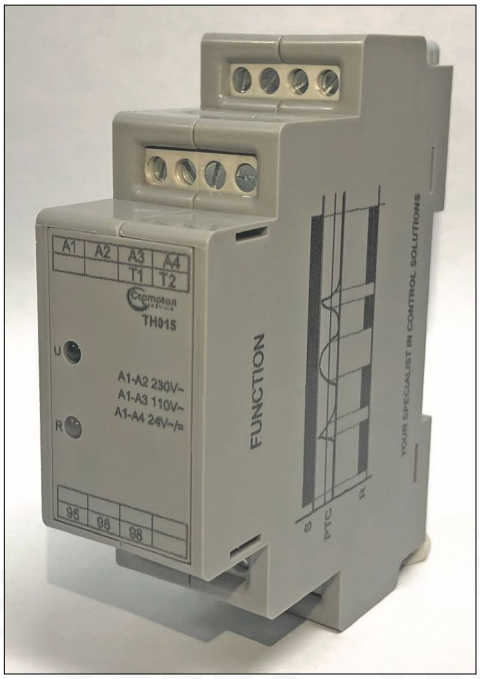
TYPE / Order Code: **TH015**

THERMISTOR MONITORING RELAY



GENERAL SPECIFICATION/FEATURES

- Din rail mounted
- Modern modular design
- Width 27mm (1.5 modules)
- SPCO output
- Tri voltage 24VAC/DC, 110VAC, 230VAC
- Tri LED status indication
- UKCE marked

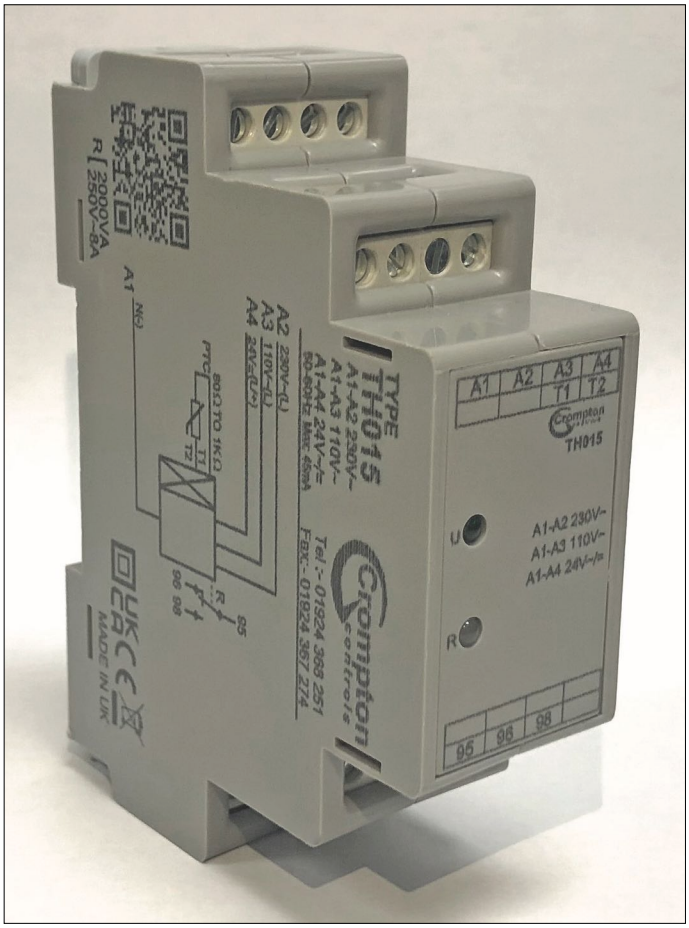
DESCRIPTION & MODE OF OPERATION

An attractive modern designed thermistor relay in a din rail mounted modular style housing of 1.5 modules width (27mm). The units are supply voltage selectable via the connection of different terminals. On the connection of the supply voltage the two LED's illuminate green and the output relay will energise. Should the PTC sensor embedded within the motor windings resistance rise above 3.3 KOhms due to a rise in motor temperature the output relay will de-energise and one of the LED's will illuminate orange. Once tripped the motor temperature would have to cool sufficiently for the resistance to drop below 1.8 KOhms to allow the output relay to re-energise again. The fixed tripping and reset values are industry recognised acceptable values.

