due to power quality issues or weather-related power disturbances.

The Intermatic AG3000 protects A/C units, furnaces, mini-splits and heat pumps from the dangers of power surge events, while the Intermatic Compressor Defender serves as an all-in-one undervoltage and surge power protection device for outdoor A/C units and heat pumps. Together, they help extend the life of HVAC components and eliminate the threat of damage caused by unexpected power surge events. Best when installed in tandem, the dynamic duo provides layered protection that's ideal for residential and light commercial HVAC applications.

Tested rigorously in our UL-certified lab, both the AG3000 and Compressor Defender include a $7,500 warranty on all connected equipment.

Contents

HVAC Surge & Power Protection

AG3000

US SPD Type 1
Canada SPD Type 2

HVACR

AG3000
HVAC Surge Protective Device

Power surges are the silent killer for home appliances and HVAC equipment. Most homeowners protect their electronics, but leave more valued equipment unprotected. Surges can wipe out equipment and leave you searching for answers. Search no more. The easy-to-install AG3000 Surge Protective Device (SPD) is the perfect add-on for HVAC equipment. A green LED indicator provides the status of protection. Trusted, state-of-the-art TPMOV® (Thermally Protected Metal Oxide Varistor) technology eliminates the potentially hazardous failure modes that are commonly associated with standard MOV technology. UL Listed to ANSI/UL 1449, 4th Edition.

Applications
- Boilers • Hydronic Heating • Heat Pumps • Furnaces
- Central Air Conditioning • Air Handlers • Mini-splits
- Instantaneous Water Heaters

Features
- Three modes of protection: L-G, L-L, L-N
- TPMOV surge protection technology
- Green LED indicator provides status of protection
- Type 4X watertight and UV resistant plastic enclosure
- 3-year product warranty
- $7,500 connected equipment warranty for 3 years

Model #	Enclosure
AG3000	Indoor/Outdoor Type 4X

Ratings	
Service Voltage	120/240 VAC, 50/60 Hz
Phase	Single
SPD Type	Type 1, Type 2
MCOV (Max Continuous Overvoltage)	L-N/G 150, L-L 300
In (Nominal Discharge Rating)	20 kA
SCCR (Short Circuit Current Rating)	100 kA
Voltage Protection Rating (VPR)	L-L 1200, L-N/G 700
Modes of Protection	3 (L1-N, L2-N, L1-L2)
Surge Protection Technology	TPMOV
Operating Temperature	-40° F to 158° F (-40° C to 70° C)
Lead Gauge	#10 AWG, Tinned Copper
Dimensions H x W x D	3 ⅞" x 1 ⅝" X 4 ³⁄₁₆" (98 mm x 41 mm x 106.4 mm)
Warranty	3-year
Connected Equipment Warranty	3-year / $7,500

INTERMATIC®

Wiring Diagrams

Line

120 V

Neutral

120 V

Ground

0 V

Line (BLACK)

Line (BLACK)

Neutral (WHITE)

120 VAC Two wire single-phase with separate ground.
Found at connections for individual pieces of equipment such as pumps, single phase motors and HVAC applications.
NOTE: Both Black wires connect to Line.

AG3000 Wiring Diagram
120 VAC

AC Disconnect

L1

Grounded/Neutral

Main Service Panel

black
black
white

AG3000

AG3000 Wiring Diagram
240 VAC

AC Disconnect

L1

Grounded/Neutral

L2

Main Service Panel

black
white
black

AG3000
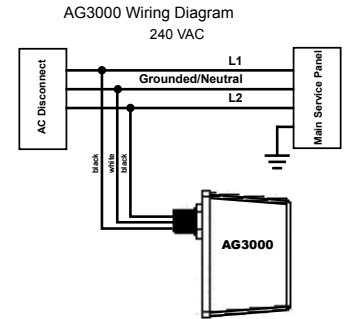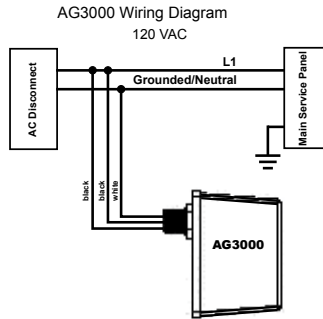
Typical 240 VAC Installation

Main Breaker

2-Pole, 20 A circuit breaker shown

A=Black (Line)
B=Black (Line)
C=Grounded/Neutral (White)

Dimensions

13/16"

13/16"

1 5/16" 1"

AG SERIES

4 3/16"

1"

Ø 1 1/8"

1 5/8"

3 7/8"

1"

11/16"

1/2" NPSM
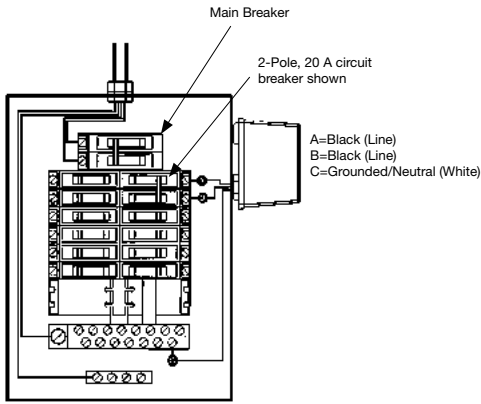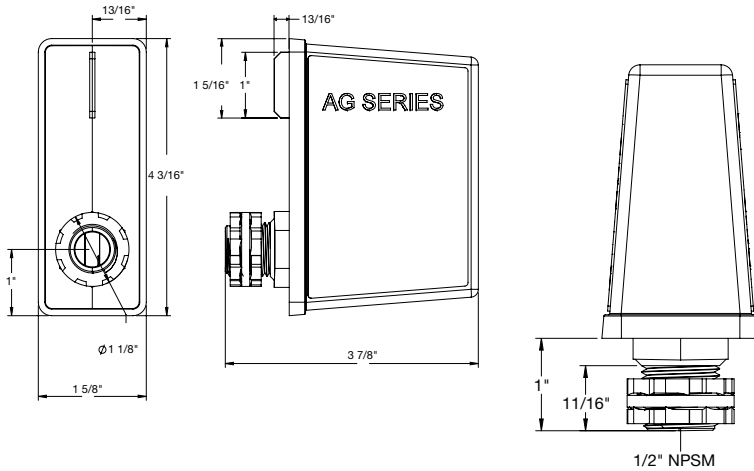
CD1-024R

CD1-024R

Compressor Defender™ Undervoltage, Surge and Short Cycle Protective Device

The Compressor Defender is the only all-in-one undervoltage and surge power protection device on the HVAC Market, providing protection for central A/C and heat pump condensing units and their associated motors, controls and components—both electronic and mechanical. It can be installed inside the condensing unit or externally on the outdoor A/C disconnect.

Autosense voltage technology protects at any voltage from 120-240 VAC, making it an ideal solution for residential or light commercial installations. Trusted, state-of-the-art TPMOV® (Thermally Protected Metal Oxide Varistor) surge protection technology eliminates the potentially hazardous failure modes that are associated with standard MOV technology. The device is also designed with integrated 3-minute short cycle time delay protection.

Applications
- 1- or 2-stage central air conditioners and heat pumps for residential and light commercial heating and cooling. • Pool and Spa Heating Systems

Features
- TPMOV® surge protection technology
- 3-year, $7500 connected equipment warranty
- Auto-sense voltage technology
- Quick-reacting, 5-line cycle undervoltage response time
- 120/208-240 VAC universal input
- 24 VAC/VDC, 2 A control thermostat output
- 3-minute short cycle time delay
- Two LED indicators provide real time status for quick and easy troubleshooting and functional visibility for end users
- Surge protection complies with the latest UL 1449, 4th Edition, surge protective device requirements
- Undervoltage protection complies with AHRI standard 110-2016 Range B Protective Device
- Undervoltage Response Time: 5 line cycles*
- Power Disruption Response Time: 3 line cycles*
- Type 3 Outdoor, UV resistant plastic enclosure

Typical Response Time

Ratings	
Input Voltage	120/208-240 VAC, Single Phase, 60 Hz
Thermostat Relay	Normally Closed Relay, 24 VAC
SPD Type	Type 2
Modes of Protection	3 (L1-N, L2-N, L1-L2)
Control Output Current Rating	2 A @ 24 VAC, isolated NC contact
Max Continuous Overvoltage (MCOV)	L-N/G: 150, L-L: 300
Voltage Protection Rating (VPR)	L-N/G: 700, L-L: 1200
Nominal Discharge Rating (In)	20 kA
SCCR (Short Circuit Current Rating)	100 kA
Undervoltage Response Time	5 line cycles*
Power Disruption Response Time	3 line cycles*
Short Cycle Delay	3 min
Operating Temperature	-40° F to 158° F (-40° C to 70° C)
Enclosure	Outdoor Type 3
Lead Gauge	#10 AWG, Tinned Copper
Shipping Weight	1.198 (0.543 kg)
Warranty	3-year limited
Connected Equipment Warranty	3-year/$7,500

Undervoltage Pickup Table	Nominal System Voltage	Range B Protection
	120 VAC	104 VAC
	208 VAC	180 VAC
	240 VAC	208 VAC

Typical Response Time

Model #	Enclosure
CD1-024R	Outdoor Type 3

Specification
Furnish and install an Intermatic CD1-024R Compressor Defender. The unit shall protect HVAC compressors (Scroll & Reciprocating), and the electronics inside central air conditioners, heat pumps, light commercial packaged rooftop units, or pool and spa heating systems, from under/overvoltage conditions, surge events, and system short cycling caused from AC power interruptions. The unit shall be capable of disconnecting a 2 A, 24 VAC thermostat circuit during an under-voltage or power disruption event which initiates a 3 minute short cycle time delay event. The unit shall be compatible with 120, 208, and 240 VAC voltage systems. The unit shall provide Type 2 surge protection with a nominal discharge current rating of 20 kA, a short circuit current rating of 100 kA, and a voltage protection rating of L-N/G: 700, L-L: 1200. If surge or voltage monitoring protection is lost, the unit shall continue normal compressor and thermostat operation without surge protection.

INTERMATIC®

Wiring Diagrams

Applicable to both single- and two-stage
central A/C & heat pumps.

Contactor Wiring   From *Compressor Defender*™

BLACK

RED

Y1

24 VAC

C

Compressor Contactor
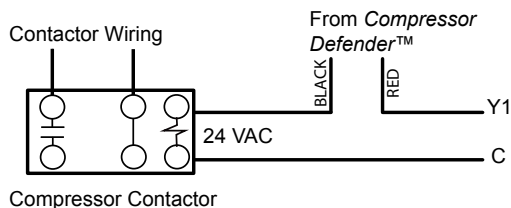
Typical 208/240 VAC Recommended Application

Line   Line
Neutral/Ground

Black
White
Black

Line   Line
A/C Disconnect
Load   Load

Compressor DEFENDER™

Control Dry Contact - 24 VAC

Y1 — Y1
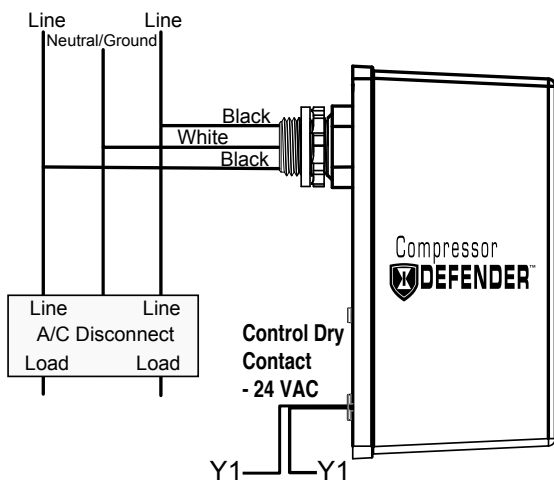
Typical 120 VAC Application

Line — BLACK

Grounded — WHITE
BLACK w/WHITE SLEEVE

120 VAC two-wire single-phase
with separate ground.
Found at connections for individual
pieces of equipment, such as pumps,
single-phase motors, and HVAC
applications.

Compressor DEFENDER™

Control Dry Contact - 24 VAC

Y1 — Y1
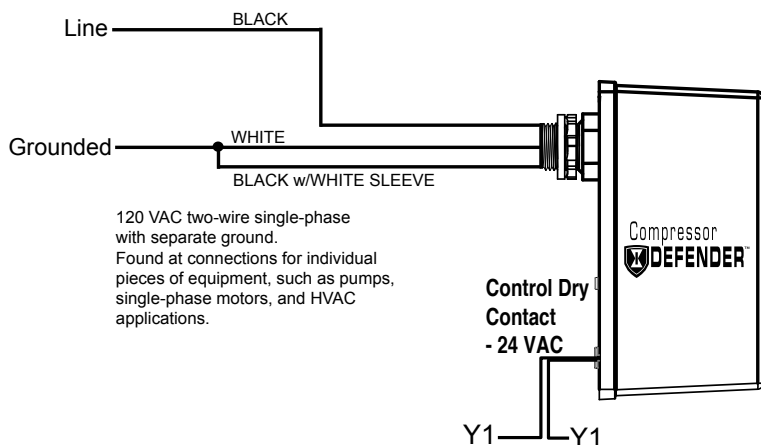
Mounting

Mounting Inside Panel/ Condenser

Bracket
Included

Sheet
Metal Screw
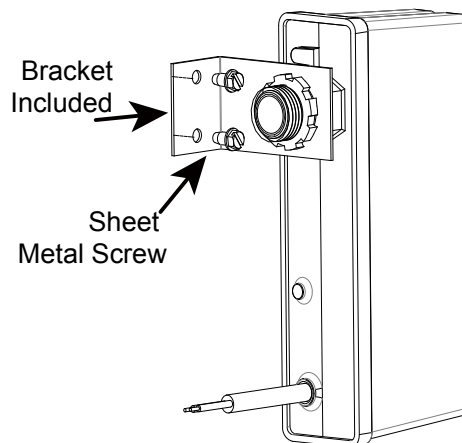
LED Diagnostic Indicator Key

Condition	Green LED	Red LED
Surge Protection	ON	-
No Surge Protection	OFF	-
Undervoltage	-	Flash
Short Cycle Protection	Flash	-
Unit Power Lost	OFF	OFF

Weatherproof Covers

Keep valuable equipment protected from the elements with In-Use Weatherproof Covers from Intermatic. Our durable lineup of Die-Cast and Plastic Weatherproof Covers offers long lasting protection in all types of rugged applications, including industrial, commercial, manufacturing, residential and more! Time-saving features and resilient construction make these weatherproof covers the most versatile covers around.

Stay compliant with Intermatic Extra-Duty Weatherproof Covers that are designed to meet or exceed current building standards, particularly NEC 2017, Article 406.9(B)(1) for wet locations and Extra-Duty applications, and CEC 2015 Section 26-702.

• Per NEC 2017 guidelines, all 15 and 20 Amp receptacles in wet locations must have a weatherproof cover that is Listed and identified as of the "extra duty" type.

• Per the 2017 NEC, all 15 and 20 A, 125 and 250 VAC receptacles installed in a wet location must have enclosures and covers that are weatherproof, whether an attachment plug cap is inserted or not.

• NEC 2017 requirements are enforced at dwelling units, and the guidelines for weather-resistant receptacles in wet locations are still applicable in the current NEC code.

• Intermatic Extra-Duty Weatherproof Covers exceed the requirements of CEC 2015 Section 26-702.

Contents

WP17

16 Configurations in One

WP217
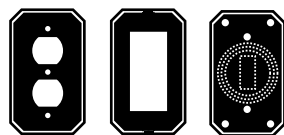
70 Configurations in One

Single-Gang and Double-Gang Inserts
For Weatherproof Covers

These inserts fit single-gang models or double-gang models of all plastic, extra-duty plastic and extra-duty die-cast models. Each insert package can be purchased separately. All weatherproof covers come with inserts, mounting screws, gasket, base and cover assembly.

Applications
• Signage • Commercial • Industrial • Residential • Manufacturing
• Agricultural • Athletic Fields

WP17 Single-Gang Features
• Standard in all single-gang covers
• Three inserts - 16 possible configurations
• Converts to either toggle or round receptacle sizes:
  1 ⅜" (35 mm), 1 ⅝" (41 mm), 1 ⅞" (48 mm) or 2 ⅛" (54 mm)

WP217 Double-Gang Features
• Standard in all double-gang covers
• Six inserts - 70 possible configurations
• Converts to either toggle or round receptacle sizes:
  1 ⅜" (35 mm) or 1 ⅝" (41 mm)
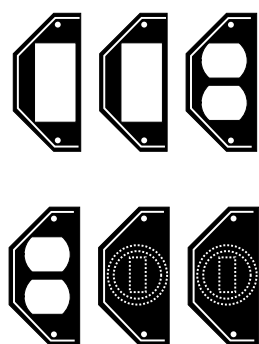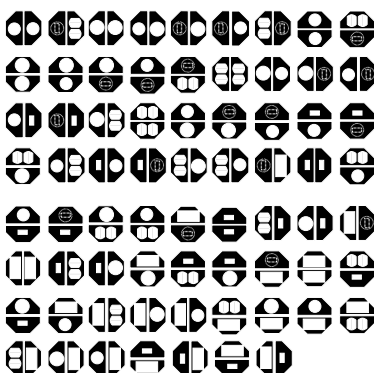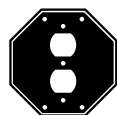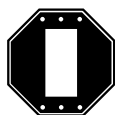
WP101   WP102

WP10HP

WP107   WP213
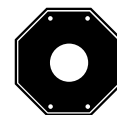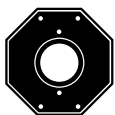
Model #	Type	Description
WP17	Single-Gang	16 Configurations in 1
WP217	Double-Gang	70 Configurations in 1
WP101	Double-Gang	Duplex
WP102	Double-Gang	GFCI
WP107	Double-Gang	Round 1 ⅜", 1 ⅝", 1 ¾" (35 mm, 41 mm, 44 mm)
WP213	Double-Gang	Round 2 ⅛", 2 ⅝" (55 mm, 67 mm)
WP10HP	–	Hinge Pin (10-pc)

INTERMATIC®

Extra-Duty Die-Cast In-Use Weatherproof Covers
Single and Double-Gang Covers

Die-Cast In-Use Aluminum Weatherproof Covers are extra-duty rated and easy to install. Heavy-duty die-cast aluminum construction ensures long-lasting durability. Covers come with a gasket, mounting screws, base, cover assembly and inserts to meet the needs of a variety of applications.

