

Frequency Meters

Frequency meters are suitable for the measurement of the frequency of an AC supply. All meters have a jewel and pivot movement which ensures reliability and accuracy. The frequency meters are available in shortscales (90°) versions or longscale (240°) versions.

All frequency meters have interchangeable scaleplates. Scales are linear and are calibrated from 45 to 65Hz with a suppressed zero. Frequency meters with dual scales (Hz & rpm) are available to display generator speed. High frequency (360-440Hz) meters and dual voltage input (110V & 230V) frequency meters are also available.



Models Available

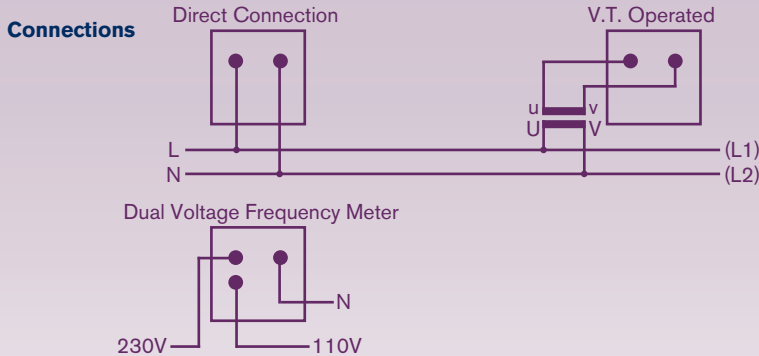
- FE48F** DIN48 Frequency Meter
- FE72F** DIN72 Frequency Meter
- FE96F** DIN96 Frequency Meter
- FE72LSF** DIN72 Longscale Frequency Meter
- FE96LSF** DIN96 Longscale Frequency Meter

Product Features

- Frequency measurement
- Standard DIN square sizes
- Interchangeable scaleplates
- Many options available (see page 16)

For dimensions see pages 17-18

Frequency Meters – for measurement of AC frequency



Specification

- Accuracy:**
 - Class 0.5 ($\pm 0.5\%$ max. error)
- Input Voltage, U_n :**
 - 110, 230 or 415V
- Scales:**
 - 45-65Hz
 - 45-65Hz & 1350-1950rpm
 - 360-440Hz
- Overload:**
 - 1.2 x U_n for 2 hours
 - 10 x U_n for 5 seconds
- Burden:**
 - 2VA at 230V
- Weight:**
 - FE48 150g
 - FE72 190g
 - FE96 290g

Ordering information

Code	DIN Square Size & Movement Type	Scaling	Input
FE48	48 x 48mm Shortscale (90°)	-	-
FE72	72 x 72mm Shortscale (90°)	-	-
FE96	96 x 96mm Shortscale (90°)	-	-
FE72LS	72 x 72mm Longscale (240°)	-	-
FE96LS	96 x 96mm Longscale (240°)	-	-
F	-	45-65Hz	-
FR	-	45-65Hz & 1350-1950rpm	-
FD	-	45-65Hz @ 110 & 230V	-
FH	-	360-440Hz	-
Specify	-	-	110, 230, 415V
Example	FE48	F	230V

Meter Options

Meter Terminal Covers

Available for FE72 and FE96* meters is a plastic terminal cover to finger-proof the terminals.
(Order Code: **FE72TC, FE96TC**) *All FE48 meters are supplied with terminal covers

Meter Terminal Covers

Available for all sizes of FE72, FE96 and EL meter are a pair of plastic terminal covers to finger-proof the terminals.
(Order Code: **MTC**)

DIN Square Blanking Plates

Available on all sizes of meter is a black plastic blanking plate to cover a DIN square hole.
(Order code: **FE48BP, FE72BP, FE96BP**)

Adjustable Red Pointer

Available on all sizes of shortscales meter is an adjustable red pointer which can be adjusted by a screwdriver from the front fascia. Not available on longscales meters.
(Order code: **ARP**)

Calibration Certificate

Calibration certificates traceable to national standards can be supplied on all meters.
(Order code: **CALCERT**)

6x Overload

Available on all ac ammeters is an overload reading of 6x the full scale current (2x is standard).
(Order Code: **6X O/L**)

Red Line On Scale

Available on any scale is a red line marked at any point on the scale, as specified by the customer.
(Order Code: **RL@ - specify**)

Coloured Sector On Scale

One or more specified coloured (red, green, yellow) sectors on the scale are available on all meters.
(Order Code: **Coloured Sector - specify**)

Heavily Damped Movements

1A or 5A DIN96 moving iron ammeters are available with a damped viscous movement and all moving coil meters are available with an electronically damped movement.
(Order Code: **HD movement**)

