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Made in Czech Republic
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EN

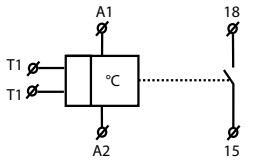
TER-3 (A, B, C, D, G, H)

Thermostats line TER-3

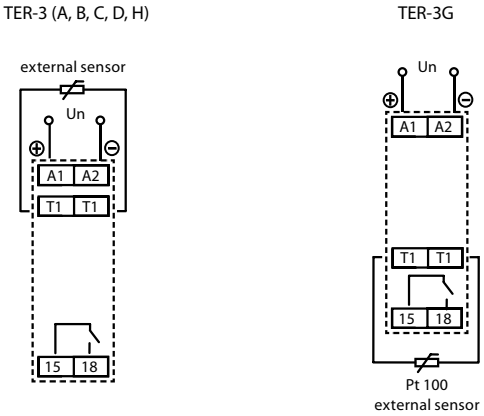
Characteristics

- single thermostat for temperature monitoring and regulation in range -30 °C to 70 °C (-22 °F to 158 °F) in six ranges
- it can be used for monitoring temperature e.g. in switchboards, heating systems, cooling systems, liquids, radiators, motors, devices, open spaces, etc.
- function of short-circuit or sensor disconnection monitoring
- possibility to set function "heating"/ "cooling" (setting is done by DIP switch)
- adjustable hysteresis (sensitivity), switching by potentiometer in range 0.5 to 5 °C (0.9 to 9 °F)
- choice of external temperature sensors with double insulation in standard lengths 3, 6 and 12 m (9.8´, 19.7´ and 39.4´)
- it is possible to place sensor directly on terminal block - for temperature monitoring in a switchboard or in its surroundings
- multivoltage supply AC/DC 24 -240 V, not galvanically separated
- output contact 1x NO - SPST 16 A / 250 V AC1
- red LED indicates status of output, green LED indicates energization of the device
- 1-MODULE, DIN rail mounting

Symbol

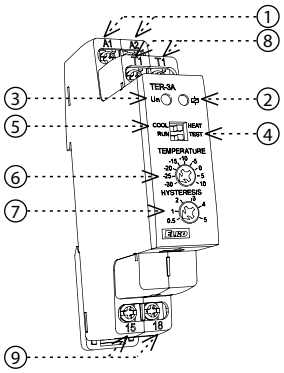


Connection

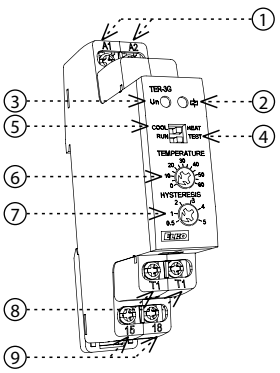


Description

TER-3 (A,B,C,D,H)



TER-3G



1. Supply terminals
2. Output indication
3. Supply indication
4. Function TEST
5. Heating / cooling selection
6. Temperature adjusting
7. Hysteresis adjusting
8. Sensor terminals
9. Output contact

Example of an order

Please specify a type of thermostat in your order (TER-3A, TER-3B .. or TER-3H) types differ in temperature range and supply voltage.

Type of load	cos φ ≥ 0.95 AC1	AC2	AC3	AC5a uncompensated	AC5a compensated	HAL.230V AC5b	AC6a	AC7b	AC12
Mat. contacts $AgSnO_2$, contact 16A	250V / 16A	250V / 5A	250V / 3A	230V / 3A (690VA)	230V / 3A (690VA) to max. input C=14uF	1000W	x	250V / 3A	x
Type of load	AC13	AC14	AC15	DC1	DC3	DC5	DC12	DC13	DC14
Mat. contacts $AgSnO_2$, contact 16A	x	250V / 6A	250V / 6A	24V / 10A	24V / 3A	24V / 2A	24V / 6A	24V / 2A	x