Applications
• Industrial • Commercial • Manufacturing • Residential • Agricultural
• Signage • Athletic Fields • Municipalities

Features
• Complies with 2017 NEC Article 406.9 (B)(1) for wet locations and extra-duty applications
• Exceeds CEC Article 26-702
• UL Certified for Type 3R outdoor enclosures
• Meets requirements for cold impact testing: -60° F (-51° C)
• Heavy-duty die-cast aluminum cover and mounting base with UV stabilized polycarbonate inserts
• 1⁄8" (3 mm) thick, neoprene gasket with slits for mounting screws
• Lockable hasp: All models accept up to 1⁄4" (6 mm) dia shank
• Impact rated: 12 lbf. impact test to ensure cover remains intact
• Reinforced hinge pin designed to exceed 40 lbf. hinge hang/stress test
• Warranty: 1-year limited

Single-Gang Models
• Three inserts provided with all models that allow each model to meet multiple installations (up to 8 configurations)
• Max cord size: #12 AWG or higher

Double-Gang Models
• Six inserts provided with all models that allow each model to meet multiple installations (up to 70 configurations)
• Max cord size: #12 AWG or higher

Dimensions
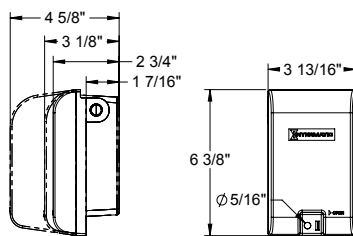
Single-Gang
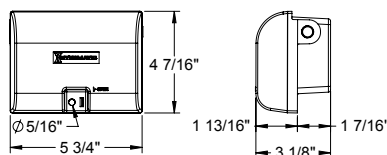
WP1010HMXD
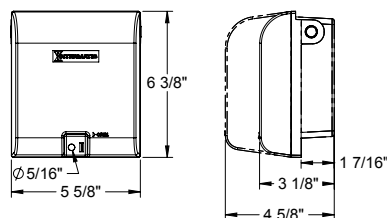
Double-Gang

WP3110MXD

WP1010MXD

WP1010HMXD

WP1250MVXD

WP1030MXD

WP1250MXD

Single-Gang
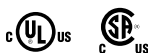
Model #	Color	Depth	Flexi-Guard Inserts
WP3110MXD	Gray	2 ¾" (70 mm)	WP17
WP1010MXD	Gray	3 ⅛" (79 mm)	WP17
WP1010HMXD*	Gray	3 ⅛" (79 mm)	WP17
WP1250MVXD	Gray	4 ⅝" (117 mm)	WP17

Note: WP1010HMXD is a horizontal mount.

Double-Gang

Model #	Color	Depth	Flexi-Guard Inserts
WP1030MXD	Gray	3 ⅛" (79 mm)	WP217
WP1250MXD	Gray	4 ⅝" (117 mm)	WP217

Accessories (detailed on pg 124)

Single-Gang Inserts	WP17
Double-Gang Inserts	WP217

Clear/Gray   Gray   Green

Black   Yellow   Beige

Orange   White   Bronze

Red

WP5000G

WP5500C

WP5103C

Extra-Duty Plastic In-Use Weatherproof Covers
Single and Double-Gang Covers

Plastic In-Use Weatherproof Covers are extra-duty rated and easy to install. Covers come with an adhered gasket, mounting screws, base, cover assembly, and inserts to meet the needs of a variety of applications.

Applications
- Industrial • Commercial • Manufacturing • Residential • Agricultural
- Signage • Athletic Fields

Features
- Complies with 2017 NEC Article 406.9 (B)(1) for wet locations and extra-duty applications
- Exceeds CEC Article 26-702
- UL Certified for Type 3R outdoor enclosures
- Meets requirements for cold impact testing: -60° F (-51° C)
- Heavy-duty UV stabilized polycarbonate cover, mounting base, and inserts
- 1⁄8" (3 mm) thick, neoprene gasket with slits for mounting screws
- Lockable hasp: All models accept up to 1⁄4" (6 mm) dia shank
- Impact rated: 12 lbf. impact test to ensure cover remains intact
- Reinforced hinge pin designed to exceed 40 lbf. hinge hang/stress test
- Warranty: 1-year limited

Single-Gang Models
- NEW Faster Installation, Pre-Set for GFCI, No insert required
- Two inserts provided with all models that allow each model to meet multiple installations (up to 16 configurations)
- Max cord size: (2) #14 AWG or (1) #12 AWG

Double-Gang Models
- Six inserts provided with all models that allow each model to meet multiple installations (up to 70 configurations)
- Max cord size: (2) #12 AWG or (1) #10 AWG
- 30/50 A (1) #6 AWG

Single-Gang - Vertical/Horizontal

Clear/Gray	Gray	Black	Yellow	Orange	White	Green	Beige	Bronze	Red	Depth	Flexi-Guard Inserts
WP5000C	WP5000G	WP5000BL	–	–	WP5000W	–	WP5000B	WP5000BR	–	2 ¼" (57 mm)	WP17
WP5100C	WP5100G	WP5100BL	WP5100Y	WP5100OR	WP5100W	WP5100GN	WP5100B	WP5100BR	WP5100R	2 ¾" (70 mm)	WP17
WP5103C*	–	–	–	–	–	–	–	–	–	2 ¾" (70 mm)	WP17
WP5110C	WP5110G	–	–	–	WP5110W	–	–	–	–	3 ⅝" (92 mm)	WP17

Double-Gang - Vertical

Clear/Gray	Gray	Black	Yellow	Orange	White	Green	Beige	Bronze	Red	Depth	Flexi-Guard Inserts
WP5220C	WP5220G	WP5220BL	WP5220Y	WP5220OR	WP5220W	WP5220GN	WP5220B	WP5220BR	WP5220R	2 ¼" (57 mm)	WP217
WP5221C	–	–	–	–	–	–	–	–	–	2 ¼" (57 mm)	WP101, WP102
WP5225C	WP5225G	WP5225BL	–	–	WP5225W	–	–	–	–	2 ¾" (70 mm)	WP217
WP5240C	–	–	–	–	–	–	–	–	–	3 ⅝" (92 mm)	WP217
WP5500C	WP5500G	–	WP5500Y	–	–	–	–	–	–	30/50 A**	WP107, WP213

* Includes 3/0 adapter plate for 3" (76 mm) round box.   **30/50 A = 4 ¾" (121 mm) depth.

Accessories (detailed on pg 124)

Single-Gang Inserts	WP17
Double-Gang Inserts	WP217
Hinge Pin	WP10HP
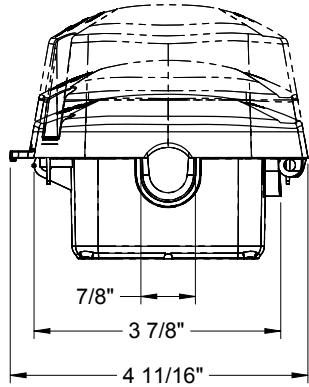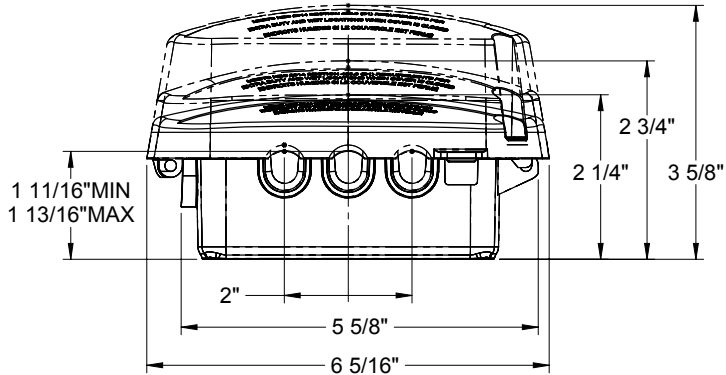
INTERMATIC®

Single-Gang

1 11/16"MIN
1 13/16"MAX

2 3/4"
2 1/4"   3 5/8"

2"
5 5/8"
6 5/16"

7/8"
3 7/8"
4 11/16"

Double-Gang

2 3/4"
2 1/4"   3 5/8"

6 1/16"

6 5/8"

5 1/4"

WP5103C

⌀.165
(2) PLACES

CL   A

4.31
3.28
2.75   2.25

2.58

⌀4.00   .188
.24

Double-Gang
30/50 A

1 1/8"
5 5/8"
1 1/16"
1 5/16"
2 5/16"
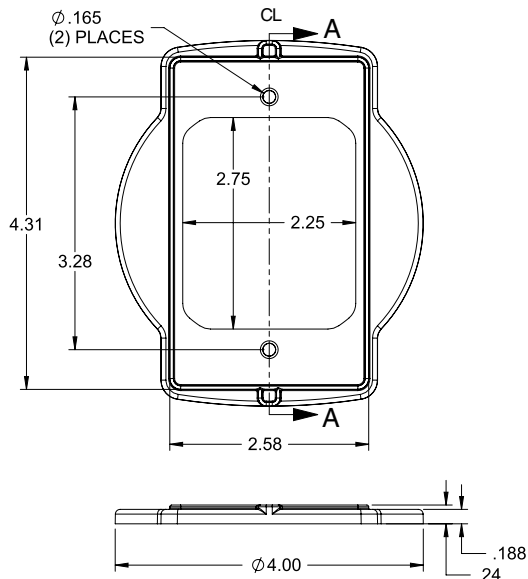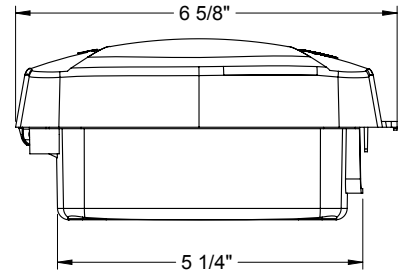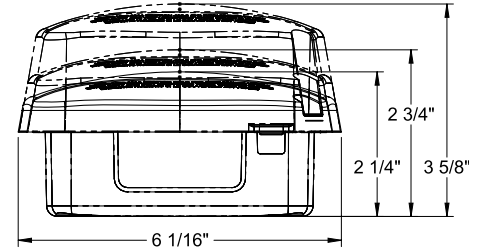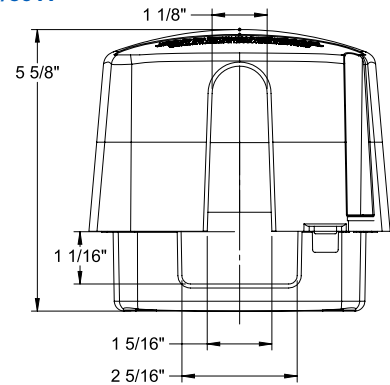
Weatherproof Covers

WP3100

WP3103C

WP1100C

Plastic In-Use Weatherproof Covers
Single-Gang Covers

Plastic In-Use Weatherproof Covers are easy to install and include adhered gasket, mounting screws, base, cover assembly and inserts to meet the needs of a variety of applications.

Applications
• Industrial • Commercial • Manufacturing • Residential • Agricultural
• Signage • Athletic Fields

Features
• Complies with 2017 NEC Article 314.15 for damp and wet locations
• Exceeds CEC Article 26-702
• UL Certified for Type 3R outdoor enclosures
• Meets requirements for cold impact testing: -60° F (-51° C)
• Heavy-duty UV stabilized polycarbonate cover, mounting base and inserts
• 1⁄8" (3 mm) thick, pre-adhered neoprene gasket with slits for mounting screws
• Lockable hasp: All models accept up to 1⁄4" (6 mm) dia shank, except WP3100C & WP3103C accept up to 1⁄8" (3 mm) dia shank
• Three inserts provided with all models that allow each model to meet multiple installations (up to 16 configurations)
• Max cord size: (2) #14 AWG or (1) #12 AWG
• Mounts vertically or horizontally
• Warranty: 1-year limited

Dimensions

WP3100

4.06"
5.77"

3.02"
1.53"
1.49"
Dia. 0.5"
2.75"
INSIDE DEPTH

WP1100C, WP1110C

3-5/8"
2-3/4"

5-3/8"
3-1/2"
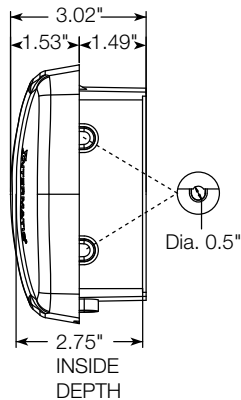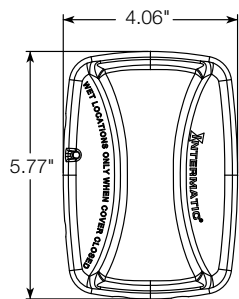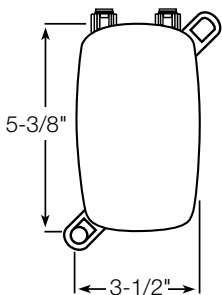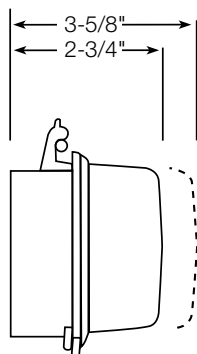
Single-Gang - Vertical/Horizontal Hinge

Model #	Color	Depth	Flexi-Guard Inserts
WP3100C*	Clear	2 ¾" (70 mm)	WP17
WP3103C**	Clear	2 ¾" (70 mm)	WP17
WP1100C	Clear	2 ¾" (70 mm)	WP17
WP1100WC	White	2 ¾" (70 mm)	WP17
WP1110C	Clear	3 ⅝" (92 mm)	WP17
WP1110GC	Gray	3 ⅝" (92 mm)	WP17
WP1110WC	White	3 ⅝" (92 mm)	WP17

*Hidden Hinge.
**Includes 3/0 Adapter Plate for 3" (76 mm) Round Box.

Accessories (detailed on pg 124)

Single-Gang Inserts	WP17

INTERMATIC®

Plastic In-Use Weatherproof Covers

Single-Gang Covers

Plastic In-Use Weatherproof Covers are easy to install and include adhered gasket, mounting screws, base, cover assembly and inserts to meet the needs of a variety of applications.

Applications
• Industrial • Commercial • Manufacturing • Residential • Agricultural
• Signage • Athletic Fields

Features
• Complies with 2017 NEC Article 314.15 for damp and wet locations
• Exceeds CEC Article 26-702
• UL Certified for Type 3R outdoor enclosures
• Meets requirements for cold impact testing: -60° F (-51° C)
• Heavy-duty UV stabilized polycarbonate cover, mounting base and inserts
• ⅛" (3 mm) thick, pre-adhered neoprene gasket with slits for mounting screws
• Three inserts provided with all models that allow each model to meet multiple installations (up to 8 configurations)
• Max cord size: (2) #14 AWG or (1) #12 AWG
• Warranty: 1-year limited

Single-Gang - Vertical Hinge

Model #	Color	Depth	Flexi-Guard Inserts
WP1000C	Clear	2 ¼" (57 mm)	WP17
WP1000GC	Gray	2 ¼" (57 mm)	WP17
WP1010C	Clear	3 ⅛" (79 mm)	WP17

Single-Gang - Horizontal Hinge

Model #	Color	Depth	Flexi-Guard Inserts
WP1000HC	Clear	2 ¼" (57 mm)	WP17
WP1000HGC	Gray	2 ¼" (57 mm)	WP17
WP1010HC	Clear	3 ⅛" (79 mm)	WP17
WP1150C	Clear	4 ¾" (121 mm)	WP17

Accessories (detailed on pg 124)

Single-Gang Inserts	WP17

WP1000C

WP1000HC

Dimensions

WP1010 3-1/8"
WP1000 2-1/4"
5-1/2"
3-13/16"

WP1010H 3-1/8"
WP1000H 2-1/4"
4-1/4"
5"

WP1150C 4-3/4"
5-3/8"
3-1/2"

Weatherproof Covers

WP1020C

Dimensions

3-1/8" WP1030C
2-1/4" WP1020C

5-1/2"

5"

WP1050

4 - 3/4"

6"

5"

Plastic In-Use Weatherproof Covers
Double-Gang

Plastic In-Use Weatherproof Covers are easy to install and include a gasket, mounting screws, base, cover assembly and inserts to meet the needs of a variety of applications.

Applications
• Industrial • Commercial • Manufacturing • Residential • Agricultural
• Signage • Athletic Fields

Features
• Complies with 2017 NEC Article 314.15 for damp and wet locations
• Exceeds CEC Article 26-702
• UL Certified for Type 3R outdoor enclosures
• Meets requirements for cold impact testing: -60° F (-51° C)
• Heavy-duty UV stabilized polycarbonate cover, mounting base and inserts
• ⅛" (3 mm) thick neoprene gasket with slits for mounting screws
• Two inserts provided with all models for multiple installations
• Max cord size: (2) #14 AWG or (1) #12 AWG, WP1050 (2) #14 AWG or (1) #10 AWG
• Warranty: 1-year limited

Double-Gang - Vertical Hinge

Model #	Color	Depth	Flexi-Guard Inserts
WP1020C	Clear	2 ¼" (57 mm)	WP101, WP102
WP1020GC	Gray	2 ¼" (57 mm)	WP101, WP102
WP1030C	Clear	3 ⅛" (79 mm)	WP101, WP102
WP1050	Clear	4 ¾" (121 mm)	WP102, WP107

Accessories (detailed on pg 124)

Double-Gang Duplex Insert	WP101
Double-Gang GFCI Insert	WP102
Double-Gang Insert - Round 1 ⅜" (35 mm), 1 ⅝" (41 mm), 1 ¾" (44 mm)	WP107
Double-Gang Insert - Round 2 ⅛" (55 mm), 2 ⅝" (67 mm)	WP213

WP101   WP102   WP107   WP213

INTERMATIC

Plastic In-Use Weatherproof Covers
Double-Gang

Plastic In-Use Weatherproof Covers are easy to install and include a gasket, mounting screws, base, cover assembly and inserts to meet the needs of a variety of applications.

Applications

• Industrial • Commercial • Manufacturing • Residential • Agricultural
• Signage • Athletic Fields

Features

• Complies with 2017 NEC Article 314.15 for damp and wet locations
• Exceeds CEC Article 26-702
• UL Certified for Type 3R outdoor enclosures
• Meets requirements for cold impact testing: -60° F (-51° C)
• Heavy-duty UV stabilized polycarbonate cover, mounting base and inserts
• 1⁄8" (3 mm) thick neoprene gasket with slits for mounting screws
• Six inserts provided with all models that allow each model to meet multiple installations (up to 70 configurations)
• Max cord size: (2) #14 AWG or (1) #12 AWG, WP1250 (2) #14 AWG or (1) #10 AWG
• Warranty: 1-year limited

WP1250

Double-Gang - Vertical Hinge

Model #	Color	Depth	Flexi-Guard Inserts
WP1220C	Clear	2 ¼" (57 mm)	WP217
WP1220WC	White	2 ¼" (57 mm)	WP217
WP1230C	Clear	3 ⅛" (79 mm)	WP217
WP1250C	Clear	4 ¾" (121 mm)	WP217

Accessories (detailed on pg 124)

Double-Gang Insert	WP217

Dimensions

WP1230C
WP1220

3-1/8"
2-1/4"
5-1/2"
5"

WP1250C

4-3/4"
6"
5"
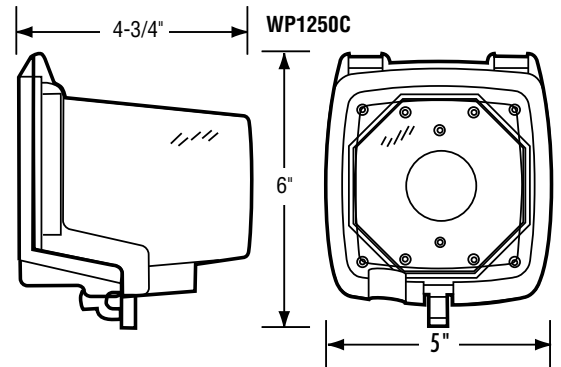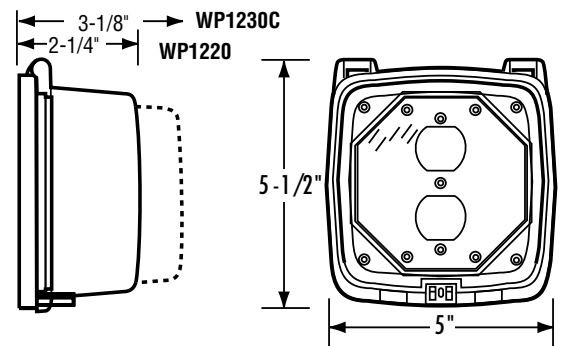
Pool & Spa Controls

Streamline installations with affordable Pool and Spa Controls from Intermatic. Our portfolio of high-quality electronic controls, safety transformers, valve actuators and accessories helps installers save time on installation and setup while reducing maintenance needs for dozens of water applications.