IP65 Sealing

All meters are available with a front sealed to IP65 and a neoprene gasket to retain sealing against the panel.
(Order Code: **IP65**)

Gaskets

Gaskets are available for all meters.
(Order Code: **G48F, G72F, G96F**)

Centre Zero Movement

Moving coil meters are available with a bi-directional reading, centre zero movement and scale. Moving coil meters are also available with an offset centre zero movement and scale.
(Order Code: **C/Z movement or O/Z movement**)

Suppressed Zero Movement

Moving Coil meters are available with a suppressed zero movement and scale (e.g. 15Vdc with suppressed scale from 0 to 10Vdc).
(Order Code: **S/Z movement**)

External Adjustable Trim Potentiometer

All moving coil meters are available with an external trim multi-turn potentiometer which is accessible from the back of the meter and adjusts the full scale reading by a minimum of $\pm 20\%$.
(Order Code: **EXT. TRIM. POT.**)

Polycarbonate Window

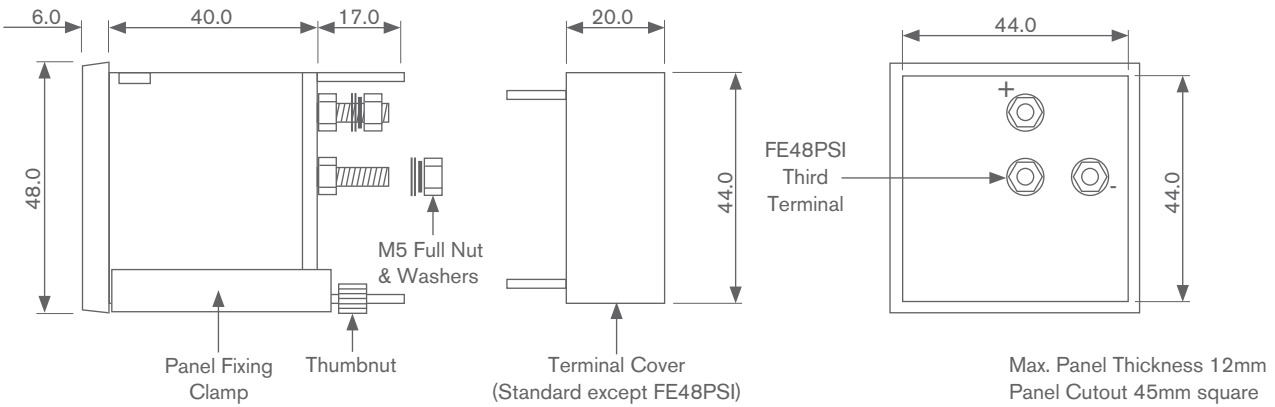
All sizes of FE meters have a glass window but a polycarbonate window is available. All sizes of EL meters have polycarbonate windows as standard.
(Order Code: **POLY window**)

Anti-Glare Window

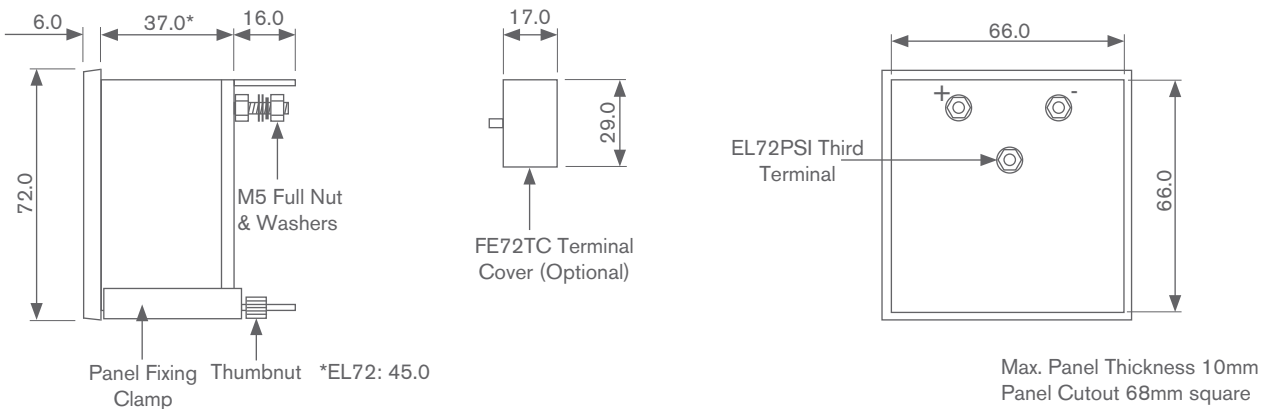
Anti-glare windows are available for all meters.
(Order Code: **AG window**)

