Time relays Ex9TR

- **Rated operating voltage 12 - 240 V AC/DC**
- **Adjustable time range**
- **Manual control switches on the front side**
- **Types of time relay**
  - **Single-function: Delay ON**
  - **Single-function: Interval ON**
  - **Single-function: Flasher**
  - **Multifunction: 10 functions**
  - **Asymmetric cycler**
  - **Delay starter Star / Delta**

Ex9TR time relays are used in automation, control and regulation (ventilation, lighting, heating, etc.). All our time relays can be powered by universal voltage 12 - 240 V AC/DC. The devices have manual control switches on the front for setting the time.
Types of time relay:

- **Single-function time relay** are offered in 3 types (Delay ON, Interval ON and Flasher).
- **Multifunction time relay** contains 10 adjustable functions with 1 or 3 changeover contacts.
- **Asymmetric cycler** with the possibility of setting the closing and opening time.
- **Delay starter Star / Delta** designed for starting motors.

Type Key

Ex9	TR	10	M	3CO
Product family	Product	Number of Functions	Type	Contacts
Ex9	TR: Time Relays	_: 1 function 10: 10 functions	DO: Delay ON IO: Interval ON F: Flasher M: Multifunction C: Cycler S-D: Delay starter Star / Delta	1CO: 1 change-over 2CO: 2 change-over 3CO: 3 change-over

Certification marks

CE

NOARK

Time relays Ex9TR

Single-function time relays

- Universal supply voltage 12 - 240 V AC/DC
- Adjustable time from 0.1 s to 100 h in 10 different intervals
- Fine set the time in the selected time interval (1-10)
- 3 types of relay : DO Delay ON, IO Interval ON, F Flasher
- Control input „S“ to pause timing

Supply voltage U_e	Function	Contacts	Article No.	Type	Packing
12 - 240 V AC/DC	Delay ON	1 CO	111731	Ex9TR DO 1CO	1/10/120
12 - 240 V AC/DC	Interval ON	1 CO	111737	Ex9TR IO 1CO	1/10/120
12 - 240 V AC/DC	Flasher	1 CO	111738	Ex9TR F 1CO	1/10/120

Multifunction time relays

- Universal supply voltage 12 - 240 V AC/DC
- Adjustable time from 0.1 s to 10 days in 10 different intervals
- Fine set the time in the selected time interval (1 - 10)
- 10 setable functions
- Versions with 1x 16 A changeover contact or 1x 16 A + 2x 8 A changeover contacts

Supply voltage U_e	Function	Contacts	Article No.	Type	Packing
12 - 240 V AC/DC	Multifunction	1 CO	111732	Ex9TR 10M 1CO	1/10/120
12 - 240 V AC/DC	Multifunction	3 CO	111733	Ex9TR 10M 3CO	1/10/120

Asymmetric cycler

- Universal supply voltage 12 - 240 V AC/DC
- Adjustable time from 0.1 s to 100 days in 10 different intervals
- Fine set the time in the selected time interval (1 - 10)
- Possibility of setting the cycle time interval and the gap
- Cycler starting with a pulse or a gap

Supply voltage U_e	Function	Contacts	Article No.	Type	Packing
12 - 240 V AC/DC	Cycler	1 CO	111729	Ex9TR C 1CO	1/10/120

Time relays Ex9TR

Delay starter Star/Delta

- Universal supply voltage 12 - 240 V AC/DC
- Adjustable time from 0.1 s to 100 days in 10 different intervals
- Fine set the time in the selected time interval (1 - 10)
- Setting the time in the star connection t1 and setting the delay t2 between the star/delta switch

Supply voltage U_e	Function	Contacts	Article No.	Type	Packing
12 - 240 V AC/DC	Star/Delta	2 CO	111730	Ex9TR S-D 2CO	1/10/120

Technical Data Ex9TR DO / IO / F

Single-function time relay

General parameters

Adjustable time range from 0.1 s to 100 hours
Types of relay: DO Delay ON, IC Interval ON, F flasher
Manual time interval and fine time control switches on the front
The relays are initiated by the supply voltage, ie it performs 1 cycle when the voltage is applied
Control input „S“ to pause timing

