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AC Ammeters, Voltmeters & Frequency Meters

AC digital ammeters and voltmeters are available in two DIN sizes, 48x24mm and 96x48mm, and a digital frequency meter is available in the larger size, all featuring a 3½ digit red LED display. The meters are panel mounting and offer a wide choice of input and display options making them suitable for a large range of industrial applications.

All AC digital panel 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.

All AC digital panel meters are delivered fully calibrated, however adjustments to zero and span points can be made (see calibration data sheets). Optional terminal protection covers are also available.

Models Available
FPM482ACA DIN48x24 AC Ammeter
FPM964ACA DIN96x48 AC Ammeter

FPM482ACV DIN48x24 AC Voltmeter
FPM964ACV DIN96x48 AC Voltmeter
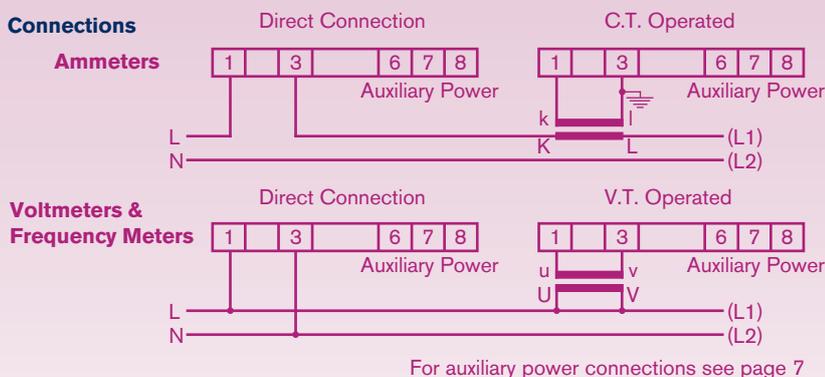
FPM964F DIN96x48 Frequency meter

Product Features
- 3½ digit red LED display
- Available in two standard DIN sizes
- User adjustable scale and decimal point
- Easy to wire screw type terminals

For digital measurement of AC current, AC voltage and frequency signals

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Connections

Ammeters — Direct Connection / C.T. Operated

Voltmeters & Frequency Meters — Direct Connection / V.T. Operated

Specification

Accuracy:
- DIN48x24 0.1% ± 1digit
- DIN96x48 0.25% ± 1digit

Input Current, *In*:
- 0-100μA~ to 0-10A~ direct connected
- DIN48x24 0-5A~ maximum direct
- 1A or 5A CT operated

Input Voltage, *Un*:
- 0-20mV~ to 0-800V~ direct connected
- DIN48x24 0-600V~ maximum

Overload:
- 2 x *In* or 1.2 x *Un* continuous
- 10 x *In* or 2 x *Un* for 5 seconds

Ammeter Burden:
- DIN48x24 1A: 0.2VA, 5A: 1VA
- DIN96x48 1A: 1VA, 5A: 0.5VA

Voltmeter Impedance:
- 10kohm/Volt (DIN48x24)
- 1kohm/Volt (DIN96x48)

Weight:
- DIN48x24 90g, DIN96x48 400g

Ordering information

Code	DIN Size & Meter Type	Input & Scaling	Auxiliary
FPM482ACA	48 x 24mm AC Ammeter	–	–
FPM964ACA	96 x 48mm AC Ammeter	–	–
FPM482ACV	48 x 24mm AC Voltmeter	–	–
FPM964ACV	96 x 48mm AC Voltmeter	–	–
FPM964F	96 x 48mm Frequency meter	–	–
Specify	–	0-100μA~ to 0-10A~ direct (48x24mm - 5A~ max.)	
Specify	–	1A or 5A from a CT (scaled as required)	
Specify	–	0-20mV~ to 0-800V~ (48x24mm - 600V~ max.)	
Specify	–	0-199.9Hz or 0-1999Hz @ 30-600Vac (FPM964F)	
110/230Vac	–	110/230Vac Dual Auxiliary (96x48mm only)	
Specify	–	12, 24, 48, 110, 230Vac	
415Vac	–	415Vac (96x48mm only)	
10-60Vdc	–	10-60Vdc (96x48mm only)	
Specify	–	12, 24 or 48Vdc (48x24mm only)	
Example	**FPM964ACA**	**800/5A**	**110/230Vac**

