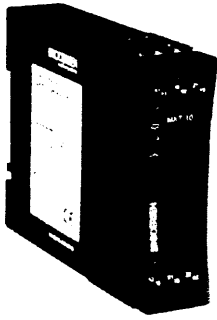


Control & Monitoring Relays

Thermostat Relay MXT-10



DESCRIPTION

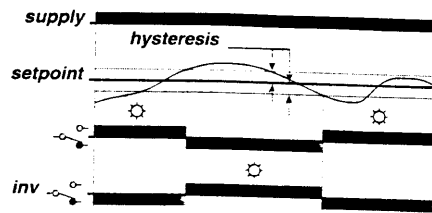
A thermostat relay for the monitoring or control of temperature in the range -50 to 300°C. The probe is a standard Pt100, either 2 or 3 wire. LED indication of a non-functional probe and relay activated. When the temperature rises and reaches the determined setpoint, plus the hysteresis, which is adjusted on the front, the relay de-energises. As the temperature falls and passes the setpoint, minus the hysteresis, the relay re-energises. By strapping 2 terminals, the relay can be inverted allowing the thermostat relay to be used for the control of heating as well as cooling systems. The relay has two analogue 0-10VDC outputs, one for measured temperature and the other for the setpoint.

Features

- 2/3 wire Pt100 input (DIN43760).
- Monitoring or control of temperature - 50 to 300°C in 5 ranges in one version.
- Adjustable Setpoint.
- Hysteresis adjustable $\pm 0.5-20\%$.
- Inversion of the relay contact function - heating/cooling control.
- LED indication of probe failure.
- Outputs.
- SPDT.
- Analogue 0 - 10VDC with ref. to measured temperature.
- Analogue 0 - 10VDC with ref. to setpoint.
- Supply voltage 24VDC, 24/115VAC or 24/230VAC.

OPERATION

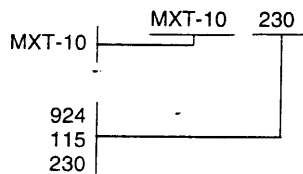
Temperature monitoring



VERSIONS/ORDERING CODES

Type:

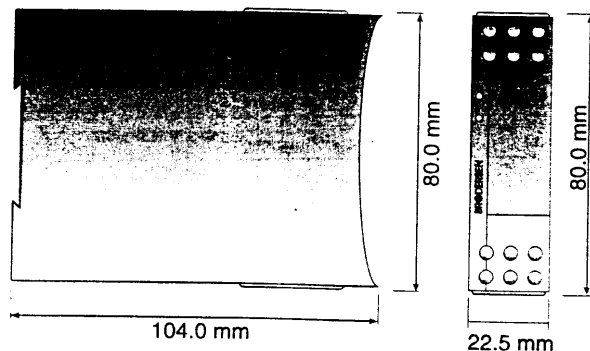
Thermostat relay



Supply voltage

24V DC
115V AC / 24V AC
230V AC / 24V AC

MECHANICAL DIMENSIONS



TECHNICAL DATA

Input: Pt-100 probe(DIN 43760), 3 conductors with compensation for cable resistance.

Temperature range: -50-50°C
0-50°C
0-100°C
100-200°C
200-300°C

Temperature drift: Max. 0,05%/°C
Setting accuracy: Typically $\pm 10\%$
Hysteresis: $\pm 0.5\text{-}20\%$ of chosen area, adjustable
Response time: time constant $\tau = 0,2s$,
Worst case of response time max. $5 \times \tau$

Output: SPDT relay: Contact material, AgNi 0,15 with hardened gold plating Au.
Max. load AC: 8A/240V AC ($\cos \varphi=1$)
Max. breaking capacity 2000VA. Inductive load. See fig. 1.
Max. load DC: 8A/24V DC
Max. breaking capacity 50- 270W. See fig. 2.

2. Max. in rush current: 15A (max. 4s/duty cycle less than 10%).
Min. in rush current: 10mA. 24V DC
Frequency: Max. 1000 operations pr. time.
Life span: Mech. Min. 3×10^7 operations
Elect. Min. 1×10^9 operations with full load.
Delay: <20ms.
Analogue outputs: 0-10V DC, refers to setpoint and measured temperature in chosen areas.
 $R_c = 2k\Omega$.
 $I_{max} = 5mA / R_{load} > 500 \Omega$.
Precision better than $\pm 0,5\%$.

Supply voltage:
Versions: 924=24V DC (20,4-27,6)V DC
115=24/115V AC (20,4-27,6 /98-132)V AC
230=24/230V AC (20,4-27,6/196-264)V AC
45-65Hz.
Net frequency: AC; 3VA
Consumption: DC; 2W

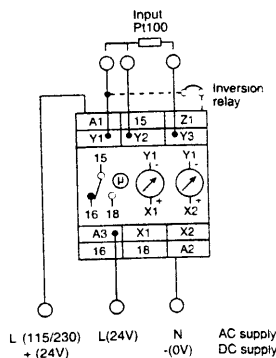
General data:
Ambient temperature: -20 to 55°C.
Storage temperature: -40 to 80°C.
Mounting: 35mm DIN-rail (EN50022).
Terminals: Screw terminals with dual compartment.
Terminal screws are combined crosshead/slotted. Up to $2 \times 2,5mm^2$ wire ($2 \times 1,5mm^2$ inc. ferrule).
Recommended torque, 0,5 Nm, max. 0,7 Nm (VDE0609-1).
Terminal identification in accordance with DIN46199/EN50005.

