



Relay Products Shortform Catalog







TE Relay Products offers an extremely broad range of relays for application in many different markets. Appliance, Alternative Energy, Automotive, Alternative Power Vehicle, Communication, Building Equipment, Industrial and Power Metering are some of the key industries served.



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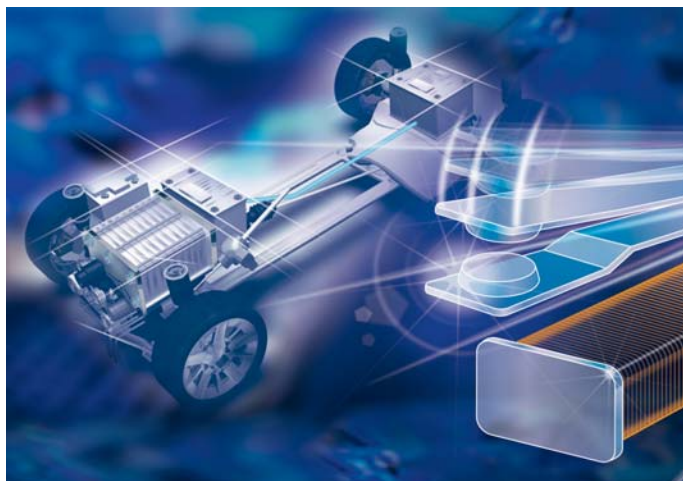
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This shortform catalog provides a brief overview of key series available from TE Relay Products. For complete details on these and other products, view the complete datasheets at <http://relays.te.com>. Specifications and/or agency recognitions do not necessarily apply to all models within a particular series. Consult datasheets and/or footnotes as well as disclaimer on page 38-39 for details.

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Power Metering (ANSI¹⁾ Style)

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Communication

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1) ANSI is a trademark of American National Standards Institute.

PCB Relays

Power K (V23133-A/076-A)

- Limiting continuous current 45A (V23076/133)
- High current/open version Power K-S (V23071): 70/50A at 23°/85°C, very low voltage drop¹⁾
- Wide voltage range
- 24VDC versions available



Mini K (V23072-A/C)

- Limiting continuous current 20A
- 24VDC versions with special contact gap
- Various contact arrangements and materials



DMR (V23084-C)

- Limiting continuous current 30A
- Easiest PCB routing among all PCB relays



Contact Data

Contact arrangement

1 form A/C, 1 NO/CO

1 form A, 1 NO 1 form C, 1 CO 1 form U, 2 NO

2 form C, 2 CO

Rated voltage

12, (24)VDC⁶⁾

Limiting continuous current at 23/85°C

NO/NC
45/30A / 30/25A

12, (24)VDC⁶⁾
(NO/NC)
15/10A 15/10A / 2x10/2x6A
10/5A

20/15A both systems

Limiting making current

100/30A

60A 60/12A 2x40A

35A

Limiting breaking current

60/30A

20A 20/10A 2x20A

35A

Limiting short-time current, overload current, ISO 8820-3: rated current:

- 1.35x rated current, t
- 2.00x rated current, t
- 3.50x rated current, t
- 6.00x rated current, t

Operate/release time max. (typ.)

5/3ms

3/1.5ms

3/1.3ms

Coil Data

Rated coil voltage

12, 24VDC

Rated coil power

1.6W

12, 24VDC

1.1W

12VDC

0.56/0.81W

Other Data

Ambient temperature

-40 to +85°C

-40 to +85°C

-40 to +85°C

Category of environmental protection

Open or sealed

Open or sealed

Sealed

Terminal type

PCB

PCB

PCB

Mounting

Dimensions lwh

Open: 24x19.25x18.5mm
Sealed: 26.5x21.5x21.5mm

Open: 16x13.2x18mm
Sealed: 17.2x15x19.5mm

17.6x17x13.4mm

Accessories

1) Please contact TE Connectivity application engineering support for more details (data below not applicable). 2) Please contact TE Connectivity application engineering support for higher current (LCC). 3) QC=quick connect. 4) For products V23086-C1021-A502 / V23086-C1001-A602 lamp load/flasher. 5) Current and time are compatible with circuit protection by a typical automotive fuse. Relay will make, carry and break the specified current. 6) Given data only valid for 12VDC systems; for 24VDC versions please refer to datasheets.

PCB Relays and Plug-in Relays

PK2 THT/THR (V23201-C/R)

- Wave and reflow solderable versions
- 60% volume reduced Power K at increased performance
- PCB area minimized by 50%
- Limiting cont. current 40A²⁾
- High shock and vibration resistance
- For bistable (latching) version refer to PK2 Latching THT/THR (V23201-L/T)



1 form A, 1 NO

12VDC

40/33A

200A

40A

3/1.5ms

12VDC

0.8W

-40 to +105°C

Sealed/vented

PCB

18.5x16.2x16.1mm (293 mm³)

Micro K THT/THR (V23086-C1/R1/C2/R2)

- Wave (THT) and reflow (THR/pin-in-paste) solderable versions
- Single and twin versions
- Small power relay
- Limiting continuous current 30A
- Minimal weight
- Low noise operation



1 form A, 1 NO 1 form C, 1 CO 2 form C, 2 CO

12VDC

30/20A

NO/NC
30/25A

NO/NC
20/15A

40A (100A)⁴⁾ 40A

30A 30A

3/1.5ms

12VDC

0.55W

0.57W

-40 to +105°C

Single: 13.2x12.2x10.1 (10.4mm THR)
Double: 23.8x13.2x10.1 (10.4mm THR)

Mini ISO

- Pin assignment similar to ISO 7588 part 1
- Plug-in or PCB terminals
- Available for 42VDC applications
- Customized versions on request: 24VDC versions with 0.8mm contact gap, integrated components, customized marking/color, special covers, various contact arrangements and materials


1 form A, 1 NO 1 form C, 1 CO 1 form U, 2 NO
1 NO (2 x 87)

12, (24)VDC⁶⁾

60/40A NO/NC 60/45A / 40/30A 2x32/ 2x35A

120A 120/45A 2x100A

60A 60/40A 2x40A

40A
54A, 1800s
80A, 5s
140A, 0.5s
240A, 0.1s

7/2ms

12, 24VDC

typ. 1.6W

-40 to +125°C

Dustproof

Plug-in, QC³⁾, PCB

Bracket optional

26.2x26.2x25.2mm

28.0x28.0x25.5mm

28.5x28.5x25.3mm

Connectors for Mini ISO Relays

Maxi ISO

- Latching version on request
- Pin assignment similar to ISO 7588 part 1
- Plug-in or PCB terminals
- Customized versions on request: 24VDC versions with 0.8mm contact gap, integrated components (e.g. resistor, diode), customized marking/color, special covers (e.g. notches, release features, brackets)



1 form A, 1 NO

12, (24)VDC⁶⁾

70/50A

240A

70A

50 A
67A, 1800s
100A, 5s
175A, 0.5s
300A, 0.1s

7/2ms

12, 24VDC

typ. 2.0W

-40 to +125°C

Dustproof

Plug-in, QC³⁾, PCB

Bracket optional

26.2x26.2x25.2mm

Connectors for Maxi ISO Relays

Plug-in Relays

Micro ISO

- High current version with limiting cont. current 30A at 85°C
- ISO plug-in terminals, pin assignment according to ISO 7588 part 3
- Customized versions on request: 24VDC versions with special contact gap, integrated components, customer marking, special covers



Micro Low Noise (V23145)

- Noise level below 50dBA
- Pin assignment according to ISO 7588 part 3
- Plug-in terminals
- Customized versions on request: special marking, special covers (e.g. notches, release features)



Mini/Maxi Shrouded Relays

- Protection class IP67 to IEC 529 (EN 60 529) if used with special connector
- Plug-in terminals
- Pin assignment according to ISO 7588 part 1
- Bracket
- Customized versions on request: integrated components (e.g. diode), customized marking



Contact Data

Contact arrangement	1 form A, 1 NO	1 form C, 1 CO	High Current 1 form A, 1 NO	1 form A, 1 NO	1 form C, 1 CO	1 form A, 1 NO (Mini)	1 form C, 1 CO (Mini)	1 form A, 1 NO (Maxi)
Rated voltage	12, (24)VDC ⁶⁾			12VDC		12VDC		
Limiting continuous current at 23/85°C	30/25A	NO/NC 30/20A / 25/15A	35A/30A	20/15A	NO/NC 20/15A / 15/10A	60A/40A	NO/NC 60/45A / 40/30A	70/50A
Limiting making current	120A	120/40A	120A	100A	40A	120A	120/45A	240A
Limiting breaking current	30A	30/15A	30A	30A	30A	60A	60/40A	70A
Limiting short-time current, overload current, ISO 8820-3: rated current:								
1.35x rated current, t	25A			20A		40A		
2.00x rated current, t	34A, 1800s			27A, 1800s		54A, 1800s		
3.50x rated current, t	50A, 5s			40A, 5s		80A, 5s		
6.00x rated current, t	87A, 0.5s			70A, 0.5s		140A, 0.5s		
Operate/release time max. (typ.)	5/3ms			3/2ms		8.5/4ms		

Coil Data

Rated coil voltage	12, 24VDC	12VDC	12VDC	12VDC	12VDC	12VDC	12VDC	12VDC
Rated coil power	1.4W	typ. 1.1W	1.4W	0.9W	0.6W	1.5W	1.5W	1.8W

Other Data

Ambient temperature	-40 to +125°C			-40 to +125°C		-40 to +125°C		
Category of environmental protection	Dustproof			Dustproof		Shrouded: protection class IP67 if used with special connector		
Terminal type	Plug-in, QC ³⁾			Plug-in, QC ³⁾		Plug-in, QC ³⁾		
Mounting						Bracket		
Dimensions lwh	23x15.5x25.4mm 23x15.5x26.0mm			23x15.5x25.4mm		32.7x35.5x54.2mm 32.0x32.0x39.0mm		

Accessories

Connectors for Micro ISO Relays

Connectors for Micro ISO Relays

Connectors for Mini ISO Relays

1) Please contact TE Connectivity application engineering support for more details (data below not applicable). 2) Please contact TE Connectivity application engineering support for higher current (LCC). 3) QC=quick connect. 4) For products V23086-C1021-A502 / V23086-C1001-A602 lamp load/flasher. 5) Current and time are compatible with circuit protection by a typical automotive fuse. Relay will make, carry and break the specified current. 6) Given data only valid for 12VDC systems; for 24VDC versions please refer to datasheets.

