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EN

TEV-2
TEV-3

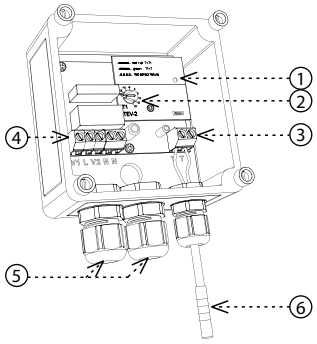
Single-level thermostats with ranges of –20 .. + 35° C in increased protection

Characteristics

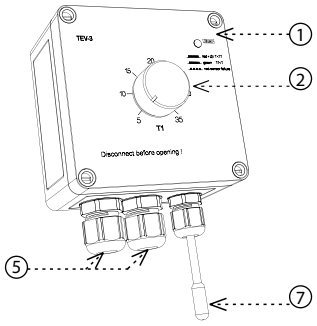
- Single level thermostat with possibility of temperature management in adjustable range.
- Used to regulate heating (or cooling) in demanding spaces (outdoor environment, humidity, dust).
- Thermostat is placed in water-proof box with IP65 protection, which enables installation outside, with in-built sensor.
- **TEV-2:** control and indication elements are placed under transparent cover.
- **TEV-3:** control and indication elements are placed directly on the cover (for easy orientation and frequent change of temperature).
- Thermostat status is indicated by two-tone LED.
- Function of monitoring sensor disconnection and short-circuit.

Description

TEV-2 - without cover

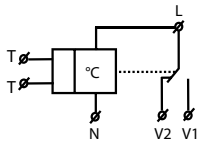


TEV-3 - with cover



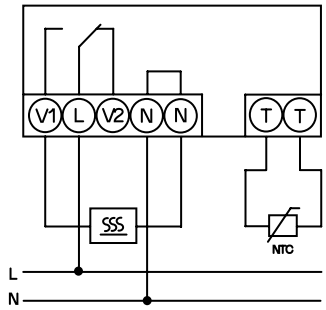
1. Device status indication
2. Temperature setting
3. Terminal for sensor
4. Terminals for connection of supply voltage and output contact
5. Sleeve for incoming cables
6. Sensor TZ-0
7. Sensor TC-0

Symbol

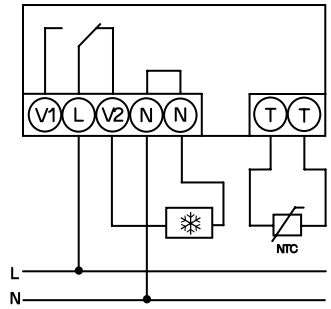


Connection

Heating function



Cooling function



Type of load	cos φ ≥ 0.95 AC1	M AC2	M AC3	AC5a uncompensated	AC5a compensated	HAL.230V AC5b	AC6a	AC7b	AC12
Mat. contacts AgNi, contact 16 A	250V / 16A	250V / 5A	250V / 3A	230V / 3A (690VA)	x	800W	x	250V / 3A	250V / 10A
Type of load	AC13	AC14	AC15	DC1	M DC3	M DC5	DC12	DC13	DC14
Mat. contacts AgNi, contact 16 A	250V / 6A	250V / 6A	250V / 6A	24V / 16A	24V / 6A	24V / 4A	24V / 16A	24V / 2A	24V / 2A

Technical parameters

	TEV-2	TEV-3
Function:	single-level thermostat	
Supply terminals:	L-N	
Supply voltage:	AC 230 V (50-60 Hz)	
Consumption (max.):	2.5 VA/0.5 W	
Supply voltage tolerance:	± 15 %	
Measuring circuit		
Measuring terminals:	T-T	
Temperature ranges:	–20 .. +20 °C (–4 .. 68 °F)	+5 .. +35 °C (41 .. 95 °F)
Hysteresis (sensitivity):	3 °C (± 1.5 °C)/37.4 °F (± 34.7 °F)	
Sensor:	thermistor NTC 12 kΩ	
Accuracy		
Setting accuracy (mech.):	5 %	
Temperature dependency:	< 0.1 %/°C (°F)	
Output		
Contact type:	1× changeover/SPDT (AgNi)	
Current rating:	16 A/AC1	
Breaking capacity:	4000 VA/AC1, 384 W/DC1	
Inrush current:	30 A/< 3 s	
Switching voltage:	250 V AC/24 V DC	
Power dissipation (max.):	1.2 W	
Mechanical life:	10.000.000 ops.	
Electrical life (AC1):	100.000 ops.	
Other information		
Operating temperature:	–30 .. +50 °C (–22 .. 122 °F)	
Storage temperature:	–30 .. +70 °C (–22 .. 158 °F)	
Operating position:	any	
Protection degree:	IP65	
Overvoltage category:	III.	
Polution degree:	2	
Cross-wire section – solid/ stranded with ferrule (mm^2):	max. 1× 2.5, 2× 1.5/ max. 1× 2.5 (AWG 12)	
Dimensions:	110 × 135 × 66 mm (4.33˝ × 5.3˝ × 2.3˝)	
Weight:	270 g (9.5 oz)	274 g (9.7 oz)
Standards:	EN 60255-1, EN 60255-26, EN 60255-27	

