

We touch your **electricity** everyday!

CSFPI

Short Circuit & Earth Fault Passage Indicator

CSFPI
CSFPI
CSFPI
CSFPI
Series



Catalogue



PMD Division

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Introduction

CSFPI-Self Powered Fault Passage Indicator is designed to detect and indicate Earth Fault and Short Circuit on a cable system in RMU networks with one input/open ring arrangement. The product is powered by the Internal Battery only. The unit will Indicate a fault condition when current is detected above set trip current settings. Fault current is sensed by cable mounted sensor, which gives signal to indication unit. Sensors must be mounted on screened cables and can be retrofitted on the cable.

Features

- ❖ Programmable Short circuit pickup level (wide range 100A to 1200A).
- ❖ Programmable Earth fault pickup level (wide range 10A to 100A).
- ❖ Indication of permanent earth-faults by blinking of Earth-fault LED.
- ❖ Indication of a short-circuit by blinking of the Short-circuit LEDs.
- ❖ Programmable response delay for short-circuits and Earth-faults (individually).
- ❖ Upto Three potential free contacts to indicate earth-fault, short-circuits & low battery remote indication.
- ❖ Various Reset option for Fault Reset.
- ❖ Reset through Potential free input & AC/DC voltage.
- ❖ Reset manually by push button.
- ❖ Reset automatically by a field configurable timer (hour).

Functional Description

If the Phase /Earth current exceeds programmed set current for programmed response time the fault (Affected Phase in case of short circuit) will be indicated by red flashing LEDs and a relay contact will be activated. Reset occurs automatically by preset time passage or by a external potential free input or by recovering of 230V AC (Not a Aux. Supply) Voltage or by manually via push button. A 'Functional Test' can also be carried out on field by pressing for more than 3 Sec and 'Battery Test' by pressing the Push button for more than 6 Sec.

Programmable parameters can be set through DIP switches which are accessible by opening the Front Cover of the CSFPI indication unit. Exit (Disable) option is available for Short Circuit & Earth Fault detection.

DIP SWITCH-1

Switch 1				
OFF	OFF	OFF	OFF	100
OFF	OFF	OFF	ON	200
OFF	OFF	ON	OFF	300
OFF	OFF	ON	ON	400
OFF	ON	OFF	OFF	500
OFF	ON	OFF	ON	600
OFF	ON	ON	OFF	700
OFF	ON	ON	ON	800
ON	OFF	OFF	OFF	900
ON	OFF	OFF	ON	1000
ON	OFF	ON	OFF	1100
ON	OFF	ON	ON	1200
ON	ON	x	x	EXIT

Short Circuit Pickup (Amp)

DIP SWITCH-2

Switch 2						
OFF	OFF	OFF	OFF	OFF	OFF	40
OFF	OFF	ON	OFF	OFF	ON	60
OFF	ON	OFF	OFF	ON	OFF	80
OFF	ON	ON	OFF	ON	ON	100
ON	OFF	OFF	OFF	ON	OFF	120
ON	OFF	ON	OFF	ON	ON	160
ON	ON	OFF	OFF	ON	ON	200
ON	ON	ON	OFF	ON	ON	240
ON	ON	ON	ON	ON	ON	EXIT

Earth Fault Pickup (Amp)

Short Circuit Response Time (ms)

DIP SWITCH-3

Switch 3						
OFF	OFF	OFF	OFF	OFF	OFF	1
OFF	ON	OFF	OFF	ON	OFF	2
ON	OFF	OFF	ON	OFF	OFF	4
ON	ON	OFF	ON	ON	ON	8
ON	x	x	x	EXIT		