Should the input resistance short circuit or go low below 30 Ohms this will be regarded as a fault and will be indicated by one green and one red LED, the output relay will be de-energised. Likewise, should the sensor go open circuit this will be infinity resistance and therefore high which will be indicated by one green and one orange LED, the output relay will be de-energised.

All terminal details and information along with the UKCE mark is clearly marked on the sides of the housing.

TYPE / Order Code: **TH015**



SPECIFICATIONS

Supply & Measuring

Supply voltage:	A1 to A2 (230VAC) A1 to A3 (110VAC) A1 to A4 (24VAC) A1 to A4 + (24VDC)
Max power consumption:	11VA
Insulation:	2.5KV 50Hz impulse
Sensor voltage:	Max 2.5VDC (open circuit 12VDC)
Trip level:	3.3 KOhms
Reset level:	1.8 KOhms
Min cold sensor:	30 Ohms

Accuracy

Repeat accuracy:	< 0.5%
Temperature dependance:	< 0.1% per 1°C

LED indication

2 green LED's:	Healthy & relay energised
1 green & 1 red LED:	Short circuited thermistor or low resistance < 30 Ohms, relay de-energised
1 green & 1 orange LED:	Open circuit thermistor or high resistance > 3.3 KOhms, relay de-energised

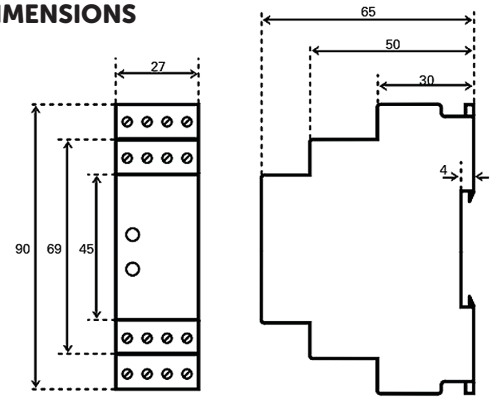
Relay output

Output contacts:	DPCO 8Amps/250V AC1
Mechanical life:	30 Million ops
Electrical life:	200K ops at max rated load

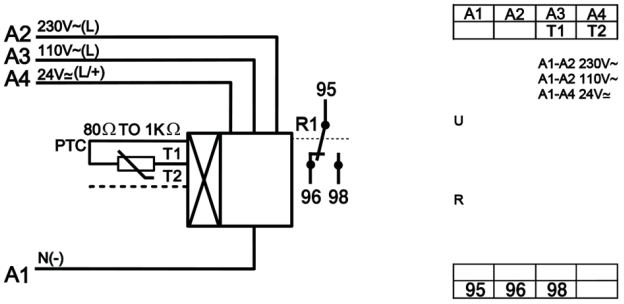
General

Operating temperature:	-20°C to +65°C
Storage temperature:	-20°C to +65°C
Max cable size:	4mm
In accordance with:	EN61000-6-1: 2007 EN61000-6-3: 2007 EN61010-1: 2002
Housing material	Polycarbonate, Auto extinguishable to UL 94 V-0

DIMENSIONS



CONNECTIONS



TYPE / Order Code: **TH016**

THERMISTOR MONITORING RELAY

GENERAL SPECIFICATION/FEATURES

- Din rail mounted
- Dual LED indication
- Isolation via transformer

DESCRIPTION & MODE OF OPERATION

Thermistor monitoring relay, in a din rail housing available as SPCO. The relay will monitor a series circuit of up to 6 thermistors having a total "healthy" resistance not exceeding 1500 Ohms, the output relay will be energised indicated also by a red LED. Should overheating occur the individual resistance of a thermistor will rapidly rise above 3.3 KOhms at which point the normally energised relay will de-energise, accompanied by the red LED extinguishing.

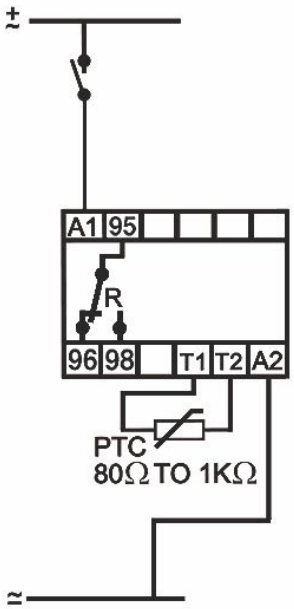
All terminal details and information along with the UKCE mark is clearly marked on the sides of the housing.

