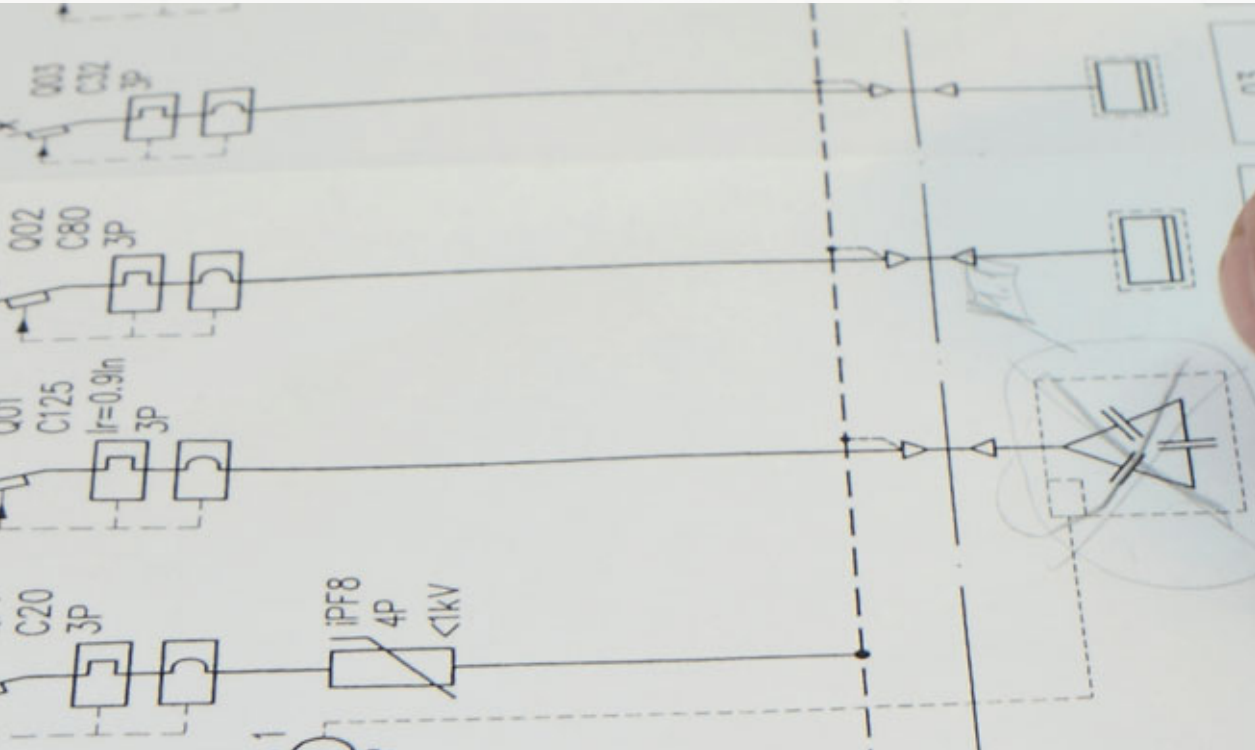
Pictograms of the table head

- U_m Nominal control voltage
- U_{up} Upper voltage protection level
- L1 L2 L3 Phase sequence control
- Relay bases
- I_{up} Upper current protection level
- A (L1,L2,L3) Adjustable range (asymmetry)
- ×P 1P 2P ×P Number of poles
- VDC VAC A Electric data of contacts
- U_h Hysteresis voltage
- Adjusting time
- U_{down} Lower voltage protection level
- m Weight
- I_e Nominal operational current
- ON OFF Sensitivity
- I_{down} Lower current protection level

Pictograms of the technical data

- Utest 1min 1,5 kV Test voltage
- TEST "TEST" button
- Cam switch
- R max. 50 mΩ Resistance
- [mm²] 1-2,5 Connectable cable
- U_i 400 V Rated insulation voltage
- 0 10 ha % Accuracy class
- R_{OFF} PTC 1600-2000 Ω Switch-off resistance (PTC):
- To -20..+80°C Operation temperature
- 35×7.5 Can be install on mounting rail
- $I_{e\ (AC\ 1,\ 230\ V)}$ 10 A Nominal operational current
- ×10⁵ Electrical life
- R_{ON} PTC 1000-1400 Ω Switch-on resistance (PTC):
- Ta -5..+40 °C Ambient temperature
- Pm 4 VA AC Self consumption
- ×10⁶ Mechanical life
- AUX 2×CO Auxiliary contacts
- IP 20 Protection degree

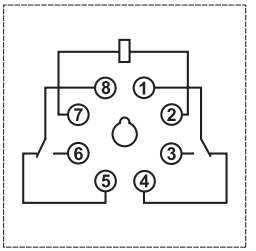


Industrial automation relays

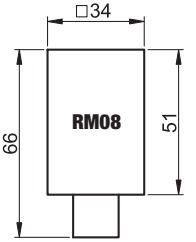
Ie (AC 1, 230 V) 3 A | Pm 2,5 VA AC | Pm 1,5 W DC | Utest 1min 1,5 kV | Ui 400 V | R max. 50 mΩ | ×10⁷ | ×10⁵ | TEST | Ta -40..+55°C | Pictograms J/0

With two changeover contacts (2 × C0)

TRACON	Um	VDC VAC — ~ A	m	
RM08-240AC	AC 230 V	3 A 230 V AC 28 V DC	75 g	**RS90.22**
RM08-110AC	AC 110 V			
RM08-48AC	AC 48 V			
RM08-24AC	AC 24 V			
RM08-12AC	AC 12 V			
RM08-110DC	DC 110 V			
RM08-48DC	DC 48 V			
RM08-24DC	DC 24 V			
RM08-12DC	DC 12 V			

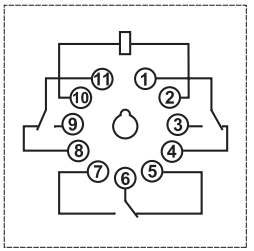


RM08

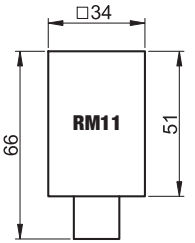


With three changeover contacts (3 × C0)

TRACON	Um	VDC VAC — ~ A	m	
RM11-220AC	AC 230 V	3 A 230 V AC 28 V DC	75 g	**PF11-3A RS90.23**
RM11-110AC	AC 110 V			
RM11-48AC	AC 48 V			
RM11-24AC	AC 24 V			
RM11-12AC	AC 12 V			
RM11-110DC	DC 110 V			
RM11-48DC	DC 48 V			
RM11-24DC	DC 24 V			
RM11-12DC	DC 12 V			



RM11



RELEVANT STANDARD
EN 61810

RM08

RM11

These plug-in relays are protected by a transparent, dustproof cover. The relays are provided with 2 or 3 switchover contacts and 8- or 11-leg plug contacts. A "TEST" button is also provided for checking the proper operation of the circuits to be switched by the contacts.

J/8

SCAN THE QR CODE!

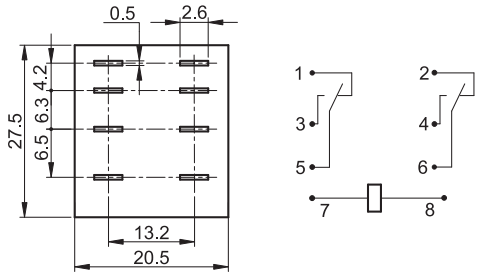
- Check our new products
- Be updated

Our range of products is continuously and quickly expanding. Our catalogue shows our products as of April 2019. Check our website to stay up-to-date.

