



POWER Quality METER



V, A, PF, W, VAR, VA,

Wh, VARh, VAh, Hz

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PRODUCT INTRODUCTION

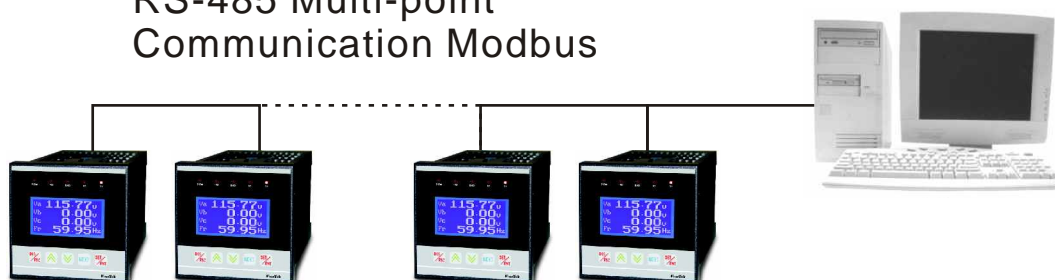
The PF Power Meter utilizes a 16 bit 61.44MHz DSP digital signal converter as it's main processor to produce timely and accurate results. Complemented with 3-phase electrical power A/D switching chip, it is able to sample 6 sets of signals simultaneously (3-phase voltage and 3-phase current) to produce accurate monitoring. Apart from the industry's standard of using switching mode single module A/D converter which produces a time lag in-between sampling, the PF provides digital analysis, display, regulation, output and other functions.

The PF, apart from displaying all electrical power units (V, A, PF, W, VAR, VA, Wh, VARh, VAh, Hz), harmonic analysis, the meter measures total harmonic distortion, odd harmonic distortion, and individual harmonic distortions for harmonics 3 through 21. it includes 2 relay outputs, availability to set max or min value for Voltage(V)/ Current(A)/ Active Power(W)/ Power Factor(PF). It also produces two pulse output for energy and reactive power (pulse/ kwh) readings. For communications interface, PF utilizes RS485 industrial standard (Modbus) to produce other output functions. The user will definitely find the PF user-friendly and easy to integrate into any systems/

MEASUREMENT & DISPLAY LIST:

Item \ Measurement	A (Phase)	B (Phase)	C (Phase)	(Total)	Accuracy
V: Voltage	Va	Vb	Vc	Frequency(Fr)	±0.2 %
I: Current	Ia	Ib	Ic	Ie	±0.2 %
P: Active Power	Pa	Pb	Pc	Pt	±0.35%
Q: Reactive Powe	Qa	Qb	Qc	Qt	±0.35%
S: Apparent Power	Sa	Sb	Sc	St	±0.35%
PF: Power Factor	PFa	PFb	PFc	PFt	±0.35%
PE+: Active Energy +	+PEa	+PEb	+PEc	+PEt	±0.35%
PE-: Active Energy -	-PEa	-PEb	-PEc	-PEt	±0.35%
QE+: Reactive Energy +	+QEa	+QEb	+QEc	+QEt	±0.35%
QE-: Reactive Energy -	-QEa	-QEb	-QEc	-QEt	±0.35%
SE: Apparent Energy	SEa	SEb	SEc	SEt	±0.35%
Harmonic V / I	Va/Ia	Vb/Ib	Vc/Ic	X	
Parameter	System Function, Relay Function, Communication				

RS-485 Multi-point Communication Modbus

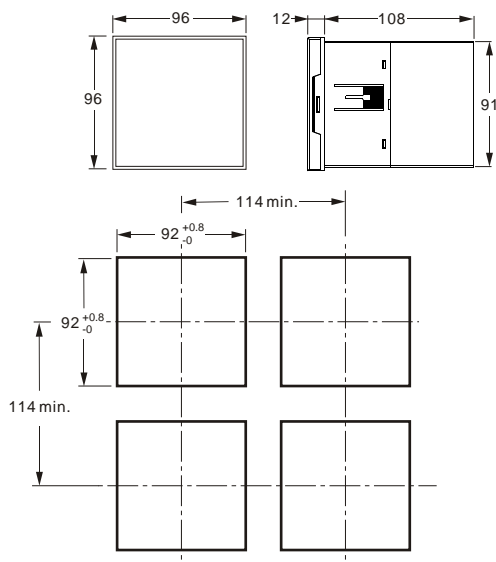




FEATURES:

- Suitable for use in 3-phase/3-wire and 3-phase/4-wire power systems. Able to measure Voltage/Current/ Power Factor/ Active Power/ Reactive Power/ Apparent Power/ Line frequency/ Active energy/ Reactive Energy and Apparent Energy.
- Uses a 128x64 blue LCD for display
- Programmable adjustment for current and voltage transformers ratio, CT/ PT ratio 1~1000.
- RS485 Communication Interface (RTU & ASCII module)
- 2 Relay outputs programmable to act on Voltage/Current /Active Power/ Power Factor
- 2 Pulse output for active power and reactive power
- Password protection for settings
- Accuracy up to 0.2%
- Provide Voltage/ Current harmonic analysis data, include signal strength and shift up to 21st order.
- Precision True-RMS measurement