Electrical parameters

	Ex9TR DO 1CO	**Ex9TR IO 1CO**	**Ex9TR F 1CO**
Functions	**Delay ON**	**Interval ON**	**Flasher**
Tested according to	EN 61812-1		
Rated operating voltage U_e	12 - 240 V AC/DC		
Operating voltage tolerance	- 15 %; +10 %		
Rated frequency f	50/60 Hz		
Rated current I_e	16 A / AC1		
Max. power input	2 VA / 1.5 W		
Power consumption	≤ 1.2 W		
Supply indication	green LED		
Switch contact	1x change-over, 16 A		
Adjustment range	0.1 s — 100 h		
Time setting	control switch and potentiometer		
Time deviation	5 % - mechanical setting		
Repeat accuracy	0.2 % - set value stability		
Switching power	4000 VA / AC1, 384 W / DC		
Switching voltage	250 V AC1 / 24 V DC		
Output indication	red LED		
Electrical life (AC1)	50 000 operation cycles		
Max. control power input	4.5 VA / 0.3 W		
Impulse length	min. 25 ms / max. unlimited		
Reset time	max. 150 ms		

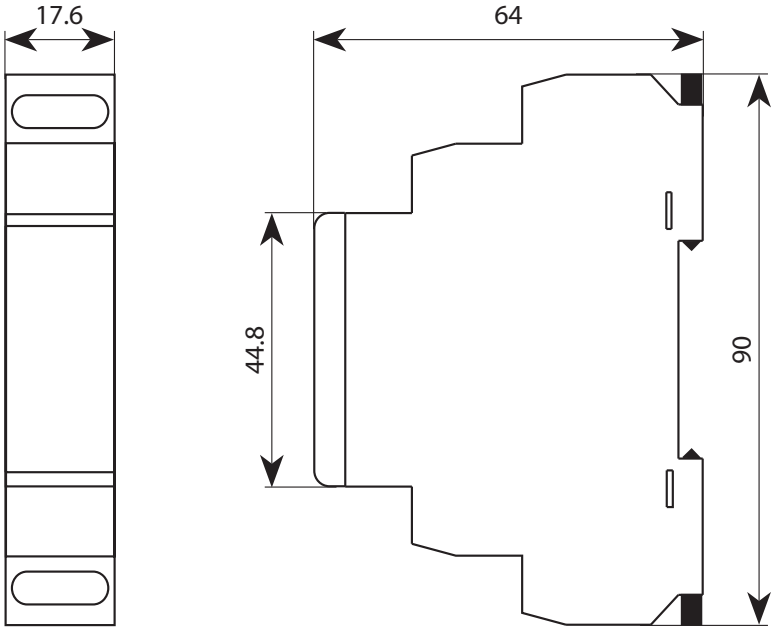
Mechanical parameters

Device width	17.6 mm
Device height	90 mm
Frame size	45 mm
Mounting	onto 35 mm device rail (DIN)
Mounting position	any
Degree of protection	IP20
Terminals	screw terminals
Terminal capacity	1 — 2.5 mm^2
Fastening torque of terminals	0.8 Nm
Mechanical life	10 000 000 operation cycles
Ambient temperature	-20°C — +55°C
Overvoltage category	III
Installation class	II
Pollution degree	2
Weight	0.061 kg

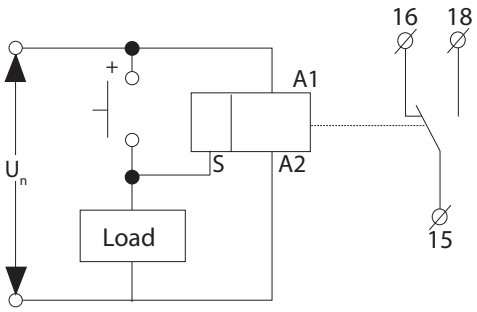
Technical Data Ex9TR DO / IO / F

Single-function time relay

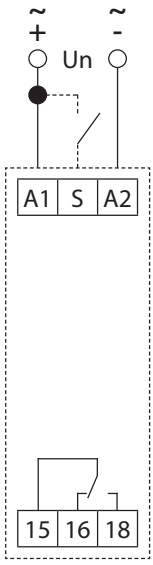
Dimensions



Wiring diagrams



A load (eg contactor, indicator light or other device) can be connected in parallel between terminals S-A2 without disturbing the correct function of the relay.