Miniature relays

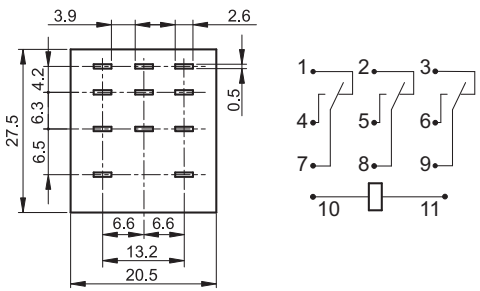
I_e (AC 1, 230 V)	P_m	P_m	U_{test} 1min	U_i	R	×10⁷	×10⁵	TEST	Ta	Pictograms
3 A	1,2 VA AC	0,9 W DC	1,5 kV	250 V	max. 50 mΩ				-40..+55°C	J/0

With two changeover contacts (2 × CO)



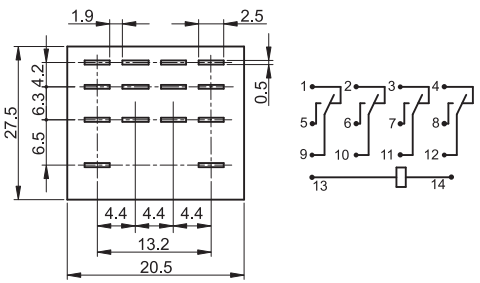
TRACON	U_m	VDC VAC A	m	
RM09-240AC	AC 230 V	3 A 230 V AC 28 V DC	35 g	**RSPYF-08A**
RM09-110AC	AC 110 V			
RM09-48AC	AC 48 V			
RM09-24AC	AC 24 V			
RM09-12AC	AC 12 V			
RM09-110DC	DC 110 V			
RM09-48DC	DC 48 V			
RM09-24DC	DC 24 V			
RM09-12DC	DC 12 V			

With three changeover contacts (3 × CO)



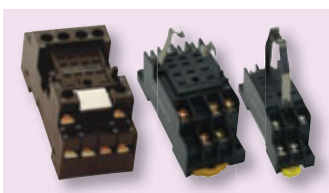
TRACON	U_m	VDC VAC A	m	
RM12-240AC	AC 230 V	3 A 230 V AC 28 V DC	35 g	**RSPYF-11A**
RM12-110AC	AC 110 V			
RM12-48AC	AC 48 V			
RM12-24AC	AC 24 V			
RM12-12AC	AC 12 V			
RM12-110DC	DC 110 V			
RM12-48DC	DC 48 V			
RM12-24DC	DC 24 V			
RM12-12DC	DC 12 V			

With four changeover contacts (4 × CO)

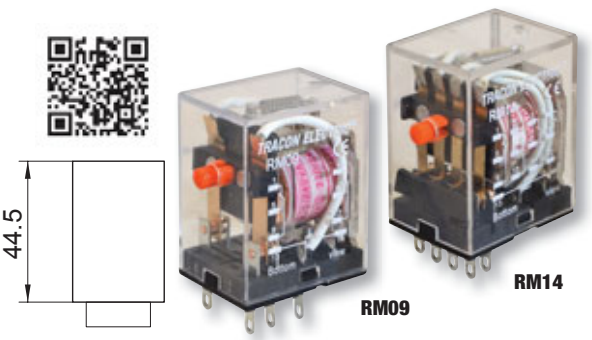


TRACON	U_m	VDC VAC A	m	
RM14-220AC	AC 230 V	3 A 230 V AC 28 V DC	35 g	**PYF14A RSPMF-14**
RM14-110AC	AC 110 V			
RM14-48AC	AC 48 V			
RM14-24AC	AC 24 V			
RM14-12AC	AC 12 V			
RM14-110DC	DC 110 V			
RM14-48DC	DC 48 V			
RM14-24DC	DC 24 V			
RM14-12DC	DC 12 V			

These relays have 2, 3 or 4 protection contacts and they can be contacted to the relay socket with their 8-, 11-, or 14-leg plug. A “TEST” button is also provided for checking the proper operation of the circuits to be switched by the contacts.



J/8-J/9

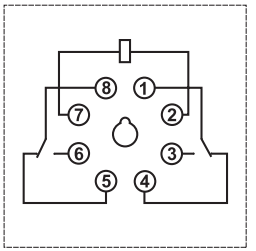


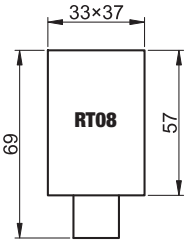
Industrial power relays

Ie (AC 1, 230 V)	Pm	Pm	Utest 1min	Ui	R	×10⁷	×10⁵	TEST	Ta	Pictograms
10 A	3,5 VA AC	2 W DC	1,5 kV	400 V	max. 50 mΩ				-40..+55°C	J/0

With two changeover contacts (2 × C0)

TRACON	Um	VDC VAC — ~ A	m	
RT08-240AC	AC 230 V	10 A 230 V AC 28 V DC	80 g	**RS90.22**
RT08-110AC	AC 110 V			
RT08-48AC	AC 48 V			
RT08-24AC	AC 24 V			
RT08-12AC	AC 12 V			
RT08-110DC	DC 110 V			
RT08-48DC	DC 48 V			
RT08-24DC	DC 24 V			
RT08-12DC	DC 12 V			

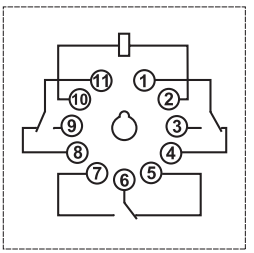


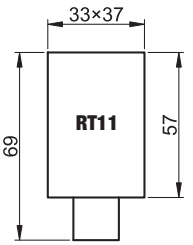


RT08

With three changeover contacts (3 × C0)

TRACON	Um	VDC VAC — ~ A	m	
RT11-240AC	AC 230 V	10 A 230 V AC 28 V DC	80 g	**RS90.23** **PF11-3A**
RT11-110AC	AC 110 V			
RT11-48AC	AC 48 V			
RT11-24AC	AC 24 V			
RT11-12AC	AC 12 V			
RT11-110DC	DC 110 V			
RT11-48DC	DC 48 V			
RT11-24DC	DC 24 V			
RT11-12DC	DC 12 V			





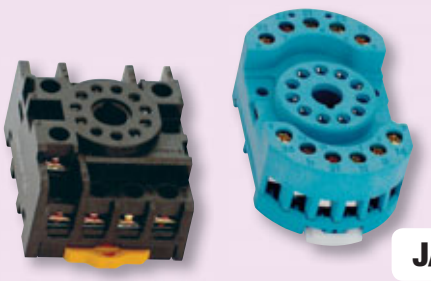
RT11

RT08

RT11

The relays have two or three switchover contacts and LED or mechanical status indicators. The LED shows the status of the operating coil and the mechanical status indicator shows the ON position of the contacts. By the “TEST” handle placed on the front side of the relay, the contacts can be put into position according to excited state of the coil. The handle – in contradiction to the “TEST” button of the RM types – keeps the contacts in ON position till one does not shift the handle back to its normal position. The resistive LED - wired parallel to the operating coil - attenuates the voltage shock associated with switching-off the circuit of the coil, in order to prevent any trouble in the electronic, operation circuit.

RELEVANT STANDARD
EN 61810-1

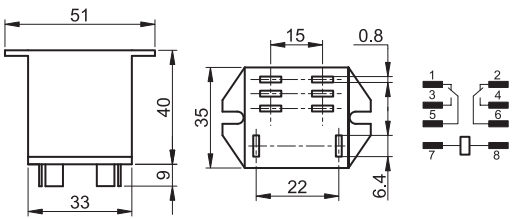


J/8

Power relays

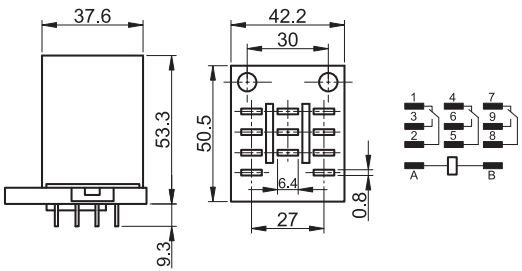
I_e (AC 1, 230 V)	P_m	P_m	Utest 1min	U_i	R	×10⁶	×10⁵	Ta	Pictograms
30 A	4 VA AC	2,5 W DC	2,5 kV	400 V	max. 50 mΩ			-40..+55°C	J/0

With two changeover contacts (2 × CO)



TRACON	Um	VDC VAC A	m	
RJ08-240AC	AC 230 V	30 A 230 V AC 25 A 28 V DC	130 g	-
RJ08-110AC	AC 110 V			
RJ08-48AC	AC 48 V			
RJ08-24AC	AC 24 V			
RJ08-12AC	AC 12 V			
RJ08-110DC	DC 110 V			
RJ08-48DC	DC 48 V			
RJ08-24DC	DC 24 V			
RJ08-12DC	DC 12 V			

With three changeover contacts (3 × CO)



TRACON	Um	VDC VAC A	m	
RJ11-240AC	AC 230 V	40 A 120 V AC 30 A 230 V AC 25 A 28 V DC	130 g	**RSJQX-38FS**
RJ11-110AC	AC 110 V			
RJ11-48AC	AC 48 V			
RJ11-24AC	AC 24 V			
RJ11-12AC	AC 12 V			
RJ11-110DC	DC 110 V			
RJ11-48DC	DC 48 V			
RJ11-24DC	DC 24 V			
RJ11-12DC	DC 12 V			

The RJ type power relays have two or three switchover contacts. The large size contacts enable the equipment to conduct and switch high currents. The three-contact version can be plugged into the RSJQX-38FS code socket – having screw contacts, or can be wired with 6,3 × 0,8 mm size quick connection female. At this kind of installation the relay can be fixed by M4 screws at the gap cut into the mounting plate (see diagram).
The two-contact version can be fixed by screws onto the mounting plate, 6,3 × 0,8 mm size quick connection females should be used for wiring.

