

**PT-01**

**FR-02**



**PT-01**

**FR-02  
General**

FR-02 is an electronic relay, which monitors the L1,L2,L3 phase sequence. FR-02 Phase Sequence Relay is developed to check the phase sequence. If the input R, S and T phases are in correct phase sequence, the light on the front panel turns ON and the output relay switches ON. When the phase sequence is wrong, the light turns OFF and output relay switches OFF. FR-02 phase relay is used in pumping systems, air compressors and elevators. FR-02 is suggested to be used in such systems where, reverse rotation of motors can cause damage to people or systems.



**FR-02**

**PT-01  
General**

PT-01 is an electronic relay, which monitors the motor temperature. PT-01 Thermistor Relay is developed for PTC protection. When the coil temperature of motor exceeds Tc -the limit temperature of PTC- then the output relay switches OFF immediately.

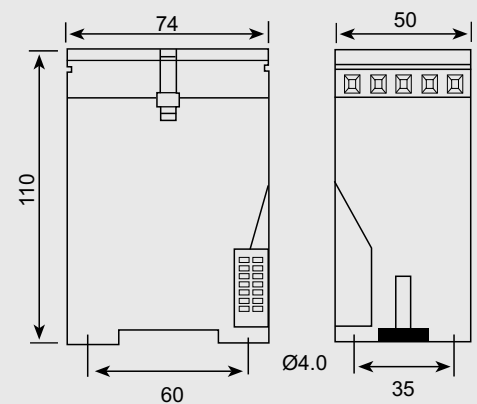
Please see the below graph for typical resistance of PTC temperature characteristics for 3 different switching temperatures (110°C, 120°C,130°C) normally. As seen from the figure,when T<Tc-5°C, the PTC resistance is smaller than 100 Ω and when T>Tc+5°C, PTC resistance is greater than 10 kΩ.



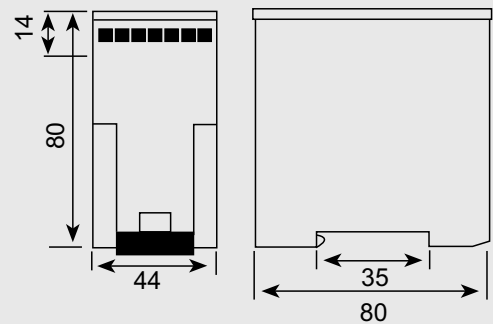
**COMMON SPECIFICATIONS**

<b>Operating Voltage (Un)</b>	230 V AC; 50/60 Hz
<b>Operating Range</b>	(0,9-1,1) x Un
<b>Network Type</b>	3-phase / 4-wire (FR-02) 1-phase / 2-wire (PT-01)
<b>Output contact</b>	1 C/O contact, 8 A, 2000 VA
<b>Degree of Protection</b>	IP 20
<b>Ambient Temperature</b>	-5°C to +50°C
<b>Dimensions</b>	PK10 (FR-02, PT-01)
<b>Installation</b>	Surface mounted
<b>Weight / each</b>	0,3 kg
<b>Quantity in 1 package</b>	10 pcs

**Dimensions**



**TYPE PK 10**

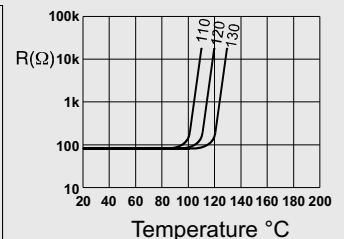
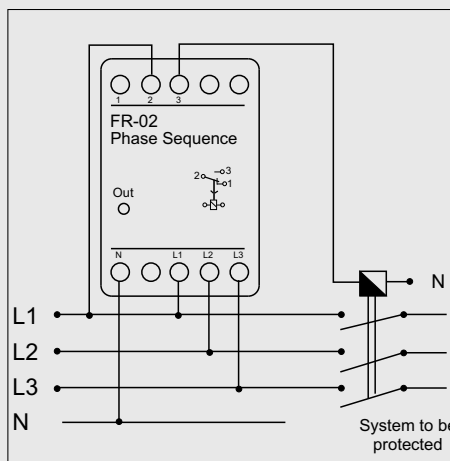
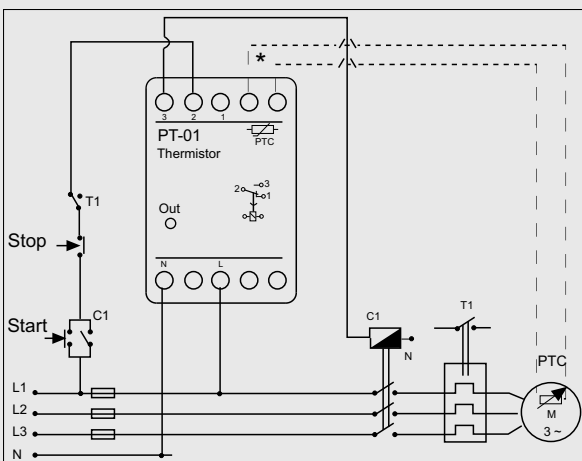


**TYPE PK 21**

**Connection Diagram**

**PT-01**

**FR-02**



Connection diagrams are given for reference. Please always check the latest user manual given with product or download from [www.entes.com.tr](http://www.entes.com.tr).