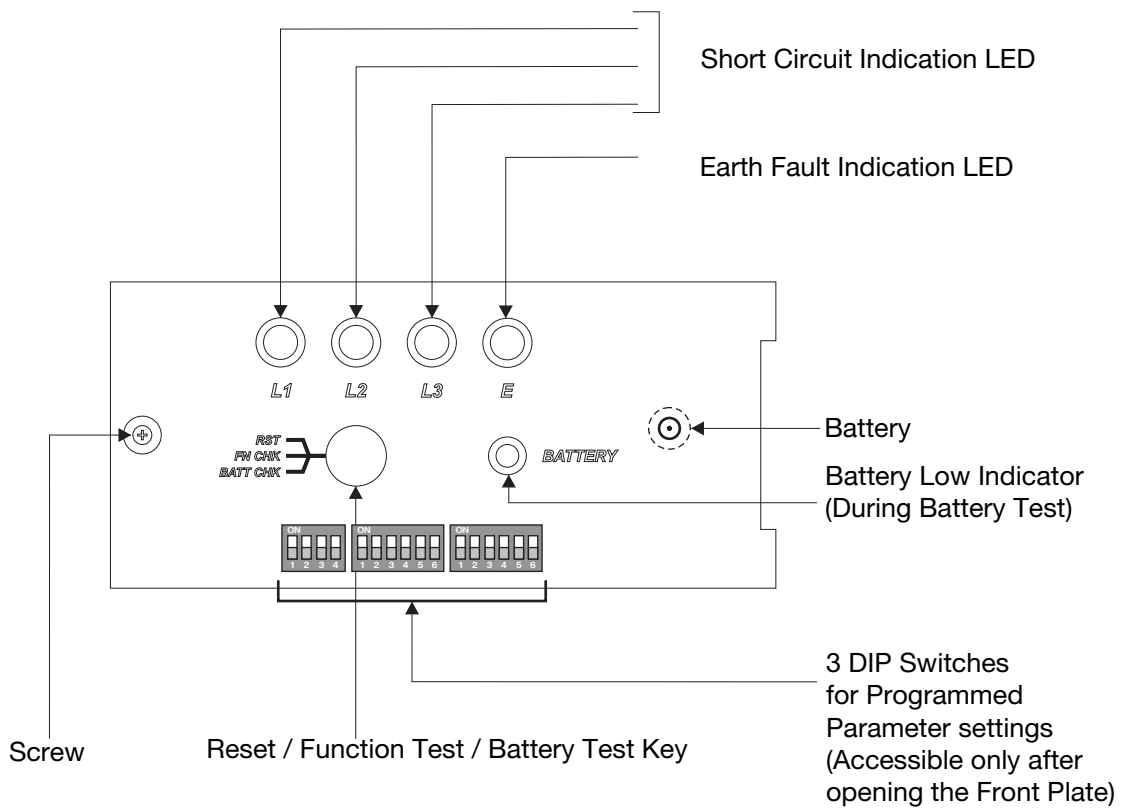
Earth Fault Response Time (ms)

Auto Reset Timer (Hour)

6th position is not in use

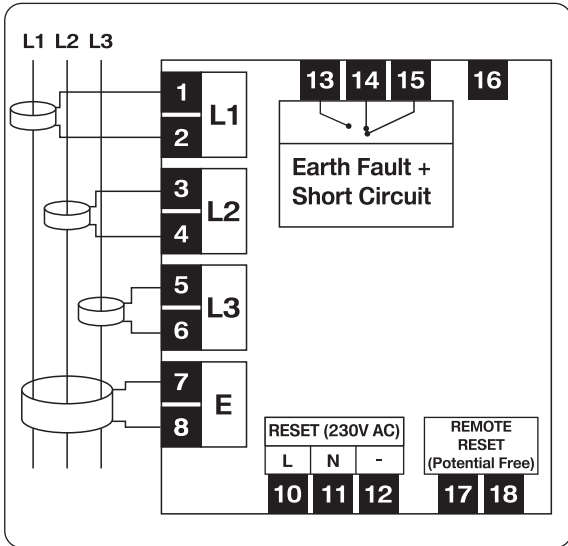
x : Don't Care (Not in Use)

Front Interface

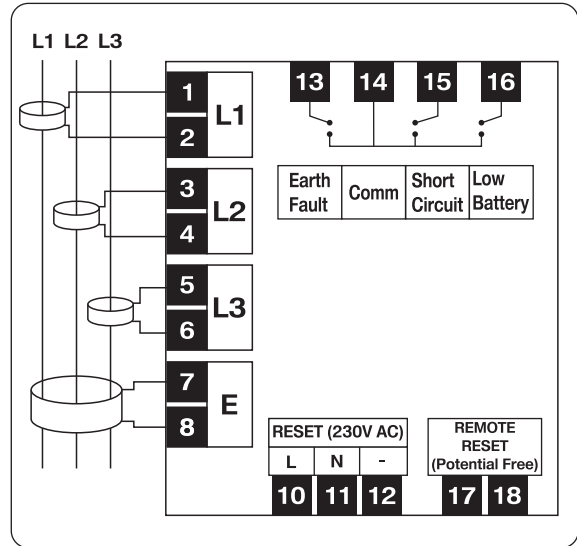


Note: open the Front plate by removing the front screw to access the DIP switch setting.