RJ08

RJ11

J/9

RELEVANT STANDARD
EN 61810-1

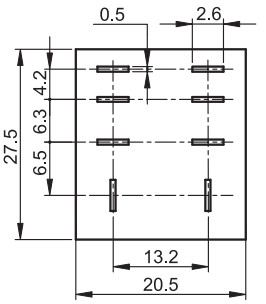
Miniature power relays

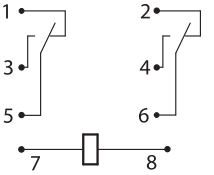
I_e (AC 1, 230 V)	P_m	P_m	U_{test}	U_i	R			
10 A	2,5 VA AC	1,5 W DC	1min 1 kV	250 V	max. 50 mΩ	×10⁷	×10⁵	Ta -40..+55°C

Pictograms J/0

With two changeover contacts (2 × CO)

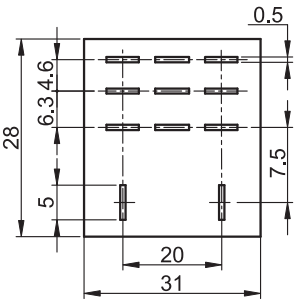
TRACON	U_m	VDC VAC — ⁓ A	m	
RL08-240AC	AC 230 V	10 A 230 V AC 24 V DC	50 g	**RSPTF-08A**
RL08-110AC	AC 110 V			
RL08-48AC	AC 48 V			
RL08-24AC	AC 24 V			
RL08-12AC	AC 12 V			
RL08-110DC	DC 110 V			
RL08-48DC	DC 48 V			
RL08-24DC	DC 24 V			
RL08-12DC	DC 12 V			

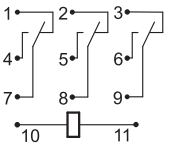




With three changeover contacts (3 × CO)

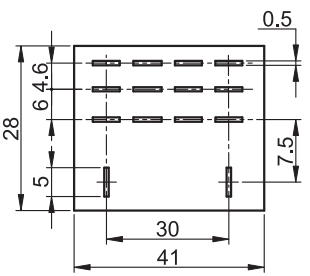
TRACON	U_m	VDC VAC — ⁓ A	m	
RL11-240AC	AC 230 V	10 A 230 V AC 24 V DC	50 g	**RSPTF-11A**
RL11-110AC	AC 110 V			
RL11-48AC	AC 48 V			
RL11-24AC	AC 24 V			
RL11-12AC	AC 12 V			
RL11-110DC	DC 110 V			
RL11-48DC	DC 48 V			
RL11-24DC	DC 24 V			
RL11-12DC	DC 12 V			

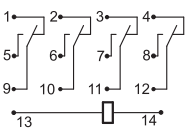




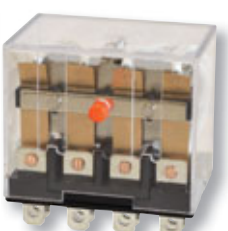
With four changeover contacts (4 × CO)

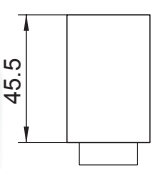
TRACON	U_m	VDC VAC — ⁓ A	m	
RL14-240AC	AC 230 V	10 A 230 V AC 24 V DC	50 g	**RSPTF-14A**
RL14-110AC	AC 110 V			
RL14-48AC	AC 48 V			
RL14-24AC	AC 24 V			
RL14-12AC	AC 12 V			
RL14-110DC	DC 110 V			
RL14-48DC	DC 48 V			
RL14-24DC	DC 24 V			
RL14-12DC	DC 12 V			

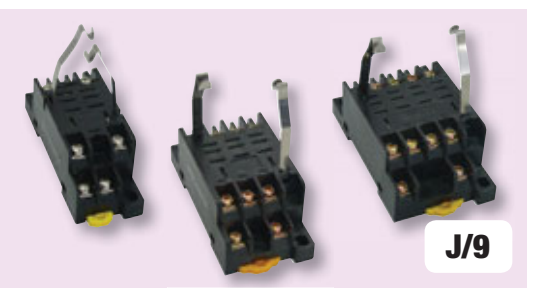





RL08


RL14



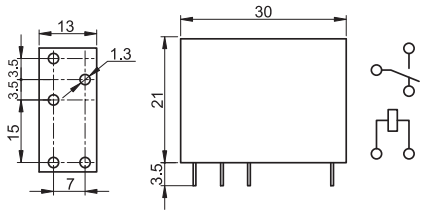


Print relays

Pm	Utest	Ui	R	×10⁷	×10⁵	Ta
0,5 W DC	1min 1 kV	250 V	max. 50 mΩ			-40..+55°C

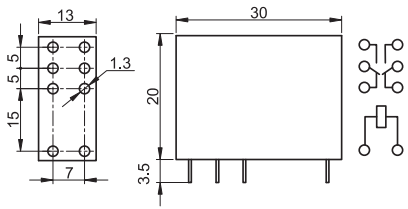
Pictograms J/0

With one changeover contacts 10 A (1 × CO)



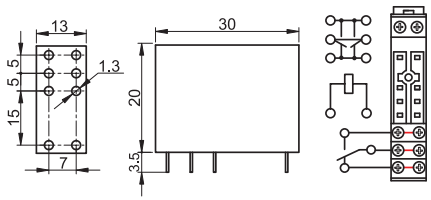
TRACON	Um	VDC VAC A	m	
PR110-1V10A	110 V DC	10 A 230 V AC 30 V DC	50 g	RSPSF-08AE
PR48-1V10A	48 V DC			
PR24-1V10A	24 V DC			
PR12-1V10A	12 V DC			

With two changeover contacts 5 A (2 × CO)



TRACON	Um	VDC VAC A	m	
PR110-2V	110 V DC	5 A 230 V AC 30 V DC	50 g	RSPSF-14AE
PR48-2V	48 V DC			
PR24-2V	24 V DC			
PR12-2V	12 V DC			

With one changeover contacts 10 A (1 × CO)



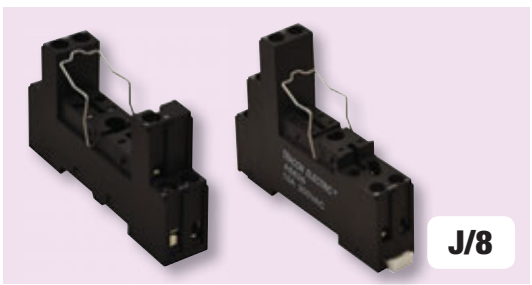
TRACON	Um	VDC VAC A	m	
PR110-1V16A	110 V DC	16 A 230 V AC 30 V DC	50 g	RSPSF-14AE
PR48-1V16A	48 V DC			
PR24-1V16A	24 V DC			
PR12-1V16A	12 V DC			

For 16 A versions, the terminals of the alternate contacts have to be connected in parallel, as shown in the scheme below!

The so-called print relays are primarily designed to be used in printed panels for electronic control, e.g. boiler automatic, household water supply equipment, water circulation and filling-up equipment of household swimming pools, automatic washing machines, etc. The construction is appropriate to be used as protective separation. The relays are tested at 4000 V for 1 minute, applied between their operation coil and contacts. They also afford the 8 mm tracking current way and air-gap between their active parts. Along conventional soldering to the printed panel application these relays can be fixed onto rail or used with screw contact sockets. The relays are provided with 1 or 2 switchover contacts.