TYPE / Order Code: **TH016**

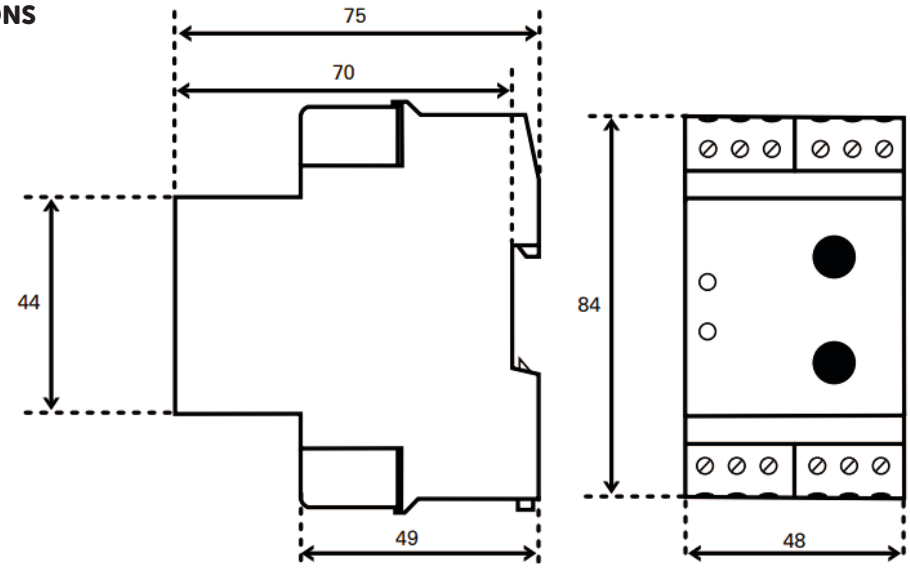
SPECIFICATIONS

Supply & Measuring	
Nominal supply tolerance:	±15%
Isolation AC versions:	Via transformer
Isolation DC versions:	None
Operating level:	3.3 KOhms ±5%
Reset level:	1.8 KOhms ±10%
Max cold resistance of detection circuit:	1500 Ohms
Max No. of PTC sensors:	6
Sensor voltage:	2.5V DC max
Short circuit detection:	30 Ohms ±20%
Operation delay on thermistor operation:	0.5 sec
Relay output	
Output contacts:	SPCO 10Amps/250V AC1
Mechanical life:	30 Million ops
Electrical life:	200K ops at max rated load
General	
Operating temperature:	-20°C to +65°C
Storage temperature:	-20°C to +65°C
Max cable size:	4mm
In accordance with:	EN61000-6-1: 2007 EN61000-6-3: 2007 EN61010-1: 2002
Housing material	Polycarbonate, Auto extinguishable to UL 94 V-0

CONNECTIONS

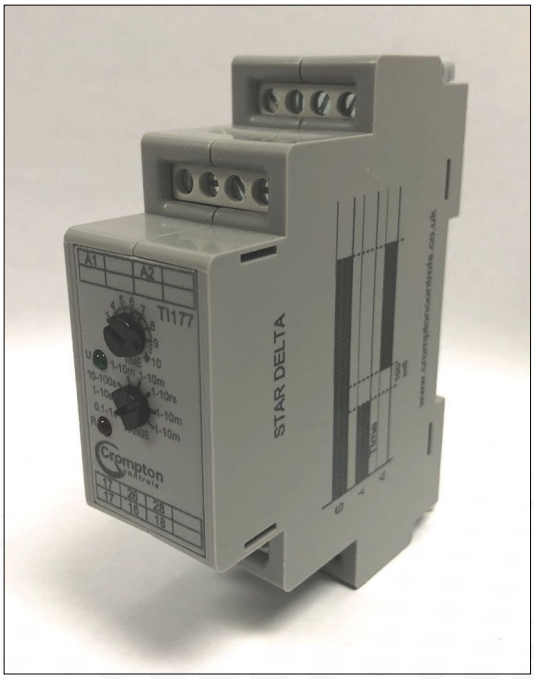


DIMENSIONS



TYPE / Order Code: **TI177**

STAR DELTA MULTI-VOLTAGE TIMER



GENERAL SPECIFICATION/FEATURES

- Din rail mounted
- Modern modular design
- Width 27mm (1.5 modules)
- 2x SPCO output version
- Multi voltage 12-250VACDC
- Multi time range 0.1 sec to 10 mins
- Dwell time 100mSec
- Duel LED indication
- UKCE marked

