



## Power Factor (cosØ) Meters

Digital power factor meters are available in the DIN 96x48mm size, for the measurement of power factor (cosØ). These self contained meters are panel mounting and are calibrated bi-directionally from 0.30 lag to 0.30 lead.

All digital power factor meters can be powered by a large selection of self contained AC or DC auxiliary power supplies, which all offer isolation between the measured input signal and auxiliary supply voltage. Optional terminal protection covers are also available.

**Notes:**

1. Ensure that current transformers are mounted such that K faces the supply and L faces the load.
2. Secondary windings of the current transformers should be earthed.

**Models Available**

- FPM964PF1** DIN96x48 1ph/3ph4w cosØ
- FPM964PF3** DIN96x48 3ph3w cosØ

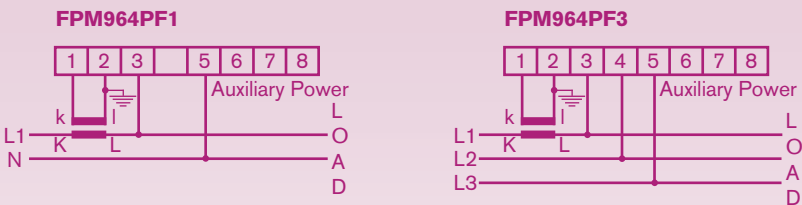
**Product Features**

- Power Factor (cosØ) measurement
- 3 digit red LED display
- DIN 96x48mm size
- Easy to wire screw type terminals

For dimensions see page 33

## Digital Power Factor Meters - for measurement of power factor (cosØ)

**Connections**



For auxiliary power connections see page 33

**Ordering information**

Code	DIN Size & Meter Type	Input	Auxiliary
FPM964PF	96 x 48mm Digital CosØ meter	-	-
1	Single Phase / 3 Phase 4 Wire Balanced	-	-
3	3 Phase 3 Wire Balanced	-	-
Specify	-	Voltage (L-N or L-L) and Current -	
110/230Vac	-	- 110/230Vac Dual Auxiliary	
Specify	-	- 12, 24, 48, 415Vac	
10-60Vdc	-	- 10-60Vdc	
<b>Example</b>	<b>FPM964PF1</b>	<b>230VL-N, 5A</b>	<b>110/230Vac</b>

**Specification**

- Accuracy:**
  - Class 1.0 ( $\pm 1.0\%$  max. error)
- Input Current,  $I_n$ :**
  - 0-0.2A to 0-10A direct connected
  - 1A or 5A CT operated
- Input Voltage,  $U_n$ :**
  - 110, 230 or 415V (-30% to +10%)
  - (50 to 600V upon request)
- Frequency:**
  - 50/60Hz
- Scale:**
  - 0.3 lag to 0.3 lead
  - Lag denoted by minus sign (-)
- Overload:**
  - 1.2 x  $I_n$  or  $U_n$  for 2 hours
  - 6 x  $I_n$  for 5 seconds
- Burden:**
  - Voltage circuit < 2VA per phase
  - Current circuit < 1VA per phase
- Response Time:**
  - < 1 second
- Weight:**
  - 420g



## Digital Trip Unit

### Models Available

**FPM964DTU** DIN96x48 Digital Trip Unit

### Product Features

- User Adjustable HI and LO setpoints
- 3½ digit red LED display
- DIN 96x48mm size
- User adjustable scale and decimal point
- Wide range of AC and DC inputs
- Easy to wire screw type terminals

For dimensions see page 33

The digital trip unit is an electronic monitoring and protection unit consisting of a digital meter and a remote DIN rail mounting relay unit. It offers increased reliability and accuracy over the traditional analogue meter relay and is available to measure all the same electrical parameters as the standard digital meters - AC Voltage, AC Current, DC Voltage, DC Current, Frequency and Power (Watts or Vars).

The digital trip unit has 'HI' and 'LO' trip points which can easily be set by the user with the aid of a small screwdriver and can be verified by pressing one of two push-buttons on the front of the meter. The FPM964 digital meter constantly displays the measured parameter so if a system is approaching its trip point it can be observed and action taken. Optional terminal protection covers are also available.

## For digital measurement with user adjustable high and low setpoints

### Specification

For Digital Meter Specification see relevant page (pages 28 to 30)

#### Differential:

- < 10 digits

#### Repeatability:

- < 3 digits

### Relay Unit

#### Enclosure:

- 55mm wide grey ABS
- Case IP40, terminals IP20
- Fixes to 35mm DIN rail (DIN-EN 50022)

#### Auxiliary Power Supply:

- 110 or 230V 50/60Hz (standard)
- 12, 24, 48V 50/60Hz or 10-60Vdc

#### Auxiliary Power Supply Variation:

- ±15%

#### Auxiliary Burden:

- < 3VA

#### Output Contacts:

- 2 single pole changeover contacts
- 8A at 250Vac/30Vdc

#### Operating Temperature:

- 0°C to 60°C

#### Contact Life:

- 1,000,000 operations at 5A
- 10,000,000 operations at 1A

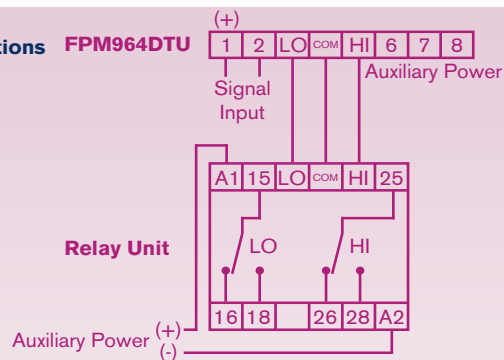
#### Reset Time:

- 100msec

#### Weight:

- 290g

### Connections FPM964DTU



For auxiliary power connections see page 33

### Ordering information

Code	Meter Type	Input & Scaling	Auxiliary
FPM964DTUDCA	DC Ammeter Trip Unit	-	-
FPM964DTUDCV	DC Voltmeter Trip Unit	-	-
FPM964DTUACA	AC Ammeter Trip Unit	-	-
FPM964DTUACV	AC Voltmeter Trip Unit	-	-
FPM964DTUF	Frequency Meter Trip Unit	-	-
FPM964DTUW*	Wattmeter Trip Unit	-	-
FPM964DTUV*	Varmeter Trip Unit	-	-
Specify	-	See Individual Specifications	
Specify	-	12, 24, 48, 110, 230, 415Vac	10-60Vdc
Specify	-	10-60Vdc	10-60Vdc
<b>Example</b>	<b>FPM964DTUDCV</b>	<b>0-10Vdc / 0-100.0%</b>	<b>230Vac</b>

\* Wiring system information required e.g. 3 phase 4 wire unbalanced