An exciting addition to our roster, the ReadySet™ Electronic Valve Actuator helps pool builders and contractors quickly establish valve position set points without unscrewing the actuator casing and making manual adjustments, saving 20 minutes per installation! It's the perfect upgrade for a range of applications, including in-ground pool and spa combinations, laminar jets, bubblers, decorative fountains and more.

Similarly, our new COMBOConnect™ Junction Box Transformer blends the simplicity of a standard junction box with the power of an embedded 100 W low-voltage transformer to fill two essential roles with a single solution. By integrating this space-saving hybrid component, contractors can simplify their setup needs and effortlessly reduce their electrical footprint.

Contents

MultiWave® Wireless Control Systems

A perfect retrofit upgrade for existing mechanical timers or new construction installations. Intermatic offers three MultiWave Wireless Control Systems that provide automatic remote control for residential and light commercial pool and spa applications. Remotely control pumps (including variable speed), valves, lights, heaters, cleaners, blowers, solar heating/cooling, water features and more.

For customized designs, the MultiWave checkfrank system configurator tool makes installation, configuration and operation easy. Use your PC, tablet or smartphone to visit **checkfrank.com** anytime. All MultiWave systems utilize the popular Z-Wave communication platform.

PE653RC

checkfrank

Ratings	
Max Power Consumption	5 W
Operating Voltage	120/240 VAC, 50/60 Hz
Circuit 1	
Resistive	20 A
Motor	80 LRA @120/240 VAC;
	17 FLA @120/240 VAC
Tungsten	5 A
Circuit 2-5	
Resistive	15 A
Motor	60 LRA @120/240 VAC;
	10 FLA @120/240 VAC
Tungsten	5 A
Enclosure Dimensions	9.375" x 5.5" x 3.75"
H x W x D	(238.1 mm x 139.7 mm x 95.3 mm)
Knockouts	
Bottom	(2) combination ½" - ¾"
Left	(1) combination ½" - ¾"
Back	(1) combination ½" - ¾"
Right	(1) combination ½" - ¾"
Warranty	2-year

MultiWave Basic Control System
PE653RC

A wireless electronic controller for pool or spa automation. Retrofit existing mechanical timers or install with new construction. Integrates with home automation software that utilizes Z-Wave wireless technology.

Applications
• Pool or Spa Equipment • Single Body of Water • No Valve Rotation

Features
• Controls 5 circuits
• Controls pumps, lights, cleaners and heaters
• Operates single, two and Pentair® IntelliFlo® and IntelliPro® variable-speed pumps
• 24-hour timing with 3 ON/OFF events per circuit
• Includes receiver, wireless remote, water and air temperature sensors, (3) AA batteries, equipment labels, flathead screwdriver, raintight enclosure, raintight cap and mount for remote mounting antenna
• Type 3R metal indoor/outdoor enclosure
• See MultiWave ECS and ECS Plus Systems for additional control options
• checkfrank - this Configurator will provide customized product recommendations, instructions and wiring diagrams for easy installation of the MultiWave wireless pool and spa controller.
• Visit www.checkfrank.com for more information

Model #	Description
PE653RC	Electronic Controller

Pentair, IntelliFlo and IntelliPro are registered trademarks of Pentair Ltd.

Accessories/Replacement

Expansion Module	P5043ME
Receiver	PE653
Wireless Remote	PE953
Water/Solar Temp. Sensor	PA122
Freeze Air Temp. Sensor	178PA28A

checkfrank
Quickly access product recommendations, installation guides and wiring diagrams from anywhere with checkfrank. Scan your smartphone or tablet over the QR code for details.

INTERMATIC®

MultiWave® Basic with 80 A Load Center
PE30065RC and PE30065RCT3

A wireless electronic controller for pool or spa automation. Retrofit existing mechanical timers or install with new construction. Has an 80 A load center.

Applications
• Pool or Spa Equipment • Single Body of Water • No Valve Rotation

Features
• Eight breaker spaces
• Controls 5 circuits
• Controls pumps, lights, cleaners and heaters
• Operates single, two and Pentair® IntelliFlo® and IntelliPro® variable-speed pumps
• 24-hour timing with 3 ON/OFF events per circuit
• Includes receiver, wireless remote, water and air temperature sensors, (3) AA batteries, equipment labels, flathead screwdriver, raintight enclosure, raintight cap and mount for remote mounting antenna
• See MultiWave ECS and ECS Plus Systems for additional control options
• Type 3R indoor/outdoor metal load center
• Four knockouts for GFCIs and switches

PE30065RC

Model #	Description
PE30065RC	80 A Load Center
PE30065RCT3*	80 A Load Center with 300 W Transformer

Built-in 300 W transformer

Ratings	
Load Center Rating	80 A, 120/240 VAC or 120/208 VAC single phase
Operating Voltage	120/240 VAC, 50/60 Hz
Circuit 1	
Resistive	20 A
Motor	80 LRA @120/240 VAC; 17 FLA @120/240 VAC
Tungsten	5 A
Circuit 2-5	
Resistive	15 A
Motor	60 LRA @120/240 VAC; 10 FLA @120/240 VAC
Tungsten	5 A
Transformer	300 W
Input Voltage	120 VAC, 60 Hz
Output Voltage	12, 13, 14 VAC
Enclosure Dimensions **H x W x D**	22.875" x 14.875" x 4.75" (581 mm x 377.8 mm x 120.7 mm)
Knockout Dimensions	
Bottom	(1) 1 1/8" diameter hole, (6) combination ½" - ¾", (4) ½", (2) combination 1 ⅛" - 1 ⅜" - 1 ¹¹⁄₁₆"
Left	(2) combination ½" - ¾"
Back	(4) combination ½" - ¾", and (2) combination ¾" - 1"
Right	(1) 1 ¾" x 2 ¾" for mounting switches or GFCI
Warranty	2-year

PE25065RC

MultiWave® ECS System

PE25065RC

This system includes the MultiWave Basic and an Expansion Module to control up to four valve actuators, two heaters, most name brand variable speed pumps and solar heating/cooling. The Remote Switch feature provides simple ON/OFF control of several components (i.e., spa heater, spa blower, spa lights) simultaneously with the flip of a single switch.

Applications
• Pool and Spa Combinations • Water Features • Solar Heater/Cooling
• New Construction or Upgrade Existing Manually or Mechanically
   Controlled Equipment

Features
• Four breaker spaces
• Controls 5 circuits
• Controls 4 actuator ports (actuators not included)
• 2 for pool to spa valve rotation, 1 for water feature valve rotation, and 1
   for solar applications
• Controls 2 heater circuits
• USB port for ease of upgrading firmware
• Load center dead front has two knockouts for switches and GFCIs
• Remote switch for simple ON/OFF control of several components at
   the same time
• Visit www.checkfrank.com for configuration assistance

Model #	Description
PE25065RC	MultiWave Basic System with Expansion Module

Ratings	
Load Center Rating	60 A, 120/240 VAC or 120/208 VAC single phase
Input Voltage	120/240 VAC, 50/60 Hz
Circuit 1	
Resistive	20 A
Motor	80 LRA @120/240 VAC; 17 FLA @120/240 VAC
Tungsten	5 A
Circuit 2-5	
Resistive	15 A
Motor	60 LRA @120/240 VAC; 10 FLA @120/240 VAC
Tungsten	5 A
Enclosure Dimensions	16.875" x 10.875" x 4.75" (428.6 mm x 276.2 mm x 120.7 mm)
Knockout Dimensions	
Bottom	(1) 1 ⅛" diameter hole, (6) combination ½" - ¾", (3) combination ¾" - 1"
Left	(2) combination ½" - ¾"
Back	(1) combination ¾" - 1
Right	(1) 1 ¾" x 2 ¾" for mounting switches or GFCI
Warranty	2-year

PE35065RC

MultiWave® ECS System

PE35065RC

This system includes the MultiWave ECS, two PE24VA Intermatic Valve Actuators and an upgraded 80 A Load Center with 8 breaker base.

Applications
• Pool and Spa Combinations • Water Features • Solar Heater/Cooling
• New Construction or Upgrade Existing Manually or Mechanically
   Controlled Equipment

Features
• Eight breaker spaces
• Controls 5 circuits
• Controls 4 actuator ports (2 actuators included), 2 for pool to spa valve
   rotation, 1 for water feature valve rotation and 1 for solar applications
• Controls 2 heater circuits
• USB port for ease of upgrading firmware
• Load center with eight position 80 A breaker base
• Load center dead front has four knockouts for switches and GFCIs
• Remote switch for simple ON/OFF control of several components at
   the same time
• Visit www.checkfrank.com for configuration assistance

Model #	Description
PE35065RC	MultiWave Basic System with 80 A Load Center, Expansion Module and 2 Valve Actuators

Ratings	
Load Center Rating	80 A, 120/240 VAC or 120/208 VAC single phase
Operating Voltage	120/240 VAC, 50/60 Hz
Circuit 1	
Resistive	20 A
Motor	80 LRA @120/240 VAC; 17 FLA @120/240 VAC
Tungsten	5 A
Circuit 2-5	
Resistive	15 A
Motor	60 LRA @120/240 VAC; 10 FLA @120/240 VAC
Tungsten	5 A
Enclosure Dimensions	22.875" x 14.875" x 4.75" (581 mm x 377.8 mm x 120.7 mm)
Knockout Dimensions	
Bottom	(1) 1 ⅛" diameter hole, (6) combination ½" - ¾", (4) ½", (2) combination 1 ⅛" - 1 ⅜" - 1 ¹¹⁄₁₆"
Left	(2) combination ½" - ¾"
Back	(4) combination ¾" - 1", (2) combination ¾" - 1"
Right	(1) 1 ¾" x 2 ¾" for mounting switches or GFCI
Warranty	2-year

Don't Forget

INTERMATIC®

PE653

MultiWave® 5-Circuit Wireless Receiver

PE653

Features
- Ideal addition to an existing enclosure installation
- Connects with PA122 water/solar temperature sensor and 178PA28A air sensor
- Communicates with pumps, cleaners, heaters and lights
- Ideal for upgrading mechanical timers
- 2-year warranty

Model #	Description
PE653	MultiWave 5-Circuit Wireless Receiver

PE953

MultiWave® Wireless Remote

PE953

Features
- On-demand control of MultiWave functions and other Z-Wave devices
- Backlit display shows time of day, equipment status, water and air temperatures and ON/OFF schedules
- Water-resistant
- Includes 3 AA batteries and equipment labels
- 2-year warranty

Model #	Description
PE953	Wireless Remote, MultiWave systems

Note: Contact Technical Support to verify compatibility

PA122

Water/Solar Temperature Sensor

PA122

Features
- Monitors pool/spa water temperature to control conventional gas or electric heating
- Monitors water temperature for solar heating/cooling
- 1-year warranty

Model #	Description
PA122	Water/Solar Temperature Sensor, 10k OHM, For MultiWave systems

Note: Needed to enable thermostat feature on the PE653RC

178PA28A

Freeze Air Temperature Sensor

178PA28A

Features
- Monitors outside air temperature
- Protects pool/spa equipment and plumbing
- Perfect for below-freezing outdoor environments
- 1-year warranty

Model #	Description
178PA28A	Freeze Probe Kit, 10k OHM, For MultiWave systems

Note: Needed to enable freeze protection feature on PE653RC

P5043ME

MultiWave® Expansion Module
P5043ME

Use the Expansion Module exclusively with the MultiWave Basic system to boost overall control capacity.

Applications
• Pool and Spa Combinations • Water Features
• Solar Heating and Cooling

Features
• Controls most name brands of variable speed pumps
• Controls 4 actuator ports (actuators not included), 2 for pool to spa valve rotation, 1 for water feature valve rotation and 1 for solar applications
• Controls 2 heater circuits
• Remote switch for simple ON/OFF control of several components at the same time
• USB port for ease of upgrading firmware
• See MultiWave ECS and ECS Plus for complete systems

Model #	Description
P5043ME	Mechanism Only

Note: Not for stand-alone use

checkfrank

Ratings	
Operating Voltage	240 VAC, 50/60 Hz, 55 VA MAX
Valve Actuator Voltage	24 VAC, 18 VA MAX for each actuator
Motor Control Output Threshold	24 VAC or 24 VDC, 500 mA
Remote Switch Output Supply	24 VAC, 55 mA MAX
Heater Control	24 VAC, 1 A MAX
Warranty	1-year

P4043ME   PE140

Valve Actuator Controls
P4043ME

This switching device is most suited for controlling electronic valve actuators which direct the flow of water to desired equipment. It can also be used with a spring wound timer or simple switch to control fountains or other aquatic features.

Applications
• Pool and Spa Combinations • Water Features • Water Gardening
• Fountains

Features
• Easily snaps into most existing Intermatic enclosures with available mechanism support bracket
• Controls up to three valve actuators
• Switches heater thermostat HIGH/LOW
• Remote control capabilities

Model #	Description
P4043ME	Mechanism Only
PE140	Mechanism (P4043ME) with Type 3R Metal Enclosure

Ratings	
Input Voltage	120/240 VAC, 50/60 Hz
Valve Actuator Supply	24 VAC, 40 VA
Warranty	1-year

INTERMATIC®

PE24VA

24-Volt Valve Actuator
PE24VA

Applications
- Water Features • Solar Heating and Cooling • Laminar Jets • Bubblers
- In-Ground Pools and Spas • Pool and Spa Combinations
- Rainwater Collection Systems • Decorative Fountains

Features
- Reliable control of 2-way and 3-way diverter valves
- Easy-to-adjust cam rotates valves to multiple settings
- Compatible with all pool/spa valves and controls

Model #	Description
PE24VA	24-Volt Valve Actuator

Ratings	
Valve Actuator Supply	24 VAC
Warranty	1-year

PE24RSVA

ReadySet™ 24-Volt Electronic Valve Actuator
PE24RSVA

Applications
- Water Features • Solar Heating and Cooling • Laminar Jets • Bubblers
- In-Ground Pools and Spas • Pool and Spa Combinations
- Rainwater Collection Systems • Decorative Fountains

Features
- Establishes valve set points using a simple toggle switch
- Compatible with virtually all pool and spa flow control valves and automation systems
- Valve position can be set at any point in the rotation (electronic valve set points are incremental and not dictated by less accurate mechanical cams)
- Molded-in scale indicates valve position setting, handle also acts as a visual valve position indicator
- Multi-colored LED light indicates Setting Mode and power ON
- Audible beep also indicates valve position has been set successfully
- Handle allows for manual valve operation in the event of a power outage
- 30' cord

Model #	Description
PE24RSVA	ReadySet 24-Volt Electronic Valve Actuator

Ratings	
Valve Actuator Supply	24 VAC
Warranty	1-year

P1353ME

PE153

PE153PF

Digital 3-Circuit Time Switch
P153 Series

This multipurpose 24-hour control is capable of automatically switching loads according to a preset daily schedule.

Applications
• Pool/Spa Pumps • Lights • Heaters • Cleaner Pumps • Booster Pumps

Features
• Controls single- and two-speed pumps and cleaner/booster pumps
• Three ON/OFF events per circuit per day
• Seven preprogrammed modes, see chart below for details
• Freeze and heater protection
• LCD readout
• Multivoltage input and output
• Countdown and override features enable programs to be overridden and automatically resumed without requiring the user to reprogram the system

Ratings	
Operating Voltage	120/240 VAC, 50/60 Hz
Switch Type	3-SPST
Resistive	17 A, 120/240 VAC, 50/60 Hz
Tungsten	5 A, 120/240 VAC, 50/60 Hz
Motor	80 LRA @ 120/240 VAC, 50/60 Hz; 17 FLA @ 120/240 VAC, 50/60 Hz
Warranty	1-year

Model #	Description
P1353ME	Mechanism Only
PE153	Type 3R Metal Enclosure
PE153F	Type 3R Metal Enclosure with Freeze Probe
PE153P	Type 3R Plastic Enclosure
PE153PF	Type 3R Plastic Enclosure with Freeze Probe

Accessories/Replacements

Freeze Probe	178PA28A
Insulator for Timer	124--00066

7 Preprogrammed Modes

Mode #	Switches Control	Additional Comments
1	Aux 1, Aux 2, Aux 3	—
2	Pump High, Pump Low, Aux 3	2-speed pump timing and protection
3	Pump, Aux 2, Booster/Cleaner Pump	Filter/cleaner pump timing and protection
4	Pump High, Pump Low, Booster/Cleaner Pump	2-speed and filter/cleaner pump timing and protection
5	Pump L1, Pump L2, Aux 3	1st and 2nd switch controls a 240 VAC pump, where L1 and L2 are disconnected when the pump is OFF
6	Aux 1, Aux 2, Aux 3 Heater green mode	Identical to Mode 1, with capability to run a heater when the filter pump is manually turned ON only. This mode is ideal for connecting Circuit 1 to a circulation pump in a spa. NOTE: When spa is not in use, the clock does not turn the heater ON. When spa is in use, the heater can be activated by manually switching Circuit 1 ON
7	Pump High, Pump Low, Common Hot Leg	Identical to Mode 2, with the capability to break both hot lines of a 240 VAC two-speed pump connection

INTERMATIC®

Electronic Pump Motor Controller with Seasonal Adjustment
PE103

Control single- and two-speed pumps and auxiliary equipment with this 3-circuit programmable device. The seasonal adjustment feature can be programmed to automatically adjust filter pump ON/OFF schedules according to the season.

Applications
- Filter Pumps • Auxiliary Equipment

Features
- Saves up to 40% in monthly utility bills compared to standard timers
- Meets most rebate incentives
- Enables separate daily schedules
- Easy-to-follow on-screen setup for programming
- Autovoltage adjust
- Efficient low-speed operation for all seasons
- User programmable high and low-speed events
- 100+ hour supercapacitor memory retention
- Available with Type 3R indoor/outdoor lockable metal enclosure

PE103   P1403ME

Model #	Description
PE103	Mechanism (P1403ME) with Type 3R Metal Enclosure
P1403ME	Mechanism Only

Ratings	
Operating Voltage	120-277 VAC, 50/60 Hz
Clock Source Voltage	120-277 VAC, 50/60 Hz
Power Consumption	7 W
Switch Type	4-SPST
Resistive	30 A @ 24 VAC, 120-277 VAC, 50/60 Hz; 20 A @ 28 VDC
Inductive Ballast	30 A @ 24 VAC, 120-277 VAC, 50/60 Hz
Tungsten	5 A @ 120-277 VAC, 50/60 Hz
Motor	16 FLA, 96 LRA @ 120 VAC, 50/60 Hz; 17 FLA, 80 LRA @ 240 VAC, 50/60 Hz
Warranty	1-year

PE20000

PE25300F

60 A Pool/Spa Control System with Type 3R Load Center
PE20000 Series

This system can be used as a load center only, or add mechanisms or wiring devices for complete control systems.