Temperature sensor

	TZ-0	TC-0
Range:	-40°C to 125°C (-40°F to 257°F)	-20 °C to 80 °C (-4 °F to 176 °F)
Scanning element:	NTC 12K	NTC 12K
Tolerance:	±(0.15°C + 0.002|t|)	±(0.15°C + 0.002|t|)
In air/ in water:	(τ65) 62 s / 8 s	(τ0.5) ≤ 18 s
In air/ in water:	(τ95) 216 s / 23 s	(τ0.9) ≤ 48 s
Cable material:	PVC	PVC unshielded, 2x 0.25 mm^2
Terminal material:	stainless steel	polyamid
Protection degree:	IP67	IP67
Electrical strength:	2500 VAC	2500 VAC
Insulation resistance:	> 200 MΩ at 500 VDC	> 200 MΩ at 500 VDC
Length:	110 mm (4.3")	100 mm (3.9")
Weight:	4.5 g (0.16 oz.)	5 g (0.17 oz)

τ65 (95): time, which sensor needs to heat up on 65 (95) % of ambient temperature of environment, in which is located.

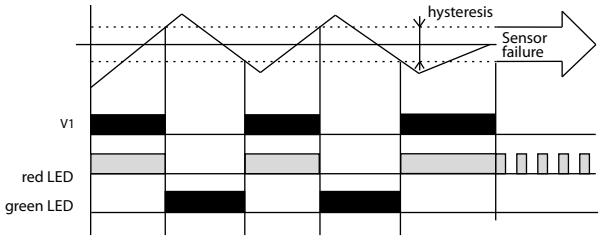
Resistive values of sensors in dependance on temperature

Temperature (°C / °F)	Sensor NTC (kΩ)
20 / 68	14.7
30 / 86	9.8
40 / 104	6.6
50 / 122	4.6
60 / 140	3.2
70 / 158	2.3

Tolerance of sensor NTC 12 kΩ is ± 5% by 25 °C / 77 °F.

Function

Heating function



TEV-2 and TEV-3 are universal single thermostats for universal use. In case ambient temperature is higher than set temperature relay is open (function HEATING), for cooling function (opposite function) is possible to use NC contact of relay (V2).

Warning

The device is constructed to be connected into 1-phase main and must be installed in accordance with regulations and norms applicable in a particular country. Installation, connection and setting can be done only by a person with an adequate electro-technical qualification which has read and understood this instruction manual and product functions. The device contains protections against over-voltage peaks and disturbing elements in the supply main. Too ensure correct function of these protection elements it is necessary to front-end other protective elements of higher degree (A, B, C) and screening of disturbances of switched devices (contactors, motors, inductive load etc.) as it is stated in a standard. Before you start with installation, make sure that the device is not energized and that the main switch is OFF. Do not install the device to the sources of excessive electromagnetic disturbances. By correct installation, ensure good air circulation so the maximal allowed operational temperature is not exceeded in case of permanent operation and higher ambient temperature. While installing the device use screwdriver width approx. 2 mm. Keep in mind that this device is fully electronic while installing. Correct function of the device is also depended on transportation, storing and handling. In case you notice any signs of damage, deformation, malfunction or missing piece, do not install this device and claim it at the seller. After operational life treat the product as electronic waste.

DECLARATION OF CONFORMITY
ELKO EP declares that the TEV-2 / TEV-3 type of equipment complies with Directives 2014/30/EU, 2011/65/EU, 2015/863/EU and 2014/35/EU. The full EU Declaration of Conformity is available at:
www.elkoep.com/thermostat-tev-2
www.elkoep.com/thermostat-tev-3