Dimensions

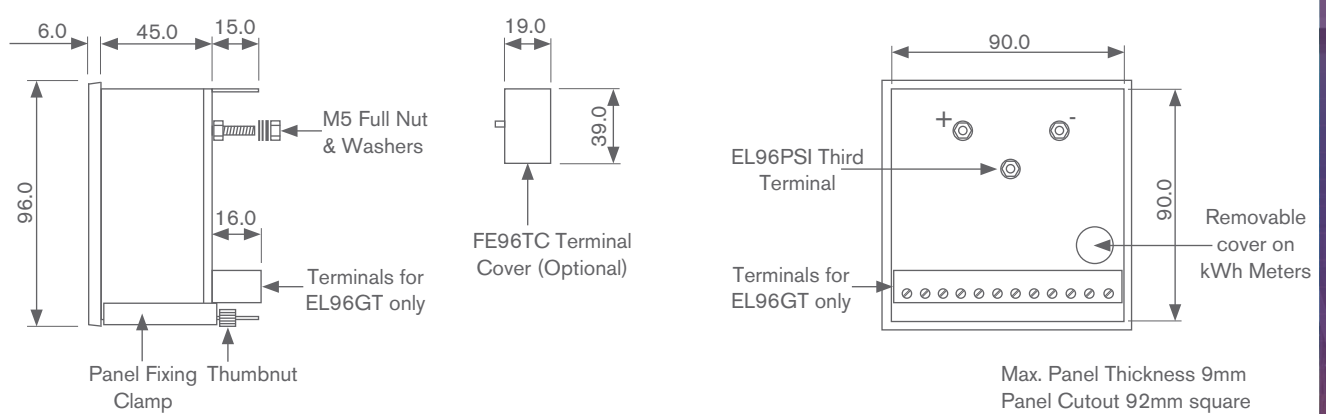
FE48 Enclosure



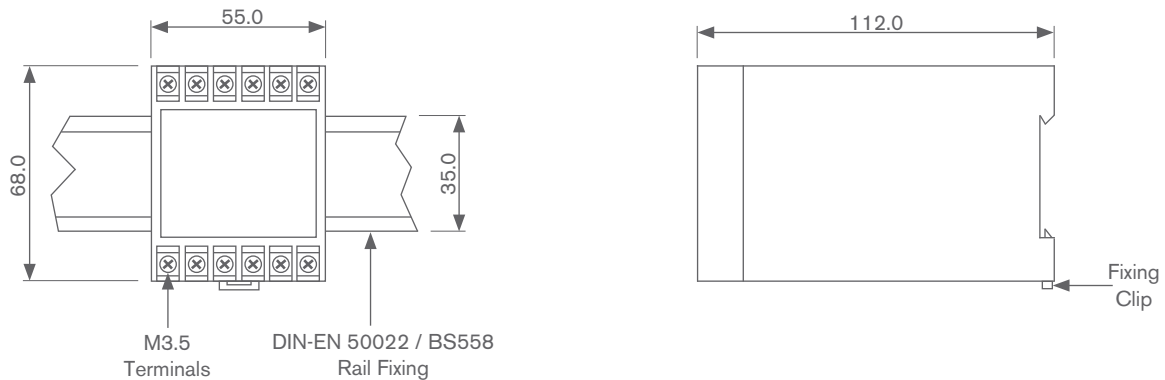
FE72/EL72 Enclosure



FE96/EL96 Enclosure



Watt/Var/cosØ Converter Unit Enclosure



General Specification

Reference Standards

Performance / Accuracy:	BS EN 60051-1, BS 89 and DIN 43780
Enclosure:	DIN 43700
Vibration Resistance:	DIN 43780
Measuring Ranges:	DIN 43701
Safety:	IEC 414
Dial Symbols:	IEC 51

Environmental

Calibration Temperature:	23°C
Operating Temperature:	-25°C to 50°C
Temperature Coefficient:	±0.03%/ °C
Relative Humidity:	0 - 90% non-condensing

Input

Input Burden:	See individual specifications
Overload:	See individual specifications
Response Time:	< 2seconds

Scales

Dials:	White with black legends
Reference Standard:	DIN 43802
Scale Length:	DIN48 - 37mm DIN72 - 65mm DIN96 - 90mm

Enclosure

Enclosure:	Flame retardant white ABS plastic case with black bezel Plain glass window is standard* but a polycarbonate window is available. (*Polycarbonate window is standard on EL meters)
Enclosure Code:	Case IP52 (IP65 with gasket optional) to IEC529 and BS5490
Insulation Test:	2kV rms 50Hz 1min (to IEC 414)
Markings:	CE marked

Specification subject to change without notice.