PR..-1V16A
PR..-2V

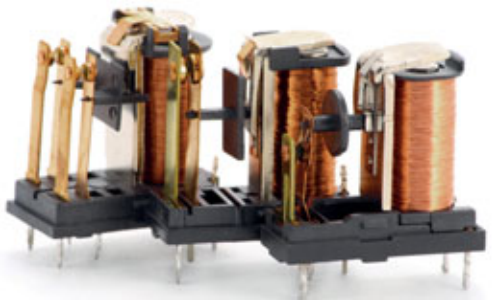
PR..-1V



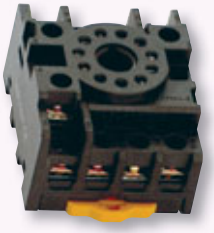
RELEVANT STANDARD
EN 61810-1

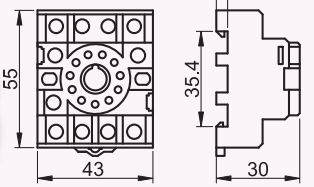
Relay bases

The relay bases can be fixed on mounting plate by screws, or on 35 × 7 mm size rail according to EN 50022. The screw terminals will accept 1 pc. 0,5 mm² or maximum 2 pcs 1,0 mm², or 1 pc 1,5 mm² cross section copper wire.
The fixing spring for relay is included for sockets

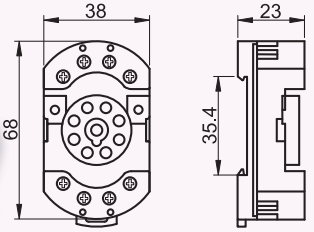


TRACON PF11-3A

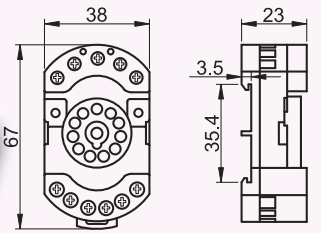




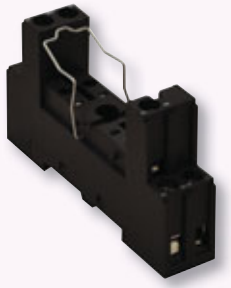
TRACON RS90.22

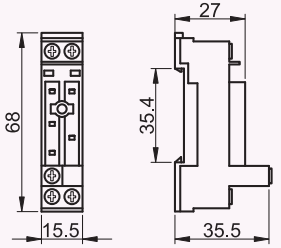


TRACON RS90.23

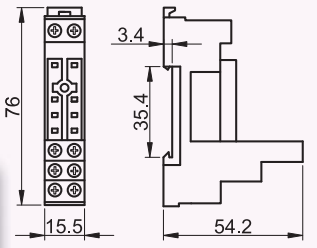


TRACON RSPSF-08AE

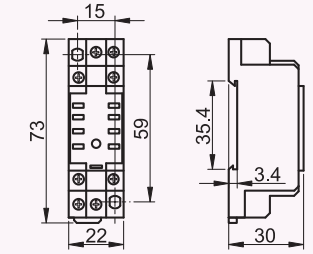




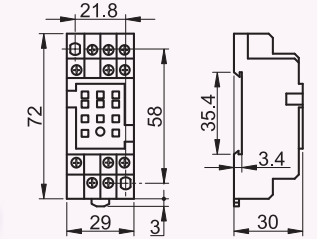
TRACON RSPSF-14AE



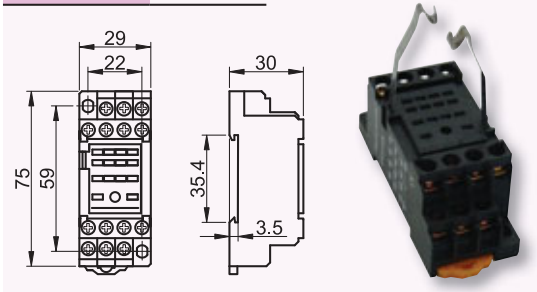
TRACON RSPYF-08A



TRACON RSPYF-11A



TRACON PYF14A



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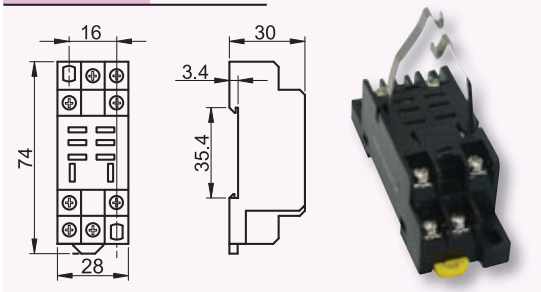

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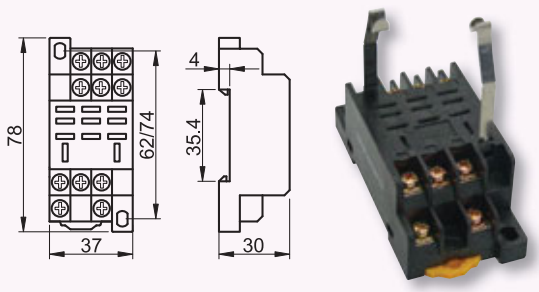
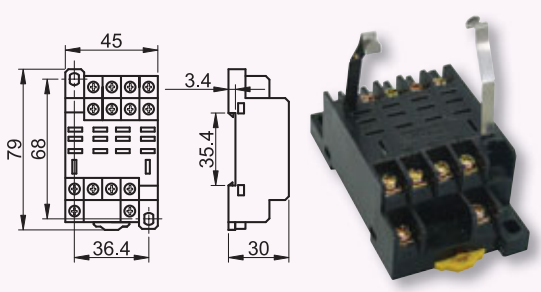
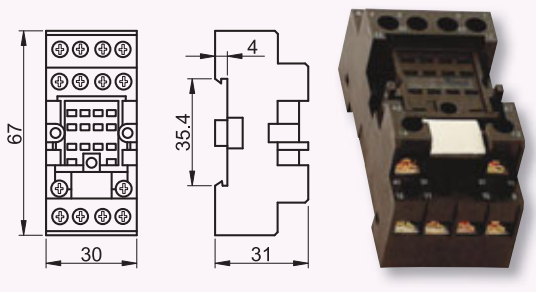


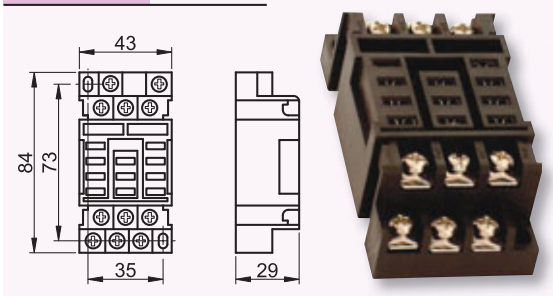
TRACON RSPTF-14A



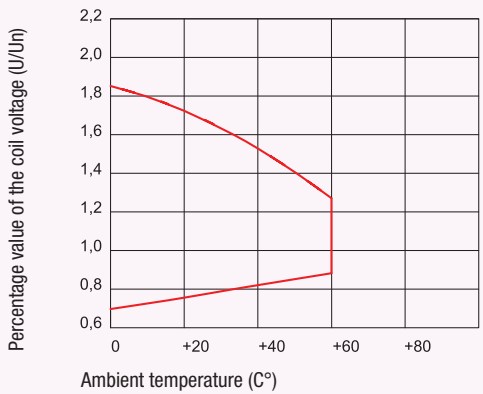
TRACON RSPMF-14



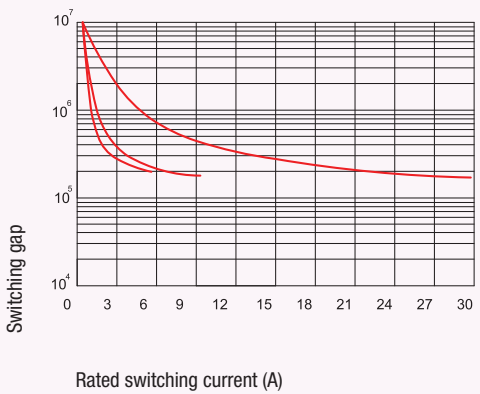
TRACON RSJQX-38FS



Operating range characteristic of DC coil



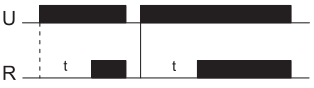
Electric life characteristic



Time relays

The modular time relays are designed for distribution box installation and they control a pre-defined time procedure. The relay to be used shall be selected depending on the complexity of the control task paying attention to the network's parameters. The star-delta relay helps to start electric motors with short circuit rotor according to the pre-adjusted time delay.