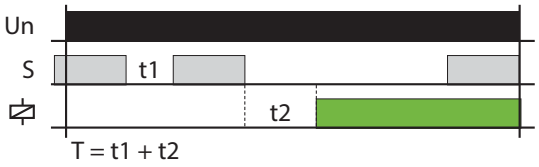
Technical Data Ex9TR DO / IO / F

Single-function time relay

Functions

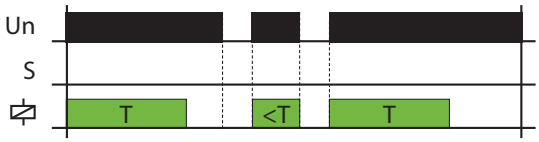
Ex9TR DO 1CO - Delay ON

When the supply voltage is applied, the time delay T begins. At the end of the timing, the relay closes and this state lasts until the supply voltage is disconnected.

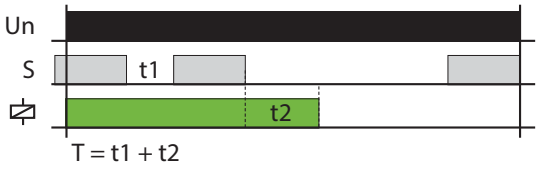


If the control contact is closed and then the supply voltage is connected, the relay is open and the timing does not start until the control contact is opened. When the timing is over, the relay closes. If the control contact is closed during timing,the timing is interrupted and does not resume until the control contact is opened.

Ex9TR IO 1CO - Interval ON

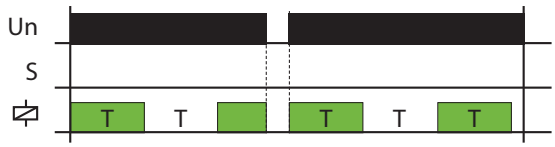


When the supply voltage is applied, the relay closes and the time delay T begins the end of the relay timing opens and this state lasts until the supply voltage is disconnected.

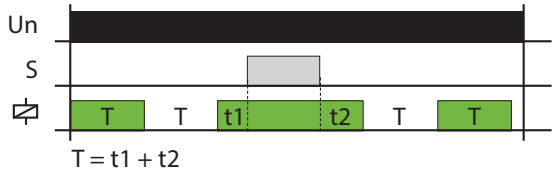


If the control contact is closed and then the supply voltage is connected, the relay closes and the timing does not start until the control contact is opened. After completion of the relay timing opens. If the control contact is closed during timing, the timing is interrupted and does not resume until the control contact is opened

Ex9TR F 1CO - Flasher



When the supply voltage is applied, the relay closes and the time delay T begins the end of the timing opens the relay and the time delay T runs again. After the end the relay timing closes again and the sequence is repeated until the supply voltage is disconnected.



If the control contact is closed during timing, the timing is interrupted and does not resume until the control contact is opened.

Note: The relays are initiated by the supply voltage, ie it performs 1 cycle when the voltage is applied.

Technical Data Ex9TR 10M

Multifunction time relay

General parameters

Time adjustment range from 0.1 s to 10 days
Version with 1 changeover contact or with 3 changeover contacts
10 adjustable time functions
5 functions controlled by input voltage and 5 functions controlled by control contact
Manual control switches for time interval, fine time setting and function selection on the front