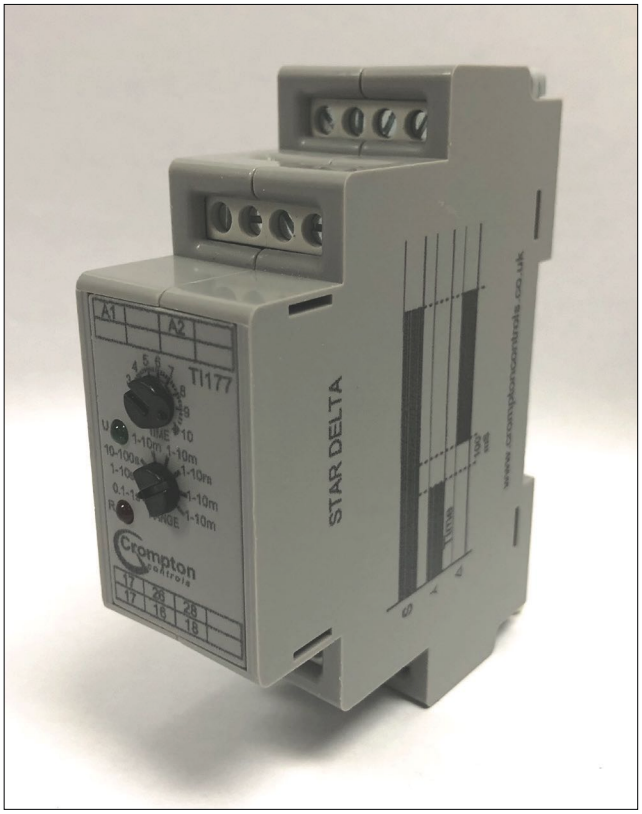
DESCRIPTION & MODE OF OPERATION

An attractive modern designed star delta timer in a din rail mounted modular style housing of 1.5 modules width (27mm). The timer features the facility of double deck terminals thus enabling the timer to be available also in a unique 2 x DPCO version. A selector switch is provided to select four different "star" time ranges from 0.1 sec to 10 mins, fine time selection on a selected range is then achieved via a percentage potentiometer. A green supply on LED is featured along with a red LED to indicate relay output status. All terminal details and the function information along with the UKCE mark is clearly marked on the sides of the housing.

Initiated by supply on terminals A1 & A2, which immediately starts the "star" time during which the "star" contacts remain closed. After expiry of the "star" time the "star" contacts open. This is followed by a pause of 100mSec and the "delta" contacts then close. Removal of supply after timing has been completed and the "delta" relay contacts will de-energise, if removal of supply is before timing has been completed remaining time will be cancelled.

All terminal details and information along with the UKCE mark is clearly marked on the sides of the housing.

TYPE / Order Code: **TI177**



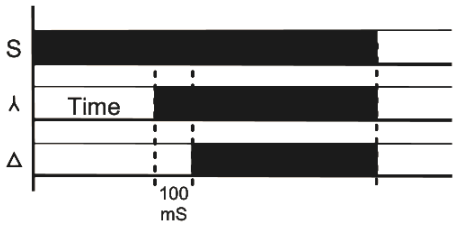
SPECIFICATIONS

Timing:	
Time ranges:	0.1sec to 10 mins
Repeat accuracy:	±0.5% of set value
Reset time:	Max 100mSec
Relay outputs:	
Output contacts:	TI177 2 x SPCO 16Amps/250V AC1
Max breaking capacity:	TI177 4000VA
Mechanical life:	30 Million ops
Electrical life:	200K ops at max rated load
Supply voltage:	
Supply voltage:	12-250VACDC
Max power consumption:	5VA / 2.8W
Insulation:	2.5KV 50Hz impulse
General:	
Operating temperature:	-20°C to +65°C
Storage temperature:	-20°C to +65°C
In accordance with:	EN61000-6-1: 2007 EN61000-6-3: 2007 EN61010-1: 2002
Housing material:	Polycarbonate, Auto extinguishable to UL 94 V-0