Timing functions



Switch-on delay: when supply voltage (U) is applied, the set time (t) starts running. After time t had been elapsed the output relay picks up. This state remains until the supply voltage is interrupted. If the supply voltage is interrupted before time t elapses, the elapsed time is deleted and restarted when the supply voltage is reapplied.

Switch-off delay: when supply voltage (U) is applied, the output relay picks up and the set time (t) starts running. After time t has elapsed, the output relay drops out. This state remains until the supply voltage is interrupted. If the supply voltage is interrupted before time t has elapsed, the output relay drops out. The elapse time is deleted and restarted when the supply voltage is reapplied.

Flasher, beginning with the pause: when supply voltage (U) is applied, the set time (t) starts running. After time t has elapsed, the output relay picks up and the set time is starts running again. After time t has elapsed, the output relay drops out. This cyclic process is working, until the supply voltage is applied.

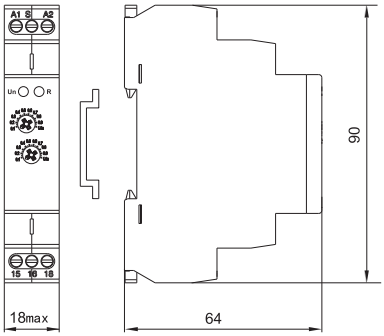
Flasher, beginning with the pulse: when supply voltage (U) is applied, the output relay picks up and the set time (t) starts running. After time t has elapsed, the output relay drops out and the set time t starts running again. This cyclic process is working, until the supply voltage is applied.

One function (ON delay) time relay

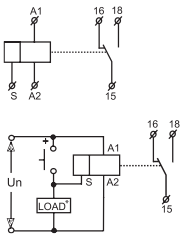
Ie (AC 1, 230 V) 16 A | [mm²] 1-2,5 | IP 20 | Ta -20..+55 °C | 35×7.5 | AUX 1×CO

Pictograms J/0

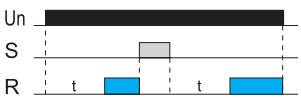
TRACON	Um	VAC A	0 10 ha %	ha %		
NARIDON	AC/DC 12-240 V	16 A 230 VAC	± 0,2 %	± 5 %	0,1 s - 10 h	62 g



Application:
- for tasks where the operation time depends on the switch ON of the device
- for pumps, heatings, ventillations, etc.



* Step button (impulse signal)



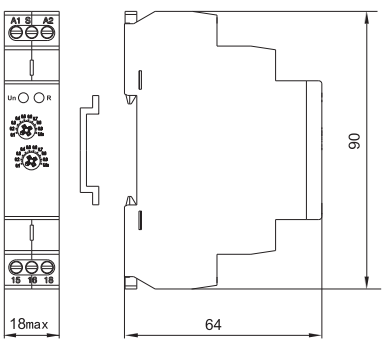
RELEVANT STANDARD
EN 61812-1

One function (OFF delay) time relay

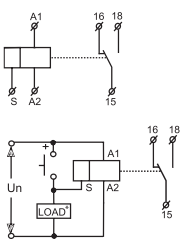
Ie (AC 1, 230 V) 16 A | [mm²] 1-2,5 | IP 20 | Ta -20..+55 °C | 35×7.5 | AUX 1×CO

Pictograms J/0

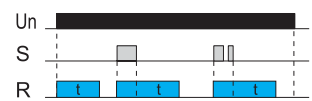
TRACON	Um	VAC A	0 10 ha %	ha %		
NARIDOFF	AC/DC 12-240 V	16 A 230 VAC	± 0,2 %	± 5 %	0,1 s - 10 h	62 g



Application:
- for tasks where the operation time is depends on the switch OFF of the device
- for pumps, heatings, ventillations, etc.



* Step button (impulse signal)



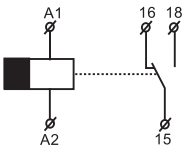
RELEVANT STANDARD
EN 61812-1

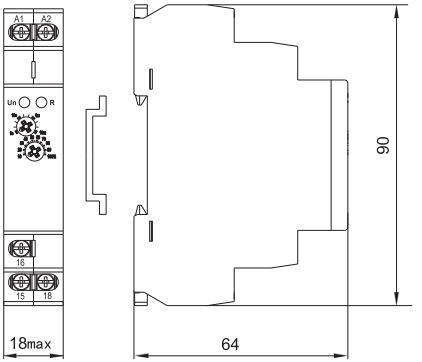
Delay OFF time relay with supply voltage actuation

Ie (AC 1, 230 V) 16 A | [mm²] 1-2,5 | IP 20 | Ta -20..+55 °C | 35×7.5 | AUX 1×CO | Pictograms J/0

TRACON	Um	VAC A	0 10 ha %	ha %		m
NARIDOFFS	AC/DC 12-240 V	16 A 230 VAC	± 0,2 %	± 5 %	0,1 s - 10 min.	86 g

Application:
- For emergency applications where the device must be operating in case of blackout.





RELEVANT STANDARD
EN 61812-1

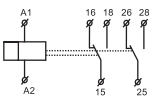
Star-delta time relay

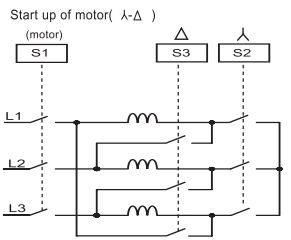
Ie (AC 1, 230 V) 16 A | [mm²] 1-2,5 | IP 20 | Ta -20..+55 °C | 35×7.5 | AUX 2×CO | Pictograms J/0

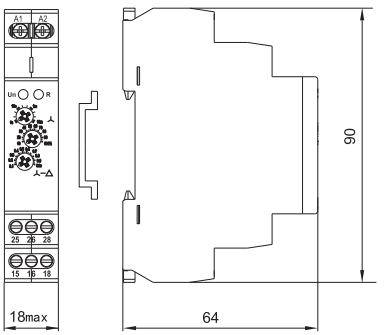
TRACON	Um	VAC A	0 10 ha %	ha %	t1	t2	m
NARIST	AC/DC 12-240 V	16 A 230 VAC	± 0,2 %	± 5 %	0,1 s - 10 min.	0,1 s - 1 s	86 g

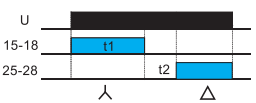
Application:
- Three phase electric motors with short circuit rotor need too much current during start procedure. To prevent damages, the supply voltage is first applied and the star contacts are closed. After the motor reaches its rated regime, relays commute back to triangle mode.

RELEVANT STANDARD
EN 61812-1





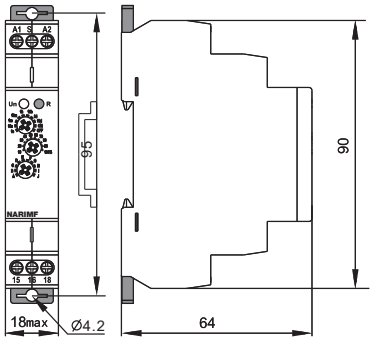




Multifunction time relay (10 functions)

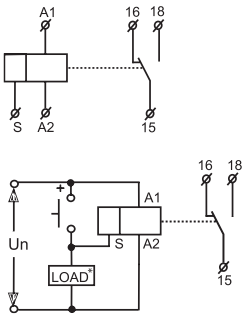
Ie (AC 1, 230 V) 16 A | [mm²] 1-2,5 | IP 20 | Ta -20..+55 °C | 35×7.5 | AUX 1×CO | Pictograms J/0

TRACON	Um	VAC A	0 10 ha %	ha %		
NARIMF	AC/DC 12-240 V	16 A 230 VAC	± 0,2 %	± 5 %	0,1 s - 10 d	64 g



Application

This multifunction time relay gives some wide range solutions for different time control tasks with only one device.