Electrical parameters

	Ex9TR 10M 1CO	**Ex9TR 10M 3CO**	
Functions	**10 adjustable functions**		
Tested according to	EN 61812-1		
Rated operating voltage U_e	12 - 240 V AC/DC		
Operating voltage tolerance	- 15 %; +10 %		
Rated frequency f	50/60 Hz		
Rated current I_e	16 A / AC1		
Max. power input	2 VA / 1.5 W		
Power consumption	≤ 1.2 W	≤ 2.4 W	
Supply indication	green LED		
Switch contact	1x change-over contact , 16 A	1x change-over contact, 16 A	2x change-over contact 8 A
Adjustment range	4000 VA / AC1, 384 W / DC	4000 VA / AC1, 384 W / DC	2000 VA / AC1, 192 W / DC
Time setting	control switch and potentiometer		
Time deviation	5 % - mechanical setting		
Repeat accuracy	0.2 % - set value stability		
Switching power	0.1 s — 10 days		
Switching voltage	250 V AC1 / 24 V DC		
Output indication	red LED		
Electrical life (AC1)	50 000 operation cycles	50 000 cycles	10 000 cycles
Max. control power input	4.5 VA / 0.3 W		
Impulse length	min. 25 ms / max. unlimited		
Reset time	max. 150 ms		

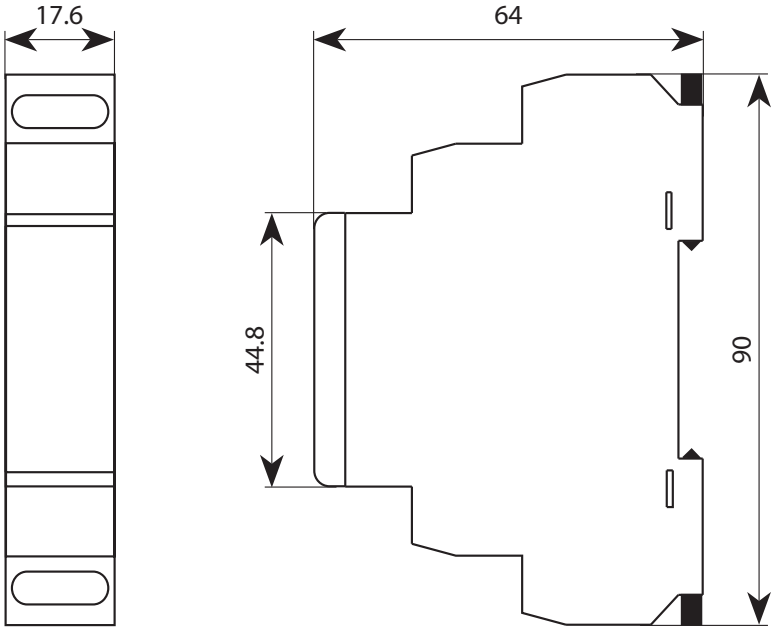
Mechanical parameters

Device width	17.6 mm	
Device height	90 mm	
Frame size	45 mm	
Mounting	onto 35 mm device rail (DIN)	
Mounting position	any	
Degree of protection	IP20	
Terminals	screw terminals	
Terminal capacity	1 — 2.5 mm^2	
Fastening torque of terminals	0.8 Nm	
Mechanical life	10 000 000 operation cycles	
Ambient temperature	-20°C — +55°C	
Overvoltage category	III	
Installation class	II	
Pollution degree	2	
Weight	0.062 kg	0.085 kg

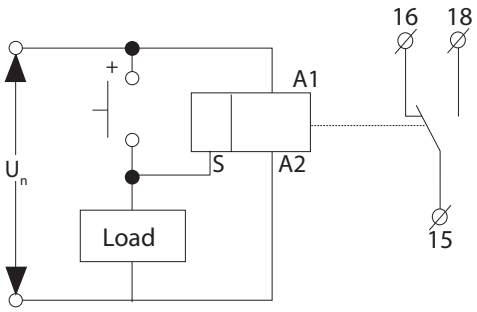
Technical Data Ex9TR 10M

Multifunction time relay

Dimensions

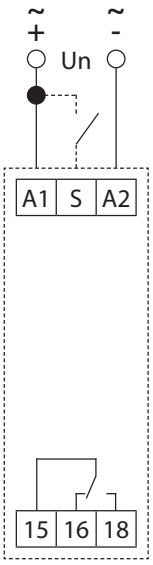


Wiring diagram

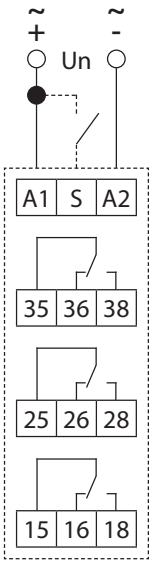


A load (eg contactor, indicator light or other device) can be connected in parallel between terminals S-A2 without disturbing the correct function of the relay.