High Current Solutions

SPR (V23135)

- Full, symmetric star-point disconnection of an electric power steering motor
- Limiting continuous current 90A
- Disconnection of high over-currents up to 200A in 12VDC and up to 60A in 36VDC power nets
- Optimized dimensions



1 form 3, 3 NO
12, (24)VDC ⁶⁾
-/90A (60A at 125°C)
200A/>10 cycles

HCR 75 (V23232)

- Limiting continuous current 75A
- Dustproof and sealed versions



1 form A, 1 NO	1 form A, 1 NOBI (bifurcated contact)
12, (24)VDC ⁶⁾	12, (24)VDC ⁶⁾
75/50A	75/50A
75A	150A
75A	100A

HCR 150 (V23132)

- Limiting continuous current 150A at 85°C
- Current switching ability up to 300A
- Suitable for voltage levels up to 42VDC
- Heat moisture and vibration resistant
- Minimal contact resistance
- Dustproof and sealed versions



1 form A, 1 NO	1 form B, 1 NC	1 form X, 1 NO
1 form C, 1 CO		
12, (24)VDC ⁶⁾		
180A with cable 25mm ² / 130A with cable 25mm ²	170A with cable 5mm ² / 120A with cable 25mm ²	
300A	300A	
300A		

HCR 200 (V23230)

- Limiting continuous current 175A at 85°C
- Current switching ability up to 200A
- Heat moisture and vibration resistant
- Minimal contact resistance
- Protection class IP64



1 form B, 1 NC
12VDC
255A with cable 50mm ² / 175A with cable 50mm ²
200A
120A

<20/<10ms
12, 24VDC
1.5W
-40 to +125°C
Sealed
Welding assembly
32.3x18.3x18.8mm

<15/<15ms	
12, 24VDC	12VDC
7.2, 4.4W	3.1W
-40 to +125°C	
Dustproof	
Plug-in, QC ³⁾ (coil)/ Screw terminals (load)	
44x36x39mm	

<30/<15ms	
12VDC	24VDC
4.1W	4.1W
-40 to +125°C	
Dustproof/Sealed	
Plug-in, QC ⁽³⁾ (coil)/ Screw terminals (load)	
63x40x71mm	

<25/<20ms
12VDC
3.9W
-40 to +110°C
Sealed
Plug-in, QC ³⁾ (coil)/ Screw terminals (load)
72x35.5x64.5mm

High Current Solutions and Latching Solutions

BDS-A (V23130-C)

- Limiting continuous current 190A at 85°C
- Electrically settable and resettable ON/OFF bistable device
- Suitable for voltage levels up to 42VDC
- High peak current carrying capability up to 1500A



Micro ISO Latching (V23145-L)

- Magnetically latched Micro ISO plug-in relay
- Two coils with set and reset function
- Pin assignment according to ISO 7588 part 3
- Customized versions on request: special marking, special covers (e.g. notches, release features)



Mini ISO Latching (V23141-L)

- Magnetically latched Mini ISO plug-in relay
- 70A (Maxi) version available on request
- Two coils with set and reset function
- Pin assignment similar to ISO 7588 part 1
- Customized versions on request: special marking, special covers (e.g. notches, release features, brackets)



Contact Data

Contact arrangement	1 form X, 1 NO	1 form A, 1 NO	1 form A, 1 NO
Rated voltage	12, (24)VDC ⁶⁾	12VDC	12VDC
Limiting continuous current at 23/85°C	260/190A	25/20A	40/30A
Limiting making current	1500A (>5ops.)	50A	200A
Limiting breaking current	1500A (>5ops.)	30A	40A
Operate/release time max. (typ.)	<15/<15ms	1.5/1.5ms	1.5/1.5ms

Coil Data

Rated coil voltage	12, 24VDC	12VDC	12VDC
Rated coil power	(only impulse needed)	(only impulse needed)	(only impulse needed)

Other Data

Ambient temperature	-40 to +120°C	-40 to +125°C	-40 to +125°C
Category of environmental protection	Dustproof/Weatherproof	Dustproof	Dustproof
Terminal type	Plug-in, QC (coil)/ Screw terminals (load)	Plug-in, QC ³⁾	Plug-in, QC ³⁾
Mounting			
Dimensions lwh	36x33x60mm	23x15.5x25.4mm	30.1x30.1x31.1mm

Accessories

Connectors for Micro ISO Relays

Connectors for Mini ISO Relays

1) Please contact TE Connectivity application engineering support for more details (data below not applicable). 2) Please contact TE Connectivity application engineering support for higher current (LCC). 3) QC=quick connect. 4) For products V23086-C1021-A502 / V23086-C1001-A602 lamp load/flasher. 5) Current and time are compatible with circuit protection by a typical automotive fuse. Relay will make, carry and break the specified current. 6) Given data only valid for 12VDC systems; for 24VDC versions please refer to datasheets.

Latching Solutions and Kilovac Contactors

PK2 Latching THT/THR (V23201-L/T)

- 50A at 125°C, due to reduced coil power consumption (2 coil system)
- 60% volume reduced Power K at increased performance
- PCB area requirements minimized by 50%
- High shock and vibration resistance
- No change of switching state version at breakdown of battery voltage
- For monostable version refer to PK2 THT/THR (V23201-C/R)



Micro K Latching (V23086-L)

- Smallest magnetically latched PCB relay
- Only set and reset pulse no continuous coil power required
- Increased ambient temperature up to 125°C
- Limiting continuous current up to 35A
- Footprint compatible with Micro Relay K
- Two coils with set and reset function
- Minimal weight



Kilovac LEV100

- 900VDC 100A, hermetically sealed DC contactor
- Side or bottom mount – not position sensitive



Kilovac EV200

- 900VDC 200A, hermetically sealed DC contactor
- Side or bottom mount – not position sensitive



1 form A, 1 NO
12VDC
50/40A
200A
40A
1.5ms

12VDC
(only impulse needed)

-40 to +125°C
Sealed/vented
PCB

18.5x16.2x16.1mm (293 mm ³)

1 form C, 1 CO
12VDC
NO/NC
40/20A / 30/15A
50/20A
30/20A
1.5/1.5ms

12VDC
(only impulse needed)

-40 to +125°C
Sealed
PCB

13.2x12.2x10.1mm

1 form X, NO-DM
900VDC
100/100A
600A (make) at +400VDC
1000A (break) at +400VDC
25/10ms

12VDC
5.5W (standard version), 9.5W (low pull-in version)

-40 to +85°C
Sealed
Stripped wires (coil)/ M5 threaded inserts (load)
Screws
54.2x35.4x57.8mm

1 form X, NO-DM
900VDC
300/200A
650A (make)
2000A (break) at 320VDC
15/12ms

12VDC
PWM required

-40 to +85°C
Sealed
Stripped wires (coil)/ M8 bolts (load)
Screws
80.5x58.2x72.3mm

Low Power PCB Relays

PE

- Sensitive coil 200mW
- 4kV coil-contact
- Low height 10.0mm
- Polarized bistable version available



RE/REL

- Sensitive coil 200mW
- 4kV coil-contact (REL)
- PCB area 200mm²



EJ

- Slim outline
- Sensitive coil 200mW
- Ambient temperature 85°C
- Coil UL class 155 (F) insulation system



Contact Data

Contact arrangement	1 form C, 1 CO	1 form A, 1 NO	1 form A, 1 NO
Rated voltage	250VAC	250VAC	250VAC/30VDC
Rated current	5A	6/5A	3A/5A
Switching power	1250VA	1500/1250VA	1250VA/150W
Contact material	AgNi90/10, AgSnO	AgNi, AgNi0.15, AgCdO	AgNi
Min. recommended contact load			100mA at 5VDC

Coil Data

Magnetic system	DC, bistable	DC	DC
Rated coil voltage	3 to 48VDC	5 to 48VDC	3 to 24VDC
Rated coil power	200mW	200/360mW	200mW

Insulation Data

Initial dielectric strength			
between open contacts	1000Vrms	1000Vrms	750Vrms
between contact and coil	4000Vrms	4000/3000Vrms	4000Vrms
between adjacent contacts			
Clearance/creepage			
between contact and coil	3.2/4mm	4/4mm	5.5/8mm (WG type)

Other Data

Ambient temperature	+85°C	+85/+70°C	+85°C (standard type) +105°C (WG type)
Category of environmental protection			
IEC 61810	RTII	RTIII (RE), RTII (REL)	RTII, RTIII
Terminal type	THT	THT	THT
Mounting	PCB	PCB	PCB
Dimensions lwh	20x10x10mm	20x10x10.6mm/20.7x10.7x12mm	20.4x6.9x15mm

Accessories

1) Recommended minimum load indication for contact material: Au and gold plated: 1mA at 6VDC; Ag, AgNi0.15 and AgNi90/10: 10mA at 12VDC; AgCdO and AgSnO₂: 100mA at 12VDC. Please contact technical support for detailed technical data.

Low Power PCB Relays

PCJ

- Slim outline
- Sensitive coil 200mW
- Meet 4kV dielectric between coil and contacts
- WG type available (IEC 60335-1)
- Ambient temperature up to 105°C
- Coil UL class 155 (F) insulation system



1 form A, 1 NO
250VAC
3A/5A (WG type)
750VA/1250VA (WG type)
AgNi
100mA at 5VDC
DC
5 to 24VDC
200mW
750Vrms
4000Vrms
8/>8 mm
+85°C (standard type)
+105°C (WG type)
RTII, RTIII
THT
PCB
20.4x7x15mm

OSA

- Meet UL TV-3, CSA TV-4 ratings (DM5 type only)
- Meet 4kV dielectric voltage; 7kV surge voltage between coil and contacts



2 form A, 2 NO
240VAC/30VDC
3A/5A
300VA/72W (DM3)
1100VA/150W (DM5)
AgSnO
100mA at 5VDC
DC
5 to 48VDC
540mW
1000Vrms
4000Vrms
2000Vrms
7/7mm
+60°C
RTII, RTIII
THT
PCB
24.4x12.9x25mm

PCH

- Compact size
- Meet 8kV surge voltage between coil and contacts
- Cadmium-free contacts
- WG type available (IEC 60335-1)
- TV-3 ratings for NO contact



1 form C, 1 CO
1 form A, 1 NO
277VAC/30VDC
3/5/10A
1400VA/150W (NO)
850VA/90W (NC)
100mA at 5VDC
DC, sensitive
3 to 48VDC
200/400mW
750Vrms
4000Vrms
1.6/3.2mm
+70°C (standard type)
+85°C (WG type)
RTII, RTIII
THT
PCB
20x10x15.2mm