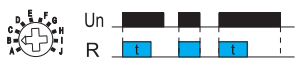


* Step button (impulse signal)

RELEVANT STANDARD
EN 61812-1

A: ON delay

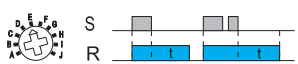
B: OFF delay



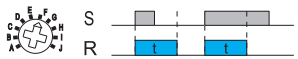
C: Flasher (starts OFF)

D: Flasher (starts ON)

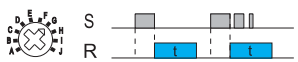
E: OFF delay (S control signal pause)



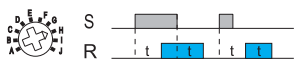
F: OFF delay (S control signal, 1 tact)



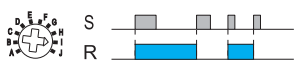
G: One tact, control impulse for running edge (cannot restart in ON state)



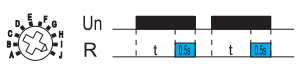
H: ON and OFF delay



I: Impulse relay

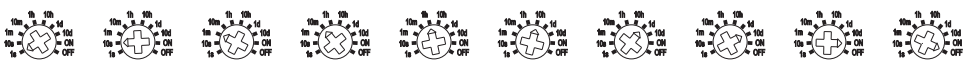


J: Impulse generator



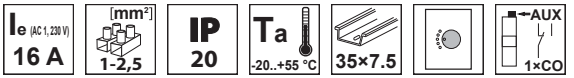
PULS = 0.5 s

Time range



0.1 - 1s | 1 - 10s | 6 - 60s | 1 - 10min | 6 - 60min | 1 - 10hr | 0.1 - 1day | 1 - 10day | only ON | only OFF

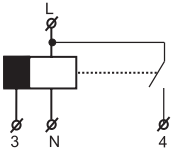
Staircase time switch

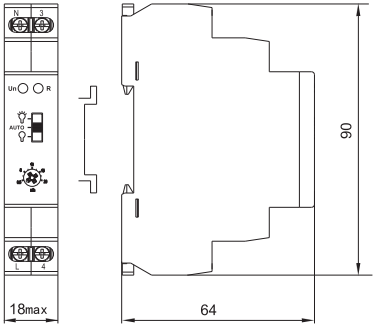


Pictograms J/0

TRACON		Ps	In	L	Σ	Pmax	
NARS	0,5 sec. - 20 min.	1.5 VA	16 A (cos φ = 1)	max. 250 m	× 50	max. 2.000 W	max. 400 W

Application
Can be used to control the time delay of staircases





RELEVANT STANDARD
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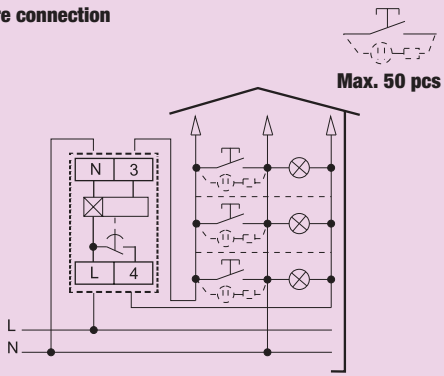
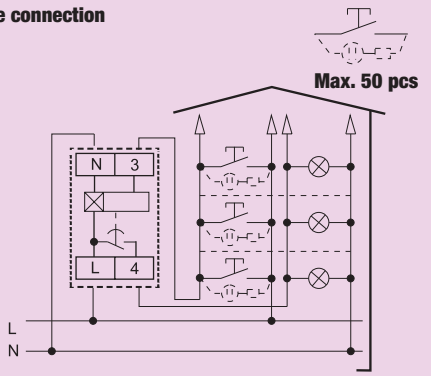
Connection diagram

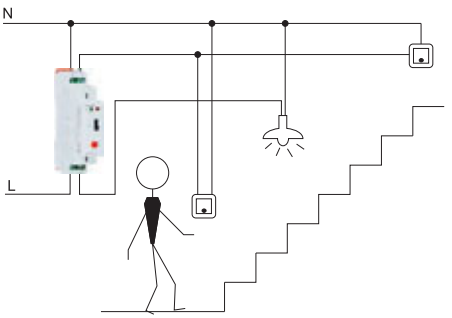
3-wire connection

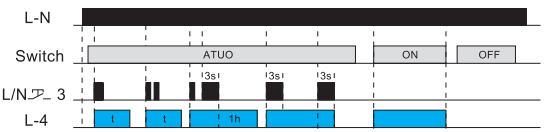


4-wire connection



Example





Light source types

Incandescent	2.000 W
Halogen 230 V	2.000 W
Compact fluorescent	400 W
LED	400 W

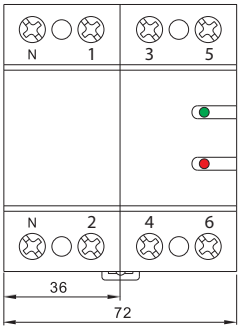
Auto reclose under- and overvoltage relay

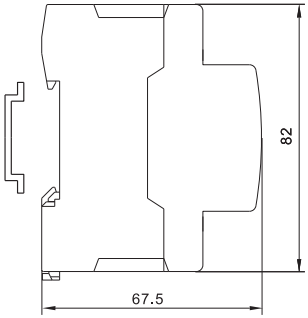
32 A gG | 230/400 V AC | ×4.000 | IP 20 | 35×7.5 | [mm²] 1,5-25 | Ta -20..+55°C | Ui 500 V

Pictograms J/0

TRACON

	EVOU02	EVOU04
Rated voltage	230 V AC	230 V AC (L-N)
Rated frequency	50 Hz	
Rated current	40 A (AC 1)	
Self power consumption	AC max. 3 VA	
Upper protection level	265 V (fix)	265 V (L-N) (fix)
Upper reclosing level	257 V (fix)	257 V (L-N) (fix)
Lower protection level	175 V (fix)	175 V (L-N) (fix)
Lower reclosing level	180 V (fix)	180 V (L-N) (fix)
Switching time	1 s	
Switching delay	2 s	
Reclosing time	30 s	
Measuring accuracy	≤1%	
Weight	120 g	250 g

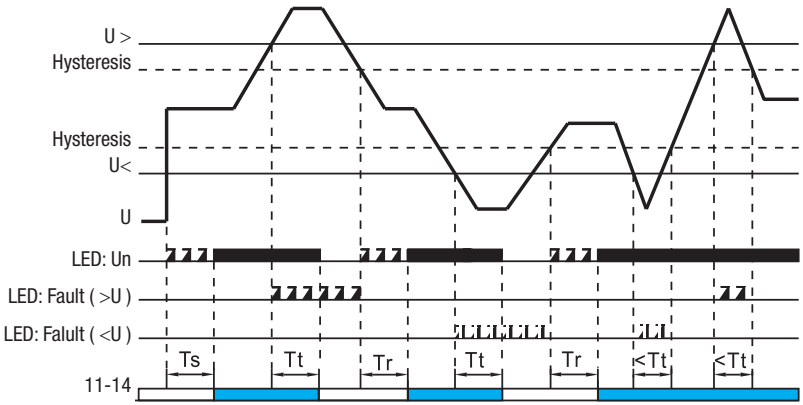




EVOU02

EVOU04

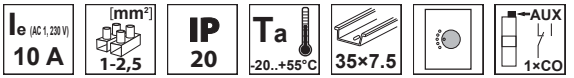
- Protection against over- and undervoltage for household devices
- Automaticly reclose after the voltage is restored
- LED status signalling



2P	4P
IN	IN
N 1 / N 2	N 1 3 5 / N 2 4 6
OUT	OUT

Ts: Operation run-up time
Tt: Switch-OFF delay
Tr: Reset time

Voltage relay for one phases

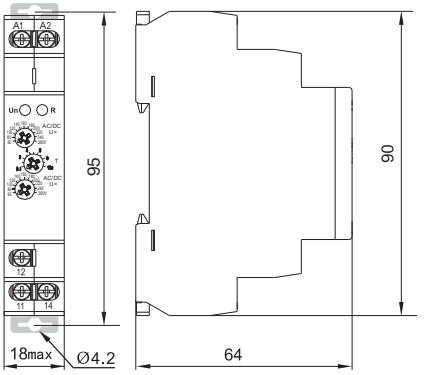


Pictograms J/0

TRACON	Um	VDC VAC A	Uh	Udown	Uup		
NARV1	AC/DC 110-240 V	10A 230V AC / 10A 24V DC	3 %	65 V ... Um	Um ... 260 V	0,1 s - 10 s	64 g

Application

- The user can adjust with the built-in potentiometer the allowed voltage range of the protected network. If the phase voltage is out of the allowed range the relay switches OFF the network. If the voltage level gets back to the allowed range the relay switches ON again.



