

PTC-resistor release relay

Type	RS-TMSA, RS-TMSA-2	RS-TMKA, RS-TMKA-2	RS-TMSW, RS-TMSW-2	RS-TMKW, RS-TMKW-2	RS-TMSV, RS-TMSV-2	RS-TMKV, RS-TMKV-2	RS-TMVV	RS-TM...-2
Function/ output contact	PTC-resistor release relay RS-TMSA: 1 change-over contact 1 normally open contact RS-TMSA-2: 2 change-over contacts	PTC-resistor release relay RS-TMKA: 1 change-over contact 1 normally open contact RS-TMKA-2: 2 change-over contacts	PTC-resistor release relay RS-TMSW: 1 change-over contact 1 normally open contact RS-TMSW-2: 2 change-over contacts	PTC-resistor release relay RS-TMKW: 1 change-over contact 1 normally open contact RS-TMKW-2: 2 change-over contacts	PTC-resistor release relay RS-TMSV: 1 change-over contact 1 normally open contact RS-TMSV-2: 2 change-over contacts	PTC-resistor release relay RS-TMKV: 1 change-over contact 1 normally open contact RS-TMKV-2: 2 change-over contacts	PTC-resistor release relay RS-TMVV: 2 change-over contacts	The preceding six PTC-resistor release relays (see cols 1-6) are also available in a 22.5 mm housing (see cols 1-6)
Basic wiring diagram/ pulse schedule	see col. 8 Basic wiring diagram 1 		see col. 8 Basic wiring diagram 2 		see col. 8 Basic wiring diagram 2 			Basic wiring diagram 1
Wiring diagram								Basic wiring diagram 2
LED	2 LED	2 LED	2 LED	2 LED	2 LED	2 LED	2 LED	
Voltage supply	24 V AC/DC * 24 V AC 42-48 V AC 110-127 V AC 230 V AC * without electrical isolation	24 V AC/DC * 24 V AC 42-48 V AC 110-127 V AC 230 V AC * without electrical isolation	24 V AC/DC * 24 V AC 42-48 V AC 110-127 V AC 230 V AC * without electrical isolation	24 V AC/DC * 24 V AC 42-48 V AC 110-127 V AC 230 V AC * without electrical isolation	24 V AC/DC * 24 V AC 42-48 V AC 110-127 V AC 230 V AC * without electrical isolation	24 V AC/DC * 24 V AC 42-48 V AC 110-127 V AC 230 V AC * without electrical isolation	24 V AC/DC * 24 V AC 42-48 V AC 110-127 V AC 230 V AC * without electrical isolation	
other attributes	Zero-voltage protection: no Restart inhibitor: no Short-circuit monitoring: no RS-TMSA: 45 mm housing RS-TMSA-2: 22.5 mm housing	Zero-voltage protection: no Restart inhibitor: no Short-circuit monitoring: yes RS-TMKA: 45 mm housing RS-TMKA-2: 22.5 mm housing	Zero-voltage protection: no Restart inhibitor: yes Short-circuit monitoring: no RS-TMSW: 45 mm housing RS-TMSW-2: 22.5 mm housing	Zero-voltage protection: no Restart inhibitor: yes Short-circuit monitoring: yes RS-TMKW: 45 mm housing RS-TMKW-2: 22.5 mm housing	Zero-voltage protection: yes Restart inhibitor: yes Short-circuit monitoring: no RS-TMSV: 45 mm housing RS-TMSV-2: 22.5 mm housing	Zero-voltage protection: yes Restart inhibitor: yes Short-circuit monitoring: yes RS-TMKV: 45 mm housing RS-TMKV-2: 22.5 mm housing	Zero-voltage protection: yes Restart inhibitor: yes Short-circuit monitoring: yes	
Method of operation	<p>These are temperature monitoring relays according to DIN 44081. They are suitable for connecting to conventional PTC-resistors according to DIN 44081 (60-180°C). The devices are ready for operation upon applying an exciting voltage to terminals A1 and A2. The PTC-resistor temperature sensors are connected to terminals P1 and P2 (T1 and T2 in the case of RS-TMVV). Six temperature sensors can be connected in series, sum of cold resistance $\leq 1.5 \text{ k}\Omega$. The devices work according to the closed-circuit current principle and hence monitor themselves, also with respect to wire breakages, and for types RS-TMKA, PS-TMKA-2, RS-TMKV, RS-TMKV-2, RS-TMKW, RS-TMKW-2 and RS-TMVV short-circuits in the sensor line ($R < 20 \text{ }\Omega$) as well.</p> <p>A short-circuit causes the same function as a heating of the sensor above the nominal cut-out temperature (thermal release). The max. voltage to be applied to the sensor is 7.5 V. The test circuit is electrically isolated from the voltage supply, the transformer used is manufactured according to VDE 0551. In the case of low sensor resistance, the output relay is triggered via an IC amplifier, contacts 11-14 and 23-24 (for 45 mm devices) or 11-14 and 21-24 (for 22.5mm devices) are opened. The pick-up resistance of each device is $3 \text{ k}\Omega$ with a tolerance of $\pm 7\%$. The release value (switching hysteresis) is the "pick-up value - 10%".</p> <p>The relay can be reset as follows, depending on the type:</p> <ul style="list-style-type: none"> - Without restart inhibitor / automatic restart (RS-TMSA.../RS-TMKA...): Automatic restart after the PTC-resistor has cooled down to below the nominal cut-out temperature. - With restart inhibitor / non zero voltage proof (RS-TMSW.../RS-TMKW...): A restart is only possible <ul style="list-style-type: none"> • after the PTC-resistor has cooled down to below the nominal cut-out temperature <u>and</u> by actuating the integral or external reset button, or • after the PTC-resistor has cooled down to below the nominal cut-out temperature <u>and</u> by briefly disconnecting the voltage supply. - With restart inhibitor / zero voltage protection (RS-TMSV.../RS-TMKV.../RS-TMVV): A restart is possible after PTC-resistor has cooled down to below the nominal cut-out temperature <u>and</u> by actuating the internal or external reset button. If there is a power failure following a thermal release, then upon restoration of the power supply the restart remains inhibited via the non-volatile permanent memory. Therefore, the devices comply with VDE 0113, sect. 5.4.2, which states that automatic restarting of machines after a release and a power failure is not permitted. Only in the case of a power failure and restoration of the power supply without a release taking place are the devices again operative. The exciting voltage must be applied for a reset. <p>Only RS-TM...-2: Exact type designation is shown on the side label.</p>							
Column	1	2	3	4	5	6	7	8