OJ/OJE/T77

- Miniature size
- Meet 4kV dielectric between coil and contacts (OJ/OJT)
- Sensitive coil 200mW type available
- Meet UL TV-5 ratings (OJT)



1 form A, 1 NO
250VAC/28VDC
3/5/8/10A
720 to 2500VA/
90 to 240W
100mA at 5VDC
DC, sensitive
3 to 48VDC
200/250/450mW
750/1000Vrms
3000/4000Vrms
1.6/3.2mm and 3.2/6.4mm
up to 85°C
RTII, RTIII
THT
PCB
18.2x10.2x14.7mm

Low Power PCB Relays

PCN

- Only 5mm wide slim type, permitting high density spacing
- Sensitive coil 120mW
- Cadmium free contacts
- Reinforced insulation type available
- UL class F (155°C) available



SNR

- Only 5mm wide
- Cadmium-free contacts
- Sensitive coil 170mW
- 4kV coil-contact
- 6/8mm creepage/clearance
- Protection class II



RYII

- 5kV/8mm coil-contact
- Reinforced insulation
- Low height 12.3mm
- Pinnings 3.2 and 5mm
- Reflow solderable version



Contact Data

Contact arrangement

1 form A, 1 NO

Rated voltage

250VAC/30VDC

Rated current

3A/5A

Switching power

750VA/1250VA

Contact material

AgNi gold plated bifurcated contact

Min. recommended contact load

1mA, 5VDC

Coil Data

Magnetic system

DC

Rated coil voltage

3 to 24VDC

Rated coil power

120mW

Insulation Data

Initial dielectric strength

between open contacts

750Vrms

between contact and coil

3000Vrms

between adjacent contacts

Clearance/creepage

between contact and coil

min. 3.5/3.5mm

Other Data

Ambient temperature

+70°C
(+85°C under a specific condition)

Category of environmental protection
IEC 61810

RTIII

Terminal type

THT

Mounting

PCB

Dimensions lwh

20x5x12.5mm

Accessories

1 form C, 1 CO
1 form A, 1 NO

250VAC

6A

1500VA

1)

DC

5 to 48VDC

170mW

1000Vrms

4000Vrms

6/8mm

+85°C

RTIII

THT

PCB or on socket

28x5x15mm

DIN rail sockets

1 form C, 1 CO
1 form A, 1 NO
1 form B, 1 NC

250VAC

8A

2000VA

AgNi0.15, AgSn0

1)

DC

5 to 60VDC

220mW

1000Vrms

5000Vrms

8/8mm

+70°C

RTII, RTIII

THT, THR

PCB or on socket

28.5x10.1x12.3mm

PCB sockets

1) Recommended minimum load indication for contact material: Au and gold plated: 1mA at 6VDC; Ag, AgNi0.15 and AgNi90/10: 10mA at 12VDC; AgCd0 and AgSn0₂: 100mA at 12VDC. Please contact technical support for detailed technical data.

Low Power PCB Relays

MSR/T75

- High inrush currents with AgSnO contacts
- 4kV/8mm coil-contact
- Reinforced insulation



1 form C, 1 CO 1 form A, 1 NO
250VAC 8/10A 2000VA AgNi90/10, AgSnO ₁)
DC 3 to 60VDC 220mW
1000Vrms 4000Vrms
8/8mm
+85°C
RTII, RTIII THT PCB 28.6x10x15mm

RZ

- Sensitive coil 400mW
- 5kV/10mm coil-contact
- Reinforced insulation
- Ambient temperature 85 or 105°C
- Height 15.7mm
- In acc. to IEC 60355-1



1 form C, 1 CO 1 form A, 1 NO
250VAC 16A 4000VA AgNi90/10, AgSnO
DC 5 to 48VDC 400mW
1000Vrms 5000Vrms
10/10mm
+85°C +105°C (HOT type) +70°C (transparent cover type)
RTII THT PCB 29x12.7x15.7mm

RT

- Sensitive DC and AC coil
- Bistable version
- 5kV/10mm coil-contact
- Reinforced insulation
- Ambient temperature 85°C
- THR (reflow) version
- WG version acc. to IEC 60355-1



1 form C, 1 CO 1 form A, 1 NO 2 form C, 2 CO 2 form A, 2 NO
250VAC 8/16A 2000/4000VA AgNi90/10, AgSnO
DC, AC, bistable 5 to 110VDC/24 to 230VAC 400mW/0.75VA
1000Vrms 5000Vrms 2500Vrms
10/10mm
+85°C +75°C (AC type)
RTII, RTIII THT, THR (DC and AC type) PCB or on socket 29x12.7x15.7mm
PCB and DIN rail sockets

RT specials

- Versions:
- Sensitive coil 250mW
- Inrush peak currents up to 165A
- 105°C ambient temperature
- Bifurcated contacts
- WG version acc. to IEC 60355-1



1 form C, 1 CO 1 form A, 1 NO
250VAC 12/16A 4000VA AgNi90/10, AgSnO, W
DC, bistable 5 to 110VDC 200/250/400mW
1000Vrms 5000Vrms
10/10mm
+85°C/+105°C
RTII, RTIII (sensitive and bifurcated type) THT PCB or on socket 29x12.7x15.7mm
PCB and DIN rail sockets

Low Power PCB Relays

RX

- 4kV/8mm coil-contact
- Reinforced insulation
- Height 15.7mm
- Transparent cover optional



OZ

- UL TV-8 (OZT) available
- Meet 5000V dielectric voltage between coil and contacts
- Meet 10000V surge voltage between coil and contacts



RP3SL

- 4kV/8 mm coil-contact for 120A/20ms inrush peak current
- Bistable version



Contact Data

Contact arrangement	2 form C, 2 CO
Rated voltage	250VAC
Rated current	8A
Switching power	2000VA
Contact material	
Min. recommended contact load	

Coil Data

Magnetic system	DC, AC
Rated coil voltage	5 to 110VDC/24 to 230VAC
Rated coil power	500mW/0.75VA

Insulation Data

Initial dielectric strength	
between open contacts	1000Vrms
between contact and coil	4000Vrms
between adjacent contacts	2500Vrms
Clearance/creepage	
between contact and coil	8/8mm

Other Data

Ambient temperature	+70°C
Category of environmental protection	
IEC 61810	RTII
Terminal type	THT
Mounting	PCB
Dimensions lwh	29x12.7x15.7mm

Accessories

1) Recommended minimum load indication for contact material: Au and gold plated: 1mA at 6VDC; Ag, AgNi0.15 and AgNi90/10: 10mA at 12VDC; AgCd0 and AgSnO₂: 100mA at 12VDC. Please contact technical support for detailed technical data.

1 form A, 1 NO
1 form C, 1 CO
240VAC/24VDC
16A
3840VA/380W
AgSnO
100mA at 5VDC

DC
5 to 48VDC
540mW/720mW

1000Vrms
5000Vrms
5.5/8mm

+60°C (standard type)
+70°C (sensitive type)

RTII, RTIII
THT
PCB
29.2x12.8x20.6mm

1 form A, 1 NO
250VAC
16A
4000VA
AgSnO

DC
6 to 110VDC
500mW

2000Vrms
4000Vrms
8/8mm

+70°C

RTII, RTIII
THT
PCB or on socket
29x12.6x25.5mm

PCB and DIN rail sockets

Low Power PCB Relays

RP-2pole 1.5mm

- 2 pole 8A
- 1.5mm contact gap per pole
- Creepage distance complies with IEC 60950



2 form A, 2 NO
250VAC
8A
2000VA
AgSnO
DC
5 to 110VDC
780mW
1000Vrms
4000Vrms
2500Vrms
7/8mm
+40°C
RTII, RTIII
THT
PCB or on socket
29x12.6x25.5mm
PCB and DIN rail sockets

OMI/OMIH/OMIT

- Meet 5kV dielectric voltage;
- 10kV surge voltage between coil and contacts
- Version with 1 form A, 1 NO contact TV-5 rating (OMIT)



1 form C, 1 CO
1 form A, 1 NO
250VAC/30VDC
10A/16A
2500VA/300W
4000VA/480W
AgSnO
100mA at 5VDC
DC
5 to 48VDC
540/720mW
1000Vrms
5000Vrms
>8/>8mm
+60°C (standard type)
+70°C (sensitive type)
RTII, RTIII
THT
PCB
29.2x12.8x20.6mm

OMI-2P

- Meet 5000V dielectric voltage between coil and contacts
- Meet 10000V surge voltage between coil and contacts



2 form A, 2 NO
2 formC, 2 CO
250VAC/30VDC
5A
1250VA, 150W
AgSnO
100mA at 5VDC
DC
5 to 48VDC
540mW/720mW
1000Vrms
5000Vrms
2500Vrms
5.5/8mm
+60°C (standard type)
+70°C (sensitive type)
RTII, RTIII
THT
PCB
29.2x12.8x20.6mm

SDT

- Meet UL TV-5 and TV-8 ratings
- Immersion cleanable, sealed version available
- Applications: appliance, HVAC, FPD, monitor display



1 form A, 1 NO
250VAC/30VDC
5A, 10A
1250VA, 150W (LMR)
2500VA, 300W (DMR)
100mA at 5VDC
DC
5 to 48VDC
250, 540mW
1000Vrms
4000Vrms
1.6/3.2mm
+70°C
RTII, RTIII
THT
PCB
24.4x10.4x25.0mm

Low Power PCB Relays

OSZ

- Meet UL TV-8 ratings
- Meet 4kV dielectric voltage; 7kV surge voltage between coil and contacts



RF

- QC²⁾ terminals on load side
- Ambient temperature up to 125°C
- Switching capacity 4000VA
- Coil power 400mW
- Reinforced insulation
- WG version acc. to IEC 60355-1



410

- Ambient temperature up to 125°C
- QC²⁾ terminals on load side
- Version with contact gap >3mm
- Insulation to VDE 0631 and VDE 0700
- WG version acc. to IEC 60355-1



Contact Data

Contact arrangement	1 form A, 1 NO
Rated voltage	240VAC/24VDC
Rated current	16A
Switching power	4000VA, 380W
Contact material	AgSnO
Min. recommended contact load	100mA at 5VDC

Coil Data

Magnetic system	DC
Rated coil voltage	5 to 48VDC
Rated coil power	540mW

Insulation Data

Initial dielectric strength	
between open contacts	1000Vrms
between contact and coil	4000Vrms
between adjacent contacts	
Clearance/creepage	
between contact and coil	>8/>8mm

Other Data

Ambient temperature	+60°C
Category of environmental protection	
IEC 61810	RTII, RTIII
Terminal type	THT
Mounting	PCB
Dimensions lwh	24.4x12.9x24.8mm

Accessories

1 form A, 1 NO
1 form B, 1 NC
250VAC
16A
4000VA
AgNi90/10

DC
5 to 60VDC
400mW

1000Vrms
4000Vrms

8/8mm

+85°C
+105°C (HOT type)

RTII
THT/QC ²⁾ terminals
PCB
40.5x12.7x16mm

1 form A, 1 NO
1 form B, 1 NC
250VAC
16A
4000VA
AgCdO, AgNi

DC
6 to 60VDC
360mW

1000Vrms
4000Vrms

8/8mm

+125°C (standard type)
+85°C (3mm type)

RTII
THT/QC ²⁾ terminals
PCB
40.5x12.5x28.5mm

1) Recommended minimum load indication for contact material: Au and gold plated: 1mA at 6VDC; Ag, AgNi0.15 and AgNi90/10: 10mA at 12VDC; AgCdO and AgSnO₂: 100mA at 12VDC. Please contact technical support for detailed technical data. 2) QC=quick connect.