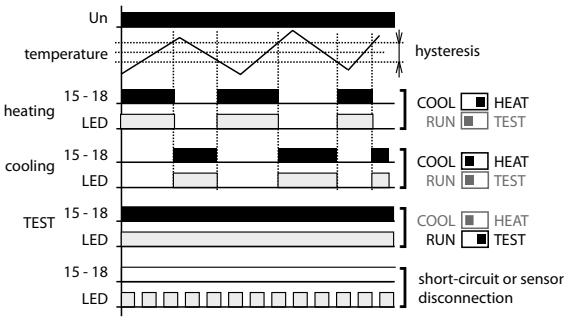
Technical parameters

	TER-3
Function:	single level
Supply terminals:	A1-A2
Voltage range:	AC/DC 24 - 240V (galvanically unseparated) (AC 50 - 60 Hz)
Power input:	max. 2 VA / 1 W
Max. dissipated power (Un + terminals):	2.5 W
Supply voltage tolerance:	- 15 %; + 10 %
Measuring circuit	
Measuring terminals:	T1 - T1
Temperature range: (according to product type sensitivity)	TER-3A: -30 °C .. 10 °C (-22 °F .. 50 °F) TER-3B: 0 °C .. 40 °C (32 °F .. 104 °F) TER-3C: 30 °C .. 70 °C (86 °F .. 158 °F) TER-3D: 0 °C .. 60 °C (32 °F .. 140 °F) TER-3G: 0 °C .. 60 °C (32 °F .. 140 °F) TER-3H: -15 °C .. 45 °C (5 °F .. 113 °F)
Hysteresis:	ajustable in range 0.5 .. 5 °C (0.9 .. 9 °F)
Sensor:	external, thermistor NTC, except for TER-3G (Pt100)
Sensor fault indication (short circuit / disconnect):	flashing red LED
Accuracy	
Setting accuracy (mech.):	5 %
Switching difference:	0.5 °C (0.9 °F)
Temperature dependance:	< 0.1 % / °C (°F)
Output	
Number of contacts:	1x NO ($AgSnO_2$)
Current rating:	16 A / AC1, 10 A / 24 V DC
Breaking capacity:	4000 VA / AC1, 300 W / DC
Switching voltage:	250 V AC / 24 V DC
Output indication:	red LED
Mechanical life:	$3x10^7$
Electrical life (AC1):	$0.7x10^5$
Other information	
Operating temperature:	- 20 .. 55 °C (-4 °F .. 131 °F)
Storage temperature:	- 30 .. 70 °C (-22 °F .. 158 °F)
Electrical strength:	2.5 kV (supply - output)
Operating position:	any
Mounting:	DIN rail EN 60715
Protection degree:	IP40 from front panel / IP10 terminals
Overvoltage category:	III.
Pollution degree:	2
Max. cable size (mm^2):	solid wire max. 2x 2.5 or 1x 4 (AWG 12) with sleeve max. 1x 2.5 or 2x 1.5 (AWG 12)
Dimensions:	90 x 17.6 x 64 mm (3.5˝ x 0.7˝ x 2.5˝)
Weight:	64 g (2.3 oz.); TER-3G: 68 g (2.4 oz.)
Standards:	EN 60255-1, EN 60255-26, EN 60255-27, IEC 60730-2-9

Warning

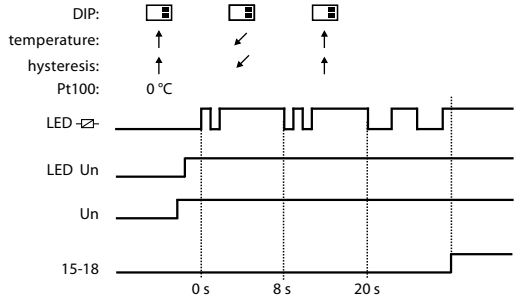
Device is constructed for connection in 1-phase AC 230 V main alternating current voltage and must be installed according to norms valid in the state of application. Connection according to the details in this direction. Installation, connection, setting and servicing should be installed by qualified electrician staff only, who has learnt these instruction and functions of the device. This device contains protection against overvoltage peaks and disturbancies in supply. For correct function of the protection of this device there must be suitable protections of higher degree (A, B, C) installed in front of them. According to standards elimination of disturbancies must be ensured. Before installation the main switch must be in position "OFF" and the device should be de-energized. Don´t install the device to sources of excessive electro-magnetic interference. By correct installation ensure ideal air circulation so in case of permanent operation and higher ambient temperature the maximal operating temperature of the device is not exceeded. For installation and setting use screw-driver cca 2 mm. The device is fully-electronic - installation should be carried out according to this fact. Non-problematic function depends also on the way of transportation, storing and handling. In case of any signs of destruction, deformation, non-function or missing part, don´t install and claim at your seller.

Function



It is a single but practical thermostat with separated sensor for monitoring temperature. Device is placed in a switchboard and external sensor senses temperature of required space, object, or liquid. Supply is not galvanically separated from sensor. Sensor is double insulated. Maximal length of delivered sensor is 12 m (39.4´). device has in-built indication of sensor damage, which means that in case of short-circuit or disconnection red LED flashes. Thanks to adjustable hysteresis, it is advantageous to regulate width of the range and thus define sensitivity of load switching. Sensed temperature is decreased by set hysteresis. When installing it is necessary to keep in mind that hysteresis is increased by temperature gradient between sensor's jacket and thermistor.

Calibration graphics TER-3G



Thermostat TER-3G uses platinum sensor Pt100. Sensor is connected by 2 wires therefore there can be an influence of wire length resulting in worse concourse of measured temperature on the scale. Thermostat is calibrated in production for sensor length 7 m (23´). For this length assures the smallest deviation, influence of sensors of length 3 m (9.8´) and 12 m (39.4´) is the same (opposite polarities) and is smaller than 3 °C (37.4 °F). In case you different length of sensor than is delivered, the concourse of the scale can get worse considerably. In such case it is possible to calibrate thermostat for a particular sensor. It is possible to calibrate sensors with length that creates dis-concourse up to approx. 15 °C (59 °F). Sensors with bigger resistance are calibrates to this limit value.

Thermostat calibration TER-3G

To ensure correct calibration it is necessary to let the thermostat measure the sensor (which will be used) which is settled on calibration temperature 0 °C / 32 °F (water with ice) and then it is necessary to strictly observe this calibration procedure.

Before you start with calibration:
- thermostat is connected in a way that it is possible to be switched on (switch button in supply)
- a sensor is correctly connected and settled on calibration temperature 0 °C / 32 °F
- DIP switch is in position HEAT and TEST
- temperature and hysteresis in the middle of the scale

Calibration:
- energize the thermostat, green control light Un shines, red control light flashes once
- temperature and hysteresis set to minimum up to 8 s from switching on
- thermostat self checks setting to minimal value and confirms it by double flashing of red control light
- temperature and hysteresis can be turned to middle of the scale up to 8 s from confirmation
- thermostat is set in the middle
- correctly confirmed procedure is confirmed by double long OFF of red control light, calibration values are recorded and thermostat will use them until another calibration
- incorrect procedure is indicated by one long OFF of red control light
- then the thermostat switches into normal mode - meaning relay switches