Applications
- Filter Pumps • Cleaner Pumps • Booster Pumps • Lighting

Features
- Four breaker spaces
- 3-SPST mechanism (P1353ME) controls single- and two-speed filter pumps, cleaner/booster pumps and pool/spa landscape lighting
- Load center dead front has two knockouts for switches or GFCIs
- P1353ME and MultiWave® controllers sold separately
- Wiring devices may be installed in these load centers with the use of Standoffs, sold separately
- Also compatible with T100 Series

Ratings	
Operating Voltage	120/240 VAC, 50/60 Hz
Switch Type	3-SPST
Resistive	17 A, 120/240 VAC, 50/60 Hz
Tungsten	5 A, 120/240 VAC, 50/60 Hz
Motor	80 LRA @ 120/240 VAC, 50/60 Hz;
	17 FLA @ 120/240 VAC, 50/60 Hz
Auxiliary Switch	2 A, 24 VAC
Enclosure Dimensions	16.875" x 10.875" x 4.75" (428.6 mm x 276.2 mm x 120.7 mm)
H x W x D	
Knockout Dimensions	
Bottom	(1) 1 ⅛" diameter hole, (6) ½" - ¾", (3) ¾" - 1"
Left	(2) ½" - ¾"
Back	(1) ¾" - 1"
Right	(1) 1 ¾" x 2 ¾"
Warranty	1-year

Model #	Description
PE20000	Load Center Only
PE25300F	Load Center with Mechanism (P1353ME) and Freeze Probe (178PA28A)
PE25300	Load Center with Mechanism (P1353ME)

Accessories/Replacement

Freeze Probe	178PA28A
Spacer-Standoff, 3" long - 2 pack	21T166A
Spacer-Standoff, 3" long - 4 pack	21T156A

INTERMATIC®

PE30000

PE35300

PE40000

PE45300

80 A Pool/Spa Control System with Type 3R Load Center
PE30000 Series

This system can be used as a load center only, or add mechanisms or wiring devices for complete control systems.

Applications
• Filter Pumps • Cleaner Pumps • Booster Pumps • Lighting

Features
• Eight breaker spaces
• 3-SPST mechanism (P1353ME) controls single and two-speed filter pumps, cleaner/booster pumps and pool/spa landscape lighting
• Load center dead front has four knockouts for switches or GFCIs
• P1353ME and MultiWave® controllers sold separately
• Transformer option provides low-voltage for LED lights
• Wiring devices may be installed in these load centers with the use of Standoffs, sold separately
• Also compatible with T100 Series

Model #	Description
PE30000	Load Center Only
PE30000T3	Load Center with 300 W Transformer
PE35300	Load Center with Mechanism (P1353ME)

Ratings	
Operating Voltage	120/240 VAC, 50/60 Hz
Switch Type	3-SPST
Resistive	17 A, 120/240 VAC, 50/60 Hz
Tungsten	5 A, 120/240 VAC, 50/60 Hz
Motor	80 LRA, 17 FLA @ 120/240 VAC 50/60 Hz
Auxiliary Switch	2 A, 24 VAC
Enclosure Dimensions H x W x D	22.875" x 14.875" x 4.75" (581 mm x 377.8 mm x 120.7 mm)
Knockout Dimensions	
Bottom	(1) 1 ⅛" diameter hole, (6) ½" - ¾", (3) ¾" - 1"
Left	(2) ½" - ¾"
Back	(1) ¾" - 1"
Right	(1) 1 ¾" x 2 ¾"
Warranty	1-year

125 A Pool/Spa Control System with Type 3R Load Center
PE40000 Series

This system can be used as a load center only, or add mechanisms or wiring devices for complete control systems.

Applications
• Filter Pumps • Cleaner Pumps • Booster Pumps • Lighting

Features
• Eight breaker spaces
• 3-SPST mechanism (P1353ME) controls single and two-speed filter pumps, cleaner/booster pumps and pool/spa landscape lighting
• Load center dead front has four knockouts for switches or GFCIs
• P1353ME and MultiWave® controllers sold separately
• Wiring devices may be installed in these load centers with the use of Standoffs, sold separately
• Also compatible with T100 Series

Model #	Description
PE40000	Load Center Only
PE45300	Load Center with Mechanism (P1353ME)

Ratings	
Operating Voltage	120/240 VAC, 50/60 Hz
Switch Type	3-SPST
Resistive	17 A, 120/240 VAC, 50/60 Hz
Tungsten	5 A, 120/240 VAC, 50/60 Hz
Motor	80 LRA, 17 FLA @ 120/240 VAC 50/60 Hz
Auxiliary Switch	2 A, 24 VAC
Enclosure Dimensions H x W x D	26.875" x 18.875" x 5.75" (682.6 mm x 479.4 mm x 146.1 mm)
Knockout Dimensions	
Bottom	(1) 1 ⅛" diameter hole, (13) ½" - ¾", (2) ¾" - 1"
Left	(2) ½" - ¾", (2) ¾" - 1"
Back	(4) ½" - ¾", (2) ¾" - 1"
Right	(1) 1 ¾" x 2 ¾"
Warranty	1-year

Accessories/Replacements

Freeze Probe	178PA28A
Spacer-Standoff, 3" Long - 2 Pack	21T166A
Spacer-Standoff, 3" Long - 4 Pack	21T156A

T101M

T104M201

24-Hour Mechanical Time Switch Only
T100 Series

Heavy-duty mechanical time switches control a single load.

Applications
- Indoor/Outdoor Lighting • Signs • Filters • Electric Fences • Fans
- Conveyors • Pool Heaters • Blowers • Pumps • Other Electrical loads

Features
- Highest motor load ratings in the industry
- 12 ON/OFF operations per day
- One ON and one OFF tripper included
- Can be installed in most Intermatic enclosures
- Available with pool heater protection
- Teeter-type terminals for multiple load connections

Ratings	
Heater Control Center	10 A, 250 VAC MAX, 60 Hz
Resistive	40 A @ Varying Voltages, 60 Hz
Inductive	40 A @ Varying Voltages, 60 Hz
Electronic Ballast	16 A, 277 VAC, 60 Hz
Tungsten	40 A @ Varying Voltages, 60 Hz
Pilot Duty	1000 VA @ Varying Voltages, 60 Hz
Max Power Consumption	3 W
Motor	2 HP, 24 FLA @ 120 VAC, 60 Hz, 5 HP, 28 FLA @ 240 VAC, 60 Hz
Operating Temperature	-40° F to 130° F (-40° C to 54° C)
Warranty	1-year

Voltage Ratings

For more details on model numbers/voltage ratings scan the QR code with your smartphone or tablet.

Model #	Switch	Input Voltage
Without Pool Heater Protection		
T101M	SPST	120 VAC, 60 Hz
T103M	DPST	
T104M	DPST	208-277 VAC, 60 Hz
T106M	SPDT, 1 NO/1 NC	
With Pool Heater Protection		
T104M201	DPST	208-277 VAC, 60 Hz

Accessories/Replacements

Extra/replacement trippers 1 ON and 1 OFF	156T1978A
Extra/replacement trippers 1 ON and 1 OFF	WG1570
Replacement 208-277 VAC, 60 Hz Motor (T104M, T106M, T104M20)	WG1573
Insulator for Timers	124T1952

Don't Forget

INTERMATIC

24-Hour Mechanical Time Switch in Enclosure
T100 Series

Heavy-duty mechanical time switches control a single load

Applications
• Pumps • Lighting • Heaters

Features
• Highest motor load ratings in the industry
• 12 ON/OFF operations per day
• One ON and one OFF tripper included
• Available with pool heater protection
• Teeter-type terminals for multiple load connections

T104P3   T101R201

Model #	Switch	Input Voltage	Enclosure
Without Pool Heater Protection			
T101P3	SPST	120 VAC, 60 Hz	Outdoor Type 3R Plastic
T104P3	DPST	208-277 VAC, 60 Hz	
T106P3	1 NO/1 NC	208-277 VAC, 60 Hz	
T101R3	SPST	120 VAC, 60 Hz	Outdoor Type 3R Metal
T104R3	DPST	208-277 VAC, 60 Hz	
With Pool Heater Protection			
T101P201	SPST	120 VAC, 60 Hz	Outdoor Type 3R Plastic
T104P201	DPST	208-277 VAC, 60 Hz	
T101R201	SPST	120 VAC, 60 Hz	Outdoor Type 3R Metal
T104R201	DPST	208-277 VAC, 60 Hz	

Accessories/Replacements

Extra/replacement trippers 1 ON and 1 OFF	156T1978A
Replacement 125 VAC, 60 Hz Motor (T101P3, T101R3, T101P201, T101R201)	WG1570
Replacement 208-277 VAC, 60 Hz Motor (T104P3, T106P3, T104R3, T104P201, T104R201)	WG1573
Insulator	124--00066

Ratings	
Heater Control Circuit	10 A, 250 VAC MAX, 60 Hz
Resistive	40 A @ Varying Voltages, 60 Hz
Inductive Ballast	40 A @ Varying Voltages, 60 Hz
Electronic Ballast	16 A, 277 VAC, 60 Hz
Tungsten	40 A @ Varying Voltages, 60 Hz
Pilot Duty	1000 VA @ Varying Voltages, 60 Hz
Motor	2 HP, 24 FLA @ 120 VAC, 60 Hz, 5 HP, 28 FLA @ 240 VAC, 60 Hz
Max Power Consumption	3 W
Operating Temperature	-40° F to 130° F (-40° C to 54° C)
Enclosure Dimensions H x W x D	
Plastic Outdoor	10" x 6.5" x 4" (254 mm x 165.1 mm x 101.6 mm)
Metal Indoor	10.125" x 6.5" x 3.625" (257.2 mm x 165.1 mm x 92.1 mm)
Knockout Dimensions	
Side/Back	½" and ¾" combination
Bottom	(2) ½" and ¾"
Warranty	1-year

Voltage Ratings

For more details on model numbers/voltage ratings scan the QR code with your smartphone or tablet.

Control System
with Type 3R Power Center
T10000R Series

Can be used as a power center only, or add mechanisms or wiring devices for complete control systems.

Applications
• Pool/Spa Equipment • Lights

Features
• Available with one or two heavy-duty time switch mechanisms
• Accepts any combination of PF1000M, P1403ME, P1353ME, P4043ME, P4243ME, T100M or RC2000M Series mechanisms
• Load center dead front has two knockouts for switches or GFCIs and one on the side
• Wiring devices may be installed in these load centers with the use of Standoffs, sold separately below
• Control two-speed pumps with the T10604R

T10000R   T10101R

Ratings	
Resistive	40 A, 120-240 VAC, 60 Hz
Inductive	40 A, 120-240 VAC, 60 Hz
Tungsten	40 A, 120-240 VAC, 60 Hz
Pilot Duty	1000 VA, 120-240 VAC, 60 Hz
Motor	5 HP, 28 FLA @ 240 VAC, 60 Hz, 2 HP, 24 FLA @ 120 VAC, 60 Hz
Operating Temperature	-40° F to 130° F (-40° C to 54° C)
Enclosure Dimensions	12.875" x 10.875" x 4.75"
H x W x D	(327 mm x 276.2 mm x 120.7 mm)
Knockout Dimensions	
Bottom	(5) combination ½" - ¾" and (2) combination ¾" - 1"
Left	(1) combination ½" - ¾"
Back	(1) combination ½" - ¾" and (1) ¾" - 1"
Right	(1) 1 ¾" x 2 ¾"
Warranty	1-Year

Model #	Mechanism	Switch Type	Mechanism Supply Voltage
T10000R	Power Center Only	–	–
T10004R	(1) T104M	DPST	240 VAC, 60 Hz
T10006R	(1) T106M	1 NO/1 NC	240 VAC, 60 Hz
T10101R	(2) T101M	SPST	120/120 VAC, 60 Hz
T10404R	(2) T104M	DPST	240/240 VAC, 60 Hz
T10604R	T106M & T104M	SPDT/DPST	240/240 VAC, 60 Hz
T12404R*	T104M201 & T104M	DPST	240/240 VAC, 60 Hz

The heater protection switch is closed when the time switch contacts are open to allow remote operation of heater. A flow or pressure switch must always be part of heater control circuit.

Accessories/Replacements

Extra/replacement trippers 1 ON and 1 OFF	156T1978A
Insulator for Timers	124T1952
Spacer-Standoff, 3" Long - 2 Pack	21T166A
Spacer-Standoff, 3" Long - 4 Pack	21T156A
In-Use Weatherproof Cover	WP1000C

INTERMATIC®

60 A Control System
with Type 3R Load Center
T21000R Series

This system can be used as a load center only, or add a heavy-duty mechanical time switch or wiring devices for a complete system.

Applications
• Pool/Spa Equipment • Lights

Features
• Four breaker spaces
• Accepts PF1000M, P1403ME, P1353ME, P4043ME, P4243ME, T100M or RC2000M Series mechanisms
• Accepts many interchangeable type breakers
• Load center dead front has two knockouts for switches or GFCIs and one on the side
• Wiring devices may be installed in these Load Centers with the use of Standoffs, sold separately

Model #	Mechanism	Switch Type	Mechanism Supply Voltage
T21000R	Load Center Only	–	–
T21001R	T101M	SPST	120 VAC, 60 Hz
T21004R	T104M	DPST	240 VAC, 60 Hz

Accessories/Replacements

Extra/replacement trippers 1 ON and 1 OFF	156T1978A
Insulator for Timers	124T1952
Spacer-Standoff, 3" Long - 2 Pack	21T166A
Spacer-Standoff, 3" Long - 4 Pack	21T156A
In-Use Weatherproof Cover	WP1000C

T21000R   T21001R

Ratings	
Load Center Rating	60 A, 120/240 VAC or 120/208 VAC, Single Phase
Resistive	40 A, 120-240 VAC, 60 Hz
Inductive	40 A, 120-240 VAC, 60 Hz
Tungsten	40 A, 120-240 VAC, 60 Hz
Pilot Duty	1000 VA, 120-240 VAC, 60 Hz
Motor	5 HP, 28 FLA @ 240 VAC, 60 Hz; 2 HP, 24 FLA @ 120 VAC, 60 Hz
Operating Temperature	-40° F to 130° F (-40° C to 54° C)
Dimensions	16.875" x 8.875" x 4.75"
H x W x D	(428.6 mm x 225.4 mm x 120.7 mm)
Knockout Dimensions	
Bottom	(5) combination ½" - ¾" and (3) combination ¾" - 1"
Left	(1) combination ½" - ¾"
Back	(1) combination ½" - ¾" and (1) ¾" - 1"
Right	(1) 1 ¾" x 2 ¾"
Warranty	1-year

T30004R

T30401R

100 A Control System with Type 3R Load Center

T30000R Series

Can be used as a Load Center only, or add mechanisms or wiring devices for complete control systems.

Applications
• Pumps • Lighting

Features
• Eight breaker spaces
• Reduces installation costs
• Eliminates the need for additional service panels
• Accepts any combination of PF1000M, P1403ME, P1353ME, P4043ME, P4243ME, T100M or RC2000M Series mechanisms
• Control two-speed pumps with the T30604R
• Fully compatible with all electrical requirements for pool/spa installations
• Load center dead front has two knockouts and one on the side for switches or GFCIs
• Wiring devices may be installed in these load centers with the use of Standoffs, sold separately

Model #	Mechanism(s)	Switch	Mechanism Supply Voltage
T30000R5	Load Center Only	–	–
T30004R	(1) T104M	DPST	240 VAC, 60 Hz
T30404R	(2) T104M	DPST/DPST	240/240 VAC, 60 Hz
T30401R	T104M & T101M	DPST/SPST	240/120 VAC, 60 Hz
T30604R	T106M† & T104M	SPDT/DPST	240/240 VAC, 60 Hz
T32404R*	T104M201 & T104M	DPST/DPST	240/240 VAC, 60 Hz

*The heater protection switch is closed when the time switch contacts are open to allow remote operation of heater. A flow or pressure switch must always be part of heater control circuit.
† For use with two-speed 240 V pumps

Accessories/Replacements

Extra/replacement trippers 1 ON and 1 OFF	156T1978A
Insulator for Timers	124T1952
Spacer-Standoff, 3" Long - 2 Pack	21T166A
Spacer-Standoff, 3" Long - 4 Pack	21T156A
Buss Bar Replacement	124--00140A
In-Use Weatherproof Cover	WP1000C

Ratings	
Load Center Rating	100 A, 120-240 VAC, Single Phase, 60 Hz
Resistive	40 A, 120-240 VAC, 60 Hz
Inductive Ballast	40 A, 120-240 VAC, 60 Hz
Tungsten	40 A, 120-240 VAC, 60 Hz
Pilot Duty	1000 VA, 120-240 VAC, 60 Hz
Motor	5 HP, 28 FLA @ 240 VAC, 60 Hz, 2 HP, 24 FLA @ 120 VAC, 60 Hz
Operating Temperature	-40° F to 130° F (-40° C to 54° C)
Enclosure Dimensions	16.875" x 10.875" x 4.75"
H x W x D	(428.6 mm x 276.2 mm x 120.7 mm)
Knockout Dimensions	
Bottom	(4) ½" - ¾", (3) ½", (2) ¾" - 1"
Left	(1) ¾" - 1"
Back	(5) ½" - ¾"
Right	(1) 1 ¾" x 2 ¾"
Warranty	1-year

INTERMATIC®

125 A Control System with Type 3R Load Center

T40000R Series

Can be used as a Load Center only, or add mechanisms or wiring devices for complete control systems.

Applications
• Pumps • Lighting

Features
• Eight breaker spaces
• Reduces installation costs
• All-in-one electrical load center eliminates the need for additional service panels
• Accepts any combination of PF1000M Series, P1403ME, P1353ME, P4043ME, P4243ME, T100M Series or RC2000M Series mechanisms
• Fully compatible with all electrical requirements for pool/spa installations
• Load center dead front has four knockouts for switches or GFCIs (Note: T40000R4 has one knockout)
• Wiring devices may be installed in these Load Centers with the use of Standoffs, sold separately

T40004R

Model #	Mechanism(s)	Switch	Mechanism Supply Voltage
T40004R	(1) T104M	DPST	240 VAC, 60 Hz
T40404R	(2) T104M	DPST	240 VAC, 60 Hz
T40000R4	Load Center with Compartment for Optional Wiring Devices	–	–

Accessories/Replacement

Extra/replacement trippers 1 ON and 1 OFF	156T1978A
In-Use Weatherproof Cover	WP1000C
Insulator for Timers	124T1952
Spacer-Standoff, 3" long - 2 pack	21T166A
Spacer-Standoff, 3" long - 4 pack	21T156A
Buss Bar Replacement	124--00140A

Ratings	
Load Center Rating	125 A MAX, 120-240 VAC, Single Phase, 60 Hz
Switch Type	DPST
Resistive	40 A, 120-240 VAC, 60 Hz
Inductive Ballast	40 A, 120-240 VAC, 60 Hz
Tungsten	40 A, 120-240 VAC, 60 Hz
Pilot Duty	1000 VA, 120-240 VAC, 60 Hz
Motor	5 HP, 28 FLA @ 240 VAC, 60 Hz, 2 HP, 24 FLA @ 120 VAC, 60 Hz
Operating Temperature	-40° F to 130° F (-40° C to 54° C)
Enclosure Dimensions H x W x D	20.875" x 12.875" x 4.75" (530.2 mm x 327 mm x 120.7 mm)
Knockout Dimensions Bottom	(5) ½" - ¾", (4) ½", (2) ¾" - 1", 1 ¼"
Left	(2) ½" - ¾"
Back	(4) ½" - ¾", (2) ¾" - 1"
Right	(1) 1 ¾" x 2 ¾"
Warranty	1-year

T10004RT1

T40604RT3

Control System with Transformer and Power or Load Center
Mechanical Controls

These mechanical control systems include built-in transformers for ease of installation.

Applications
- Low-Voltage Lighting

Features
- All-in-one control power for pool/spa installation
- Easy to wire
- Can house additional Intermatic mechanisms and components
- Control two-speed pumps with the T40604RT3
- Heavy-duty Type 3R metal indoor/outdoor power and load center
- Wiring devices may be installed in these Load Centers with the use of Standoffs, sold separately
- Knockout on the side for additional wiring device.