Low Power PCB Relays

OMIF

- #187 QC² terminal
- Meet 5kV dielectric voltage; 10kV surge voltage between coil and contacts



1 form A, 1 NO
240/250VAC, 30VDC
16A
4000VA/385W
100mA at 5VDC
DC
3 to 48VDC
540mW
1000Vrms
5000Vrms
9.8/10mm
+85°C
RTII
THT/QC ² terminals (#187)
PCB
29x12.6x24.5mm

EK

- #187 QC² terminal
- 20.1mm low profile (without tab)
- Meet 4kV dielectric voltage between coil to contacts
- Ambient temperature 85°C



1 form A, 1 NO
250VAC
16A
4000VA
100mA at 5VDC
DC
5 to 48VDC
500mW
1000Vrms
5000Vrms
6.3/7.4mm
+85°C
RTII
THT/QC ² terminals (#187)
PCB
23.7x12.3x20.1mm

PCK

- #187 QC² terminal
- Height 26.7mm (without tab)
- Meet 4kV dielectric voltage between coil to contacts
- Ambient temperature 85°C



1 form A, 1 NO
277VAC
16A
4000VA
DC
3 to 48VDC
500mW
1000Vrms
5000Vrms
9.6/13.7mm
+70°C
RTII
THT/QC ² terminals (#187)
PCB
22.8x11.6x26.7mm

PB/PBH

- Environmentally-friendly cadmium-free contacts
- Ambient temperatures up to 105°C (PBH)
- Compact and simple design gives high process security



1 form C, 1 CO
1 form A, 1 NO
250VAC
10A
2500VA
AgNi90/10, AgSnO
DC
5, 6, 12, 24VDC
360mW/500mW
1000Vrms
2500Vrms
3/4mm
+85°C/+105°C
RTII
THT
PCB
15x15x20mm

Low Power PCB Relays

ORWH/T7S

- Compact relay with 1 form A and 1 form C contact arrangement
- 10A switching capacity
- Flux proof or sealed type available
- 105°C hot version available (T7S)
- Acc. to IEC 60335-1 (T7S)



PCE/T7N

- Low cost, small package, 10A switching capacity
- UL Class F (155°C) insulation system standard
- Immersion cleanable, sealed version available
- WG version acc. to IEC 60335-1 (T7N)



SRUDH/T7C

- Low cost, small package, 12A switching capacity (at 120VAC)
- Applications: HVAC, security system, garage opener control, emergency lighting



Contact Data

Contact arrangement	1 form A, 1 NO 1 form C, 1 CO
Rated voltage	277VAC/28VDC
Rated current	10A
Switching power	2770VA/360W
Contact material	AgZnO, AgCdO, AgNi
Min. recommended contact load	100mA at 5VDC

Coil Data

Magnetic system	DC
Rated coil voltage	3 to 48VDC
Rated coil power	360mW

Insulation Data

Initial dielectric strength	
between open contacts	750Vrms
between contact and coil	1500Vrms
between adjacent contacts	
Clearance/creepage	
between contact and coil	1.6/3.2mm

Other Data

Ambient temperature	+70°C/+105°C
Category of environmental protection	
IEC 61810	RTII, RTIII
Terminal type	THT
Mounting	PCB
Dimensions lwh	19.0x15.5x15.8mm

Accessories

1) Recommended minimum load indication for contact material: Au and gold plated: 1mA at 6VDC; Ag, AgNi0.15 and AgNi90/10: 10mA at 12VDC; AgCdO and AgSnO₂: 100mA at 12VDC. Please contact technical support for detailed technical data. 2) QC=quick connect.

1 form C, 1 CO 1 form A, 1 NO
250VAC/28VDC
10A
2500VA, 280mW
100mA at 5VDC

DC
5 to 48VDC
360mW

750Vrms
2000Vrms
1.6/3.2mm

+85°C
RTII, RTIII
THT
PCB
22x16x16.4mm

1 form C, 1 CO 1 form A, 1 NO
240VAC/28VDC
10A
2400VA, 300W
100mA at 5VDC

DC
5 to 48VDC
360mW

750Vrms
1500Vrms
1.6/3.2mm

+60°C
RTII, RTIII
THT
PCB
20.2x16.5x20.2mm

Low Power PCB Relays

LN/LNH

- High performance 10A version (LN1)
- 16A high capacity version available (LN3)
- Version for HOT applications (LNH)
- Flux proof
- Plastic materials acc. to IEC 60335-1 (domestic appliances)



1 form C, 1 CO 1 form A, 1 NO
250VAC
10A (LN1 + LNH), 16A (LN3)
2500VA (LN1 + LNH), 4000VA (LN3)
AgSnO ₂ , AgCdO
DC
5 to 48VDC
400mV
1000Vrms
2000Vrms
2.5/2.5mm
+85°C (LN1, LN3)
+105°C (LNH)
RTII
THT
PCB
20.2x16.5x20.2mm

PCD/PCDF

- Low coil power 200mW
- Height 10.2mm
- Wash tight
- Version with QC² terminals available (PCDF)



1 form A, 1 NO
250VAC/24VDC
10A
1800VA, 240W
100mA at 5VDC
DC
5 to 48VDC
200mW
1000Vrms
2000Vrms
1.6/3.2mm
+70°C
RTII, RTIII
THT, QC ² terminals
PCB
23x16.1x10.2mm

430

- 4kV/8mm coil-contact
- DC or AC coil
- PCB mounting or QC²
- Mounting brackets or snap mounting
- 1 or 2 pole versions



1 or 2 form C, 2 CO 1 or 2 form A, 2 NO
250VAC
10A
2500/4000VA
1)
DC, AC
6 to 110VDC/6 to 240VAC
1W/1.8VA
1000Vrms
4000Vrms
8/8mm
+70°C
RTI
THT, QC ² terminals
PCB, panel mount
35.5x16.4x30.5mm

419

- Contact gap >3mm
- Switching capacity 4000VA
- DC or AC coil
- Safety mains insulation
- 4kV/8mm coil-contact
- QC² terminals
- Snap or screw mount



2 form A, 2 NO
250VAC
16A
4000VA
1)
DC, AC
6 to 24VDC/120 to 400VAC
1.3 W/2.0 to 2.5VA
2000Vrms
4000Vrms
6/8mm
+90°C
RTI
QC ² terminals, Rast 5
Panel mount
48x25.4x47.3mm

Force Guided Relays

SR2M

- 2 pole relay with force guided contacts according to EN 50205
- Reinforced insulation between poles



SR4 D/M

- 4 pole relay with force guided contacts according to EN 50205
- Compact design, space efficient



SR6

- 4/6 pole relay with force guided contacts according to EN 50205
- Reinforced insulation between all contacts



Contact Data

Contact arrangement

1 form A + 1 form B, 1 NO + 1NC
2 form C, 2 CO

Rated voltage

250VAC

Rated current

6A

Switching power

Contact material

AgNi

Min. recommended contact load

5VDC/10mA

Coil Data

Magnetic system

DC

Rated coil voltage

5 to 110VDC

Rated coil power

700mW

Insulation Data

Initial dielectric strength

between open contacts

1500Vrms

between contact and coil

4000Vrms

between adjacent contacts

3000Vrms

Clearance/creepage

between contact and coil

8/8mm

Other Data

Ambient temperature (max.)

+70°C

Category of environmental protection
IEC 61810

RTIII

Terminal type

THT

Mounting

PCB

Dimensions lwh

29x12.6x25.5mm

Accessories

Sockets and relay clips

3 form A + 1 form B, 3 NO + 1 NC
2 form A + 2 form B, 2 NO + 2 NC

250VAC

8A

AgSnO₂

5VDC/10mA

DC

5 to 110VDC

800mW

1500Vrms

4000Vrms

2500Vrms

10/10mm

+70°C

RTIII

THT

PCB

40x13x16.5mm

3 form A + 1 form B, 3 NO + 1 NC
2 form A + 2 form B, 2 NO + 2 NC
3 form A + 3 form B, 3 NO + 3 NC
4 form A + 2 form B, 4 NO + 2 NC
5 form A + 1 form B, 5 NO + 1 NC

250VAC

8A

AgSnO₂

5VDC/10mA

DC

5 to 110VDC

1200/800mW

1500Vrms

4000Vrms

3000/4000Vrms

5.5/5.5mm, 15/15mm

+70°C

RTIII

THT

PCB

55x16.5x16.5mm

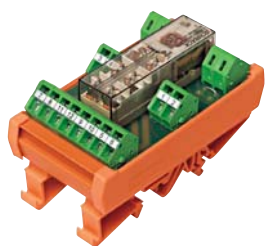
PCB sockets

1) Recommended minimum load indication for contact material: Au and Au plated: 1mA at 6VDC; Ag, AgNi0.15 and AgNi90/10: 10mA at 12VDC; AgCdO and AgSnO₂: 100mA at 12VDC. Please contact technical support for detailed technical data. 2) QC=quick connect.