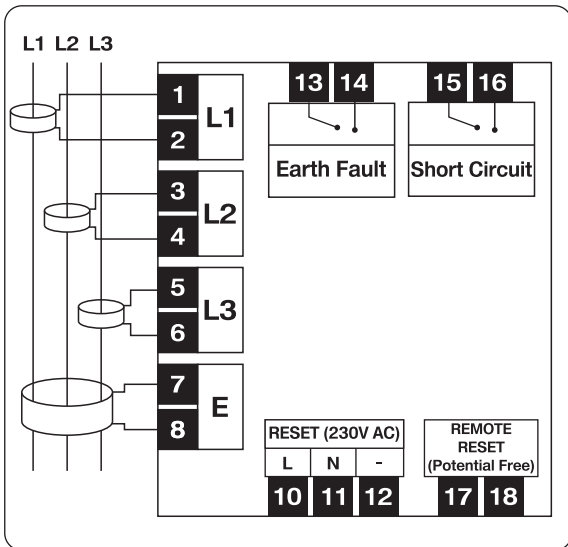
Connection Diagram



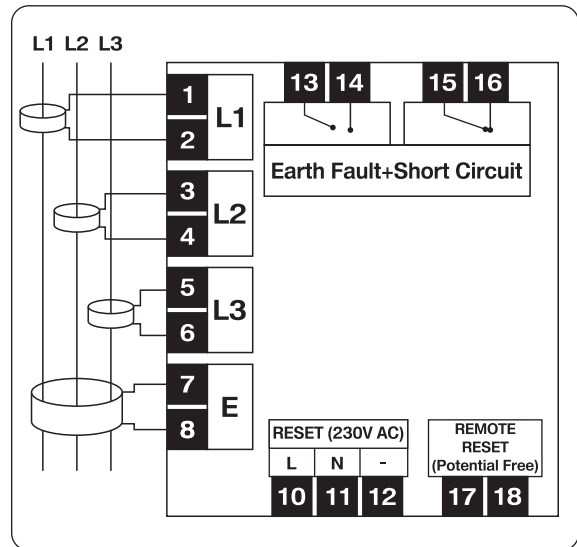
CSFPI-E-B-x



CSFPI-E-D-x



CSFPI-E-C-x



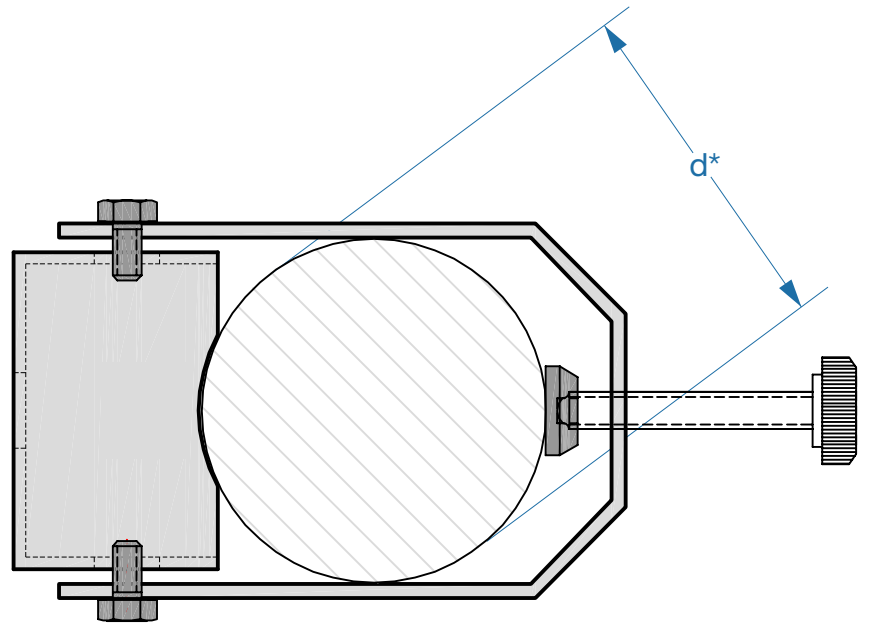
CSFPI-E-G-x

General Data

Subject	Value
Short-Circuit Trip Current (Phase to Phase)	: Adjustable: : 100/ 200/ 300/ 400/ 500/ 600/ 700/ 800/ 900/ 1000/ 1100/ 1200 A ($\pm 10\%$) **
Earth-Fault Trip Current (Phase to Ground)	: Adjustable: : 10/ 20/ 30/ 40/ 60/ 80/ 100 A ($\pm 10\%$) **
Short-circuit Response Time	: Adjustable: : 40 / 60 / 80 / 100 / 120 / 160 / 200 / 240 ms ($\pm 100\text{mSec}$)
Earth Fault Response Time	: Adjustable : 40 / 60 / 80 / 160 ms ($\pm 100\text{mSec}$)
Indication Unit	: Suitable for panel installation
Indication of	
a) Short-Circuit	: a) One Red LED for each Phase
b) Earth-Fault	: b) One Red LED for Earth-Fault
c) Battery	: c) One Yellow LED for Battery Low
Reset of the Indicator	: a) Manual by push-button : b) Remote Reset (Potential Free Input) : c) Automatic Reset by Time : 1 / 2 / 4 / 8 ($\pm 5\%$) hours after fault : d) Self-acting after recovering of 230V AC/DC (Range: 22V - 260V AC/DC)
On Site Function Test	: By Push-Button
Dimensions	: Indication Unit : 97.75 mm x 51.75 mm x 92.0 mm (WxHxD)
Protection Class	: Indication Unit - IP50 : Sensors - IP67
Type Test	: According to IEEE 495-2007
Operation Temperature Range	: -25°C to $+70^{\circ}\text{C}$
Power Supply	: Lithium Battery 3.6V / 2.7 Ah (Mandatory)
SCADA Contact *	: Max. 3 Latch Contacts : Nominal Switching Capacity : 2A 30V DC, 0.5A 125V AC (Resistive Load) : Max. Switching Power : 60W, 60VA (Resistive Load) : Max. Switching Voltage : 220V DC, 250V AC
Short-Circuit Sensor (CT)	: Three Short Circuit Sensors Type CS-x-PS-x-x for Three Core Cable (One Sensor for each core) : Diameter & Length: various option available (Based on ordering information)
Earth-Fault Sensor (CT)	: One Earth-Fault Sensor Type CS-x-ES-x-x for a Three-Core Cable : Diameter & Length: various option available (Based on ordering information)
Connection & Mounting	: Screwed Terminal Connector at the rear side of the Unit. Panel mount.