Ratings	
Power Center Rating	62 A per leg, 109 A MAX, 120-240 VAC, Single-Phase, 60 Hz
Load Center Rating	100 A, 120-240 VAC, Single Phase, 60 Hz
Switch Type	
T103M/T104M	DPST
T106M*	1 NO/1 NC
Resistive	40 A, 120-240 VAC, 60 Hz
Inductive Ballast	40 A, 120-240 VAC, 60 Hz
Tungsten	40 A, 120-240 VAC, 60 Hz
Pilot Duty	1000 VA, 120-240 VAC, 60 Hz
Motor	2 HP, 24 FLA @ 120 VAC, 60 Hz, 5 HP, 28 FLA @ 240 VAC, 60 Hz
Operating Temperature	-40° F to 130° F (-40° C to 54° C)
Power Center Dimensions H x W x D	12.875" x 12.875" x 4.75" (327 mm x 327 mm x 120.7 mm)
Load Center Dimensions H x W x D	20.875" x 12.875" x 4.75" (530.2 mm x 327 mm x 120.7 mm)
Knockout Dimensions T10000R Series	
Bottom	(5) ⅞" - 1 ⅞", (2) ⅞", (2) 1 ⅛" - 1 ⅜"
Left	(1) ⅞" - 1 ⅛"
Back	(1) ⅞" - 1 ⅛", (1) 1 ⅛" - 1 ⅜"
Right	(1) 1 ¾" x 2 ¾"
Knockout Dimensions T40000R Series	
Bottom	(5) ⅞" - 1 ⅞", (4) ⅞", (2) 1 ⅛" - 1 ⅜" - 1 ⅝"
Left	(2) ⅞" - 1 ⅛"
Back	(4) ⅞" - 1 ⅛", (2) 1 ⅛" - 1 ⅜"
Right	(1) 1 ¾" x 2 ¾"
Warranty	1-year

Can be wired as SPDT

Model #	Description	Mechanism Supply Voltage	Transformer		
			Watts	Input Voltage	Output Voltage
Power Center					
T10004RT1	Power Center with T104M	240 VAC, 60 Hz	100	120 VAC, 1 A, 60 Hz	12, 13 VAC
T10004RT3	Power Center with T104M	240 VAC, 60 Hz	300	120 VAC, 3 A, 60 Hz	12, 13, 14 VAC
Load Center with Eight Breaker Spaces					
T40000RT3	Load Center Only with 8 breaker spaces	–	300	–	–
T40003RT3	Load Center with T103M and 8 breaker spaces	120 VAC, 60 Hz	300	120 VAC, 3 A, 60 Hz	12, 13, 14 VAC
T40004RT1	Load Center with T104M and 8 breaker spaces	240 VAC, 60 Hz	100	120 VAC, 1 A, 60 Hz	12, 13 VAC
T40004RT3	Load Center with T104M and 8 breaker spaces	240 VAC, 60 Hz	300	120 VAC, 3 A, 60 Hz	12, 13, 14 VAC
T40604RT3	Load Center with T106M, T104M and 8 breaker spaces	240 VAC, 60 Hz	300	120 VAC, 3 A, 60 Hz	12, 13, 14 VAC

Accessories/Replacements

Extra/replacement trippers 1 ON and 1 OFF	156T1978A
Insulator for Timers	124T1952
Spacer-Standoff, 3" Long - 2 Pack	21T166A
Spacer-Standoff, 3" Long - 4 Pack	21T156A
Buss Bar Replacement	124--00140A
In-Use Weatherproof Cover	WP1000C

INTERMATIC®

Surge Protective Device
PS3000

Mount the PS3000 to your pool electrical panel to protect all your expensive pool and spa equipment against power surges. Designed with trusted, state-of-the-art TPMOV® (Thermally Protected Metal Oxide Varistor) surge protection technology to eliminate the potentially hazardous failure modes that are commonly associated with standard MOV technology.

Applications
• All Pool/Spa Equipment Powered by the Electrical Service Panel

Features
• TPMOV Surge Protection Technology
• UL Listed to ANSI/UL 1449, 4th edition
• 120/240 VAC single-phase SPD for use on a variety of pool equipment
• Green LED protection indicator
• Type 4X watertight and UV resistant plastic enclosure
• Three modes of protection
• Includes (3) 18", #10 AWG tinned copper leads
• 3-year warranty
• $7,500 connected equipment warranty

Model #	Wiring Configuration
PS3000	L1, L2, L/N-G

US SPD Type 1
Canada SPD Type 2

PS3000

Ratings	
Service Voltage	120/240 VAC, 50/60 Hz
SPD Type	1 or 2
Nominal Discharge Current (In)	20 kA
SCCR*	100 kA
Voltage Protection Rating (VPR)	
L-N/G	700
L-L	1200
MCOV**	
L-N	150
L-L	300
Dimensions H x W x D	3.875" x 1.625" x 4.1875"
	(98 mm x 41 mm x 106.4 mm)
Warranty	3-year

*MCOV Maximum Continuous Operating Voltage
*SCCR Short Circuit Current Rating

Surge Protective Device
IG1200RC3

The IG1200 Surge Protective Device (SPD) is designed for a variety of applications. Trusted, state-of-the-art TPMOV® (Thermally Protected Metal Oxide Varistor) surge protection technology eliminates the potentially hazardous failure modes that are commonly associated with standard MOV technology.

Applications
• Residential • Light Commercial

Features
• TPMOV Surge Protection Technology
• Meets ANSI UL1449, 3rd Edition Standards
• 120/240 VAC single-phase SPD for use on a variety of pool equipment
• Green LED protection indicator
• Type 3R rainproof enclosure for indoor/outdoor applications
• Three modes of protection (L1-N, L2-N, L1-L2)
• Includes (3) 30" long, #12 AWG tinned copper leads
• 3-year warranty
• $7,500 connected equipment warranty

Model #	Wiring Configuration
IG1200RC3	L1, L2, L/N-G

IG1200RC3

Ratings	
Input Voltage	120/240 VAC, 50/60 Hz
SPD Type	1, 2
Nominal Discharge Current	20 kA
SCCR*	100 kA
Voltage Protection Rating (VPR)	
L-N/G	700
L-L	1200
MCOV**	
L-N	150
L-L	300
Dimensions H x W x D	4 3/16" x 4 3/16" x 3 7/16"
	(106.4 mm x 106.4 mm x 87.3 mm)
Warranty	3-year

*MCOV Maximum Continuous Operating Voltage
*SCCR Short Circuit Current Rating

PF1112T   PF1222TB1

Control System with Freeze Protection and Power or Load Center
PF1100 and PF1200 Series Mechanical Panels

Protects pool/spa equipment against freeze damage.

Applications
- Pools and Spas Requiring One or Two Time Switches
- Cold Climate

Features
- GFCI and switch mounting capabilities
- Turns pump and heater ON when outdoor temperature drops below user-adjustable setpoint on thermostat
- Heavy-duty Type 3R metal indoor/outdoor enclosure

Ratings	
Power Center Rating	120/240 VAC, Single-Phase, 60 Hz
Load Center Rating	60 A Max, 120/240 VAC, Single Phase, 60 Hz
Operating Voltage	240 VAC, 60 Hz
Switch Type	DPST
Resistive	17 A, 240 VAC, 60 Hz
Motor	3 HP, 240 VAC, 60 Hz
Thermostat Range	33° F to 42° F (0.5 ° C to 6° C)
Power Center Dimensions H x W x D	12" x 12.875" x 4.25" (304.8 mm x 327 mm x 108 mm)
Load Center Dimensions H x W x D	16.875" x 10.875" x 4.75" (428.6 mm x 276.2 mm x 120.7 mm)
Warranty	1-year

Model #	Description	Heater Protection
PF1112T	Power Center with (1) T104M Time Switch	No
PF1202T	Power Center with (2) T104M Time Switches	No
PF1222TB1*	Load Center with (2) T104M Time Switches	Yes

*Four breaker spaces and heater protection
Note: Wiring devices may be installed in these Load Centers with the use of Standoffs.

Accessories/Replacements

Extra/replacement trippers 1 ON and 1 OFF	156T1978A
Insulator for Timers	124T1952
Replacement Freeze Protection Thermostat	178T24
Spacer-Standoff, 3" Long - 2 Pack	21T166A
Spacer-Standoff, 3" Long - 4 Pack	21T156A
4-Pole Breaker Base	124--00139A
In-Use Weatherproof Cover	WP1000C

Voltage Ratings

For more details on timer/voltage ratings, scan the QR code with your smartphone or tablet.

INTERMATIC®

Single-Circuit Freeze Protection Controls

PF1100 Mechanical Series

Protect pool/spa equipment against freeze damage.

Applications
• Pool/Spa Equipment Used in Cold Climates

Features
• Turn pump and heater ON when outdoor temperature drops below user-adjustable setpoint on thermostat
• Models with or without mechanical timer mechanism

PF1102M

PF1102

Model #	Description
PF1102M	Thermostat Only - 240 VAC
PF1103M*	Thermostat Only - 120/240 VAC
PF1102	Thermostat in Type 3R Metal Enclosure
PF1103	Thermostat in Type 3R Metal Enclosure
PF1102MT	Timer Thermostat Mechanism Only
PF1103MT*	Timer Thermostat Mechanism Only
PF1102T	Thermostat & Timer Mechanism in Type 3R Metal Enclosure
PF1103T*	Thermostat & Timer Mechanism in Type 3R Metal Enclosure

Neutral must be installed

Accessories/Replacements

Trippers - Clip, ON/OFF, 24-Hr	156PB10398A
Replacement Freeze Protection Thermostat	178T24

PF1102MT

PF1102T

Ratings	
Operating Voltage	
PF1102	240 VAC, 60 Hz
PF1103	120/240 VAC, 60 Hz
HP	
PF1102	3 HP @ 240 VAC, 60 Hz
PF1103	1.5 HP @ 120 VAC, 3 HP @ 240 VAC, 60 Hz
Thermostat Range	33° F to 42° F (6° C to 6° C)
Enclosure Dimensions	9.625" x 5.75" x 3.625"
H x W x D	(244.5 mm x 146.1 mm x 92.1 mm)
Knockout Dimensions	
Bottom	(2) ½" - ¾"
Left	(1) ½" - ¾"
Back	(4) ½" - 3/4", (1) ½" - ¾"
Right	(1) ½" - ¾"
Warranty	1-year

RC2163BFE

Remotely Operated Control System
RC2163BFE Pool/Spa Combination
Control Panel

Control ON/OFF timing of pool/spa loads remotely, away from the water. Includes actuators for turning valves between pool and spa modes.

Applications
• Pool and Spa Combinations

Features
• Eight breaker spaces
• Use spring wound timer, toggle switch, wireless receiver/transmitter or Ascend™ Smart In-Wall timer to operate equipment
• 3-Wire heater control
• Digital override timer for spa mode
• (2) PE24VA 24-V valve actuators included
• Heavy-duty Type 3R metal indoor/outdoor load center

Model #	Remote Command
RC2163BFE	Any SPST Switch*

Accessories/Replacement

Spacer-Standoff, 3" Long - 2 Pack	21T166A
Replacement Buss Bar	188RC1712A
Clock	PB313EK
Relay	143RC151
Transformer	119RC335A

Sold separately

Ratings	
Load Center Rating	100 A, 120/240 VAC or 120/208 VAC, Single Phase, 60 Hz
Operating Voltage	120/240 VAC, 60 Hz
Filter Pump	
Single or Two Speed	1.5 HP @ 120 VAC, 3 HP @ 240 VAC, 60 Hz
No. of Actuator Connections	3
Dimensions H x W x D	16.875" x 10.875" x 4.75" (428.6 mm x 276.2 mm x 120.7 mm)
Warranty	1-year

RC2123PT

Multifunction Air Switches with 24-Hour Timer
RC2000 Timer Switches

Control ON/OFF timing safely, without electricity, near the water.

Applications
• Pool and Spa Pumps

Features
• Remote control for one or two separate loads
• Multiple ON/OFF settings per day
• Flexible air hose (RC117 sold separately) enables operation up to 100 feet
• Type 3R plastic indoor/outdoor enclosure: Requires a neutral

Model #	Mechanism
RC2123PT	One- or Two-Speed Pump ON/OFF with Timer
RC2343PT	One- or Two-Speed Pump and Blower ON/OFF with Timer

Accessories/Replacements

Trippers - Clip, ON/OFF, 24-Hr	156PB10398A

Ratings	
Operating Voltage	120/240 VAC, 60 Hz
Switch Type	
RC2123PT	SPDT
RC2343PT	4-Function
Switch Ratings (Each Circuit)	
Resistive	20 A, 120/240 VAC, 60 Hz
Motor	1 HP, 120 VAC, 60 Hz, 2 HP, 240 VAC, 60 Hz
Enclosure H x W x D	9 5/8" x 5 3/4" x 3 5/8" (244.5 mm x 146.1 mm x 92.1 mm)
Warranty	1-year

INTERMATIC®

Air-Actuated Remote Control
RC2100 Switch Series

Safely control pool/spa equipment, without electricity, near the water.

Applications
• Pool/Spa Pumps and Lights

Features
• Type 3R plastic indoor/outdoor enclosure
• Controls one piece of equipment with one air button
  (button sold separately)
• Control works with up to 100-ft long air tube

RC2103S

Model #	Description
RC2103S	Remote Control ON/OFF Switch

Ratings	
Operating Voltage	
Line and Neutral	120 VAC, 60 Hz
Line, Line 2, and Neutral	120 VAC, 60 Hz
Switch Type	SPST
Switch Ratings	
Resistive	20 A, 120/240 VAC, 60 Hz
Motor	1 HP, 120 VAC, 60 Hz,
	2 HP, 240 VAC, 60 Hz
Enclosure H x W x D	4.125" x 4.125" x 3.375"
	(104.8 mm x 104.8 mm x 85.7 mm)
Warranty	1-year

Air Switches and Accessories
RC Series

Applications
• Air Control Equipment

Features
• Replaces existing buttons and accessories

RC4G   RC6F

RC117   RC122B

Model #	Description
RC4G	1" Gunite Air Button - 100 ft Range
RC6F	1 ½" Fiberglass Air Button - 100 ft. Range
RC117	Air Tubing - 75 ft. Length
RC150	Air Tubing - 500 ft. Length
RC122B	Air Tubing and Air Button (RC4G) - 25 ft. Length
RC127B	Air Tubing and Air Button (RC4G) - 75 ft. Length
RC510	Air Tubing Coupler (pack of 10)

RC510

INTERMATIC®

RC613

RC613R

Ratings	
Switch Type	
RC613/L, RC615	SPST
Resistive	15 A, 120 VAC, 60 Hz
Tungsten	10 A, 1200 W, 60 Hz
Motor	1 HP, 120 VAC, 60 Hz
Switch Type	
RC613R	DPST
Resistive	30 A, 120/240 VAC, 60 Hz
Tungsten	12.5 A, 1500 W, 60 Hz
Motor	1.5 HP @ 120 VAC, 3 HP @ 240 VAC, 60 Hz
Enclosure H x W x D	
RC613/L, RC615	4.5" x 3" x 1.75" (114.3 mm x 76.2 mm x 44.5 mm)
RC613R	8" x 4.25" x 3.375" (203.2 mm x 108 mm x 85.7 mm)
Warranty	1-year

Outdoor Radio Receivers
RC600 Series

Control loads with the receiver mounted ON/OFF button or wirelessly via a remote transmitter.

Applications
• Pumps • Lights

Features
• Respond to handheld transmitter (provided separately below)
• For indoor/outdoor use
• Handle a variety of switching applications
• Enable connected loads to be turned ON/OFF remotely
• Maximum range 100 ft (see RC939 transmitter below)
• Beige outdoor grade plastic enclosure

Model #	Description
RC613	Receiver with Manual ON/OFF button, 6" Leads
RC613L	Receiver with Manual ON/OFF button, (3) 36" Leads
RC613R	Heavy-Duty Receiver Module with Manual ON/OFF button

RC939

Ratings	
Dimensions H x W x D	2.5" x 1.25" x ½" (63.5 mm x 31.8 mm x 12.7 mm)
Warranty	1-year

Handheld 3-Channel Radio Transmitter
RC939

Transmit signals to the RC family of radio receivers for remote ON/OFF control.

Applications
• Pool/Spa Pumps • Blowers • Lights

Features
• Operates up to three RC600 Series receivers

Model #	Description	Range	Battery
RC939	3-Channel Radio Transmitter	100 ft*	CR2032

Range depends on many factors including age of battery, proximity of large metal objects, location of receiver, and environmental conditions at the time of transmission.

INTERMATIC®

Safety Transformers

PX Series

These safety transformers are specifically designed to supply 12-14 VAC and are suitable for direct connection to underwater pool/spa lights.

Applications

• LED Pool Lights • Submersible Fixtures • Outdoor Landscape
• Decorative Lighting

Features

• Mounting brackets on the top and bottom
• Built-in circuit protection disconnects power temporarily in case of overload*
• Complies with NEC Code 680.23 requirements for underwater luminaries

Model #	Input Voltage	Output Voltages	Watts
3R Beige Metal			
PX50	120 VAC, .5 A, 60 Hz	12, 13 VAC	50
PX100	120 VAC, 1 A, 60 Hz	12, 13 VAC	100
PX300	120 VAC, 3 A, 60 Hz	12, 13, 14 VAC	300
PX600	120 VAC, 6 A, 60 Hz	12, 13, 14 VAC	600
3R Brown Stainless Steel			
PX50S	120 VAC, .5 A, 60 Hz	12, 13 VAC	50
PX100S	120 VAC, 1 A, 60 Hz	12, 13 VAC	100
PX300S	120 VAC, 3 A, 60 Hz	12, 13, 14 VAC	300
PX600S	120 VAC, 6 A, 60 Hz	12, 13, 14 VAC	600

Disconnection is not permanent; the transformer is equipped with a thermal protector. The circuit will "re-energize" when the transformer cools.

PX50   PX300S

Ratings PX50, 100, 300	
Enclosure Dimensions	7.25" x 5.25" x 4.5"
H x W x D	(184.2 mm x 133 mm x 114.3 mm)
Knockout Dimensions	
Bottom	(4) combination ½" - ¾"
Left	(2) combination ½" - ¾"
Back	(2) combination ½" - ¾"
Right	(2) combination ½" - ¾"
Product Warranty	1-year

Ratings PX600 (PX600S)	
Enclosure Dimensions	10" x 10" x 5.375"
H x W x D	(254 mm x 254 mm x 136.5 mm)
Knockout Dimensions	
Bottom	(2) combination ½" - ¾", (4) combination ¾" - 1"
Left	(2) combination ½" - ¾"
Back	(2) combination ½" - ¾"
Right	(2) combination ½" - ¾"
Warranty	1-year

PJBX52100

COMBOConnect™
PJBX52100

The COMBOConnect combines the simplicity of a standard junction box with the power of a 100 W low-voltage transformer.

Applications
- In-Ground Pools and Spas • Landscape Lighting
- Nicheless Low-Voltage Lights • Fountain Lighting

Features
- Patent pending design that combines a standard junction box with a built-in transformer
- Two high-voltage openings (one for inlet power, one to daisy chain to other j-boxes), five low-voltage openings (one more than typical larger junction boxes to better accommodate nicheless lights)
- Includes built-in 100 W safety transformer
- Built-in electronic noise reduction
- Unit is 20 percent smaller than standard junction box and transformer components
- Connections are designed to be easily accessible
- Uses insulated terminals for wiring connections
- Mount via wall, post or rod (PA119 mounting bracket sold separately.)
- Complies with NEC Code 680.24 requirements for junction boxes and per NEC 411 for low-voltage landscape lighting
- 1-year warranty

Accessories/Replacements

Mounting Bracket for PJBX52100 COMBOConnect	PA119

Model #	Light Connections	Dimensions H x W x D
PJBX52100	5	5" x 8" x 6" (127 mm x 203.2 mm x 152.4 mm)

PJB4175   PJB2175

Pool/Spa Light Junction Boxes
PJB Series

These polymeric junction boxes are code compliant and provide safe, reliable connections for low-voltage lights.