Indicators: Green LED = operating voltage.
Red LED (constant) = relay switched on.
Red LED (flashing) = non-functional probe.

Protection: IP20.
Electric isolation: 3,75kVAC (1 min.) between input, supply and relay output (EN60950).
Note: No galvanic isolation between input and analogue output.

Housing: Noryl (GE), UL94V1.
Terminal block: Noryl (GE), UL94V0.
Weight: 180 g.

WIRING DIAGRAM



Coding:
Relay inverter, Jumper Y1-Z1

Analogue output 0-10V DC
Setpoint: X1= (+) V
Y1= (-) 0

Measured temperature: X2= (+) V
Y1= (-) 0

SPECIFICATIONS:

- MXT-10 is designed and developed with regard to relevant specifications:
- EN60204-1 / VDE0113 electrical material on machines.
 - VDE0110 / IEC664 Isolation specifications/creepage and clearance distances.
 - Electrical safety in accordance with EN61010.
 - IEC414 Safety regulations for control and monitoring equipment.
 - EMC: Emission EN50081-1
Immunity EN50082-2
 - Humidity in accordance with IEC68-2-3; RH=95%, 40°C.
 - Vibration in accordance with IEC68-2-6;
 - Shock when mounted, in accordance with IEC68-2-27.

MXT-10 is CE-marked in accordance with EMC-and the Low Voltage Directive.

OUTPUT LOAD DIAGRAMS

Fig. 1

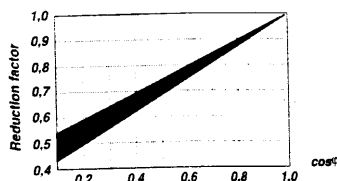
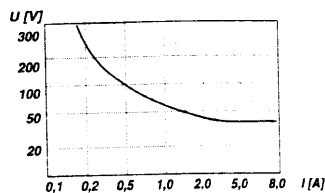


Fig. 2



MXT-10 MXL-10 MXP-10 MXP-20 MXC-10 MXC-20 MXC-30 MXV-10 MXV-20 MXV-30 MGP-10 MGP-20 MGP-30 MGP-40 MGP-50 MGP-60 MGP-70 MGP-80 MGP-90 MGP-100 MGP-110 MGP-120 MGP-130 MGP-140 MGP-150 MGP-160 MGP-170 MGP-180 MGP-190 MGP-200 MGP-210 MGP-220 MGP-230 MGP-240 MGP-250 MGP-260 MGP-270 MGP-280 MGP-290 MGP-300 MGP-310 MGP-320 MGP-330 MGP-340 MGP-350 MGP-360 MGP-370 MGP-380 MGP-390 MGP-400 MGP-410 MGP-420 MGP-430 MGP-440 MGP-450 MGP-460 MGP-470 MGP-480 MGP-490 MGP-500 MGP-510 MGP-520 MGP-530 MGP-540 MGP-550 MGP-560 MGP-570 MGP-580 MGP-590 MGP-600 MGP-610 MGP-620 MGP-630 MGP-640 MGP-650 MGP-660 MGP-670 MGP-680 MGP-690 MGP-700 MGP-710 MGP-720 MGP-730 MGP-740 MGP-750 MGP-760 MGP-770 MGP-780 MGP-790 MGP-800 MGP-810 MGP-820 MGP-830 MGP-840 MGP-850 MGP-860 MGP-870 MGP-880 MGP-890 MGP-900 MGP-910 MGP-920 MGP-930 MGP-940 MGP-950 MGP-960 MGP-970 MGP-980 MGP-990 MGP-1000 MGP-1010 MGP-1020 MGP-1030 MGP-1040 MGP-1050 MGP-1060 MGP-1070 MGP-1080 MGP-1090 MGP-1100 MGP-1110 MGP-1120 MGP-1130 MGP-1140 MGP-1150 MGP-1160 MGP-1170 MGP-1180 MGP-1190 MGP-1200 MGP-1210 MGP-1220 MGP-1230 MGP-1240 MGP-1250 MGP-1260 MGP-1270 MGP-1280 MGP-1290 MGP-1300 MGP-1310 MGP-1320 MGP-1330 MGP-1340 MGP-1350 MGP-1360 MGP-1370 MGP-1380 MGP-1390 MGP-1400 MGP-1410 MGP-1420 MGP-1430 MGP-1440 MGP-1450 MGP-1460 MGP-1470 MGP-1480 MGP-1490 MGP-1500 MGP-1510 MGP-1520 MGP-1530 MGP-1540 MGP-1550 MGP-1560 MGP-1570 MGP-1580 MGP-1590 MGP-1600 MGP-1610 MGP-1620 MGP-1630 MGP-1640 MGP-1650 MGP-1660 MGP-1670 MGP-1680 MGP-1690 MGP-1700 MGP-1710 MGP-1720 MGP-1730 MGP-1740 MGP-1750 MGP-1760 MGP-1770 MGP-1780 MGP-1790 MGP-1800 MGP-1810 MGP-1820 MGP-1830 MGP-1840 MGP-1850 MGP-1860 MGP-1870 MGP-1880 MGP-1890 MGP-1900 MGP-1910 MGP-1920 MGP-1930 MGP-1940 MGP-1950 MGP-1960 MGP-1970 MGP-1980 MGP-1990 MGP-2000