Ex9TR 10M 1CO



Ex9TR 10M 3CO

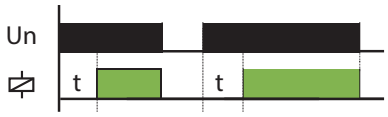


Potential difference between supply terminals (A1-A2), output contact 2 (25-26-28) and output contact 3 (35-36-38)
must not exceed 250 V AC rms / DC.

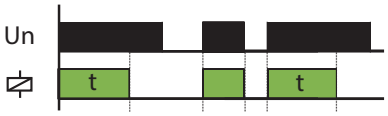
Technical Data Ex9TR 10M

Multifunction time relay

Functions

a 

Delay ON

b 

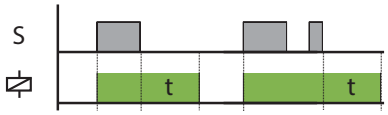
Interval ON

c 

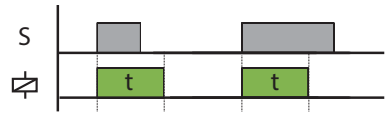
Flasher - OFF first

d 

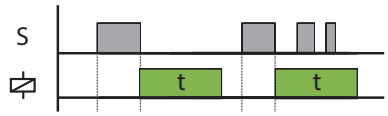
Flasher - On first

e 

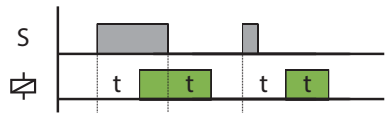
OFF Delay

f 

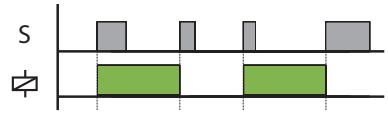
SINGLE SHOT

g 

SINGLE SHOT falling edge

h 

ON/OFF DELAY

i 

MEMORY LATCH (impulse relay)

j 

PULSE GENERATOR = 0,5s

Technical Data Ex9TR C

Asymmetric cycler

General parameters

Adjustable time range from 0.1 s to 100 days
Possibility to set PULSE and GAP time
Manual time interval and fine time control switches on the front
Cycler starting with pulse or starting with gap with connected terminal „S“

Electrical parameters

	Ex9TR C 1CO
Functions	**Asymmetric cycler**
Tested according to	EN 61812-1
Rated operating voltage U_e	12 - 240 V AC/DC
Operating voltage tolerance	-1 5 %; +10 %
Rated frequency f	50/60 Hz
Rated current I_e	16 A / AC1
Max. power input	2 VA / 1.5 W
Power consumption	≤ 1.2 W
Supply indication	green LED
Switch contact	1x change-over contact, 16 A
Adjustment range	0.1 s — 100 days
Time setting	control switch and potentiometer
Time deviation	5 % - mechanical setting
Repeat accuracy	0.2 % - set value stability
Switching power	4000 VA / AC1, 384 W / DC
Switching voltage	250 V AC1 / 24 V DC
Output indication	red LED
Electrical life (AC1)	50 000 operation cycles
Max. control power input	4.5 VA / 0.3 W
Reset time	max. 150 ms