Applications
- Pools • Spas • Landscape Lighting

Features
- Accommodates flexible cords and non-metallic conduits from ½" to 1"
- Watertight, multifixture enclosure
- Easy access ground bar
- PA114 Wall/Post Mounting Bracket (sold separately)
- Complies with NEC Code 680.24 requirements for junction boxes
- 1-year warranty

Model #	Light Connections	Dimensions H x W x D
PJB2175	2	7.25" x 3" x 4" (184.2 mm x 76.2 mm x 101.6 mm)
PJB4175	4	8.75" x 5" x 4.625" (222.3 mm x 127 mm x 117.5 mm)

Accessories/Replacements

Mounting bracket for Pool/Spa Light Junction Boxes	PA114

INTERMATIC®

PB873MKZ

PB913N/PB914N

PB913N66/PB914N66

PB913N84/ PB914N84

Panel Mount Timers

PB Series

Features

- Automated control for pumps, cleaners and other types of loads
- 3 different mounting methods
- Quick connect terminals for easy installation
- 24-hour timing cycle - MIN ON time 1-hr, MAX ON time 23-hr, 30-min intervals
- 7-day timing cycle - 6 to 162-hr ON time, 3-hr intervals

Model #	Dial Input	Operating Voltage	No. of Trippers	Manual Override
Without Manual Override				
PB873MKZ*	7-day	120 VAC, 60 Hz	56	No
PB913N	24-hour	120 VAC, 60 Hz	48	No
PB914N	24-hour	208-277 VAC, 60 Hz	48	No
With Manual Override				
PB913N66	24-hour	120 VAC, 60 Hz	48	Yes
PB914N66	24-hour	208-277 VAC, 60 Hz	48	Yes
PB913N84	24-hour	120 VAC, 60 Hz	4	Yes
PB914N84	24-hour	208-277 VAC, 60 Hz	4	Yes

UL Recognized only

Ratings	
Switch Type	SPST
Resistive	20 A**, 120-277 VAC, 60 Hz
Tungsten	1250 W, 125 VAC, 60 Hz
Pilot Duty	360 VA, 120-240 VAC, 60 Hz
Motor	1 HP, 16 FLA @ 120 VAC, 60 Hz, 2 HP, 12 FLA @ 240 VAC, 60 Hz
Quick Connect Terminals	Terminals, (4) 1/4" male (2) for load (2) for independent clock motor
Dimensions H x W x D	3.333" x 2.8125" x 1.953125" (84.6 mm x 71.4 mm x 49.6 mm)
Warranty	1-year

*** CSA 16 A*

Accessories/Replacements

Trippers - Clip, ON/OFF, 24-Hr	156PB10398A

PB313E

PB373E

Ratings	
Switch Type	
24-Hour Models	SPDT
7-Day Models	SPST
Dimensions	2.375" x 2.375" x 1.0625" (60.3 mm x 60.3 mm x 27 mm)
H x W x D	
Warranty	1-year

Electronic Panel Mount Timers
PB300 Series

Applications
• Pumps • Mechanical Timer Replacement

Features
• 24-hour and 7-day models
• Turn equipment ON/OFF up to 8 times per day
• Select feature enables timers to be continuously in ON/OFF/AUTO mode
• Rugged construction
• Beige, plastic enclosure
• 3-year service life replaceable lithium battery

Model #	Resistive/Supply Voltage	HP/FLA
24-Hour		
PB313E	16 A, 120 VAC, 50/60 Hz	1/2 HP, 8 FLA @ 120 VAC, 50/60 Hz
PB313EK*	16 A, 120 VAC, 50/60 Hz	1/2 HP, 8 FLA @ 120 VAC, 50/60 Hz
PB314E	16 A, 240 VAC, 50/60 Hz	1/2 HP, 8 FLA @ 240 VAC, 50/60 Hz
PB314EK*	16 A, 240 VAC, 50/60 Hz	1/2 HP, 8 FLA @ 240 VAC, 50/60 Hz
7-Day		
PB373E**	20 A, 120 VAC, 50/60 Hz	1 HP, 16 FLA @ 120 VAC, 50/60 Hz
PB374E**	20 A, 240 VAC, 50/60 Hz	2 HP, 12 FLA @ 240 VAC, 50/60 Hz

*EK models are replacement kits for PB Series timers.
**Output voltage is same as supply.

P7103ME

Ratings	
Input Voltage	120 VAC, 50/60 Hz
Switch Type	DPST
Resistive	20 A, 120-240 VAC, 50/60 Hz
Tungsten	12.5 A (1500 W), 120 VAC, 50/60 Hz
Motor	1.5 HP @ 120 VAC, 50/60 Hz;
	3 HP @ 240 VAC, 50/60 Hz
Dimensions	9.4375" x 6.5" x 3.6875"
H x W x D	(239.7 mm x 165.1 mm x 93.7 mm)
Warranty	1-year

Electronic Time Switch Mechanisms
P7103ME

These digital time switches allow multiple ON/OFF cycles within a 24-hour time period for up to seven days.

Applications
• Pumps • Mechanical Timer Replacement

Features
• Turn equipment ON/OFF up to 8 times per day
• To-the-minute programming accuracy
• Dual-voltage input (3-wire)
• Timer override
• Select feature enables timers to be continuously in ON/OFF/AUTO mode
• 24-hour and 7-day models
• 3-year service life replaceable lithium battery

Model #	Description
P7103ME*	7-Day Mechanism Only

*Standard mechanism fits in all standard Intermatic enclosures and power and load centers.

Don't Forget

INTERMATIC®

TN311

1x
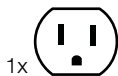
Heavy-Duty 24-Hour Indoor Mechanical Plug-In Timer

TN311 Heavy-Duty Timer

Features
• 3 ON/3 OFF settings per day with removable trippers, more ON/OFF events with addition of extra trippers
• Minimum 30-min ON/OFF time
• Grounded receptacle and 3-prong plug
• Plugs directly into wall outlet

Model #	Amp/Supply Voltage	Rcpt/Plug	
---------	--------------------	-----------	
TN311	15 A, 125 VAC	5-15	

Ratings	
Operating Voltage	125 VAC, 60 Hz
Resistive	15 A, 125 VAC, 60 Hz
Inductive Ballast	15 A, 125 VAC, 60 Hz
Tungsten	1875 W, 125 VAC, 60 Hz
Motor	1/3 HP, 125 VAC, 60 Hz
Dimensions	3 1/8" x 3" x 2" (79 mm x 76 mm x 51 mm)
Warranty	5-year limited

DT620

2x

7-Day Indoor Digital Plug-In Timer

DT620 Heavy-Duty Timer

Features
• 28 ON/OFF programmable events
• Full 7-day programming options, including astronomical clock, automatic DST adjustment and random mode
• Two grounded receptacles and a grounded plug
• LR44 battery backup (included)
• Plugs directly into wall outlet

Model #	Amp/Supply Voltage	Rcpt/Plug	
---------	--------------------	-----------	
DT620	15 A, 120 VAC	5-15	

Ratings	
Operating Voltage	120 VAC, 60 Hz
Resistive	15 A, 120 VAC, 60 Hz
Inductive Ballast	12 A, 120 VAC, 60 Hz
Tungsten	1000 W, 120 VAC, 60 Hz
Motor	1/2 HP, 120 VAC, 60 Hz
Dimensions	3 1/5" x 3 1/3" x 2 1/4" (84 mm x 84 mm x 57 mm)
Warranty	1-year

TN111RM40

1x

24-Hour Outdoor Mechanical Plug-In Timer

TN111RM40 Heavy-Duty Timer

Features
• 2 ON/2 OFF settings per day with removable trippers, more ON/OFF events with addition of extra trippers
• Minimum 30-min ON/OFF time
• Rated for outdoor use in a Type 3R outdoor enclosure
• Manual override dial

Model #	Amp/Supply Voltage	Rcpt/Plug	
---------	--------------------	-----------	
TN111RM40	15 A, 125 VAC	1-15	

Ratings	
Operating Voltage	125 VAC, 60 Hz
Resistive	9 A (1125 W), 125 VAC, 60 Hz
Inductive Ballast	9 A, 125 VAC, 60 Hz
Dimensions	3 1/8" x 3" x 2" (79 mm x 76 mm x 51 mm)
Warranty	1-year limited

HB880R

7-Day Outdoor Digital Plug-In Timer

HB880R Heavy-Duty Timer

Features
• 14 ON/OFF programmable events
• Full 7-day programming options, including astronomical clock, automatic DST adjustment and random mode
• 2 grounded receptacles with 24" cord and grounded plug
• Incandescent/fluorescent/CFL/LED compatible
• AA battery backup (included)
• Plugs directly into wall outlet

Model #	Amp/Supply Voltage	Rcpt/Plug	
---------	--------------------	-----------	
HB880R	15 A, 120 VAC	5-15	

Ratings	
Input Voltage	120 VAC, 60 Hz
Resistive	15 A, 120 VAC, 60 Hz
Inductive Ballast	8.3 A, 120 VAC, 60 Hz
Electronic/LED Ballast	500 VA, 120 VAC, 60 Hz
Tungsten	1000 W, 120 VAC, 60 Hz
Motor	1/2 HP, 120 VAC, 60 Hz
Dimensions	5 3/8" x 5" x 1 7/8" (137 mm x 129 mm x 48 mm)
Warranty	1-year limited

DT200LT

2x

Digital Landscape Timer

DT200LT Digital Astronomic Landscape Timer

Digital 7-day Landscape timer with DST, rated for use in low voltage transformers up to 1200W featuring ON programming at Dusk or predetermined time and OFF at Dawn or predetermined time.

Applications
• Lamps • Appliances • Electronics • Heaters • Window Air Conditioning
• Chargers

Features
• Factory set AUTO DST option takes the hassle out of Daylight Saving Time adjustments
• One push, programming override for homeowner convenience
• Rated for use in low voltage transformers up to 1200 W
• An operating temperature range of -40° F to 122° F (-40° C to 50° C) for steady performance in all types of climates
• Two included LR44 batteries retain the correct time and settings for up to three months without power
• Use with UL Certified Type 3R enclosure (sold separately)
• Intermatic Linesync provides accurate timing for years.

Model #	Amp/Supply Voltage	Rcpt/Plug	
DT200LT	15 A, 120 VAC	5-15	

Ratings	
Operating Voltage	120 VAC, 60 Hz
Resistive	15 A, 120 VAC, 60 Hz
Inductive	12 A, 120 VAC, 60 Hz
Motor	1/2 HP @ 120 VAC, 60 Hz
Dimensions H x W x D	3 ³⁄₁₆" x 3 ⁵⁄₁₆" x 2 ¼" (81 mm x 84 mm x 57 mm)
Warranty	1-year

P1101

P1121

P1131

Outdoor Mechanical Plug-In Timers With Built-In Enclosure

P1100 Series

Applications
• Pumps • Water Fountains • Aerators • Landscape/Holiday Lighting
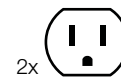• Engine Block Heaters

Features
• 2 ON/2 OFF settings per day with removable trippers, more ON/OFF events with addition of extra trippers
• Minimum 30-min ON/OFF time
• Built into outdoor rated enclosure with clear or black flip cover
• Grounded standard or twist-lock style NEMA plug and receptacle
• Plugs directly into wall outlet

Model #	Rcpt/Plug		Cord Length	Cover
P1101	5-15		22"	Clear
P1121			13"	Black
P1131	L5-20		22"	Clear

Ratings	P1101	P1121	P1131
Input Voltage	120 VAC, 60 Hz	120 VAC, 60 Hz	120 VAC, 60 Hz
Resistive	15 A, 120 VAC, 60 Hz	15 A, 120 VAC, 60 Hz	20 A, 120 VAC, 60 Hz
Tungsten/ Incandescent	1800 W, 120 VAC, 60 Hz	1800 W, 120 VAC, 60 Hz	–
FLA/LRA	1 HP, 15 FLA, 90 LRA @ 120 VAC	1 HP, 15 FLA, 90 LRA @ 120 VAC	1 HP, 16 FLA, 96 LRA @ 120 VAC
Dimensions H x W x D	5 ³⁄₈" x 5 ⅛" x 2 ½" (137 mm x 130 mm x 64 mm)	5 ⅝" x 3 ⅝" x 3 ¼" (143 mm x 92 mm x 83 mm)	5 ³⁄₈" x 5 ⅛" x 2 ½" (137 mm x 130 mm x 64 mm)
Warranty	1-year limited		

INTERMATIC®

Two-Circuit Portable Outdoor Timers
P1200 Series

Use these convenient plug-in timers instead of hard-wired controls. They offer plug-in receptacles for convenience and ease of use.

Applications
- Above Ground Pool Pumps • Lights • Fountains

Features
- 24-hour with 23 ½-hour MAX ON time
- Timed circuit controlled by timer
- Timed and photocontrol circuit controlled by photocell and timer (P1251P only)
- Built-in GFCI protected circuits and three-prong grounded plug for time switch supply
- Type 3R plastic indoor/outdoor enclosure
- 2 ON/OFF trippers standard
- Accepts up to 12 sets of trippers

Model #	Photocontrol	Rect/Plug
P1251P	Yes	5-15
P1261P	No	5-15

Accessories/Replacements

Trippers - Clip, ON/OFF, 24-Hr	156PB10398A
Light Shield for Button Photocontrol	6LV1352

P1251P

Ratings	
Resistive	15 A, 1800 W, 60 Hz
Tungsten	15 A, 1800 W, 60 Hz
Motor	1 HP, 15 FLA, 90 LRA @ 120 VAC
Dimensions H x W x D	9.375" x 5.5" x 4" (238.1 mm x 139.7 mm x 101.6 mm)
Cord	3 wire, outdoor grade, 24" with grounded plug
Warranty	1-year

Emergency Shut-Off Switch
PA600 Series

Safety switch intended for disconnecting electrical equipment from its power source, quickly and safely, in case of emergency.

Features
- Fits in single-gang junction box
- Rated for outdoor installation
- Disconnects electrical equipment from its power source in case of emergency
- Electrical grade plastic housing
- Beige, powder-coated steel faceplate

Model #	Description
PA600	Emergency Shut-Off Switch
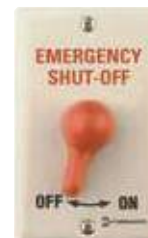
PA600

Ratings	
Operating Voltage	120-240 VAC, 60 Hz
Switch Type	DPST
Resistive	20 A, 60 Hz
Motor	1 HP, 120 VAC, 60 Hz, 3 HP, 240 VAC, 60 Hz

Fireman Switch
156T4042A

Features
- Coordinated control for pool/spa heaters and filter pumps
- Turns OFF gas pool/spa heater before filter pump shuts down to extend heater life
- 10 A, 250 VAC MAX

Model #	Description
156T4042A	Fireman Switch

156T4042A

Indoor and Outdoor Enclosures

Corrosion-Resistant Paint

Mounting Bracket

20-Gauge Steel

Lockable Hasp

Knockouts (5)

Rainproof Gasket

2T511GA Shown
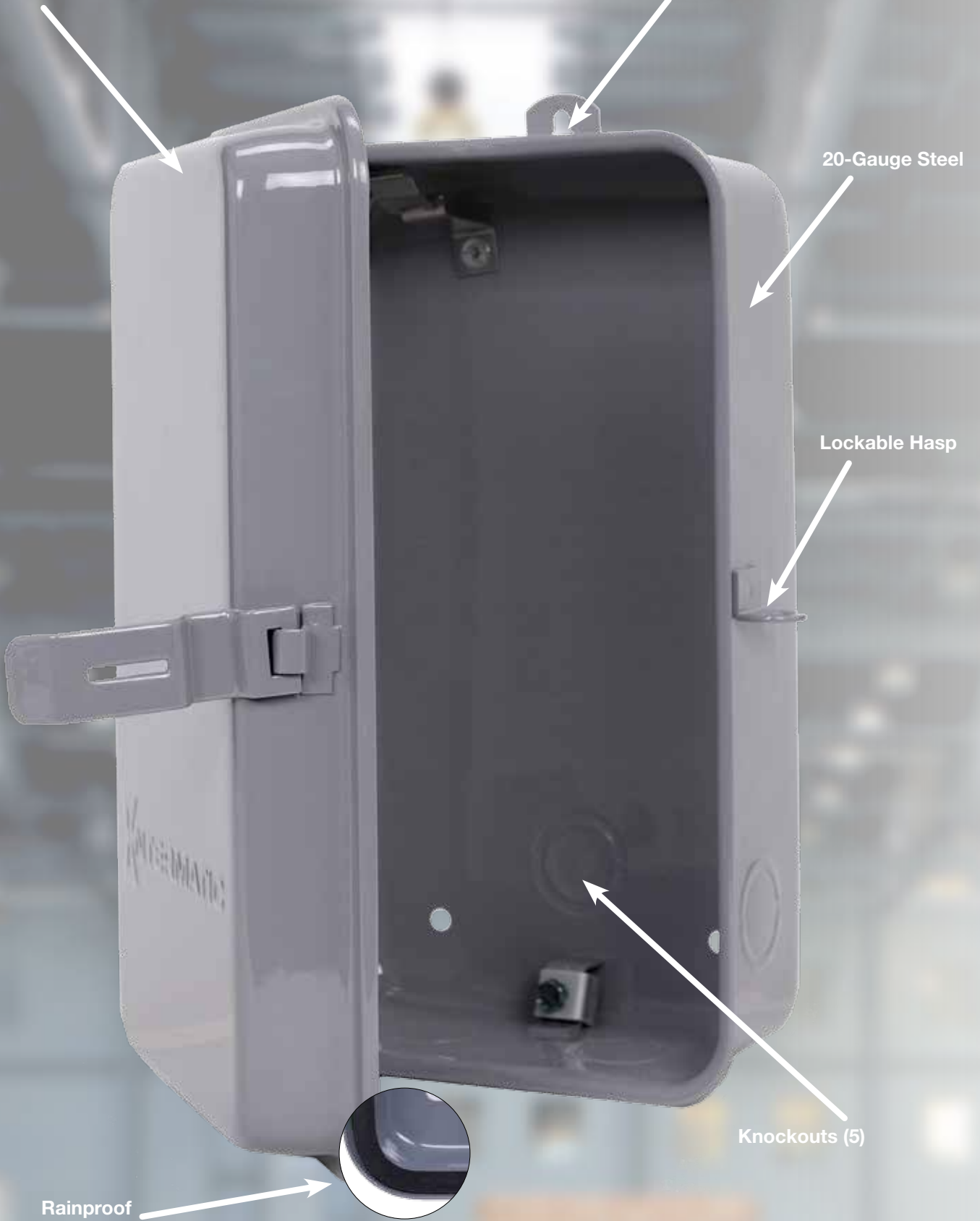
Selecting an enclosure that best meets your needs:

Intermatic Enclosures
pages 166-168

Type 1 Indoor Metal

Type 3R Outdoor Metal

Type 3R Outdoor Plastic

Grässlin Enclosures
pages 169

Type 1 Indoor Plastic

Type 3R Outdoor Plastic

Type 3R Outdoor Plastic

Mounting Options

Flush Mount Metal
Enclosures

Surface Mount
Bracket

Mounting Options

DIN Rail/Surface or
Flush Mount Options

Contents

Enclosure Dimensions

2T2040GA
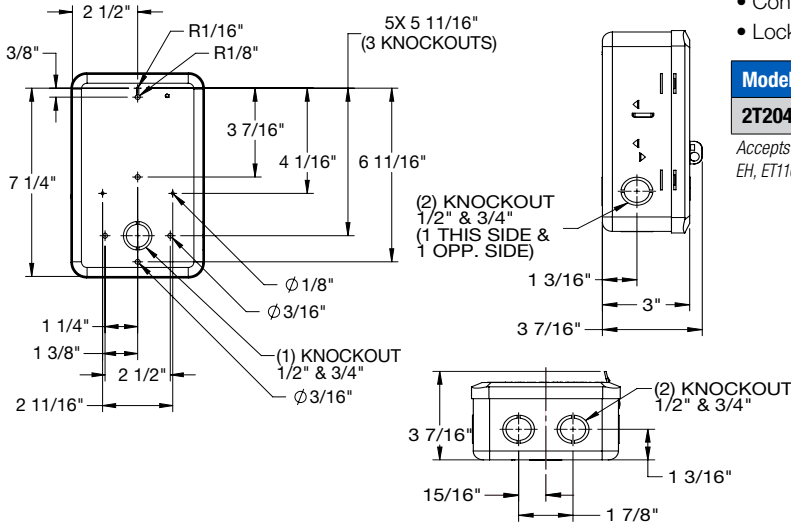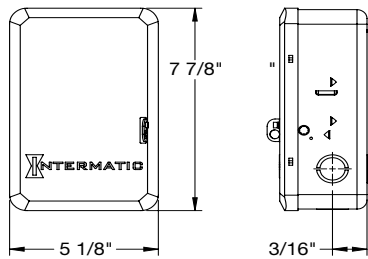
Indoor Metal Enclosure
Type 1

These drawn steel, powder coated enclosures offer a spring style hasp to ensure the enclosure remains closed and allows for a lock to be used to prevent unauthorized access to the controls.

