ZEZ SILKO
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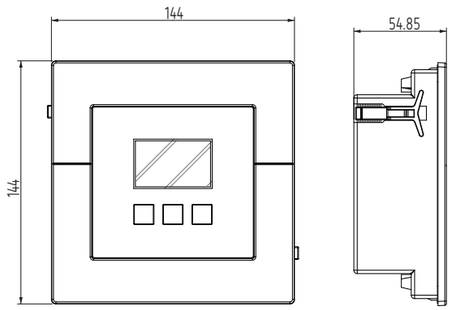
PFR 6S
PFR 12S

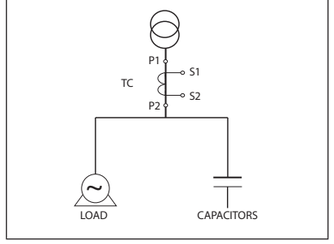
REACTIVE ENERGY CONTROLLER

UK CA CE

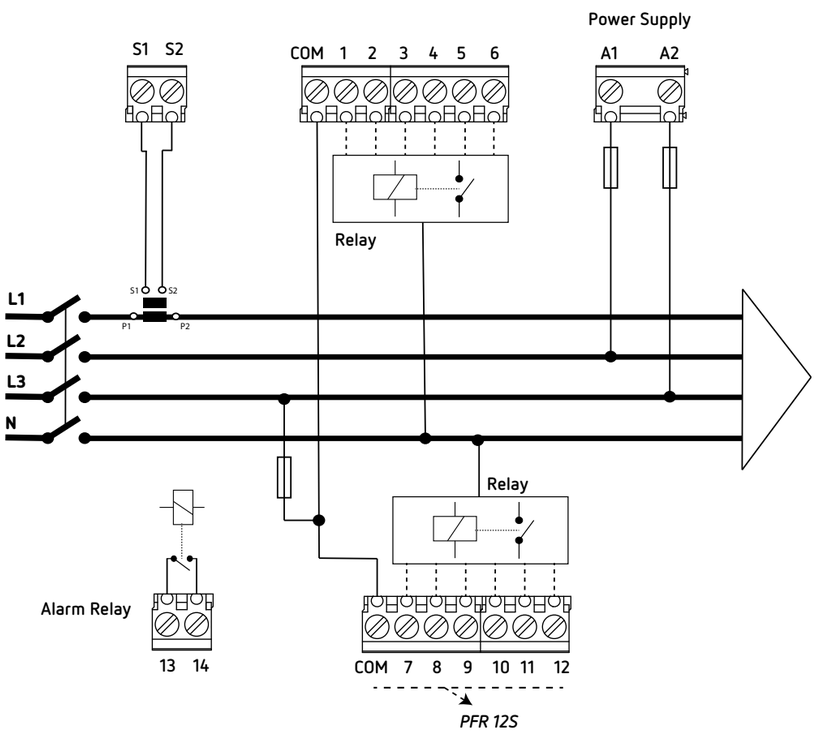
Dimensions



Current Transformer connection (CT)



Connections



GB

This manual is **a PFR 6S / 12S** installation guide.

IMPORTANT!

The device must be disconnected from its power supply sources (power supply and measurement) before under taking any installation, repair or handling operations on the unit's connections. Contact the after-sales service if you suspect that there is an operational fault in the de-vice. The device has been designed for easy replacement in case of malfunction.

The manufacturer of the device is not responsible for any damage resulting from failure by the user or in-staller to heed the warnings and/or recommendations set out in this manual, nor for damage resulting from the use of non-original products or accessories or those made by other manufacturers.

1. DESCRIPTION

PFR 6S/12S is a device that measures the mains's cosine parameters and controls capacitor connection and disconnection to correct it. The device also measures and displays every other basic parameter of a mains. There are 2 versions of the device,depending on the number of output relays:

- ✓ **PFR 6S,** with six outp ut relays.
- ✓ **PFR 12S** with twelve output relays.

2. INSTALLATION

The device will be installed on a panel ($138^{+0.8}$ x $138^{+0.8}$ mm panel drill hole, in compliance with DIN 43700). All the connections terminals are located inside the electric panel.

IMPORTANT!!

Take into account that when the device is connected, the terminals may be hazardous to the touch, and opening the covers or removing elements may provide access to parts that are dangerous to the touch. Do not use the device until it is fully installed.

¡DANGER!!

The **PFR 6S/12S** is connecte d to device s w ith ca-pacitors that remain charged even after the voltage has been disconnected. **Wait at least 5 minutes** after the device is disconnected before handling its internal components to avoid the risk of electric shock.
Any manipulation or use of the device other than that specified by the manufacturer may compromise user safety.