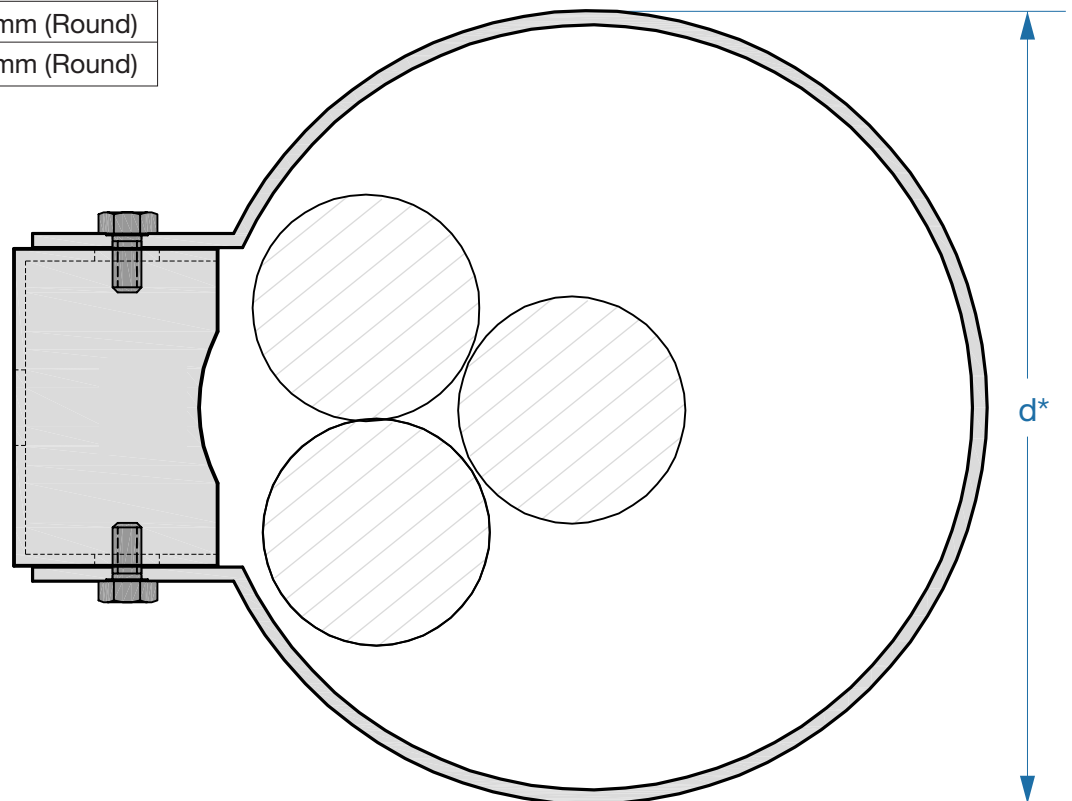
Short Circuit Sensor Type (CS-x-PS-x-x)

Sensor Dia (d)	Cable Dia
D1	15-25 mm (Round)
D2	18-44 mm (Round)
D3	40-60 mm (Round)



Earth Fault Sensor Type (CS-x-ES-x-x)

Sensor Dia (d)	Cable Dia
D1	80-100 mm (Round)
D2	100-120 mm (Round)
D3	120-140 mm (Round)



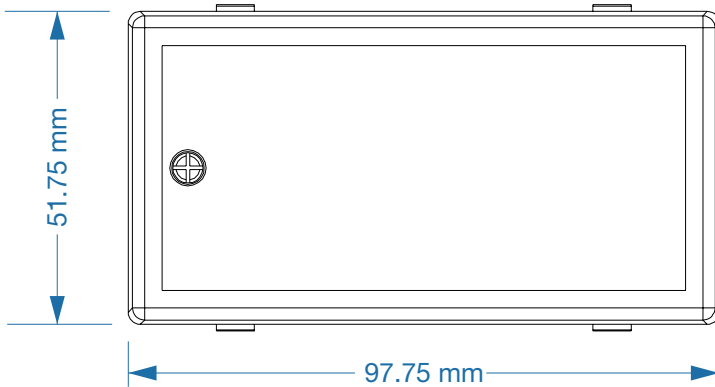
Sensor Diameter (d *) & Sensor Cable (2 Wire, 6mm dia, FR Grade type) Length : based on sensor ordering information

Dimension Details

Panel cut out Dimension	
Width	: 91.0 mm
Height	: 46.0 mm
Installation Depth	: 84.0 mm