Features
- Drawn steel with gray powder coat paint finish
- Combination ½" and ¾" nominal knockouts with one on back and each side of enclosure, and two on bottom
- Convenient mounting holes
- Lockable hasp holds door closed

Model #	Color	Dimensions H x W x D
2T2040GA	Gray	7 ⅞" x 5 ⅛" x 3 ⁷⁄₁₆" (200 mm x 130.2 mm x 87.3 mm

Accepts a wide range of Intermatic Time Switches, including most T100, T170, T1900, T2000, C8800, EH, ET1100, ET1700, ET2000, ET8000, ET90115, and ET90215 Series units.

Enclosure Dimensions
2T511GA / 2T2485GA

2T2485GA

2T511GA
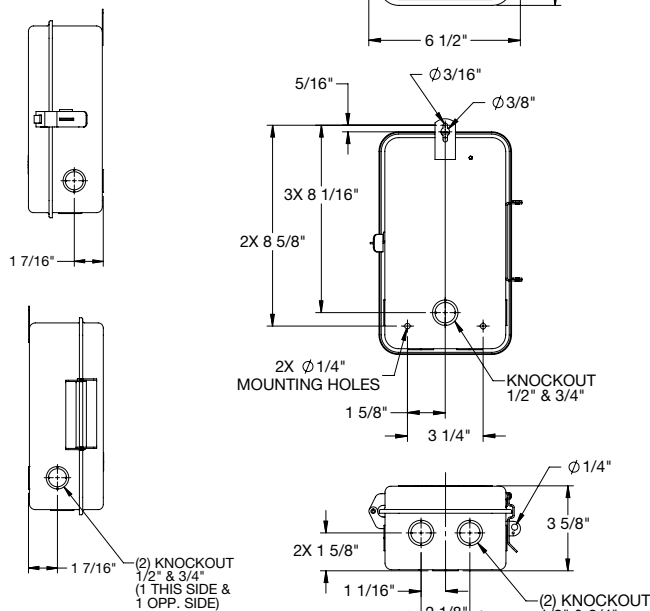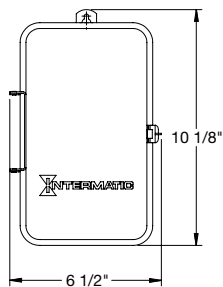
Outdoor Metal Enclosures
Type 3R Rainproof

These drawn steel, powder coated enclosures keep controls protected from rain, sleet, snow, and ice. They have a swinging hasp that allows for a lock to be used to prevent unauthorized access to the controls.

Features
- Drawn steel with gray or beige powder coat paint finish
- Combination ½" and ¾" nominal knockouts with one on back and each side of enclosure, and two on bottom
- Separate grounding terminal
- Convenient mounting holes
- Lockable hasp holds door closed

Model #	Color	Dimensions H x W x D
For Most Mechanical and Electronic Controls		
2T511GA*	Gray	10 ⅛" x 6 ½" x 3 ⅝" (257.2 mm x 165.1 mm x 92.1 mm)
2T2485GA*	Beige	10 ⅛" x 6 ½" x 3 ⅝" (257.2 mm x 165.1 mm x 92.1 mm)
For Carry-Over Models		
2T2331GA**	Gray	10 ⅛" x 6 ½" x 3 ¹¹⁄₁₆" (257.2 mm x 165.1 mm x 93.7 mm)

*Available for T100, T170, T1900, T2000 ,C8800, EH, ET1100, ET1700, ET2000, ET8000, ET90115, and ET90215 Series units.
**Available for T100CR, T170CR, T1400, and T1800 Series units.

INTERMATIC®

Outdoor Plastic Enclosures
Type 3R Rainproof

These heavy-duty industrial grade plastic enclosures include molded mounting brackets for easy installation and have a lockable hasp to prevent unauthorized access to the controls. These plastic enclosures are non-corroding, and are great for applications in high moisture or dusty locations.

Features
- Heavy-duty industrial grade plastic
- Perfect for high humidity and dusty environments
- Combination ½" and ¾" nominal knockouts with one on back and each side of enclosure, and two on bottom
- Lockable hasp holds door closed

Model #	Color	Cover Color	Dimensions H x W x D
2T2500GA	Gray	Gray	10" x 6 ½" x 4" (254 mm x 165.1 x 101.6 mm)
2T2502GA	Beige	Beige	10" x 6 ½" x 4" (254 mm x 165.1 x 101.6 mm)
2T2926A	Gray	Clear	10" x 6 ½" x 4" (254 mm x 165.1 x 101.6 mm)

Available for T100, T170, T1400, T1900, T2000 ,C8800, EH, ET1100, ET1700, ET8000, ET2000, ET90115, ET90215, R8800 and T8800 Series units.

2T2500GA

2T2502GA

2T2926A

Enclosure Dimensions

6 1/2" — 10" — 1 1/2" — 4" — R1/8" — 2 3/4" — 8 1/16" — 1 5/8" — 3 1/4" — 8" — 2X 8 1/2" — 2X ⌀1/4" MOUNTING HOLES — KNOCKOUT 1/2", 3/4"

(2) KNOCKOUT 1/2", 3/4" — 1 5/8" — 1 1/16" — 2 1/16" — 8 1/16" — 1 1/2" — (2) KNOCKOUT 1/2", 3/4" (1 THIS SIDE & 1 OPP. SIDE)

INTERMATIC
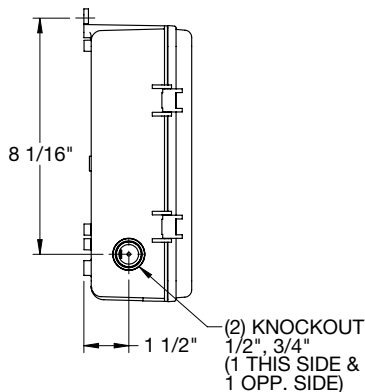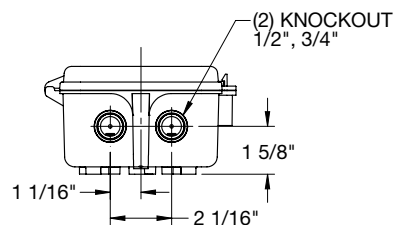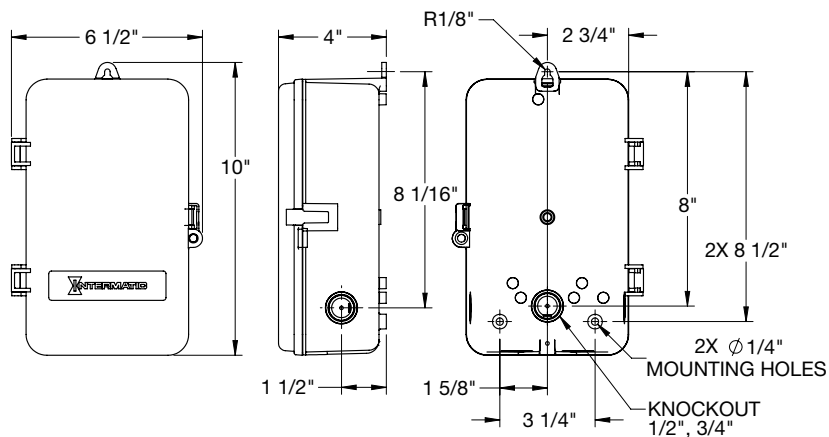
Enclosure Dimensions

2T2365GA
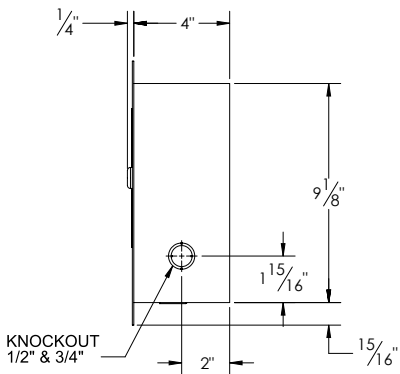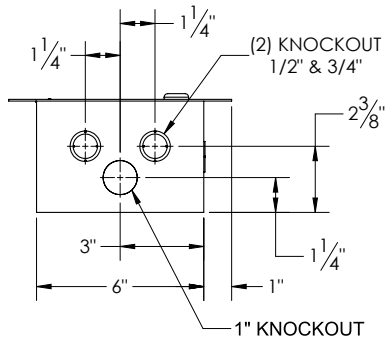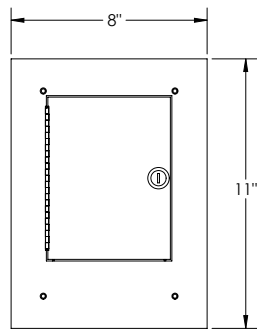
Flush Mount Metal Enclosures
Type 1 Rated

These enclosures are great for concealing the controls in the wall to provide a finished, flush appearance. Enclosures are made of heavy-duty steel and also include a locking mechanism to prevent unauthorized access to the controls.

Features
• Heavy-duty construction with hinged door
• Lockable door with key
• Various mounting holes

Model #	Dimensions H x W x D
Riveted Mounting Bracket	
2T2365GA*	9 ⅛" x 6" x 4 ⅛" (231.8 mm x 152.4 mm x 104.8 mm)
Adjustable Bracket Mount Locations	
2T308A**	9 ⅛" x 6" x 4 ⅛" (231.8 mm x 152.4 mm x 104.8 mm)

*Available for ET1100, ET1700, ET2000, ET8000, EH, ET90115, and ET90215 Series units.
**Available for T100, T170, T1900, T2000, and C8800 series units.

22T338GR

Surface Mount Bracket
Mounting Brackets

This bracket has been designed to be used when mounting the controls into areas where an enclosure will not be needed or when mounting the control into another form of enclosure. The bracket also accepts a wide range of Intermatic controls

Features
• Ideal for panel mounting mechanical or electronic time switch controls

Model #	Description	Dimensions H x W x D
22T338GR	Mounting Bracket for Intermatic Standardized Timer Mechanisms	6" x 5" x 2" (152.4 mm x 127 mm x 50.8 mm)

Accepts a wide range of Intermatic Time Switches, including most T100, T170, T1900, T2000, C8800, ET1100, ET1700, ET2000, ET8000, ET90115, and ET90215 series units.

INTERMATIC®

Indoor Plastic Enclosure

E150

The Grässlin E150 is an indoor rated plastic enclosure which provides mounting for any Grässlin Electromechanical and Electronic Time Switch. These enclosures are also well-suited for use with pool controls, relays, contactors, and other control or electrical mechanisms. Bosses are provided for mounting of a DIN rail. Additional bosses provide a means of mounting a printed circuit board assembly. Provision for interior cover panel is also provided.

Features
• Type 1 indoor enclosure
• High impact all-plastic enclosure eliminates rust and corrosion
• Rugged heavy-duty construction
• Provision for padlock seal
• Five combinations of ½" and ¾" knockouts

Model #	Dimensions
E150	8 $^{41}/_{64}$" x 6 ½" x 3 ¾" (219.45 mm x 165 mm x 95 mm)

Enclosure Dimensions
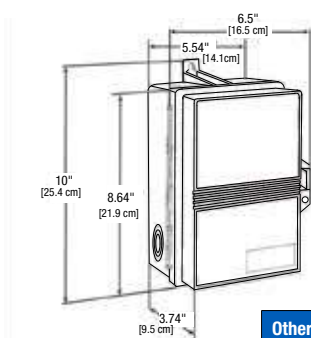
E150

Other Specifications	
Overall, w/mounting tabs	10" x 6 ½" x 3 ¾"
Base Exterior	8" x 5" x 2 $^{13}/_{32}$"
Base Interior	7 ½" x 4 ½" x 2"
Door Exterior	8 $^{45}/_{64}$" x 5 ½" x 1 $^{3}/_{32}$"
Weight	1 lbs (0.453592 kg)

Outdoor Plastic Enclosure

E200

The Grässlin E200 and E300 are outdoor rated plastic enclosures which provide mounting for any Grässlin Electromechanical and Electronic Time Switches. These enclosures are also well-suited for use with pool controls, relays, contactors, and other control or electrical mechanisms. The E200 and E300 are Type 3R "Rainproof" rated for outdoor and wet or dusty locations. Bosses are provided for mounting of a DIN rail. Additional bosses provide a means of mounting a printed circuit board assembly. Provision for interior cover panel is also provided.

Features
• Type 3R Outdoor enclosure
• High impact all-plastic enclosure eliminates rust and corrosion
• Rugged heavy-duty construction
• Provision for padlock seal
• Five combinations of ½" and ¾" knockouts

Model #	Dimensions H x W x D
E200	8 $^{41}/_{64}$" x 6 ½" x 3 ¾" (219.45 mm x 165 mm x 95 mm

Enclosure Dimensions
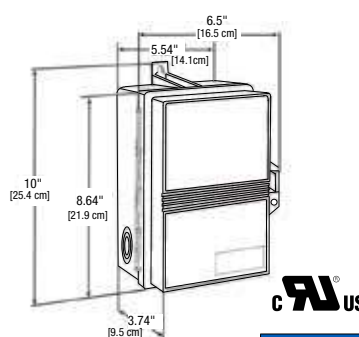
E200

Other Specifications	
Overall, w/mounting tabs	10" x 6 ½" x 3 ¾"
Base Exterior	8" x 5" x 2 $^{13}/_{32}$"
Base Interior	7 ½" x 4 ½" x 2"
Door Exterior	8 $^{45}/_{64}$" x 5 ½" x 1 $^{13}/_{32}$"
Weight	1 lbs (0.453592 kg)

Outdoor Plastic Enclosure

E300

Features
• Type 3R Outdoor enclosure
• High impact all-plastic enclosure eliminates rust and corrosion
• Rugged heavy-duty construction
• Provision for padlock seal
• Five combinations of ½" and ¾" knockouts

Model #	Dimensions H x W x D
E300	8 ⅞" x 6 $^{39}/_{64}$" x 3" (225.42 mm x 167.86 mm x 76.2 mm

Enclosure Dimensions
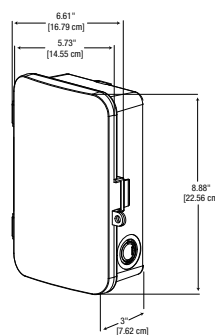
E300

Other Specifications	
Overall, w/mounting tabs	8 ⅞" x 6 $^{39}/_{64}$" x 3"
Weight	1.33 lbs (60 kg)

Don't Forget

It's easy to add relays or other accessories to your Grässlin Enclosure, such as a Grässlin Time Control for heavy-duty applications. Applicable accessories include: Relays 143T137 (24 VAC coil voltage), 143PS107 (24 VDC coil voltage), 143T304 (120 VAC coil voltage), 22—00012 (4" metal DIN rail).See Pages 170-172 for further accessory details.

