Klemsan

ADJUSTABLE PROTECTION RELAYS

- » Product design in accordance with TS EN 60255 standard
- » 18mm thin product body conforming to DIN Standard,
- » TRMS measurement,
- » Red LED indicators for fault notification
- » Orange LED indicator for relay status,
- » Adjustable knobs for time and limit values,
- » 10 A SPDT relay output,
- » Microprocessor based,
- » Optional Asymmetry, Phase Sequence,Phase Loss, High-Low Voltage, PTC and Neutral Break Protection
- » Star and delta connection options,
- » High precision and high mechanical strength.

CE c UL us LISTED UL508

Product Guide

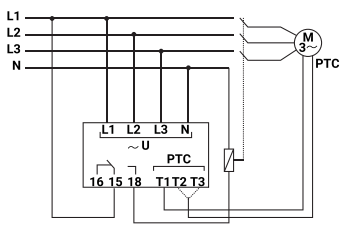
Products	Stock Code	Connection Type	Phase Loss Protection	Phase Sequency Protection	Asymmetry Protection	PTC	High/Low Voltage Protection	Neutral Break Protection
P1Y-ASF-230	270277	3P4W	√	√	√			√
P1D-ASF-400	270278	3P3W	√	√	√			
P1Y-M1WASFN-170-280	270282	3P4W	√	√	√		√	√
P1D-M1WASF-295-480	270283	3P3W	√	√	√		√	
P1Y-M2WSP-170-280	270286	3P4W	√	√		√	√	√
P1D-M2WSP-295-480	270287	3P3W	√	√		√	√	
P1Y-M1WASFN-100-200	270288	3P4W	√	√	√		√	√
P1D-M1WASF-175-345	270289	3P3W	√	√	√		√	
P1Y-M2WSP-100-200	270290	3P4W	√	√		√	√	√
P1D-M2WSP-175-345	270291	3P3W	√	√		√	√	

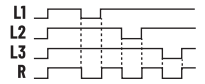
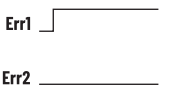
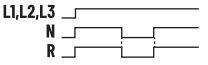
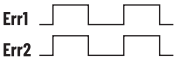
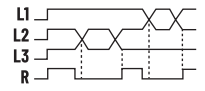
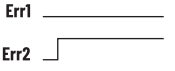
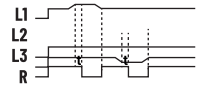
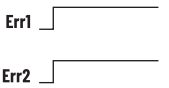
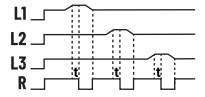
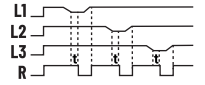
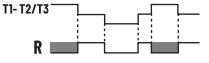
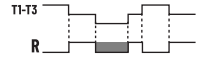
**M1xxx, signify that the high and low limits are set as a percentage with a single knobs.*
**M2xxx, signify that the high and low limits are set from different knobs.*