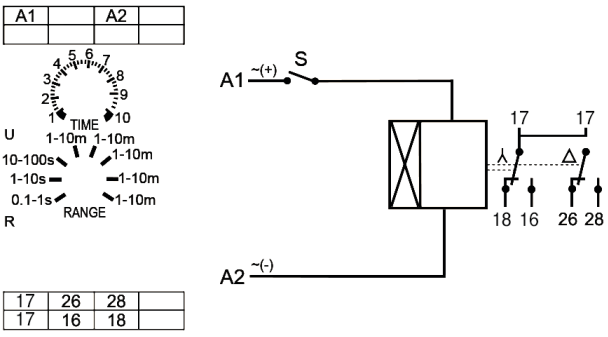
TIMER RANGES

Position 1:	**0.1 - 1 sec**	**Position 3:**	**10 - 100 secs**
Position 2:	**1 - 10 secs**	**Position 4:**	**1 - 10 mins**

FUNCTION



CONNECTIONS



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TYPE / Order Code: **TI178**

STAR DELTA SINGLE VOLTAGE TIMER

GENERAL SPECIFICATION/FEATURES

- Din rail mounted
- Seperate contact output for Star
- Seperate contact output for Delta
- Supply voltage 400V 50/60Hz
- With standard dwell time
- LED indication
- UKCE marked

DESCRIPTION & MODE OF OPERATION

Din rail mounted star delta timers, dedicated coil voltage and dedicated adjustable time range. The timers have two independent contact outputs, one designed as Star and one as Delta. The timers are with a single adjustable time range and feature a red LED to indicate completion of the "Star" time. All terminal details along with the UKCE mark is clearly marked on the sides of the housing.

On connection of the supply voltage the "Star" contact remains closed and timing immediately commences, after the expiry of the set delay time the "Star" contact opens. There then follows a dwell time of 100mSec (on request 30mSec) and the separate "Delta" contact then closes. On loss of the supply voltage during timing, the elapsed time is immediately cancelled and after timing the "Delta" contact will open.

All terminal details and information along with the UKCE mark is clearly marked on the sides of the housing.

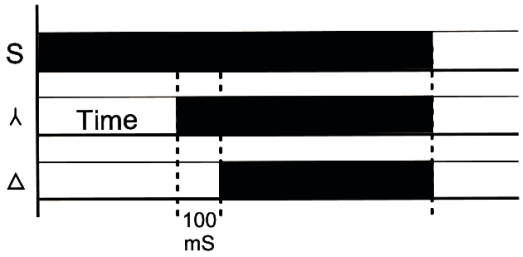
TYPE / Order Code: **TI178**

SPECIFICATIONS

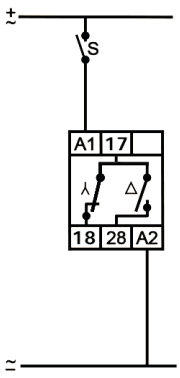
Timing:	
Repeat accuracy:	
constant ambient:	±1% of set value
across temp range:	±3%
Setting accuracy:	0 to +30%
Time ranges:	1 to 100 sec
Dwell time:	100mSec standard (30mSec on request)
Reset time:	
during timing:	100mSec
after timing:	100mSec
Relay outputs:	
TI178	Star 1NC, Delta 1NO
Output contacts:	5Amps/250V AC1
Max switching voltage:	250VAC, 30VDC
Mechanical life:	20 Million ops
Electrical life:	50K ops at max rated load
Supply voltage:	
Supply voltage tolerance:	±15%
Frequency:	50/60Hz
Max power consumption:	11VA
General:	
Operating temperature:	-20°C to +65°C
Storage temperature:	-20°C to +65°C
In accordance with:	EN61000-6-1: 2007 EN61000-6-3: 2007 EN61010-1: 2002
Housing material:	Polycarbonate, Auto extinguishable to UL 94 V-0

FUNCTION

N



CONNECTIONS



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TYPE / Order Code: **TI179**

DELAY ON ENERGISATION SINGLE VOLTAGE TIMER

GENERAL SPECIFICATION/FEATURES

- Din rail mounted
- SPCO
- Ideal for OEM applications
- Single coil voltage 400VAC
- Time Range: 0.2 – 20 mins (Adjustable)
- Option for fixed times
- LED indication
- UKCE marked