Model #	Description
HVAC Power Protection	
22--00091	Compressor Defender™ Mounting Bracket
Defrost Time Controls/HVAC/R	
DT-B	Defrost Timer Bracket
156--01318A	DTAV40 Plate Assembly
Electronic Controls	
101--00040	Battery Holder for ET100
176ET17A	120 VAC Surge Suppressor
6ET1398GA	Flush Mount Door Assembly with Lock
NOISEFILTER	Noise Filter
ET-NF	Noise Filter for Electronic Controls
22T338GR	Mounting Bracket for ET90115, ET90215, ET1100, ET1700, ET8000, ET2100, ET2700 and ET2800 Series Electronic Controls
ET9100	ET90415-ET91615 Replacement Door Assembly
ET9232	Ethernet Module for ET90000 Upgrade or Re-placement
ET9250	4-Circuit Relay Board for Upgrade or Replacement of ET90415CR-ET91615CR Panels
124--00101	Insulator for ET Series controls (ET1100, ET1700, ET8000, ET2100, ET2700, ET2800 Series)
ET9500	BEMS Interface Box for ET90000 Series
Grässlin Time Controls	
24--00109	Wall Plate for KM2ST-1G or KM2STU-1G, Single Gang, White
24--00046	Wall Plate for KM2ST-2D, 2 Gang (Timer and Decorator Switch), White
24--00041	Wall Plate for KM2ST-2G, 2 Gang (Timer and Toggle Switch), White
24--00045	Wall Plate for KM2ST-2R, 2 Gang (Timer and Receptacle), White
24--00051	Wall Plate for KM2ST-3D, 3 Gang (Timer and 2 Decorator Switches), White
24--00042	Wall Plate for KM2ST-3G, 3 Gang (Timer and 2 Toggle Switches), White
24--00043	Wall Plate for KM2ST-4G, 4 Gang (Timer and 3 Toggle Switches), White
DC-FME	Clear Dust Cover for Electronic Panel Mount
DC-FME-A	Dust Cover for Electronic Panel Mount
FM-FU	FM1 Flush Mount Housing Kit
FM-SU	FM1 Surface/DIN Rail Kit
180-0014	FM1 Housing Terminal Base
Grässlin Hour Meters	
691	Housing Base for UWZ48 Surface Mount
G-53U	FWZ53 Flush Mount Gasket
BEZ55-GRAYU	55 mm Gray Bezel for UWZ48E
BEZ55-BLACKU	55 mm Black Bezel for UWZ48E
BEZ72U	72 mm Gray Bezel for UWZ48E
BEZ72PU	72 mm Bezel with 3 Pins for Round 3-Bolt Hole Opening for UWZ48E
MB-48V	DIN Rail Mounting Base for UWZ48E

Model #	Description
Mechanical Time Switches	
107T119	Tripper (Silver) for T8800 and R8800 Series (Day Skipper)
107T73	Replacement Day Wheel Pins (These go into the actual Day Wheel)
119T85	24 VAC, 20 VA (S) Transformer
119T86A	24 VAC Transformer for T8845PV
124T1948	Insulator for Single Pole Time Switch (T101, T102, T171, T172)
124T1949	Insulator for Double Pole Time Switch (T103, T104, T105, T173, T174, T175, T176, T185, WH40)
124T1952	Insulator for Double Pole Time Switch (T103, T104, T105, T173, T174, T175, T176, T185, WH40)
124T1953	Insulator for 4PST Time Switch
124T1954	Insulator for T101B with Independent Motor Wiring
124T2058	Insulator for T1905, T1906, T2006, T2005, C8815, C8825, C8835, C8845, C8855, C8865, C8866
124T2097	Insulator for R8806P101C, T8805P101C, T8845PV
124T2098	Insulator for WH21
124T2375	Insulator for T30004R30
124T905	Insulator for T1905HDM, T1975EHDM, T1975HD, T1976, T1975, T1975ER, T1905
124T907A	Insulator Assembly (S001)
130T1042	Grounding Terminal Bar
131T68GA	125 VAC, 60 Hz Motor and Carry-over for T7400BC and T800BC Series
133T698A	Replacement Snap Switch for T1970 Series
133T700A	Micro Switch for T8800 and R8800 Series
133T701A	Replacement Snap Switch for T1900 and T2000 Series
133T773A	Replacement Snap Switch for C8800 Series
143T138	Relay Kit, DPST, 3 HP, 240 VAC (S)
143T302A	Relay Kit, Assembly (S001)
143T304	Relay Kit, DPST, 3 HP, 120 VAC (S)
146T400	Knob-Switch (S)
156T1948A	Trippers for T170, T1400, T1800 Series Includes 1 ON, 1 OFF, and 1 ON with Skipper Extension
156T1949A	Tripper for T185 (Variable 10 to 60 Minute Interval)
156T1950A	Set of 12 Trippers for T1900, T2000, C8800, R8800 and T8800 Series
156T1950AD12	12 Bags of 156T1950A Trippers for T1900, T2000, C8800, R8800, and T8800 Series
156T1954A	14 Skipper Pins for R8800, and T8800 Series
156T1957A	Skipper Screws

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Model #	Description
Mechanical Time Switches (continued)	
156T1978A	1 Set of ON/OFF Trippers for T100, T7000, and WH40
156T1978AD12	12 Pack of 156T1978A Trippers for T100, T7000, and WH40
156T1978AII	2 Sets of ON/OFF Trippers for T100, T7000, and WH40
156T2548A	7 Sets of ON/OFF Trippers for T7400 and T7800 Series
156T2978A	Package Accessory Trippers
156T3085A	Skipper Screws for T170 Series, T1470 Series, and T1870 Series
22T338GR	Bracket for T100, T170, T1900, T2000, & C8800 Series
WG1570-10D	125 VAC, 60Hz Motor for T101, T103, T105
WG1573-10D	208-277 VAC, 60 Hz Motor for T102, T104, T106, T172, T174, WH40
WG730-14D	125 VAC, 60 Hz Motor for R8800, T1900, T1970, and T8800 Series
WG733-14D	208-277 VAC, 60 Hz Motor for R8800, T1900, T1970, and T8800 Series
Metal Trippers	
156T1948A	Trippers (1) Set (ON/OFF/ON Cutout) for T170, P171, T1400, and T1800 Series
156T1949A	Tripper Variable (10 to 60 Min) for T185
156T1950A	Trippers (12 ON/OFF) for T1900, T2000, C8800, R8800 and T8800 Series
159T1954A	14 Pins for R8800 and T8800 Series
156T1957A	Skipper Screws (3 per package)
156T1978A	Trippers (1 ON/1 OFF) for T100, T7000, and WH40
156T2548A	Trippers 7 sets (ON/OFF) for T5100, T7400 and T7800 Series
156EB1945A	Trippers for E1020 (Pack of 2)
156T3085A	3 Skipper Screws for T170, P171, T1400, T1800 and WH Series
156T3230A	Trippers (1) Set (ON/OFF/ON Cutout) for WH Series
156T3225A	Trippers WH40
Photocontrols	
6LV1352	Light Shield for Button Photocontrol (K4000 Series, K4321, K4400 Series, EK4036S, EK4336S, EK4436SM)
K43-WP-KIT	Wall Plate Kit (for Button – K4000 Series, EK4036S)
22LG563	Replacement Light Guard for Thermal Photocontrols (K4100 and K4200 Series)
K42-SW-A	Swivel Arm
K4500	Shorting Plug, Rating: 15 A, 480 VAC Max
K121	ANSI C136.10 Locking Type NEMA Receptacle, (9" lead)
K121-30	ANSI C136.10 Locking Type NEMA Receptacle, (30" lead)
K122	Sealed Locking Type NEMA Receptacle with Pole Bracket

Model #	Description
Plastic Trippers	
107SB234	Green (ON) for HB35R, HB36R (Outdoor)
107SB189	Red (OFF) for HB35R, HB36R (Outdoor)
107SB216	Green (ON) for HB31R, HB32R
107SB217	Red (OFF) for HB31R, HB32R
107HB254	Green (ON) for HB11, HB1113RC, HB1116R, HB3116R8, P1121 (Outdoor)
107HB255	Red (OFF) for HB11, HB1113RC, HB1116R, HB3116R8, P1121 (Outdoor)
107TN222	Turquoise (ON) for TN, PB, TB Series, P1101, P1131, P1161, P1261P, AL300TPWS, AL600TPWS and AL900TPWS
107TN221	Red (OFF) for TN, PB, TB Series, P1101, P1131, P1161, P1261P, AL300TPWS, AL600TPWS and AL900TPWS
107SB189	Red (ON) for SB Series, HB112C, HB113C, HB114C (Indoor), AL300RTW, AL600TW, AL900TW, AL60TW and ML Series Transformer Timers
107SB192	Black (OFF) for SB Series, HB112C, HB113C, HB114C (Indoor), AL300RTW, AL600TW, AL900TW, AL60TW and ML Series Transformer Timers
Pool & Spa	
119T267	Transformer - 100 W, 120 V, 60 Hz
119T340	Transformer - 300 W, 120 V, 60 Hz
124--00066	Insulator for Timers
124T2411A	Time Switch Insulator - 10 Pack
124T2530A	8-Pole Buss Bar Assembly
133RC1144	Pressure Sensing Momentary Air Switch - 3 A
143RC140	Relay - 4-Function Stepper
143RC151	Relay - DPST, 3 HP, 24 VAC
143T135	Relay - DPST, 3 HP, 240 VAC
143T136	Relay - DPST, 3 HP, 120 VAC
143T145A	Relay - DPST, 3 HP, 24 VDC
156PB10398A	Trippers - Clip, ON/OFF, 24-Hr
156T6738A	Insulators for Time Switch Manual Lever - 10 pack
178T24	Freeze Protection Thermostat
21T156A	Spacer-Standoff, 3" long - 4 pack
21T166A	Spacer-Standoff, 3" long - 2 pack
22T904A	Breaker Hold-Down Kit (If breaker is used as a backfed device)
2T2485GA	Case - Raintight, Beige, Painted
2T2502GA	Case - Rainproof, Plastic
PA102	Switch Assembly with Thermostat and Relay
PA114	Mounting Bracket for Pool/Spa Light Junction Boxes
PA115	Trippers - OFF - 25 pack
PA117	Replacement Latch Kit
PA120	Relay - DPST with 24 VAC coil
Specialty Time Switches	
133T1115A	Toggle Switch for T8800 and R800 Series
133T700A	Micro switch for T8800 and R800 Series

Enclosures and Accessories

Model #	Description
Surge Protection	
AG1BRKT	Mounting Bracket for AG2401C3, AG48013, AG2083C3, AG4803C3, AG6503C3, AG6503L3, AG2403C3
24EG5133	Mounting Bracket Plate for Type 3 SPD Surge Strips
IG1240FMP33	Flush Mount Kit for IG1200RC3 and IG1240RC3
IG3240FMP33	Flush Mount Kit for IG3240RC3
IG2T	Spare Telephone/Modem/DSL Internet Protection Module
IG1C	Spare Coax Cable Protection Module
IG120RSM10	Replacement Consumable Module for IG2240 Series
IG120RSM20	Replacement Consumable Module for IG2280 Series
IG2200-FMK	Flush Mount Kit for IG2240-IM, IG2240-IMS, IG2280-IM
Timers	
146MT573	Knob-Wall Switch FD Series - Ivory
146MT574	Knob-Wall Switch FD Series - White
146MT575	Knob-Wall Switch FD Series - Almond
146MT577	Knob-Wall Switch FF Series - White
146MT579	Knob-Wall Switch FF Series - Black
148FD5024	Plate for 5-Min with HOLD (FF5MH)
148FD5025	Plate for 5-Min without HOLD (FF5M)
148FD5029	Plate for 60-Min with HOLD (FF60MHC)
148FD5030	Plate for 6-Hr without HOLD (FF36H, FF46H, FF6H)
148FD5031	Plate for 6-Hr with HOLD (FF6HH)
148FD5032	Plate for 12-Hr without HOLD (FF12HC, FF312H, FF412H)
148FD5033	Plate for 12-Hr with HOLD (FF12HHC, FF312HH)
148FD5034	Plate for 2-Hr without HOLD (FF2H, FF32H)
148FD5035	Plate for 2-Hr with HOLD (FF32HH)
148FD5036	Plate for 4-Hr without HOLD (FF34H, FF4H)
148FD5037	Plate for 4-Hr with HOLD (FF34HH)
148FD5038	Plate for 30-Min with HOLD (FF30MH)
148FD5039	Plate for 15-Min with HOLD (FF15MH)
148FD5052	Plate for 5-Min without HOLD, White (FD5MW)
148FD5054	Plate for 15-Min with HOLD, White (FD15MHW)
148FD5056	Plate for 30-Min with HOLD, White (FD30MHW)
148FD5058	Plate for 60-Min with HOLD, White (FD60MHW)
148FD5059	Plate for 6-Hr without HOLD, White (FD46HW, FD6HW)
148FD5060	Plate for 6-Hr with HOLD, White (FD6HHW)
148FD5061	Plate for 12-Hr without HOLD, White (FD12HWC)
148FD5062	Plate for 12-Hr with HOLD, White (FD12HHW)

Model #	Description
Timers (continued)	
148FD5063	Plate for 2-Hr without HOLD, White (FD2HW, FD32HW)
148FD5064	Plate for 5-Min without HOLD, Ivory (FD5M)
148FD5066	Plate for 15-Min with HOLD, Ivory (FD15MH)
148FD5068	Plate for 30-Min with HOLD, Ivory (FD30MH)
148FD5070	Plate for 60-Min with HOLD, Ivory (FD60MH)
148FD5071	Plate for 6-Hr without HOLD, Ivory (FD36H, FD46H, FD6H)
148FD5072	Plate for 6-Hr with HOLD, Ivory (FD6HH)
148FD5073	Plate for 12-Hr without HOLD, Ivory (FD12HC)
148FD5074	Plate for 12-Hr with HOLD, Ivory (FD12HH)
148FD5075	Plate for 2-Hr without HOLD, Ivory (FD2H, FD32H)
148FD5076	Plate for 4-Hr without HOLD, Ivory (FD34H, FD4H)
148FD5077	Plate for 15-Min without HOLD, Light Almond (FD15MAC)
148FD5078	Plate for 30-Min without HOLD, Light Almond (FD30MAC)
148FD5079	Plate for 60-Min without HOLD, Light Almond (FD60MAC)
148FD5080	Plate for 4-Hr without HOLD, White (FD34HW, FD4HW)
FD15MP	Plate for 15-Min without HOLD, Ivory (FD15MC, FD415M)
FD15MPW	Plate for 15-Min without HOLD, White (FD15MWC)
FD30MP	Plate for 30-Min without HOLD, Ivory (FD30MC, FD430M)
FD30MPW	Plate for 30-Min without HOLD, White (FD30MWC, FD430MW)
FD60MP	Plate for 60-Min without HOLD, Ivory (FD460M, FD60MC)
FD60MPW	Plate for 60-Min without HOLD, White (FD460MW, FD60MWC)
FF15MP	Plate for 15-Min without HOLD, Ivory (FF15MC, FF315M, FF415M)
FF30MP	Plate for 30-Min without HOLD, Ivory (FF30MC, FF330M, FF430M)
FF60MP	Plate for 60-Min without HOLD, Ivory (FF360M, FF460M, FF60MC)
Weatherproof Covers	
WP17	Single-Gang Inserts
WP217	Double-Gang Inserts
WP101	Double-Gang Duplex
WP102	Double-Gang GFCI
WP107	Double-Gang Round 1 ⅜", 1 ⅝", 1 ¾" (35 mm, 41 mm, 44 mm)
WP213	Double-Gang Round 2 ⅛", 2 ⅝" (55 mm, 67 mm)
WP10HP	Replacement Hinge Pins (10-pc)

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Reference

Mechanical/Electronic	Time Switch Type	24-Hour, 7-Day or 365-Day	# of Circuits	A Rating	Switch Rating	Total ON/OFF Events
Electromechanical	Auto-Voltage or Multivoltage	24-Hour or 7-Day	1	40	SPDT, DPDT	96-Events for 24-Hours/ 48-Events for Weekly with Captive Trippers
Mechanical	Panel Mount	24-Hour or 7-Day	1	21	SPDT	96-Events for 24-Hours/ 48-Events for Weekly with Captive Trippers
Mechanical	Flush, Surface or DIN Rail Mount	24-Hour or 7-Day	1	21	SPDT	96-Events for 24-Hours/ 48-Events for Weekly with Captive Trippers
Mechanical	General Purpose	24-Hour	1	40	SPST, SPDT, DPDT	12
Mechanical	24-Hour with Skipper	24-Hour	1	40	SPST, SPDT, DPDT, 4PST	10
Mechanical	24 Hour with Skipper	24-Hour	1	20	SPDT	96
Mechanical	Percentage Cycle Timer	1, 3, 5, 10, 30-Minutes; 1, 4-Hours (CT1000 does not have a 4-Hour Increment)	1	20	SPST	3% to 97% Cycle Duration
Mechanical	Irrigation/Sprinkler	24-Hour with Skip-a-day Selection	1	15-25	SPDT	60
Mechanical	Compact 7-Day	7-Day	1	20	SPDT	84
Mechanical	7-Day Dial with/without Carry-over	7-Day	1	40	4PST	Different ON/OFF Program for Each Day of the Week
Mechanical	Water Heater	24-Hour	1	40	DPST	T104-20 (2 ON/OFF per Day) WH (1 ON/OFF per Day)
Mechanical	Astronomic Dial with Skipper	24-Hour with Skip-a-day Selection	1	40	3PST	N/A
Electromechanical	Defrost Timer	24-Hour	1	40	SPDT, SPST	1 to 24/24-Hour Period
Mechanical	In-Wall Spring Wound	Decorator and Commercial Style	1	15	Varies	Various increments with/ without "HOLD"
Mechanical	In-Wall Mechanical	24-Hour	1	20	SPST	36 (72 Captive Trippers in 20-Minute Increments)
Electronic	Auto-Voltage 120-277 VAC	24-Hour or 7-Day	1	40	SPDT, DPDT	96
Electronic	Panel Mount	24-Hour and/or 7-Day	1 & 2	16	SPDT	Various
Electronic	Flush, Surface or DIN Rail Mount	24-Hour and/or 7-Day	1 & 2	16	SPDT	Various
Electronic	24-Hour, Multivoltage	24-Hour	1 & 2	30	SPST, DPST	28
Electronic	24-Hour with Holiday, Multivoltage	24-Hour with Exceptions	1, 2 & 4	30		96+
Electronic	7-Day, Multivoltage	7-Day with Exceptions	1 & 2	30	SPST, SPDT, DPST	28
Electronic	7-Day with Holiday, Multivoltage	7-Day with Exceptions	1, 2 & 4	30		96+
Electronic	7-Day Astronomic, Multivoltage	Astronomic 7-Day	1 & 2	30	SPST, SPDT, DPST	28
Electronic	7-Day Astronomic with Holiday, Multivoltage	Astronomic 7-Day with Exceptions	1, 2 & 4	30		96+
Electronic	365-Day Advanced Control	365-Day	1, 2, 4, 8 & 16	30	SPST, SPDT, DPST, DPDT	2000+
Electronic	365-Day Advanced Control (DIN Rail Mount)	365-Day	2	16	SPST, SPDT	400
Electronic	Water Heater	7-Day with Exceptions	1	30	SPST, DPST	42
Electronic	In-Wall	Count Down Timers in Various Increments	1	15	SPST	N/A
Electronic	In-Wall	Programmable Countdown Timer 24-Hour	1	20	Single Pole/Three Way	1
Electronic	In-Wall	Programmable 7-Day	1	15	Single Pole	7
Electronic	In-Wall	Programmable 7-Day with Astro	1	15/20	Single Pole/Three Way	40/Week

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Minimum ON/OFF Time	Temperature Input	Skip-A-Day	Carry-over	Astro	Daylight Saving Time	Product Series	Page(s)
15-Minutes for 24-Hours/ 48-Events for Weekly with Captive Trippers	No	Yes	Optional	No	No	GM40AV	46
15 Minutes for 24 Hours/48 Events for Weekly with Captive Trippers	No	No	Optional	No	No	FM1 - SERIES	52-53
15 Minutes for 24 Hours/48 Events for Weekly with Captive Trippers	No	No	Optional	No	No	MIL72 SERIES	50-51
1 Hour		No	No	No	No	T100	32
1 Hour		Yes	Optional	No	No	T170	33
15 Minutes		Yes	Optional	No	No	T1900	34
1 Second		No	No	No	No	CT2000	40
12 Minute		Yes	No	No	No	R8800/T8800 Series	40
2 Hours		No	No	No	No	T2000	37
3.5 Hours		No	Optional	No	No	T7000 Series	36
1 Hour		No	Yes	No	No	T104-20/WH40	43
N/A		Yes	Yes	Yes	No	V45000 Series	41
15-Minutes Minimum ON/OFF Time; 23-Hours 45-Minutes Max Off Time	Yes	No	Optional	No	No	DTAV40	98
Varies		N/A	N/A	N/A	N/A	FD Series & FF Series	64-65
20 Minute		N/A	N/A	N/A	N/A	KM2 Series	61
1 Minute		Yes	Yes	No	No	GM40AVE	24
1 Minute	No	Yes	Yes	No	Yes	FMD - SERIES	26-29
1 Minute	No	Yes	Yes	No	Yes	FMD - A&E SERIES	26-27
1 Minute		Yes	Yes	No	Yes	ET1100	16-17
1 Minute		Yes	Yes	No	Yes	ET2100	14-15
1 Minute		Yes	Yes	No	Yes	ET1700	16-17
1 Minute		Yes	Yes	No	Yes	ET2700	14-15
1 Minute		Yes	Yes	Yes	Yes	ET8000	16-17
1 Minute		Yes	Yes	Yes	Yes	ET2800	14-15
1 Second		Yes	Yes	Yes	Yes	ET90000	12-13
1 Second	No	Yes	Yes	Yes	Yes	TALENTO882	23
1 Minute		Yes	Yes	No	No	EH Series	43
Varies		N/A	N/A	N/A	N/A	EI200	63
1 Second		N/A	N/A	No	No	EI400	63
1 Minute		N/A	N/A	No	No	EI500	59
1 Minute		N/A	N/A	Yes	Yes	STO1C/EI600	58

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