DC Ammeters & Voltmeters

DC digital ammeters and voltmeters are available in two DIN sizes, 48x24mm and 96x48mm, both 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 DC 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 DC 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
FPM482DCA DIN48x24 DC Ammeter
FPM964DCA DIN96x48 DC Ammeter

FPM482DCV DIN48x24 DC Voltmeter
FPM964DCV DIN96x48 DC Voltmeter

Product Features
- 3½ digit red LED display
- Available in two standard DIN sizes
- User adjustable scale and decimal point
- 4-20mA process monitor available
- Easy to wire screw type terminals

For dimensions see page 7

For digital measurement of DC current, DC voltage and process signals

Specification
Accuracy:
- 0.1% ± 1digit

Input Current, In:
- 0-100µA to 0-10A direct connected
- DIN48x24 0-5A maximum direct
- > 10A use shunt and mV voltmeter
- 4-20mA process signal

Input Voltage, Un:
- 0-20mV to 0-800V direct connected
- DIN48x24 0-600V maximum
- 0-5V, 0-10V, 1-5V, 2-10V process signal

Overload:
- 2 x In or 1.2 x Un continuous
- 10 x In or 2 x Un for 5 seconds
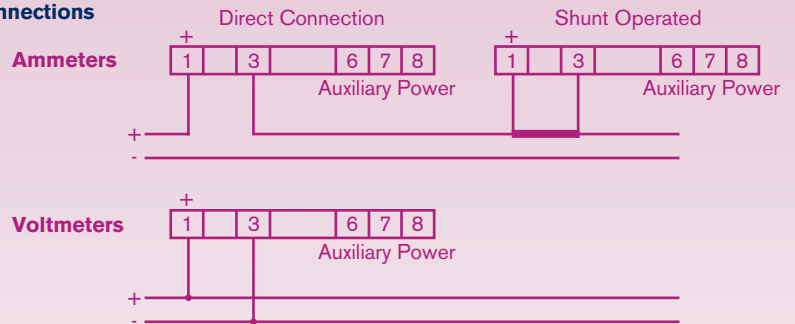
Ammeter Voltage Drop:
- 20mV (direct connected)

Impedance:
- Voltmeter 10kohm/Volt
- DIN48x24 4-20mA: 50ohms
- DIN96x48 4-20mA: 1ohm

Weight:
- DIN48x24 90g, DIN96x48 380g

Connections

Direct Connection — Shunt Operated — Ammeters — Auxiliary Power

Voltmeters — Auxiliary Power

For auxiliary power connections see page 7

Ordering information

Code	DIN Size & Meter Type	Input & Scaling	Auxiliary
FPM482DCA	48 x 24mm DC Ammeter	–	–
FPM964DCA	96 x 48mm DC Ammeter	–	–
FPM482DCV	48 x 24mm DC Voltmeter	–	–
FPM964DCV	96 x 48mm DC Voltmeter	–	–
Specify	–	0-100µA to 0-10A direct (DIN48x24 - 5A max.)	
Specify	–	> 10A use shunt & 50, 60, 75mV Voltmeter	
Specify	–	4-20mA (scaled as required)	–
Specify	–	0-20mV to 0-800V (DIN48x24 - 600V max.)	
110/230Vac	–		110/230Vac Dual Auxiliary (DIN96x48 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	**FPM482DCV**	**0-10Vdc / 0-100.0%**	**24Vdc**

General Specification

Environmental

Operating Temperature: 0ºC to 60ºC (Calibration temperature 23ºC)
Storage Temperature: -10ºC to 70ºC
Temperature Coefficient: < 100ppm/ ºC
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
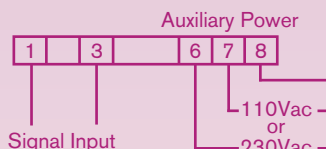
Enclosure

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)
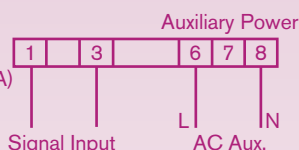   4kV rms 50Hz 1min terminals/case (FPM964)
Markings: CE marked

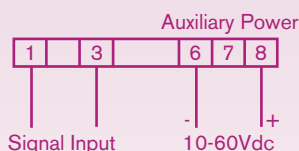Specification subject to change without notice.

Auxiliary Power Connections

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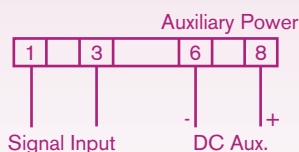110/230Vac ±20% (Burden < 3VA)

FPM964 Non Standard AC Auxiliary Supply
12Vac, 24Vac, 48Vac, 415Vac ±20% (Burden < 3VA)
FPM482 Standard AC Auxiliary Supply
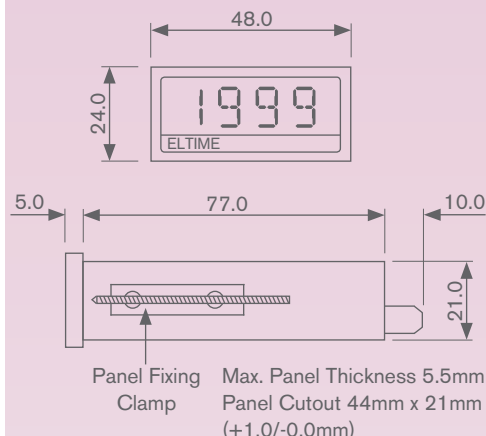12Vac (±10%)
24Vac, 48Vac, 110Vac, 230Vac ±20%
(Burden < 3VA)
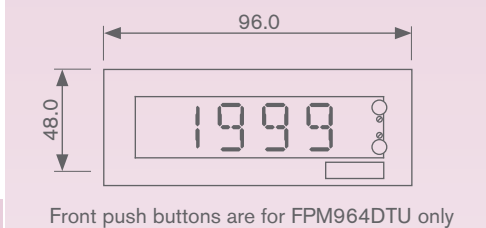
FPM964 DC Auxiliary Supply
10-60Vdc (Burden < 2W)

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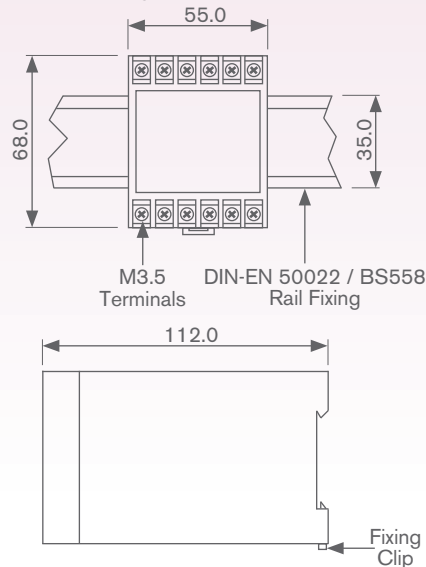12Vdc (±10%), 24Vdc, 48Vdc ±20%
(Burden < 2W)

Dimensions

FPM482 Enclosure

Panel Fixing Clamp

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

FPM964 Enclosure

Front push buttons are for FPM964DTU only

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

M3.5 Terminals

DIN-EN 50022 / BS558 Rail Fixing

Fixing Clip

All dimensions in mm