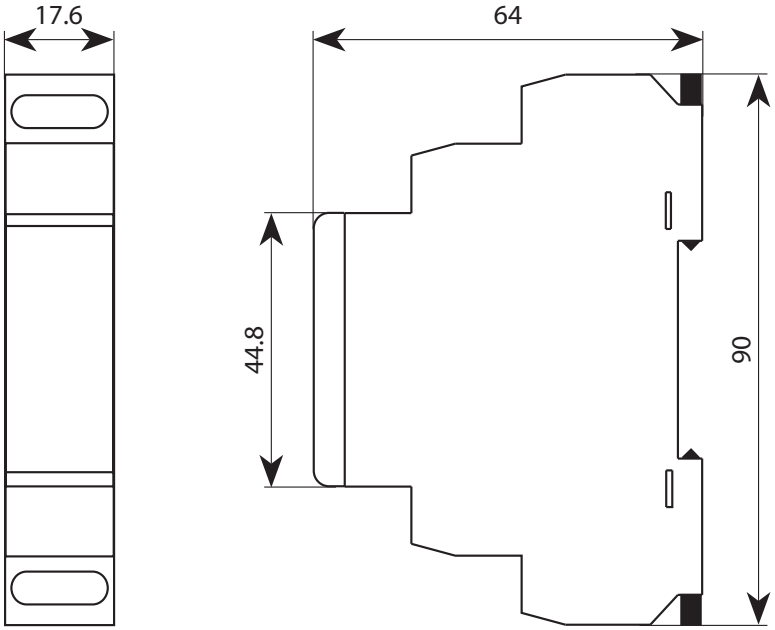
Mechanical parameters

Device width	17.6 mm
Device height	90 mm
Frame size	45 mm
Mounting	onto 35 mm device rail (DIN)
Mounting position	any
Degree of protection	IP20
Terminals	screw terminals
Terminal capacity	1 — 2.5 mm^2
Fastening torque of terminals	0.8 Nm
Mechanical life	10 000 000 operation cycles
Ambient temperature	-20°C — +55°C
Overvoltage category	III
Installation class	II
Pollution degree	2
Weight	0.061 kg