EXTERIOR/CUTOUT DIMENSIONS



SPECIFICATIONS

Size (mm)	96 (W) x96 (H) x120 (D) DIN 1/4
Model	PF
Power Supply	85~265V AC \pm 10%, 50/60Hz
Display	128 X 64 Graphic LCM
Input Signal	3 ϕ 3W / 3 ϕ 4W V _{L-N} : 65~250V V _{L-L} : 112~430V I: 0.06~6A
Relay Output	SPST-ON x2, 3A/250V AC, 5A/30V DC
Pulse Output	2 sets Open Collector Output 1: 10000pulse/KWh (8~30VDC,50mA) 2: 10000pulse/KVARh
Communication Interface	RS485 MODBUS
Operating Conditions	0~60°C(45~85% RH), Accuracy: 23 \pm 5°C
Storage Conditions	-10~70°C
Functions	Measurement 3 ϕ 3W / 3 ϕ 4W Frequency, V, I, P, Q, S, PF, PE, QE, SE
Power/ Energy Range (User able to connect CT and PT to expand range)	Active Power: 0~4.5 KW Reactive Power: 0~4.5 KVAR Apparent Power: 0~4.5 KVA Active Energy: 0~400 MWh Reactive Energy: 0~400 MVARh Apparent Energy: 0~400 MVAh

ORDERING INFORMATION:

PF-3050-S1

Pulse Output	0---Non 1---with pulse output
Communication Interface	0---Non 1---RS485

OUTPUT / CONNECTING DIAGRAM

CONTACT OUTPUT:

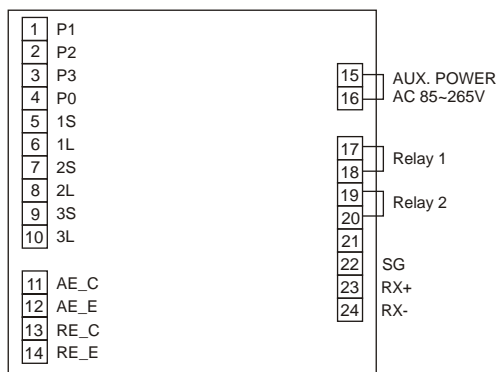
PF series products can provide metering and programmable 2 setpoints for alarm or control from most measures value (before PT, CT ratio multiplication) when it is overcurrent, overvoltage, Power overload or when its power factor is either leading or lagging than the level set, the contact relay will be activated. The relay output performance sequence is illustrated as below graph:

1. When the monitoring value (V, I, P) of V is lower than V1 set value, the relay is OFF (de-activated).
2. When the monitoring value (V, I, P) of V is over than V1 set value, the relay is ON (activated).

TRANSISTOR OUTPUT:

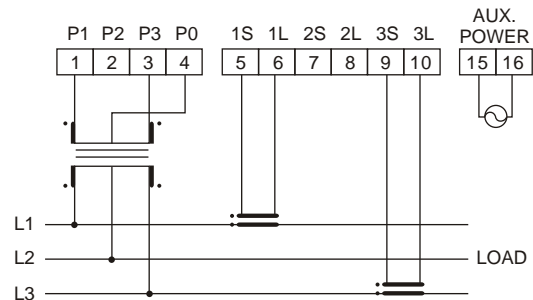
PF series is also able to offer 2 NPN open collector transistor output setpoint, base on the variation of power energy (KWh/KVARh), It will create equivalent voltage pulse output simultaneously (before PT, CT ratio multiplication), Its ratio is set at 10,000 Pulse/KWh and 10,000 Pulse/KVARh.

TERMINAL ARRANGEMENTS:

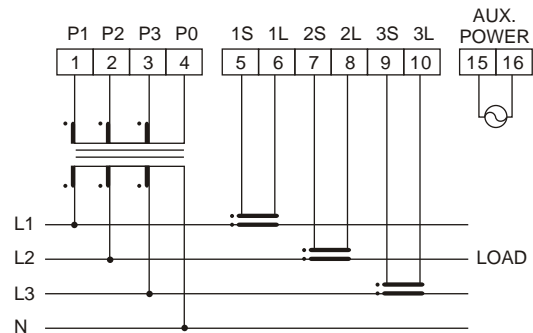


TYPICAL WIRING:

A. 3 Phase 3-Wire with 2PTs, 2CTs



B. 3 Phase 4-Wire with 3PTs, 3CTs



C. 1 Phase 2-Wire with 1CTs (no PTs)