The device must be connected to a power circuit that is protected with gl (IEC 269) or M type fuses with a rating of 0.5 to 2 A. It must be fitted with a circuit breaker or equivalent device, in order to be able to disconnect the device from the power supply network. The power and voltage measuring circuit must be connected with cables that have a minimum cross-section of 1,5 mm^2.

One external current transformer (CT) need to be installed in order to measure current. Usually, the transformation ratio of these CTs is **In/5 A**, where the **In** must be at least 1.5 times greater than the total maximum load current.

The secondary cables of the current transformer (CT) must have a mini mum cross-section of 2,5 mm^2. If the distance between the CTs and the device is over 25 m, this cross-section must be increased by 1 mm^2 for every 10 m.

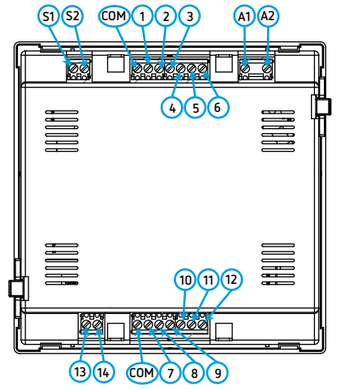
The current transformer (CT) must be installed at the power line connec-tion point through which the entire load current circulates, and where more compensation is needed for the capacitor load currents.

Note: *The current transformer must be installed keeping the category of the installation.*

Technical features

AC Power supply			
Connection	Connection Connect preferably to phases L2-L3		
Rated voltage[1]	230 V ~ ± 10% , 400 V ~ ± 10%		
Frequency	50 ... 60 Hz		
Consumption	**230 V** ~	4.7 VA	
	400 V ~	13 VA	
Installation category	CAT III 300V		
Voltage measurement circuit			
Connection	Connect preferably to phases L2-L3		
Rated voltage (Un)	230 V ~, 400 V ~		
Voltage measurement margin	- 10% ... +10%		
Frequency measurement margin	50 ... 60 Hz		
Installation category	CAT III 300V		
Current measurement circuit			
Connection	Connection Connect preferably to phase L1		
Rated current (In)	.../5A		
Current measurement margin	0.05 ... 5A (Maximum overload +20%)		
Installation category	CAT III 300V		
Measurement accuracy			
Voltage measurement	1%		
Current measurement	1%		
Cos φ measurement	2% ± 1 digit		
Relays outputs	**PFR 6S**	**PFR 12S**	
Quantity	6 + 1 (Alarm)	12 + 1 (Alarm)	
Max. switching voltage	250 V~		
Max. current	1 A ~		
Maximum switching power	250 W		
Electrical life (Maximum load)	$1x10^5$ cycles		
Mechanical life	$1x10^7$ cycles		
User interface			
Display	4 digits		
Keyboard	3 keys		
Environmental features			
Operating temperature	-20°C... +60°C		
Storage temperature	-20°C ... +70°C		
Relative humidity (non-condensing)	5 ... 95%		
Maximum altitude	2000 m		
Protection degreey IP	IP30 Front panel: IP40		
Protection degree IK	IK08		
Pollution degree	2		
Use	Indoor		
Safety category	Class II		
Mechanical features			
Terminals			
S1, S2, COM, 1 ... 14, A1, A2	≥ 1.5 mm^2	0.5 Nm	flat
Dimensions	144 x 144 x 54.85 mm		
Weight	**PFR 6S**	**230 V** ~	555 g.
		400 V ~	447 g.
	PFR 12S	**230 V** ~	608 g.
		400 V ~	500 g.
Enclosure	If-extinguishing V0 plastic		
Attachment	Panel		
Standars			
UNE EN 61010-1, UNE-EN 61010-2-030, UNE-EN 61000-6-4, UNE-EN 61000-6-2			

[1] Depending on model.



Terminal connections designations	
A1	~, Power supply
A2	~, Power supply
S1	Current input
S2	Current input
COM	Common of relays 1 ... 12
1	Relay output 1
2	Relay output 2
3	Relay output 3
4	Relay output 4
5	Relay output 5
6	Relay output 6
7	**PFR 12S:** Relay output 7
8	**PFR 12S:** Relay output 8
9	**PFR 12S:** Relay output 9
10	**PFR 12S:** Relay output 10
11	**PFR 12S:** Relay output 11
12	**PFR 12S:** Relay output 12
13	Alarm relay (C)
14	Alarm relay (NO)

Note: *Device images are for illustrative purposes only and may differ from the actual device.*

Technical service

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