Force Guided Relays and Panel / Plug-In Relays

Relay Module SR2Z/SR6Z

- 2/6 pole relay with force guided contacts according to EN50205
- DIN rail mounting



Slim Interface SNR

- Sensitive coil 170mW
- Strong coil pins for DIN-rail socket
- 4kV coil-contact, 6/8mm clearance/creepage
- Reinforced insulation
- Reduced system width



Interface Relay RT

- Sensitive coil 400mW
- Cadmium-free contacts
- Reinforced insulation
- 4kV/8mm coil-contact



Interface Relay XT

- Sensitive coil 400mW
- Cadmium-free contacts
- Reinforced insulation
- 4kV/8mm coil-contact
- Manual test tab
- Mechanical and electrical indicator



1 form A + 1 form B, 1 NO + 1 NC 2 form C, 2 CO 3 form A + 3 form B, 3 NO + 3 NC 4 form A + 2 form B, 4 NO + 2 NC 5 form A + 1 form B, 5 NO + 1 NC	
250VAC	
6/8A	
AgNi/AgSnO ₂	
5VDC/10mA	
DC or AC/DC	
6 to 230VAC/VDC	
700mW/1200mW	
1500/1000Vrms	
4000/3000Vrms	
2000Vrms	
8/8mm, 5.5/5.5mm	
+50°C	
Screwless	
DIN rail	
Module width 20/46mm	

1 form C, 1 CO	
250VAC	
6A	
1500VA	
AgSnO ₂ , AgSnO ₂ Au plated	
1)	
DC	
5 to 60VDC	
170mW	
1000Vrms	
4000Vrms	
≥6/8mm	
relay +85°C, in socket +55°C	
RTIII	
Plug-in	
Socket	
28x5x15mm	
DIN rail sockets, jumper bars	

1 form C, 1 CO 2 form C, 2 CO	
240VAC	
8/16A	
2000/4000VA	
AgSnO ₂ , AgNi90/10, AgNi90/10 Au plated	
1)	
DC, AC	
12 to 110VDC/24 to 230VAC	
400mW/0.75VA	
1000Vrms	
4000/5000Vrms	
2500Vrms	
≥8/8mm	
+70/+85°C	
RTII	
Plug-in	
Socket	
29x13x15.7mm	
DIN rail and PCB sockets, clips, marking tags, modules, jumper bars	

1 form C, 1 CO 2 form C, 2 CO	
240VAC	
8/16A	
2000/4000VA	
AgNi90/10	
12VDC/10mA	
DC, AC	
12 to 110VDC/24 to 230VAC	
400mW/0.75VA	
1000Vrms	
4000/5000Vrms	
2500Vrms	
≥8/8mm	
+70/+85°C	
RTII	
Plug-in	
Socket	
29x13x26.7mm	
DIN rail and PCB sockets, clips, marking tags, modules, jumper bars	

Panel / Plug-In Relays

R10

- Broad range of coil options provide sensitivity ranging from 25 to 750mW
- Various contacts switch from dry circuit to 7.5A
- Many mounting and termination options



PT/KH/PTH

- Sensitive coil
- Low height 29/33mm
- Cadmium-free contacts
- Mechanical indicator
- Manual test tab, optionally lockable
- optional LED, protection diode



Contact Data

Contact arrangement	1, 2, 3, 4, 6, 8 form C (CO)
Rated voltage	115VAC, 115VDC
Rated current	0.5/2/3/7.5A
Switching power	862VA max.
Contact material	Ag, AgCdO, Ag w/ Au overlay
Min. recommended contact load	Dry circuit to 12VDC/300mA

Coil Data

Magnetic system	DC, AC
Rated coil voltage	3 to 115VDC/6 to 115VAC
Rated coil power	36mW to 1.6W/1.5VA

Insulation Data

Initial dielectric strength	
between open contacts	500/1000Vrms
between contact and coil	1000Vrms
between adjacent contacts	
Clearance/creepage	
between contact and coil	

Other Data

Ambient temperature (max.)	+75°C
Category of environmental protection IEC 61810	RTI, RTIII
Terminal type	Solder/plug-in and PCB
Mounting	Socket, panel mount and PCB
Dimensions lwh	29.6x18.7x30.2

Accessories

Solder/PCB sockets, clips, hold down strap, mounting strip

2 form C, 2 CO; 3 form C, 3 CO; 4 form C, 4 CO
240VAC
1/2/5/6/10/12A
1500/2500/3000VA
AgNi90/10, AgNi90/10 Au plated
¹⁾ Bifurcated contacts for dry circuit available on KH

DC, AC
6 to 220VDC/6 to 240VAC
750 to 900mW/1 to 1.2VA

1200Vrms
2500Vrms
2000/2500Vrms
≥4/4mm

+70°C

RTII
THT, plug-in, QC ²⁾
Socket, PCB
28x22.5x29/30/36mm

DIN rail and PCB sockets, clips, marking tags, modules, jumper bars

¹⁾ Recommended minimum load indication for contact material: Au and Au plated: 1mA at 6VDC; Ag, AgNi0.15 and AgNi90/10: 10mA at 12VDC; AgCdO and AgSnO₂: 100mA at 12VDC. Please contact technical support for detailed technical data. ²⁾ QC=quick connect.

Panel / Plug-In Relays

PTF/K10

- Mounting options include socket, PCB, top flange
- DC and AC coils
- LED versions available



2 form C, 2 CO
120/240VAC
10/15A
1800/2500VA
AgCdO, AgNi90/10 ¹⁾
DC, AC
6 to 220VDC/6 to 240VAC
750 to 900mW/1 to 1.2VA
1200/1000Vrms
2500/1500Vrms
2500/1500Vrms
≥3.1/3.1mm
+70°C
RTII
QC ²⁾ , solder, PCB
Socket and bracket mount
28x22.5x29/34.9mm
Screw, solder and PCB sockets and clips

KRPA/MT

- Industry standard octal/undecal type termination for quick installation
- DC and AC coils
- Mechanical indicator, indicator lamp and push-to-test options



1 form C, 1 CO (KRPA); 2 form C, 2 CO; 3 form C, 3 CO
240VAC
4/10A
500/2400/2500VA
AgCdO, AgNi90/10, AgNi90/10 Au plated
¹⁾ Bifurcated contacts for dry circuit available on MT
DC, AC
6 to 220VDC/6 to 240VAC
760mW to 1.3W/0.74 to 2.3VA
1000/1500Vrms
1000/2500Vrms
1000/2500Vrms
≥2.8/4mm
DC +60/+70°C
AC +50/+55°C
RTI
Plug-in
Socket
35.7x35.7x50.8/57mm
DIN rail and PCB sockets, clips, marking tags, modules

Panel / Plug-In Relays

RM2/3/7

- Wide selection of termination and mounting styles
- PC terminals available
- Push to test button and indicator lamps
- Class B coil insulation



KUP/KUMP/KUIP

- Wide selection of termination and mounting styles
- Broad range of contact forms
- PC terminals available
- Push to test button and indicator lamps
- Class B coil insulation



RM8/C/D

- Power relay with push-on and solder terminals
- Various mounting options
- Class B coil insulation
- Optional push to test button, indicator lamps and mechanical indicator



Contact Data

Contact arrangement

2 form C, 2 CO
3 form C, 3 CO

Rated voltage

400VAC

Rated current

10/16A

Switching power

3800/6000VA

Contact material

AgCdO, AgNi90/10 in preparation

Min. recommended contact load

1)

Coil Data

Magnetic system

DC, AC

Rated coil voltage

6 to 220VDC/6 to 400VAC

Rated coil power

1.2 to 1.8W/2 to 2.8VA

Insulation Data

Initial dielectric strength

between open contacts

1500Vrms

between contact and coil

2500Vrms

between adjacent contacts

2500Vrms

Clearance/creepage

between contact and coil

≥4/14.9mm

Other Data

Ambient temperature (max.)

+50/+70°C

Category of environmental protection
IEC 61810

RTI

Terminal type

THT, Plug-in, solder, QC²⁾

Mounting

Socket, PCB, bracket, flange mount
and DIN-snap-on

Dimensions lwh

38.5x35.5x48.5mm

1, 2, 3, 4 form C (CO);
1, 2, 3 form A (NO); 2, 3 form B (NC)
1 form X (NO-DM); 1 form Y
(NC-DB); 1 form Z (CO-DM/DB)

240VAC

10/15A

2400/4155VA

Ag, AgCdO, AgSnOInO

12VDC/100mA (Ag)

12VDC/300mA (AgCdO, AgSnOInO)

DC, AC

5 to 110VDC/6 to 240VAC

1.2 to 1.8W/2 to 2.7VA

1200Vrms

2200/3750Vrms

2200Vrms

1 form C, 1 CO
2 form C, 2 CO

400VAC

20/30A

6000/7500VA

AgCdO, AgNi90/10 in preparation

1)

DC, AC

6 to 220VDC/6 to 400VAC

1.2W/2.7VA

1500/2000Vrms

2500Vrms

4000Vrms

≥4/14.9mm

DC +60/+65°C
AC +40°C

RTI

Solder, QC²⁾

Bracket, top flange panel mount
and DIN-snap-on

38.5x35.5x48.5mm

Accessories

DIN rail and PCB sockets, clips

DIN rail, panel and PCB sockets, clips

No sockets

1) Recommended minimum load indication for contact material: Au and Au plated: 1mA at 6VDC; Ag, AgNi0.15 and AgNi90/10: 10mA at 12VDC; AgCdO and AgSnO₂: 100mA at 12VDC. Please contact technical support for detailed technical data. 2) QC=quick connect.

Panel / Plug-In Relays

KUHP

- Power relay with push-on and solder terminals
- Various mounting options
- Designed to meet VDE space requirements
- Class B coil insulation



1 form C, 1 CO 2 form C, 2 CO
240VAC, 50/60Hz; 28VDC 20/30A 4800/7200VA AgCdO, AgSnOInO 12VDC/300mA
DC, AC 6 to 110VDC 50/60Hz. 6 to 277VAC 1.2W/2.7VA
1200Vrms 3750Vrms 3750Vrms
DC +45°C AC +75°C
RTI, RTO Solder, PCB THT, QC ²⁾ Bracket and top flange panel mount 38.9x35.7x48.4mm
No sockets

RM5/6/B 3mm

- 3mm contact gap
- DC or AC coil
- Push-to-test button
- Plug-in version, PCB terminals or chassis or DIN-rail mount



2 form A, 2 NO 3 form A, 3NO
240/400VAC 10/16A 3800/6000VA AgCdO, AgNi90/10 in preparation 1)
DC, AC 6 to 220VDC/6 to 400VAC 1.2W/2.7VA
2500Vrms 2500Vrms 2500Vrms
+50/+60°C
RTI Plug-in, solder, QC ²⁾ , PCB THT Socket, PCB, bracket, flange mount and DIN-snap-on 38.5x35.5x48.5mm
DIN rail and PCB sockets, clips

KUGP

- 3mm contact gap
- DC or AC coil
- Plug-in version, PCB terminals or chassis mount