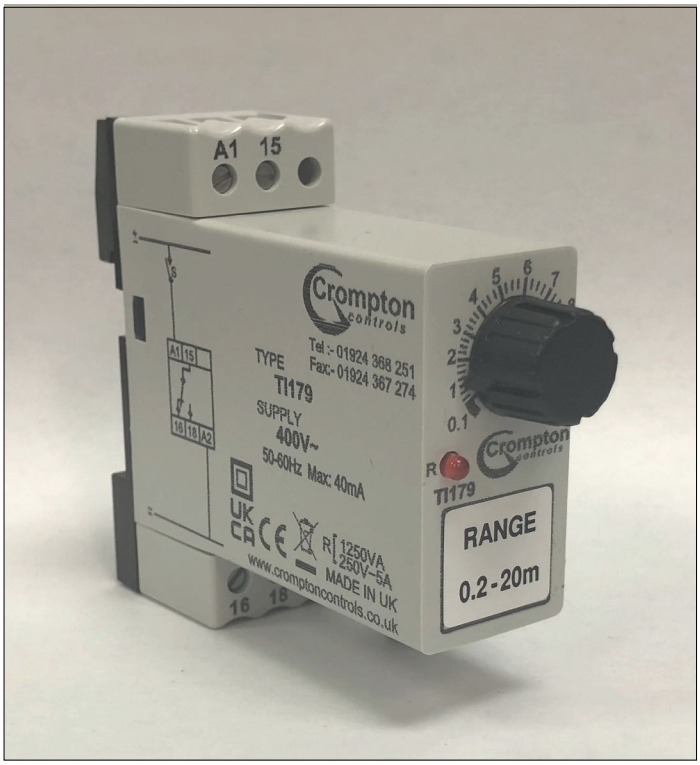
DESCRIPTION & MODE OF OPERATION

Simple din rail mounted delay on timer, with dedicated coil voltage and time range. These timers are ideal for mass production OEM applications, or for any application where operator interference must be kept to a minimum. .

The function is initiated by a supply on terminals A1 & A2 which commences the timing, the relay contacts will then energise after the timing period. Removal of the supply after timing has been completed and the relay contacts will de-energise, if removal of the supply is before timing has been completed the remaining time will be cancelled.

All terminal details and information along with the UKCE mark is clearly marked on the sides of the housing.

TYPE / Order Code: **TI179**



SPECIFICATIONS

Timing:

Repeat accuracy:	
constant ambient:	±0.5% of set value
across temp range:	±3%
Setting accuracy:	0 to +30%
Reset time:	
during timing:	100mSec
after timing:	50mSec

Relay outputs:

Output contacts:	SPCO units 5Amps/250V AC1
Max switching voltage:	250VAC, 30VDC
Mechanical life:	20 Million ops
Electrical life:	50K ops at max rated load

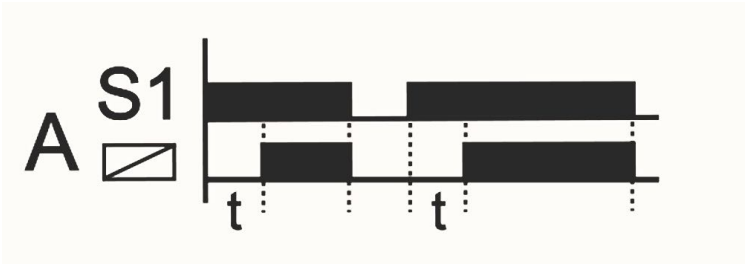
Supply voltage:

Supply voltage tolerance:	±15%
Frequency:	50/60Hz
Max power consumption:	10VA

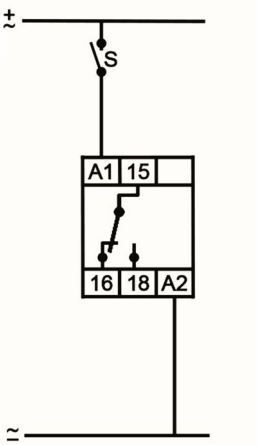
General:

Operating temperature:	-20°C to +65°C
Storage temperature:	-20°C to +65°C
In accordance with:	EN61000-6-1: 2007 EN61000-6-3: 2007 EN61010-1: 2002
Housing material:	Polycarbonate, Auto extinguishable to UL 94 V-0

FUNCTION



CONNECTIONS



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