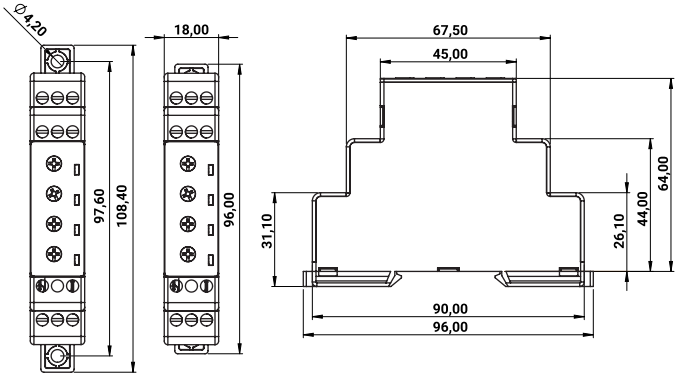
Techinal Details

Operating Voltage		85 - 300 V LN ±20% (P1Y-ASF-230 P1Y-M2WSP-170-280 P1Y-M1WASFN-170-280) 75 - 250 V LN ±20% (P1Y-M1WASFN-100-200 P1Y-M2WSP-100-200) 150- 500 V LL ±20% (P1D-ASF-400 P1D-M2WSP-295-480 P1D-M1WASF-295-480) 130 - 430 V LL ±20% (P1D-M1WASF-175-345 P1D-M2WSP-175-345)
Operating Frequency		50 / 60 Hz
Supplyig Terminals (Burden)		L2-L3 (3P4W —> 4,8 kΩ / 3P3W —> 7 kΩ) Note: Any two terminals on products with PTC)
Voltage Measurment Terminalsi		L1-L2-L3-N
PTC Inputs (Burden)		T1-T2 (4,7 MΩ) T1-T3 (6.85 MΩ)
Nominal Voltage		230 V LN (P1Y-ASF-230) 400 V LL (P1D-ASF-400) 100 - 200 V LN (P1Y-M2WSP-100-200 P1Y-M1WASFN-100-200) 170 - 280 V LN (P1Y-M2WSP-170-280 P1Y-M1WASFN-170-280) 175 - 345 V LL (P1D-M2WSP-175-345 P1D-M1WASF-175-345) 295 - 480 V LL (P1D-M2WSP-295-480 P1D-M1WASF-295-480)
Voltage Protection Range Low&High		±(5 - 30%) / Off (P1Y-ASF-230 P1D-ASF-400 no off option)
Energization Delay		< 1 s
Phase Loss Threshold Value		Un x 60%
Asymmetry Threshold Value		±(5 - 30%) / Off
Histerisis		3%
PTC Alarm Threshold Value	Short Circuit	20 Ω
	High Value	2.7 kΩ
Output Contact		1 C/O
Max. Switching Voltage / Current / Power		250VAC / 10A / 1250VA 30VDC / 5A / 150W
Fault Delay Period	Phase Loss	ton: 500ms toff: 500ms
	Phase Sequence	ton: 500ms toff: 500ms
	Asymmetry	ton: 0.1-10sn toff: 500ms
	Low/high voltage	ton: 0.1-10sn toff: 500ms
	Neutral break	ton: 500ms toff: 500ms
	PTC	ton: 2s toff: 1s
Over Voltage Category (IEC 60664)		CAT III
Cable Cross Section		0.2 - 2.5mm² / AWG 14-26 solid or stranded
Screw Tightening Torque		0.6 Nm
Cable Stripping Size (Min/Max)		8 mm / 9 mm
Power Consumption		< 13 VA
Operating Temperature Range		-20 / +60 °C
Max Surrounding Air Temperature		50°C (60°C for 270286/287/290/291)
Protection Degree (IEC 60529)		IP 20
Pollution Degree		2
Activated I/O's at the max temperature	Relay	1
	PTC Input	2

NOTE: Use 60/75°C copper (CU) wire only.



Fault Types	Relay Actions	LED Display
Phase Loss: In case of any of the measuring signals falls below %60 of the rated voltage, phase loss fault accurs. Relay activation and the LED notification are shown in the adjacent figure.		
Neutral Break: In products with neutral connection, if there is a neutral break fault detection feature, in case of a break in the neutral line or if the neutural connection is not made,neutural break fault occurs. Relay activation and the LED notification are shown in the adjacent figure.		
Phase Sequence: When the angles between the signals entring the L1,L2 and L3 inputs are less than 60°' and more theaan 180°, a phase sequence fault occurs in cases where the phases are not connected in sequence. Relay activation and LED notification are shown in the adjacent figure.		
Asymmetry Fault: Asymmetry value is calculated by dividing the max. difference between the phase voltage by the nominal voltage. According to this formula, if the asymmetry value is higher than the asymmetry limit, an asymmetry fault occurs. Relay activation and LED notification are shown in the adjacent figure.		
High Voltage Fault: If the signal that applied from the L1,L2 and L3 signals, is higher than the set high voltage limit, a high voltage fault occurs . Relay activation and the LED notification are shown in the adjacent figure.		
Low Voltage Fault: If the signal that applied from the L1,L2 and L3 signals, is lower than the set low voltage limit, a low voltage fault occurs. Relay activation and the LED notification are shown in the adjacent figure.		
PTC Fault: **a. PTC High Valure Fault:** When T1-T2 or T1-T3 detects high value, PTC high value fault occurs. Relay activation and LED notification are shown in the adjacent figure. **b. PTC Short Circuit Fault:** If short circuit fault is detected in the device, PTC short circuit fault occurs when there is a short circuit between PTC inputs T1-T3. Relay activation and LED notification are shown in the adjacent figure.	 	 



Rev.No.15062026
Doc.No.9.0.0.9.040161
klemsan.com.tr
Kızılüzüm,
Kızılüzüm Cad.
No:15, 35730
Kemalpaşa/Izmir