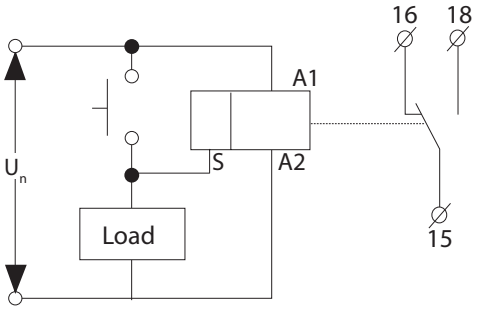
Technical Data Ex9TR C

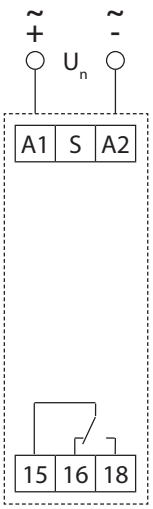
Asymmetric cycler

Dimensions

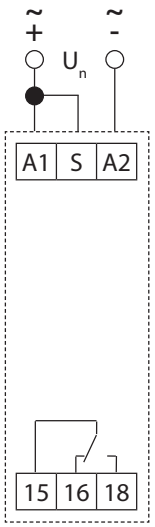


Wiring diagrams





Ex9TR C - Cycler starting with pulse



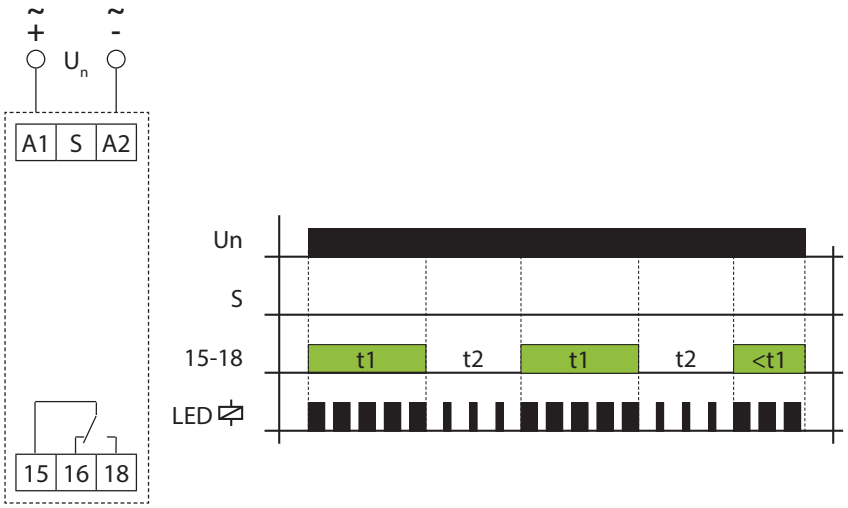
Ex9TR C - Cycler starting with gap

Technical Data Ex9TR C

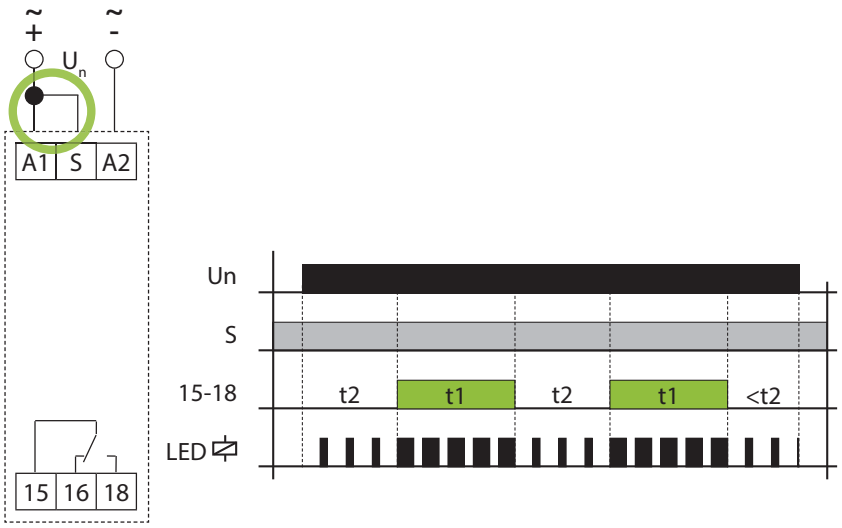
Asymmetric cycler

Functions

Ex9TR C - Cycler
starting with pulse



Ex9TR C - Cycler
starting with gap



Technical Data Ex9TR S-D

Delay started Star/Delta

General parameters

Adjustable time range from 0.1 s to 100 hours in star connection
Adjustable time delay from 0.1 - 1 s
Manual time interval and fine time control switches on the front

Electrical parameters

	Ex9TR S-D 2CO	
Functions	**Delay starter Star/Delta**	
Tested according to	EN 61812-1	
Rated operating voltage U_e	12 - 240 V AC/DC	
Operating voltage tolerance	- 15 %; +10 %	
Rated frequency f	50/60 Hz	
Rated current I_e	16 A / AC1	
Max. power input	2 VA / 1.5 W	
Power consumption	≤ 1.2 W	
Supply indication	green LED	
Switch contact	2x change-over contact, 16 A	
Adjustment range	t1 = 0.1 s — 100 h	t2 = 0.1 — 1s
Time setting	control switch and potentiometer	
Time deviation	5 % - mechanical setting	
Repeat accuracy	0.2 % - set value stability	
Switching power	4000 VA / AC1, 384 W / DC	
Switching voltage	250 V AC1 / 24 V DC	
Output indication	red LED	
Electrical life (AC1)	50 000 operation cycles	
Reset time	max. 150 ms	