1 form C, 1 CO 2 form A, 2 NO 2 form C, 2 CO 3 form C, 3 CO
240/400VAC 10A 2400VA Ag, AgCdO 12VDC/100mA (Ag) 12VDC/300mA (AgCdO)
DC, AC 6-110VDC/6 to 240VAC 1.8W/2.7VA
3500Vrms 2200Vrms 2200Vrms
>8mm
DC +75°C AC +70°C
RTI THT, Plug-in, solder, QC ²⁾ , PCB Socket, PCB, bracket and flange mount 38.9x35.7x48.4mm
DIN rail and PCB sockets, clips

KUL

- Magnetic latching
- Single and dual coils
- Panel mounting



1 form C, 1 CO 2 form C, 2 CO 3 form C, 3 CO
28/240VAC 10A Ag, AgCdO 12VDC/100mA (Ag) 12VDC/300mA (AgCdO)
DC, AC 12 to 48VDC/24 to 120/240VAC 1.6W dual coil/1.2W single coil
500Vrms 1500Vrms 1500Vrms
DC +70°C AC +50/+70°C
RTI .187" QC ²⁾ /solder Socket, bracket 38.9x35.7x54.8mm
Screw, solder, PCB and QC sockets and clips

Panel / Plug-In Relays

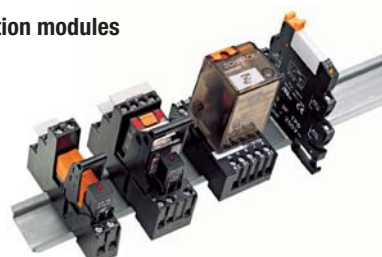
KUEP

- 10A relay with various contact arrangements
- Magnetic blowout for 150VDC load switching
- Indicator lamp option



Accessories

- DIN rail and PCB sockets
- Screw and screwless fingersafe terminals
- Retaining and ejection clips
- Marking tags, jumper bars, jumper links
- LED and protection modules



Sets

- Relay package consisting of relay, DIN rail socket, plastic retaining clip, marking tag and module



Contact Data

Contact arrangement

1 form X (NO-DM)
2 form A, 2 NO
2 form C, 2 CO

Rated voltage

150VDC/240VAC

Rated current

10A

Switching power

1500W/2400VA

Contact material

AgCdO, AgSnOInO

Min. recommended contact load

12VDC/300mA

Coil Data

Magnetic system

DC, AC

Rated coil voltage

5 to 110VDC/6 to 240VAC

Rated coil power

1.2W to 1.8W/2 to 2.7VA

Insulation Data

Initial dielectric strength

between open contacts

1200Vrms

between contact and coil

2200Vrms

between adjacent contacts

2200Vrms

Clearance/creepage

between contact and coil

Other Data

Ambient temperature (max.)

AC +55/+70°C
DC +50/+70°C

Category of environmental protection
IEC 61810

RTI

Terminal type

QC²⁾/solder and PCB

Mounting

Socket, PCB, bracket and
top flange mount

Dimensions lwh

38.9x35.7x48.4mm

Accessories

DIN rail, track mount, chassis mount,
and snap-in sockets, clips

PCB, panel mount and DIN rail

DIN, panel mount

1) Recommended minimum load indication for contact material: Au and Au plated: 1mA at 6VDC; Ag, AgNi0.15 and AgNi90/10: 10mA at 12VDC; AgCdO and AgSnO₂: 100mA at 12VDC. Please contact technical support for detailed technical data. 2) QC=quick connect.

Power Relay

PRD

- Contact ratings to 50A
- Magnetic blowout available for switching DC loads
- SPDT auxiliary switch available
- Class B insulation system



1 form A, 1 NO
1 form C, 1 CO
1 form X (NO-DM)
2 form A, 2 NO
2 form C, 2 CO

600VAC, 28/125VDC
50A

12000VA

Ag, AgCdO

1A, 12VDC or VAC

DC, AC

6 to 110VDC/6 to 480VAC

2W/9.8VA

2000Vrms

2000Vrms

2000Vrms

>8mm

DC +80°C

AC +45°C

RT 0/open

Screw, QC⁽²⁾

Panel mount

85.7x63.8x63.5mm

Dust cover

PCB High Power, Metering and Solar Relays

T9A/T9E/T90

- High breaking capacity
- PCB and QC²⁾ connections and chassis mount version
- UL-class F as standard
- Ambient temperature 85°C
- Open version available



T9S

- Specially designed to meet the requirements for the solar industry
- Contact gap >1.5mm
- 350mW hold power,
- Product in accordance to IEC 60335-1
- EN 61095: AC7 at 85°C



T92

- Switching capacity 7500VA
- DC or AC coil
- 4kV/8mm coil-contact
- PCB or QC²⁾ connections or chassis mount



Contact Data

Contact arrangement	1 form C, 1 CO 1 form A, 1 NO
Rated voltage	250VAC
Rated current	30A
Switching power	7500VA
Contact material	AgCdO, AgSnInO
Min. recommended contact load	1A at 5VDC or 12VAC

Coil Data

Magnetic system	DC
Rated coil voltage	6 to 48VDC
Rated coil power	1W/900mW

Insulation Data

Initial dielectric strength	
between open contacts	1500Vrms
between contact and coil	2500Vrms
between adjacent contacts	
Clearance/creepage	
between contact and coil	3.1/6.3mm

Other Data

Ambient temperature (max.)	+85°C
Category of environmental protection IEC 61810	RTO, RTI, RTII, RTIII
Terminal type	THT, QC ²⁾
Mounting	PCB, panel mount
Dimensions lwh	32.3x27.4x20.4mm

Accessories

1 form A, 1 NO

Rated voltage	277VAC
Rated current	35A
Switching power	8750VA
Contact material	AgNi

Magnetic system	DC
Rated coil voltage	12VDC
Rated coil power	2.25W/350mW hold power

Initial dielectric strength	2500Vrms
between contact and coil	4000Vrms

Clearance/creepage	3/4 mm
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Ambient temperature (max.)	+85°C
Category of environmental protection IEC 61810	RTII
Terminal type	THT
Mounting	PCB
Dimensions lwh	32.5x27.4x20.4mm

2 form C, 2 CO
2 form A, 2 NO

Rated voltage	400VAC
Rated current	30A
Switching power	7500VA
Contact material	AgCdO, AgSnInO
Min. recommended contact load	100mA at 6VAC/VDC

Magnetic system	DC, AC
Rated coil voltage	6 to 110VDC/12 to 277VAC
Rated coil power	1.7W/4.0VA

Initial dielectric strength	1500Vrms
between contact and coil	4000Vrms
between adjacent contacts	2000Vrms

Clearance/creepage	8/9.5mm
--------------------	---------

Ambient temperature (max.)	+65°C, +85°C
Category of environmental protection IEC 61810	RTI, RTII, RTIII
Terminal type	THT, QC ²⁾
Mounting	Panel mount, PCB
Dimensions lwh	52.3x34.6x30.8mm

1) Recommended minimum load indication for contact material: Au and gold plated: 1mA at 6VDC; Ag, AgNi0.15 and AgNi90/10: 10mA at 12VDC; AgCdO and AgSnO₂: 100mA at 12VDC. Please contact technical support for detailed technical data. 2) QC=quick connect.

PCB High Power, Metering and Solar Relays

EF

- Low profile max. 20.0mm
- QC² terminals for load
- Meet 4kV dielectric voltage between coil and contact
- Ambient temperature 85°C



1 form A, 1 NO
250VAC
20A
5000VA
100mA at 5VDC
DC
5 to 48VDC
900mW
1000Vrms
4000Vrms
6.4/9.5mm
+85°C
RTII
THT/QC ² (#250)
PCB
30.4x16.0x20mm

PCF

- QC² terminal for load (PCF only)
- Height 26.5mm
- Meet 4kV dielectric voltage between coil and contact
- Ambient temperature 85°C



1 form A, 1 NO
250VAC
25A
6370VA
100mA at 5VDC
DC
6 to 24VDC
900mW
1000Vrms
4000Vrms
6.7/>8mm
+85°C
RTII
THT/QC ² (#250)
PCB
30.4x16x26.5mm

PCFN Solar

- Specially designed to meet the requirements for the solar inverter industry
- Contact gap >1.5mm
- 200mW hold power



1 form A, 1 NO
277VAC
26A
7200VA
AgSnO ₂
1)
DC
12VDC
1.5W/200mW hold power
2500Vrms
4000Vrms
6.1/6.1mm
+85°C
RTII
THT
PCB
30.4x16x26.5mm

EW

- 80A switching capacity
- Heavy load 20000VA
- 1 coil bistable
- 4000VAC coil to contact dielectric endurance

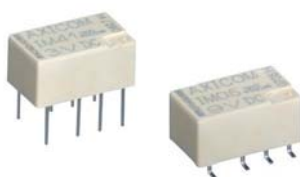


1 form A, 1 NO
250VAC
80A
20000VA
100mA at 12VAC
DC
5 to 24VDC
1W
1500Vrms
4000Vrms
6/6mm
+70°C
RTI
THT/lug
PCB, customized
36.8x17.2x30.4mm

Signal Relays

IM

- 4G telecom/signal relay
- Slim line 10x6mm
- Low profile 5.65mm
- High dielectric version
- High current version
- High contact stability version
- 2/5A UL rating
- Meets Telcordia Technologies Inc. requirements



UL US IEC 60950

IMD/E

- 4G telecom/signal relay
- 2 pole make or brake
- Slim line 10x6mm
- Low profile 5.65mm
- High dielectric version
- 2A UL rating
- Meets Telcordia Technologies Inc. requirements



UL US IEC 60950

IMA/B

- 4G telecom/signal relay
- 1 pole make, break or changeover
- Slim line 10x6mm
- Low profile 5.65mm
- High dielectric version
- 2A UL rating
- Meets Telcordia Technologies Inc. requirements



UL US IEC 60950

Contact Data

Contact arrangement

2 form C, 2 CO
Bifurcated contacts

Rated voltage

220VAC/250VDC

Rated current

2/5A

Switching power

60W/62.5VA

Min. recommended contact load

100μV/1μA

Initial contact resistance

<50mΩ

Coil Data

Magnetic system

Polarized

Rated coil voltage

1.5 to 24VDC

Rated coil power

DC coil/bistable 1 coil/2 coils

50 to 200mW/-

Insulation Data

Initial dielectric strength

between open contacts

1000 to 1500Vrms

between contact and coil

1500 to 1800Vrms

between adjacent contacts

1000 to 1800Vrms

Initial surge withstand voltage

between open contacts

1500 to 2500Vp

between contact and coil

2500Vp

between adjacent contacts

1500 to 2500Vp

Isolation 100/900MHz

-37.0/-18.8dB

Insertion loss 100/900MHz

-0.03/-0.33dB

Volt. standing wave ratio 100/900MHz

1.06/1.49

Capacitance

between open contacts

max. 1pF

Other Data

Ambient temperature

-40 to +85°C (+125°C)