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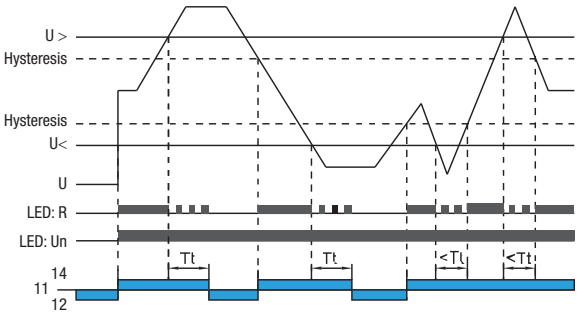
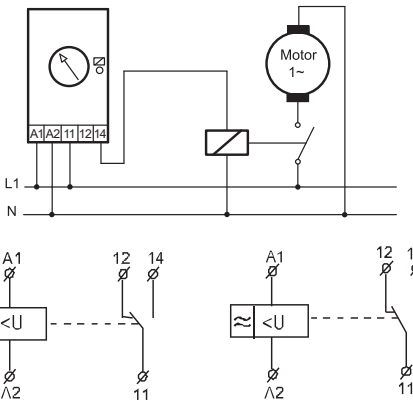
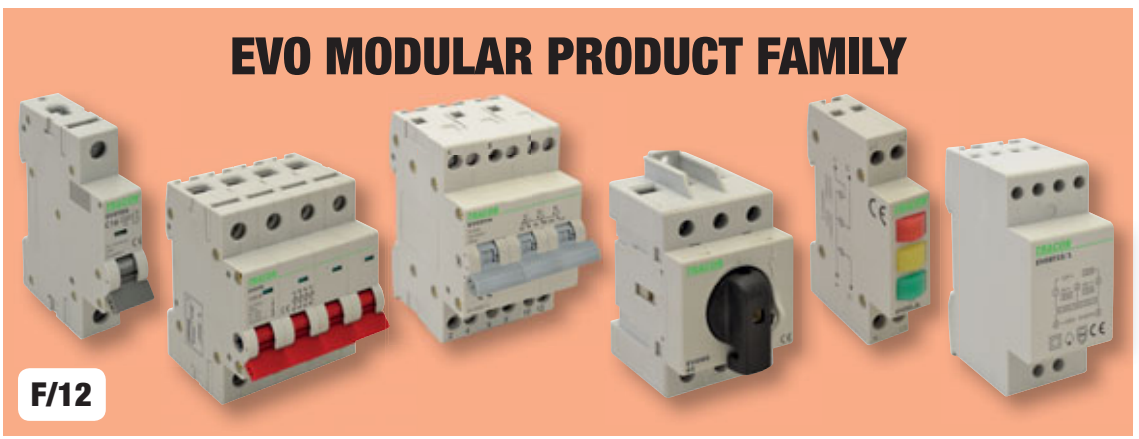
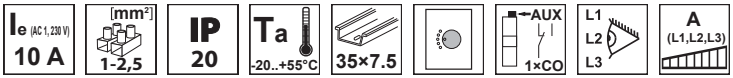
Phase rise and phase reduction diagram





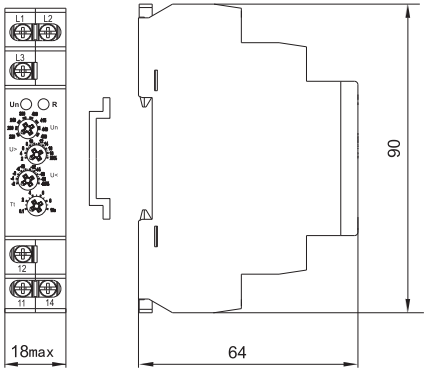


Voltage relay for three phases



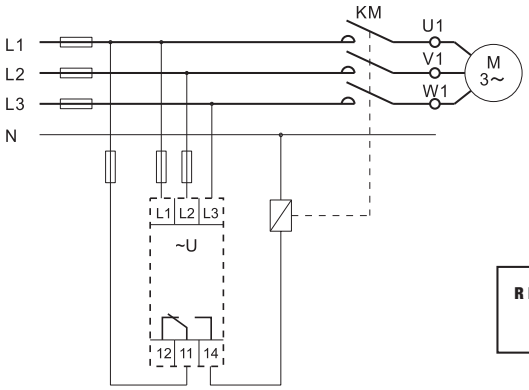
Pictograms J/0

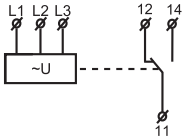
TRACON	Um	VDC VAC A	Uh	Udown	Uup	A (L1,L2,L3)		m
NARV	AC 220-460 V	10 A 230 VAC	2 %	-2 ... -20 %	+2 ... +20 %	8 % (fix)	0,1 s - 10 s	86 g



Application

- The user can adjust with the built-in potentiometer the allowed voltage range of the L1, L2 and L3 phases of the protected network. If any of the phase voltages is out of the allowed range the relay switches OFF the network. If all voltage levels are back to the allowed range the relay switches ON again.





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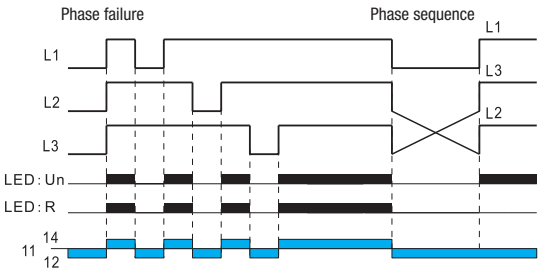
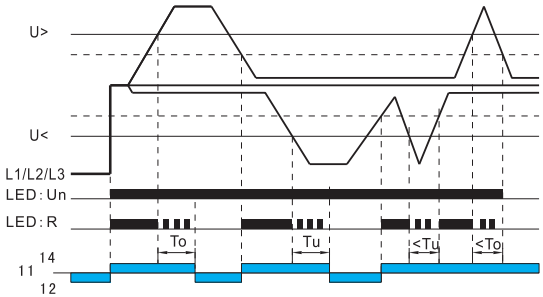
RELEVANT STANDARD
EN 60255-27

Phase failure and phase sequence diagram



Phase rise and phase reduction diagram



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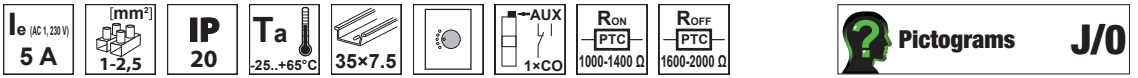
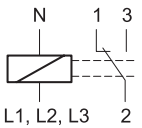
Voltage relay for three phase with adjustable asymmetry and overheat protection



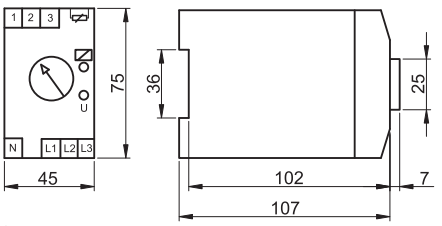
TRACON	Um	Uh	VDC VAC A	0 10 ha %	A (L1,L2,L3)	m
TFKV-04	3×230/400 V AC	max. 10 V	5 A 230 V AC	±1 %	±5 % - ±25 % (L1-L2)	85 g

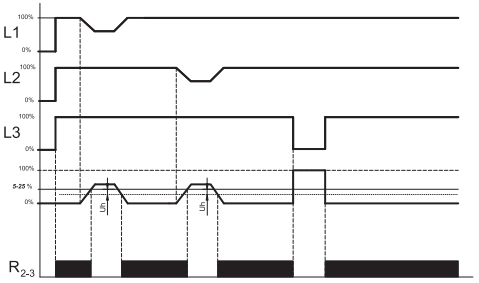


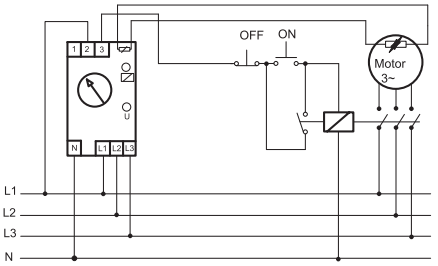
Designed to protect three phase motors from over voltage and overheat. The user can adjust the over voltage level with a potentiometer. If the L1, L2 and L3 phase voltages are normal the relay switches on. If any phase voltage is rising over the pre-adjusted value, the relay switches off and the motor stops. When the phase vol tage gets back in the nominal range, the relay switches on and the motor is able to start again. If the motor is provided with thermistor having PTC characteristics then the relay is able to protect the motor from overload. When the thermistor's resistance changes fixed into pictogram signed terminals the relay switches off the contactor and the motor stops. When the motor's temperature is falling back to nominal value the relay switches on and the motor is able to start again.