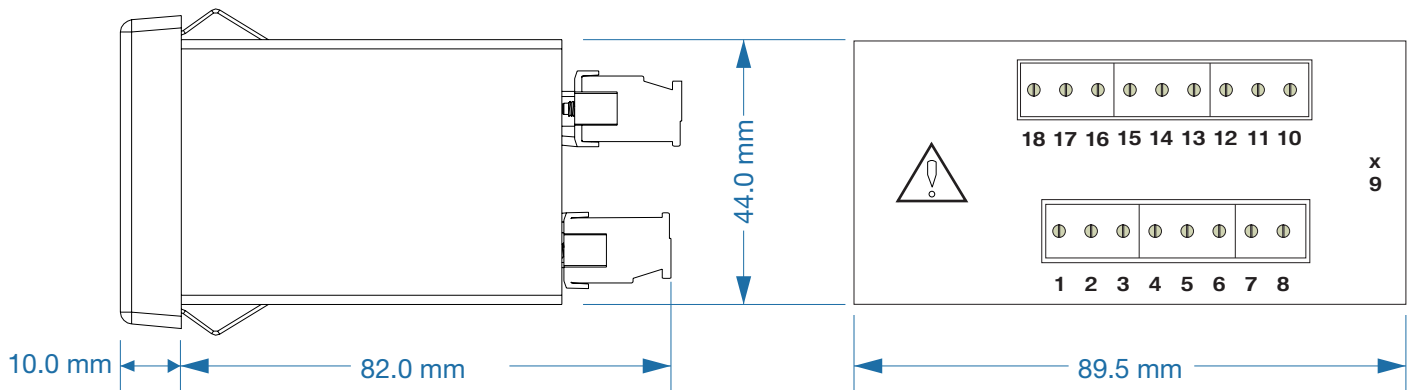


FRONT VIEW OF PHASE & EARTH FAULT INDICATOR

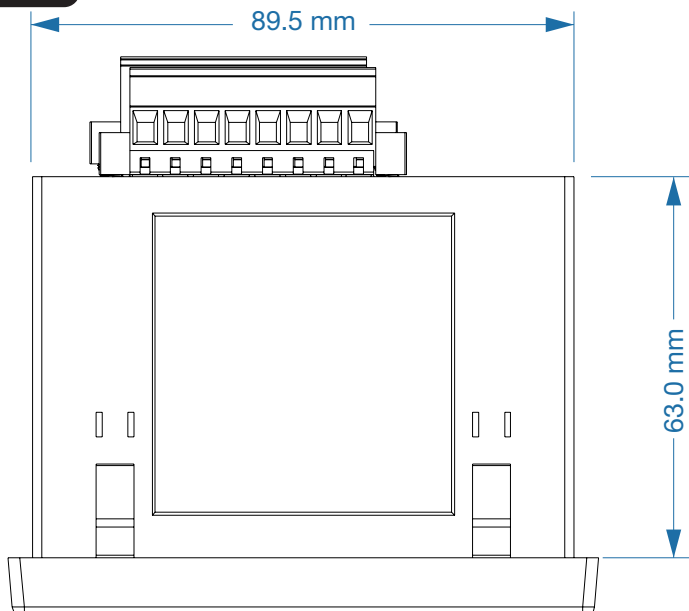


SIDE VIEW

BACK VIEW



TOP VIEW



Ordering Information (Indication Unit)

CSFPI - E - X - H - X

- B : (Short ckt + Earth Fault) Indicator with 1 C/O Digital Output (Short Ckt+ Earth Fault)
- C : (Short ckt + Earth Fault) Indicator with 2 Digital Output [1 N/O Digital Output (Short Ckt) + 1 N/O Digital Output (EarthFault)]
- D : (Short ckt + Earth Fault) Indicator with 3 Digital Output [1 N/O Digital Output (Short Ckt) + 1 N/O Digital Output (EarthFault) + 1 N/O Digital Output (Low Battery)]
- G : (Short ckt + Earth Fault) Indicator with 1 N/O+1 N/C Digital Output (Short Ckt+ Earth Fault)

- Cx : Customized model
- : Standard Model

All the models have internally Battery for Power.

Ordering Information (Sensor Unit)

CS - E - X - X - X

PS : Short Circuit Sensor
ES : Earth Fault Sensor

Dx : Sensor Diameter (Refer Sensor Details)

1: Wire Length from Sensor to Indicator 1.5 Meter
3: Wire Length from Sensor to Indicator 3.0 Meter

Revision History

S.No.	Rev.No.	Details	Date
01	01	In Dimension Details: Depth of the Relay is changed from 75 mm to 84 mm.	27.04.15
02	02	In Functional Description on Page 3 Dip switch details : 6th position of switch 3 included.	28.07.15
03	03	On Page 6 in General Data $\pm 15\%$ changed to $\pm 10\%$	04.08.15
04	04	Change in all Connection diagram and Back Terminal in dimension details	24.08.15
05	05	Inclusion of Text "Self Powered Fault Passage Indicator is designed...	16.05.16
05	05	and the internal battery power supply" in introduction	16.05.16

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Rev. No: 05

Rev. Date: 16.05.16

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