Category of environmental protection

IP67/RTV

Terminal type

THT, SMT

Dimensions lwh

10x6x5.65mm

2 form B, 2 NC
2 form A, 2 NO
Bifurcated contacts

220VAC/250VDC

2A

60W/62.5VA

100μV/1μA

<50mΩ

Polarized

1.5 to 24VDC

140mW/-

1000Vrms

1800Vrms

1000Vrms

1500Vp

2500Vp

1500Vp

-37.0/-18.8dB

-0.03/-0.33dB

1.6/1.49

max. 1pF

-40 to +85°C

IP67/RTV

THT, SMT

10x6x5.65mm

1 form B, 1 NC
1 form A, 1 NO
Bifurcated contacts

220VAC/250VDC

2A

60W/62.5VA

100μV/1μA

<100mΩ

Polarized

1.5 to 24VDC

140mW/-

2500Vrms

4000Vrms

3500Vp

5600Vp

-37.0/-18.8dB

-0.03/-0.33dB

1.6/1.49

max. 1pF

-40 to +85°C

IP67/RTV

THT, SMT

10x6x5.65mm

Signal Relays

IMC

- 4G telecom/signal relay
- 1 pole changeover
- Slim line 10x6mm
- Low profile 5.65mm
- High dielectric version
- 3A UL rating
- Meets Telcordia Technologies Inc. requirements



UL US IEC 60950

1 form C, 1 CO Bifurcated contacts
220VAC/250VDC
2/3A
60W/62.5VA
100µV/1µA
<100mΩ
Polarized
1.5 to 24VDC
140mW/-/-
1000Vrms
1800Vrms
1500Vp
2500Vp
-37.0/-18.8dB
-0.03/-0.33dB
1.6/1.49
max. 1pF
-40 to +85°C
IP67/RTV
THT, SMT
10x6x5.65mm

P2

- 3G telecom/signal relay
- Slim line 15x7.5mm
- Switching current max. 5A
- High dielectric version
- Meets Telcordia Technologies Inc. requirements



UL US IEC 60950

2 form C, 2 CO Bifurcated contacts
220VAC/250VDC
2A
60W/62.5VA
100µV/1µA
<50mΩ
Polarized
2.4 to 24VDC
140mW/70mW/140mW
1000 to 1500Vrms
1500Vrms
1000 to 1500Vrms
2500Vp
2500Vp
2000Vp
-39.0/-20.7dB
-0.02/-0.27dB
1.4/1.40
max. 1pF
-40 to +85°C
IP67/RTIII
THT, SMT
14.5x7.2x10.4mm, stand. 14.5x7.2x9.9mm, overm.

FX2

- 3G telecom/signal relay
- Slim line 15x7.5mm
- Standard and sensitive coil
- High mechanical shock resistance
- High dielectric version
- Meets Telcordia Technologies Inc. requirements



UL US IEC 60950

2 form C, 2 CO Bifurcated contacts
220VAC/250VDC
2A
60W/62.5VA
100µV/1µA
<70mΩ
Polarized
3 to 48VDC
80 to 300mW/-/-
1800 to 2100Vrms
1800 to 3500Vrms
1800 to 2100Vrms
2500 to 2900Vp
3500 to 5000Vp
2500 to 2900Vp
-34.0/-15.1dB
-0.03/-0.60dB
1.07/1.45
max.2pF
-55 to +85°C
IP67/RTV
THT
15x7.3x10.7mm

FT2/FU2

- 3G telecom/signal relay
- Slim line 15x7.5mm
- Standard and sensitive coil
- 125°C ambient temperature
- Suitable for explosive environments
- High dielectric version
- Meets Telcordia Technologies Inc. requirements



UL US IEC 60950

2 form C, 2 CO Bifurcated contacts
220VAC/250VDC
2A
60W/62.5VA
100µV/10µA
<70mΩ
Non polarized
3 to 48VDC
200 to 300mW/-/-
1500 to 1800Vrms
1500 to 4000Vrms
1000 to 1500Vrms
1500 to 2500Vp
2500 to 6000Vp
1500 to 2500Vp
-30.6/-13.7dB
-0.02/-0.50dB
1.02/1.27
max. 1pF
-55 to +125°C
IP67/RTIII/RTV
THT, SMT
15x7.5x9.6mm

Signal Relays

FP2

- 3G telecom/signal relay
- Low profile 5mm
- Standard and sensitive coil
- High mechanical shock resistance



D2N V23105

- 2G telecom/signal relay
- 4 coil sensitivities
- 3A UL rating



MT2

- 2G telecom/signal relay
- 5 coil sensitivities
- 2A UL rating



Contact Data

Contact arrangement

2 form C, 2 CO
Bifurcated contacts

2 form C, 2 CO
Single contacts

2 form C, 2 CO
Bifurcated contacts

Rated voltage

220VAC/250VDC

250VAC/220VDC

250VAC/220VDC

Rated current

2A

3A

2A

Switching power

60W/62.5VA

60W/125VA

60W/62.5VA

Min. recommended contact load

100µV/1µA

100µV/10µA

100µV/1µA

Initial contact resistance

<50mΩ

<100mΩ

<70mΩ

Coil Data

Magnetic system

Polarized

Non polarized

Non polarized

Rated coil voltage

3 to 48VDC

3 to 48VDC

3 to 48VDC

Rated coil power

80 to 300mW/200 to 200mW
80 to 300mW/100 to
150mW/200mW

150 to 700mW/-/-

150 to 550mW/-/-

DC coil/bistable 1 coil/2 coils

Insulation Data

Initial dielectric strength

between open contacts

1000Vrms

750Vrms

750Vrms

between contact and coil

1000Vrms

1000Vrms

1000Vrms

between adjacent contacts

750Vrms

750Vrms

750Vrms

Initial surge withstand voltage

between open contacts

1500Vp

1500Vp

1500Vp

between contact and coil

1500Vp

1500Vp

1500Vp

between adjacent contacts

1500Vp

1500Vp

1500Vp

Isolation 100/900MHz

-40.2/-22.3dB

-39.0/-20.7dB

-31.8/-14.2dB

Insertion loss 100/900MHz

-0.03/-0.25dB

-0.02/-0.27dB

-0.02/-0.97dB

Volt. standing wave ratio 100/900MHz

1.01/1.07

1.04/1.40

1.03/1.31

Capacitance

between open contacts

max. 1pF

max. 2pF

max. 2pF

Other Data

Ambient temperature

-55 to +85°C

-25 to +85°C

-55 to +85°C

Category of environmental protection

IP67/RTIII

IP67/RTIII

IP67/RTIII

Terminal type

THT

THT

THT

Dimensions lwh

14x9x5mm

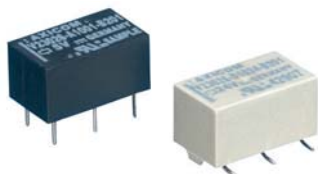
20.2x10x11.4mm

20.2x10x11mm

Signal Relays

P1 V23026

- Very high sensitive relay
- Low profile
- High vibration and shock resistance
- Version: symmetric pin layout
- Temperature range up to 85°C
- 1500Vrms across opened contacts



UL US IEC 60950

1 form C, 1 CO
Bifurcated contacts

150VAC/125VDC
1A
30W/60VA
100µV/1µA
<50mΩ

Polarized
3 to 24VDC

65 to 130mW/30 to
130mW/70 to 200mW

500Vrms
1500Vrms

2500Vp

-30.0/-18.0dB
-0.12/-1.90dB
1.06/1.75

max. 5pF

-40 to +85°C

IP67/RTIII

THT, SMT

13x7.6x6.9mm

W11 V23101

- Multi purpose relay with switching current up to 3A



UL US IEC 60950

1 form C, 1 CO
Single contacts

60VAC/125VDC
1.25 A / 3A
30 to 72W/60 to 360VA
-
<100mΩ

Non polarized
1.5 to 24VDC

200 to 450mW/-/-

750Vrms
1000Vrms

max. 2pF

-40 to +85°C

IP67/RTIII

THT

15.6x10.6x11.5mm

Reed DIP

- Direct driving with TTL signals
- Ultrasonic cleanable
- High switching speed
- Clamping diode
- Electrostatic shield



UL US

1 form A, 1 NO
2 form A, 2 NO
1 form C, 1 CO
Reed contacts

175 to 200VAC/VDC
0.25 to 0.5A
3 to 10W
10µV/1µA
<150mΩ

Non polarized
5 to 24VDC
50 to 300mW/-/-

140 to 175Vrms
1000Vrms

max. 1pF

-20 to +70°C

IP67/RTIII

THT

19.3x5.7x7.5mm

Reed SIL

- Direct driving with TTL signals
- Ultrasonic cleanable
- High switching speed
- Clamping diode



UL US

1 form A, 1 NO
Reed contacts

180 to 200VAC/VDC
0.5A
10W
10µV/1µA
<150mΩ

Non polarized
5 to 24VDC
50 to 300mW/-/-

150 to 175Vrms
1000Vrms

max. 1pF

-20 to +70°C

IP67/RTIII

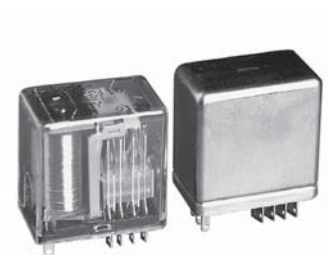
THT

19.8x5.1x7.8mm

Signal Relays

Cradle

- Very high reliability
- Great variety of coils and contact sets
- Accessories for socket mounting



TSC

- Designed for thermostat, modem
- Computer peripherals, video recording and security applications
- Low coil power requirements
- IC compatibility



OUAZ/T81

- Gold overlay silver palladium alloy contact suitable for low loads
- High density available on PCB due to small size
- 2.54mm terminal pitch same as IC socket terminal pitch
- Sensitive and standard coils



Contact Data

Contact arrangement	Various
Rated voltage	30 to 250VAC/VDC
Rated current	0.2 to 5A
Switching power	5 W to 500VA
Min. recommended contact load	-
Initial contact resistance	on request

Coil Data

Magnetic system	Non polarized/Polarized
Rated coil voltage	5 to 220VDC/6 to 230VAC
Rated coil power	-/1450 to 1650mW/1450 to 1650mW

Insulation Data

Initial dielectric strength	
between open contacts	500 to 1000Vrms
between contact and coil	500 to 2000Vrms
between adjacent contacts	on request
Initial surge withstand voltage	
between open contacts	
between contact and coil	
between adjacent contacts	
Isolation	
Insertion loss	
Voltage standing wave ratio (VSWR)	
Capacitance	
between open contacts	on request