Description: if the overheat protection is not used, than the thermistor connection the relay terminals have to be short-circuited.

RELEVANT STANDARD
EN 60255-26, -27







PTC thermistor for voltage protective relays with overheat protection

If the protected motor has no PTC thermistor, an external PTC thermistor can be connected to the **TFKV-04** type voltage protection relay, to the marked terminal, according to the wiring diagram above.

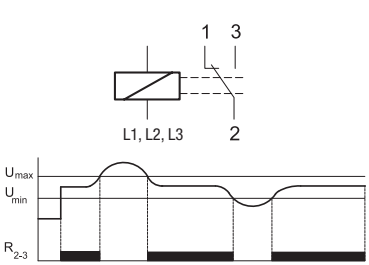
Voltage protection relay for three phase neutral-less lines

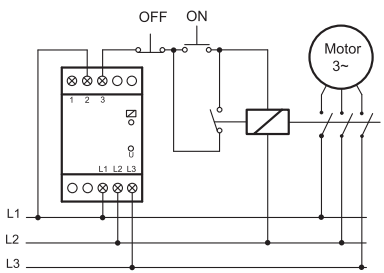
I_e (AC 1, 230 V)	[mm²]	IP	Ta		AUX
5 A	1-2,5	20	-25..+65°C	35×7.5	1×CO

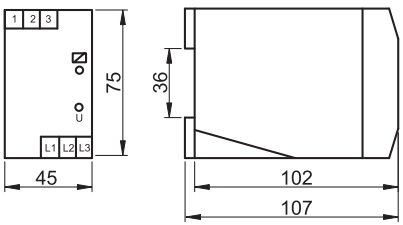
Pictograms J/0

TRACON	U_m	VDC VAC A	0 10 ha %	U_{down}	U_{up}	m
TFKV-02	3×400 V AC	5 A 230 V AC	±1 %	0,7 U_n (fix)	1,2 U_n (fix)	285 g

The device was designed to protect electric motors in three phase neutral-less lines. When L1 – L2 – L3 phase voltage values are normal then the relay switches on and the motor is able to start. If any of phase's voltage is falling under pre-adjusted value, or breaks then the relay switches off and the motor stops. If the abnormal phase voltage gets back back to the nominal value, then the relay switches on and the motor will be able to start.



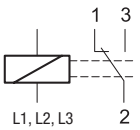




Compact voltage protection relay with delay adjustment

Pictograms **J/0**

TRACON	Um 1~	Um 3~	Uh	VDC VAC A	Udown	Uup		m
TFKV-09	3×1×230 V AC	3×230/400 V AC	max. 20 V	5 A 230 V AC 10 A 24 V AC/DC	160 V AC (fix)	260 V AC (fix)	5 min. – 15 min.	85 g
TFKV-10	3×1×230 V AC	3×230/400 V AC			160 V AC (fix)	260 V AC (fix)	0 s – 10 s	85 g



This microcontroller-based relay protects against both over and under voltage. It is designed for three phase circuits, but can be used in one-phase circuits, too. It detects voltage in each phase and switches off if necessary. If the voltage in any phase falls under 160 V, the relay drops immediately. If the voltage
in all three phases rises over 180 V, after an adjustable delay time (0 … 15 minutes) the device switches on, and the line turns active again. If the voltage in any phase rises over 260 V, the relay switches off the system. If the voltage in all three phases turns back into the adjusted interval, after an adjustable delay time (0 … 15 minutes) the device switches on. When used in one-phase systems, the phase wire has to be connected to all existing inputs.

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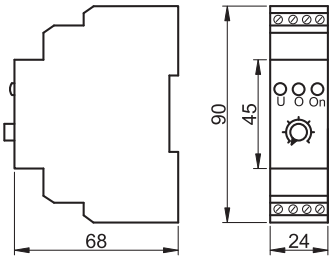
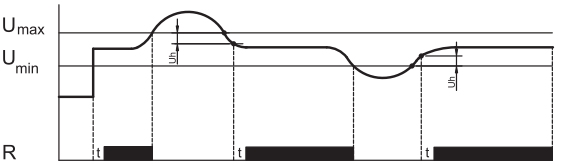
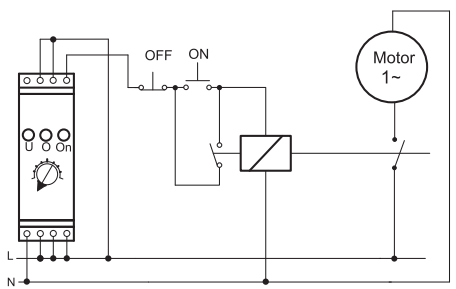
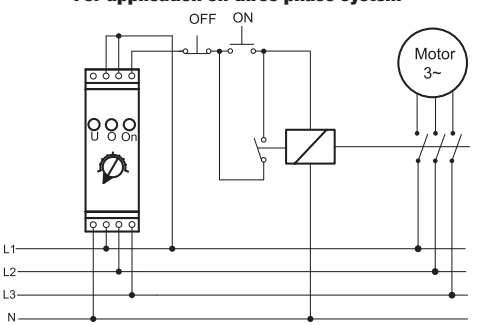




For application on one phase system



For application on three phase system



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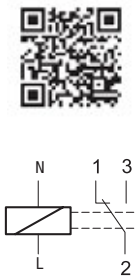
Adjustable over/ under current protection relay

Pictograms J/0

TRACON	Um	VDC VAC A	Idown	Iup	t1	t2	m
TFKV-AKA05	230 V AC	5 A 230 V AC	–	0,5 – 5 A	0,5 – 8 s	0,5 – 15 s	280 g
TFKV-AKD05	230 V AC		0,5 – 5 A	–	0,5 – 8 s	0,5 – 15 s	

These protection relays were designed to protect motors or lines against over and under current. We advise to use the device over 100A load. The device have two adjustable time delays (start and relay-output), and adjustable current protection level. The device compares the metered current with the pre-adjusted protection level.

If the metered current is within the rated range, then the relay's contacts will not change state on the output. The device has to be associated with a current transformer of 5 A secondary value. If the metered current is different from the rated level, then the relay's contacts will change state on the output after pre-adjusted delay. When the current turns back to rated level during delay time, then the relay gets back to normal state



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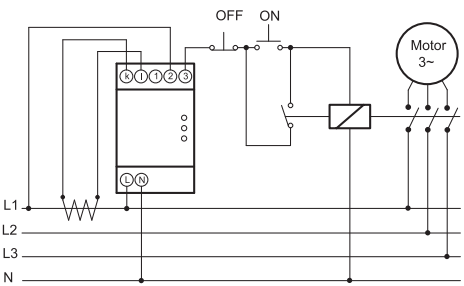
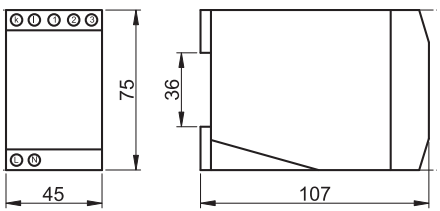
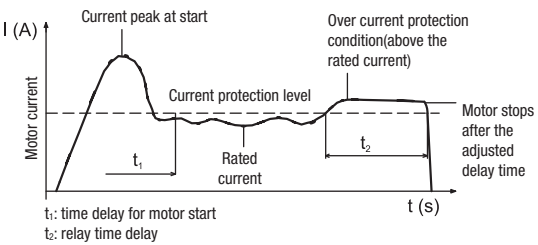
EN 60255-27



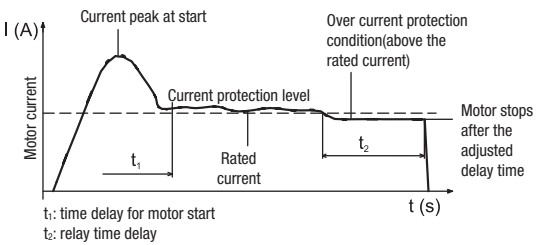


Operating diagrams - TFKV-AKA05



t1: time delay for motor start
t2: relay time delay

Operating diagrams - TFKV-AKD05



t1: time delay for motor start
t2: relay time delay

Protection wiring diagram for three-phase device