

- » 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,
- » 10A 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
FPIY-ASF-230	270271	3P4W	✓	✓	20%	-
FPID-ASF-400	270272	3P3W	✓	✓	20%	-
FPIY-ASF8-230	270273	3P4W	✓	✓	40%	-
FPIY-ASF8.3-230	270274	3P4W	✓	✓	40%	-
FPIYA-ASF8-230	270300	3P4W	✓	✓	40%	-
FPIYA-ASF8.3-230	270301	3P4W	✓	✓	40%	-
FPIY-AF-230	270275	3P4W	✓	-	20%	-
FPIY-SF-230	270276	3P4W	✓	✓	-	-
FPIY-SFP-230	270284	3P4W	✓	✓	-	✓
FPID-SFP-400	270285	3P3W	✓	✓	-	✓
FPID-SF-400	270302	3P3W	✓	✓	-	-

Technical Details

Operating Voltage		85 - 300 V LN $\pm$ 20% (for 3P4W) 150 - 500 V LL $\pm$ 20% (for 3P3W) 185 - 265 VLN $\pm$ 10% (for FPIYA series)
Operating Frequency		50 / 60 Hz
Supplying Terminals (Burden)		L2-L3 (3P4W $\rightarrow$ 4,8 k Ω / 3P3W $\rightarrow$ 7 k Ω) L3-N (FPIYA-xxx) NOTE: (any two terminals on product with PTC)
Voltage Measurement Terminals		L1-L2-L3-N
PTC Inputs (Burden)		T1-T2 (4,7 M Ω) T1-T3 (6,85 M Ω)
Rated Voltage		230 V LN 400 V LL
Energization Delay		<1 s
Phase Loss Threshold Value		Un x 60%
Asymmetry Threshold Value		$\pm$ 20% $\pm$ 40 (FPIY-ASF8-230,FPIY-ASF8.3-230, FPIYA-ASF8-230 and FPIYA-ASF8.3-230)
Histerisis		3%
PTC Alarm Threshold Value	Short Circuit	20 Ω
	High Value	2,7 k Ω
Output Contact		1 C/O 1 NO (FPIY-ASF8.3-230 and FPIYA-ASF8.3-230)
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: 1500ms toff: 500ms
	PTC	ton: 2s toff: 1s
Over Voltage Category (IEC 60664)		CAT III
Cable Cross Section		0.2-2.5mm ² / 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 270284/285/300/301)
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.

FIXED PROTECTION RELAYS

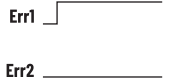
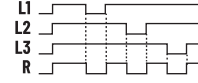
Fault Types

Relay Actions

LED Display

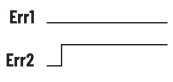
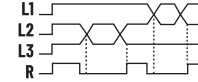
Phase Loss:

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.



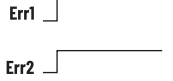
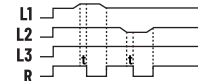
Phase Sequence:

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:

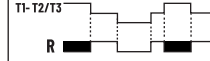
Asymmetry value is calculated by dividing the max. difference between the phase voltage by the nominal voltage. According to this formula, if the asymmetry value is higher than the asymmetry limit, an asymmetry fault occurs. Relay activation and LED notification are shown in the adjacent figure.



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.