Other Data

Ambient temperature	-40 to +70°C
Category of environmental protection	IP30 or RTI or RTIII
Terminal type	THT or plug-in
Dimensions lwh	24 to 35x19x30mm

1 form C, 1 CO
120VAC, 30VDC
1A
120VA, 24W
1mA at 1VDC
50mΩ at 100mA, 6VDC

DC, sensitive
3 to 24VDC
150, 300mW

400Vrms
1000Vrms

1500Vp (10/160μs)

-40 to +80°C
RTIII/IP67
THT
12.5x7.5x10mm

1 form C, 1 CO
1 form A, 1 NO
120VAC/24VDC
1A
120VA, 30W
1mA at 1VDC

DC, sensitive
5 to 24VDC
200, 450mW

500Vrms
1000Vrms

1500Vp (10/160μs)

-40 to +75°C (sensitive)
-40 to +60°C (standard)
RTII, RTIII
THT
15.4x10.4x11.2mm

High Frequency Relays/Switches

HF3

- High performance small HF relay/switch up to 3GHz
- Low power consumption $\leq 70/140\text{mW}$
- 50 and 75 Ω version



HF3S

- High performance small HF relay/switch up to 3GHz
- Low power consumption $\leq 70/140\text{mW}$
- 50 and 75 Ω version
- RF power 150W at 2GHz



HF6

- High performance small HF relay/switch up to 6GHz
- Low power consumption $\leq 70/140\text{mW}$
- 50 Ω version



Contact Data

Contact arrangement

1 form C, 2 CO
Bridge contacts

1 form C, 2 CO
Bridge contacts

1 form C, 2 CO
Bridge contacts

Rated voltage

220VAC/250VDC

220VAC/250VDC

220VAC/250VDC

Rated current

2A

2A

2A

Switching power

60W/62.5VA/50W (2.5GHz)

60W/62.5VA/50W (2.5GHz)

60W/62.5VA/50W (2.5GHz)

Min. recommended contact load

100 μV /1 μA

100 μV /1 μA

100 μV /1 μA

Initial contact resistance

<100m Ω

<100m Ω

<100m Ω

Coil Data

Magnetic system

Polarized

Polarized

Polarized

Rated coil voltage

3 to 24VDC

3 to 24VDC

3 to 24VDC

Rated coil power

DC coil/bistable 1 coil/2 coils

140mW/70mW/140mW

140mW/70mW/140mW

140mW/70mW/140mW

Insulation Data

Initial dielectric strength

between open contacts

600Vrms

600Vrms

600Vrms

between contact and coil

1000Vrms

1000Vrms

1000Vrms

between adjacent contacts

Initial surge withstand voltage

between open contacts

1000Vp

1000Vp

1000Vp

between contact and coil

1500Vp

1500Vp

1500Vp

between adjacent contacts

Capacitance

between open contacts

max. 1pF

max. 1pF

max. 1pF

RF Data

Isolation

0.1/0.9/3GHz

0.1/0.9/3GHz

0.9/3/6GHz

Insertion loss

-80/-72/-45dB

-95/-80/-55dB

-80/-60/-30dB

Voltage standing wave ratio (VSWR)

-0.03/0.12/-0.35dB

-0.03/-0.12/-0.30dB

-0.05/-0.15/-0.80dB

1.05/1.15/1.20

1.05/1.10/1.25

1.05 / 1.10 / 1.40

Other Data

Ambient temperature

-55 to +85°C

-55 to +85°C

-55 to +85°C

Category of environmental protection

IP67/RTIII

IP67/RTIII

IP67/RTIII

Terminal type

SMT

SMT

SMT

Dimensions lwh

14.6x7.2x10mm

15x7.6x10.6mm

15x7.6x10.6mm

Circuit Breakers

W28

- Replaces slow blow glass cartridge fuse and holder
- Snap-in mounting
- Button provides visible trip indication
- Push-to-reset
- Right angle QC¹⁾ optional



W23/W31

- Toggle and push/pull actuator; can not be reset against overload



W33

- Combines optional illuminated on/off switching and circuit protection in a single unit
- Optional auxiliary switch



Contact Data

Type	Thermal	Thermal	Thermal
Contact arrangement number of poles	1	1	1-2
Circuit function	Series trip	Series trip	Series trip both poles; series trip 1 pole/ switch only 1 pole; switch only 2 poles
Max. switching voltage (max. operating voltage)	32VDC 250VAC	50VDC 240VAC	50VDC 250VAC
Rated current	0.5A to 20A	0.5A to 50A	2A to 20A
Interrupt capacity	1000A at 250VAC, 50/60Hz, 32VDC	1000A for 0.5 to 50A at 240 VAC/0 to 50A at 50VDC both with 4X max. fuse protection; 2000A for 0.5 to 25A at 50VDC/10 to 20A at 120VAC both without 4X max. fuse protection	1000A at 50VDC, 250VAC/60Hz and 125/250VAC 400Hz; 1500A at 25/250VAC/60Hz
Trip time at 200% of rating	0.25 to 2A models 4.5 to 28s; 3 to 20A models 2.2 to 15s	0.5 to 4A models 11 to 30s; 5 to 50A models 6 to 22s	3 to 33s

Insulation Data

Initial dielectric strength	1500Vrms	1500Vrms	2000Vrms
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Other Data

Ambient temperature	-20 to +60°C	-20 to +65°C	-20 to +65°C
Terminal type	QC ¹⁾	Screw	QC ¹⁾
Mounting	Snap-in	3/8"-24 threaded bushing	Snap-in
Manual operation Actuator	Push-to-reset	Push/pull and toggle	Rocker
Dimensions lwh	39.0x15.9x13.7mm	40.6x17.5x35.2mm	43.8x24.9x48.0mm

Accessories

Protective boot, push-on lockwasher

Hex nut, lockwasher, knurl nut

1) QC=quick connect.

Circuit Breakers

W51

- Compact, rocker actuated design
- Provides circuit protection and power switching in a single unit
- Optional indicator lamp



Thermal
1
Series trip
50VDC 125/250VAC (model dependent)
5A to 20A
1000A
4 to 40s
1500VAC
0 to 60°C QC ¹⁾ and PCB
Snap-in, PCB
Rocker
21.8x15.2x32.0mm

W54/W57

- Push-to-reset down to 3A with optional bottom marking
- Ignition protection compliant (UL1500) models



Thermal
1
Series trip
50VDC 250VAC
5A to 40A (W54) 3A to 20A (W57)
1000A
5 to 30s (W54) 4 to 40s (W57)
1500VAC
0 to 60°C QC ¹⁾ and screw
3/8"-24, M11-1.0, M12-1.0 threaded bushing
Push-to-reset
31.0x14.6x35.0mm (W54) 22.6x14.6x29.2mm (W57)
Protective boot, knurl nut, hex nut, lockwasher, nameplate

W58

- Push-to-reset down to 0.5A with optional bottom marking
- Ignition protection compliant (UL1500)



Thermal
1
Series trip
50VDC 250VAC
0.5A to 30A
2000A at 50VDC; 1000A at 250VAC
5 to 30A models 6 to 30s; 1 to 4A models 10 to 45s
1500Vrms
-20 to +65°C QC ¹⁾ and screw
7/16"-28, 15/32"-32, 3/8"-24 threaded bushing
Push-to-reset
34.9x16.8x34.9mm
Protective boot, knurl nut, hex nut, lockwasher

W6/W9

- Secondary protection, heavy duty magnetic hydraulic for the international market
- Multiple delay curve options
- Optional auxiliary switch, toggle guard and multiple pole single actuation
- Ignition protection compliant (UL1500) models



Magnetic/Hydraulic
1-4
Series trip
65VDC 277VAC 480VAC - 3Ø wye
0.20A to 50A
UL1077 up to 2000ADC/5000AAC; UL1500 up to 3000VDC/1000VAC
30ms to 150s depending upon type of trip curve selected
50/60Hz, 1500VDC: DC 1100VDC
-40 to +85°C QC ¹⁾ , screw and stud
6-32, M3 tapped holes
Toggle and rocker
41.7x19.0x50.8mm (W6 per pole) 46.9x19.0x63.5mm (W9 per pole)
Toggle guard (W6 only)

Industry Overview



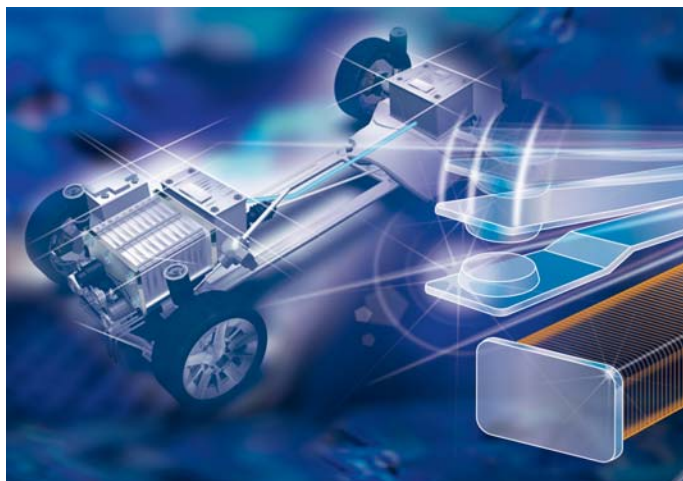
Alternative Energy

Relays meeting the specific requirements for use in power inverters are among the switching components offered by TE Relay Products for alternative energy applications.



Automotive

TE Relay Products supplies many different switching products for automotive applications. These range from basic electromechanical relays to special function relays, contactors and hybrid modules.



Alternative Power Vehicle

From miniature relays for PCB mounting to large power contactors, TE Relay Products offers an array of switching solutions for alternative power vehicles.



Building Equipment

TE Relay Products provides a broad range of products for use in building equipment such as elevators, HVAC systems, alarms and more.

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Industry Overview



Appliance

Among the many switching products TE Relay Products provides to appliance manufacturers are signal relays, general purpose relays and circuit breakers.



Industrial

Whether the application is a basic pump control circuit, a complex interface with a programmable logic controller or a safety circuit, industrial machinery designers specify components from TE Relay Products.



Power Metering (ANSI¹⁾ Style)

TE Relay Products is developing a global line of specialized high current relays for the expanding power metering market.



Communication

From high frequency relays for antenna switching to power control relays for end-user equipment, TE Relay Products offers the vast communications market an array of components.

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1) ANSI is a trademark of American National Standards Institute.



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