

- » Product design in accordance with TS EN 60255 standard,
- » 18mm thin product body conforming to DIN Standard,
- » True RMS measurement,
- » Red LED indicators for fault notification,
- » Orange LED indicator for relay status,
- » 5A SPDT relay output,
- » Microprocessor based,
- » Optional Asymmetry, Phase Sequence, Phase Loss and PTC protection,
- » Star and delta connection options,
- » High precision and high mechanical strength.

Product Guide

Products	Stock Code	Connection Type	Phase Loss	Phase Sequence Protection	Asymmetry Protection	PTC
FP1Y-ASF 230	270271	3P4W	✓	✓	20%	-
FP1D-ASF 400	270272	3P3W	✓	✓	20%	-
FP1Y-ASF8 230	270273	3P4W	✓	✓	40%	-
FP1Y-ASF8.3 230	270274	3P4W	✓	✓	40%	-
FP1YA-ASF8 230	270300	3P4W	✓	✓	40%	-
FP1YA-ASF8.3 230	270301	3P4W	✓	✓	40%	-
FP1Y-AF 230	270275	3P4W	✓	-	20%	-
FP1Y-SF 230	270276	3P4W	✓	✓	-	-
FP1Y-SFP 230	270284	3P4W	✓	✓	-	✓
FP1D-SFP 400	270285	3P3W	✓	✓	-	✓
FP1D-SF 400	270302	3P3W	✓	✓	-	-

Technical Details

Operating Voltage	85 - 300 V LN ± 20% 145 - 520 V LL ± 20% 180 - 265 V AC ± 10% (FP1YA series for)	
Operating Frequency	50 / 60 Hz	
Supplying Terminals (Burden)	L2-L3 (3P4W → 4,8 kΩ / 3P3W → 7 kΩ) L3-N (FP1YA-xxx için) NOTE: (any two terminals on product with PTC)	
Voltage Measurement Terminals	L1-L2-L3-N	
PTC Inputs (Burden)	T1-T2 (4,7 MΩ) T1-T3 (6,85 MΩ)	
Rated Voltage	230 V LN 400 V LL	
Energization Delay	<1 sn	
Phase Loss Threshold Value	Un x 60%	
Asymmetry Threshold Value	± 20% ± 40 (FP1Y-ASF8 230, FP1Y-ASF8.3 230, FP1YA-ASF8 230 and FP1YA-ASF8.3 230 for)	
Histerisis	3%	
PTC Alarm Threshold Value	Short Circuit	20 Ω
	High Value	2,7 kΩ
Output Contact	1 C / 0 1 NO (FP1Y-ASF8.3 and FP1YA-ASF8.3 for)	
Max. Switching Voltage / Current / Power	250VAC / 5A / 1250VA - 30VDC / 5A / 150W	
Fault Delay Period	Phase Loss	ton= 2 sn / toff: 500msn
	Phase Sequence	ton= 2 sn / toff: 500msn
	Asymmetry	ton= 2 sn / toff: 500 msn
	PTC	ton= 2 sn / toff: 1 sn
Over Voltage Category (IEC 60664)	CAT III	
Cable Cross Section	2,5mm² (Only copper conductor) / 14 AWG Solid / Stranded	
Screw Tightening Torque	0,5 Nm	
Cable Stripping Size (Min/Max)	8 mm / 9 mm	
Power Consumption	<13 VA	
Operating Temperature Range	-20 / +60 °C	
Protection Degree (IEC 60529)	IP 20	
Activated I/O's at the max temperature	Relay	1
	PTC Input	2

FIXED PROTECTION RELAYS

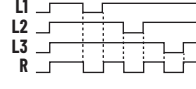
Fault Types

Relay Actions

LED Display

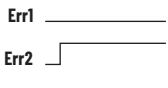
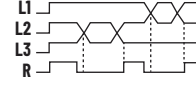
Phase Loss:

In case of any of the measuring signals falls below %60 of the rated voltage, phase loss fault occurs. Relay activation and the LED notification are shown in the adjacent figure.



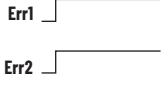
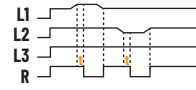
Phase Sequence:

When the angles between the signals entering the L1, L2 and L3 inputs are less than 60° and more than 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:

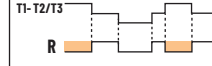
Asymmetry value is calculated by dividing the max. difference between the phase voltage by the nominal voltage. According to this formula, if the asymmetry value is higher than the asymmetry limit, an asymmetry fault occurs. Relay activation and LED notification are shown in the adjacent figure.



PTC Fault:

a. PTC High Value 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.