General Specification

Environmental

Operating Temperature:	0°C to 60°C (Calibration temperature 23°C)
Storage Temperature:	-10°C to 70°C
Temperature Coefficient:	< 100ppm/ °C
Relative Humidity:	0 - 85% non-condensing
Warm Up Time:	1 minute

Display

Digit & Display:	3½ digit (1999) red LED (cosØ meter 3 digit)
Digit Height:	10.2mm high (FPM482), 14.2mm high (FPM964)
Decimal Point:	Internally selectable
Sampling Time:	Approx 0.4 sec (FPM482), 1 sec (FPM964)
Over Input Indication:	'1'
Polarity:	Automatic with (-) indicating negative inputs
Measuring Mode:	Dual slope
Input Mode:	Floating
Noise Elimination Ratio:	CMRR over 86dB 50/60Hz

### Enclosure

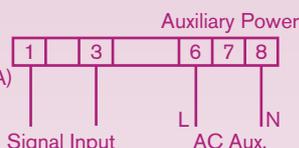|	
Enclosure:	Flame retardant black ABS plastic case
Enclosure Code:	Case IP54 (IP65 with gasket optional) to IEC529
Insulation Test:	2kV rms 50Hz 1min input/auxiliary (to IEC 414)
	2kV rms 50Hz 1min terminals/case (FPM482)
	4kV rms 50Hz 1min terminals/case (FPM964)
Markings:	CE marked

Specification subject to change without notice.

Auxiliary Power Connections

FPM964 Standard Dual AC Auxiliary Supply
110/230Vac ±20% (Burden < 3VA)

Auxiliary Power
Signal Input
110Vac or 230Vac
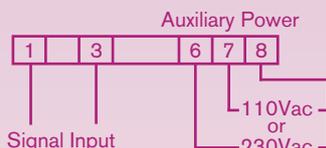
FPM964 Non Standard AC Auxiliary Supply
12Vac, 24Vac, 48Vac, 415Vac ±20% (Burden < 3VA)
FPM482 Standard AC Auxiliary Supply
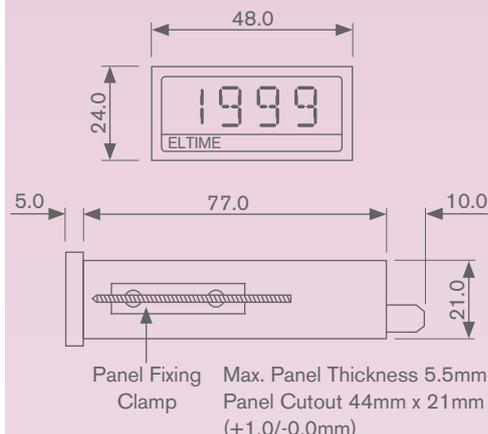12Vac (±10%)
24Vac, 48Vac, 110Vac, 230Vac ±20%
(Burden < 3VA)

Auxiliary Power
Signal Input
AC Aux.
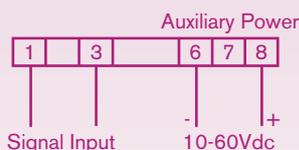
FPM964 DC Auxiliary Supply
10-60Vdc (Burden < 2W)

Auxiliary Power
Signal Input
10-60Vdc

FPM482 DC Auxiliary Supply
12Vdc (±10%), 24Vdc, 48Vdc ±20%
(Burden < 2W)

Auxiliary Power
Signal Input
DC Aux.
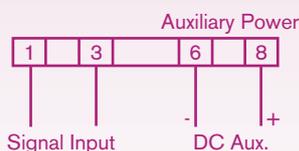
Dimensions
FPM482 Enclosure

48.0
24.0
ELTIME
5.0
77.0
10.0
21.0

Panel Fixing Clamp

Max. Panel Thickness 5.5mm
Panel Cutout 44mm x 21mm
(+1.0/-0.0mm)

FPM964 Enclosure

96.0
48.0

Front push buttons are for FPM964DTU only

7.0
98.0
12.0
45.0

Panel Fixing Clamp

Max. Panel Thickness 6mm
Panel Cutout 92mm x 45mm
(+1.0/-0.0mm)

Watt/Var/CosØ Converter Unit
and DTU Relay Unit Enclosure

55.0
68.0
35.0

M3.5 Terminals
DIN-EN 50022 / BS558 Rail Fixing

112.0

Fixing Clip

All dimensions in mm