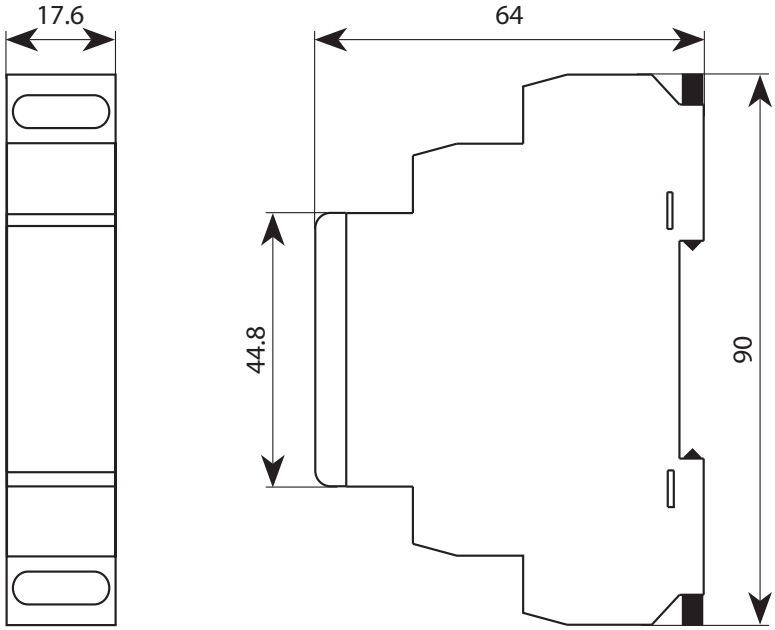
Mechanical parameters

Device width	17.6 mm
Device height	90 mm
Frame size	45 mm
Mounting	onto 35 mm device rail (DIN)
Mounting position	any
Degree of protection	IP20
Terminals	screw terminals
Terminal capacity	1 — 2.5 mm^2
Fastening torque of terminals	0.8 Nm
Mechanical life	10 000 000 operation cycles
Ambient temperature	-20°C — +55°C
Overvoltage category	III
Installation class	II
Pollution degree	2
Weight	0.078 kg

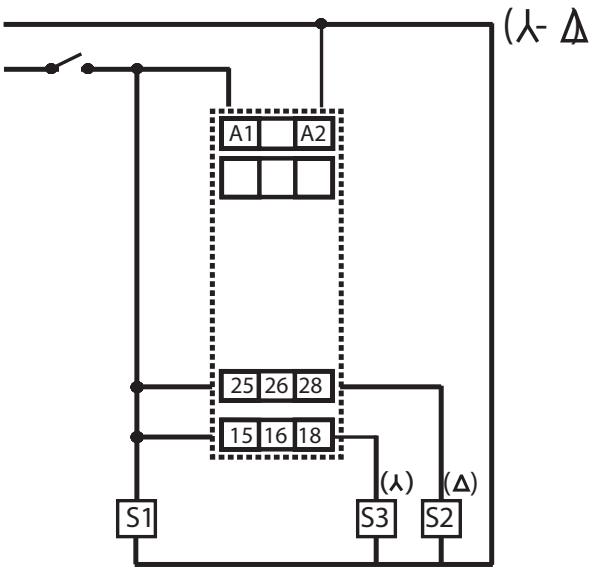
Technical Data Ex9TR S-D

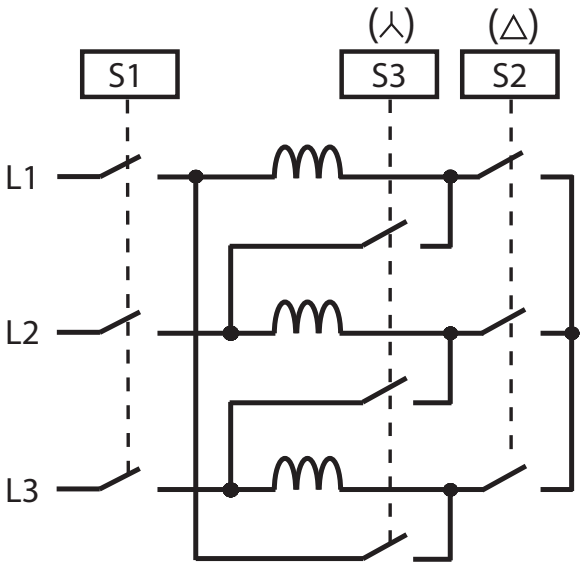
Delay starter Star/Delta

Dimensions



Wiring diagrams

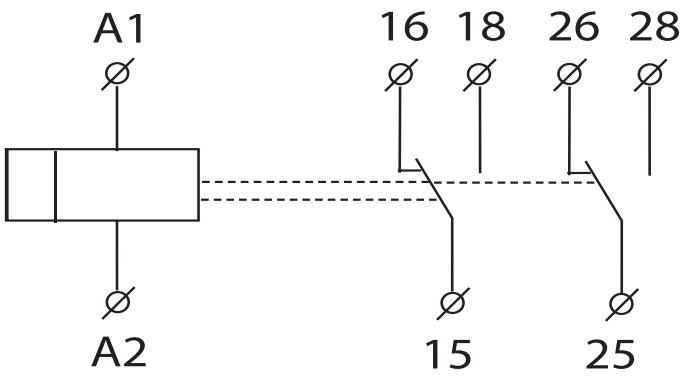




Technical Data Ex9TR S-D

Delay starter Star/Delta

Symbol



Functions

Ex9TR S-D Delay starter Star/Delta