

DIN panel meters – long scale

FEATURES

- DIN 48, 72 and 96mm case style
- Slide in dials
- Moving coil movement
- Terminal covers
- Resistance to mechanical impact and vibrations



APPLICATIONS

- Switchgear
- Distribution systems
- Generator sets
- Control panels
- Energy management
- Building management
- Utility power monitoring
- Process control
- Motor control

APPROVALS

- BV approved



BENEFITS

- Local indication
- Ease of installation
- Minimal training
- Low maintenance
- Customised options and features

MOVING COIL METER

Centre cored, self shielding moving coil movement, made of light quality material which is not sensitive to external electromagnetic fields and is resistant to mechanical impacts and vibrations.

FREQUENCY METER

Meter uses a 100 microamps 4000 ohm movement driven by an EMC hard frequency conversion circuit.

DIALS, SCALES AND POINTERS

Standard dials are white matt with black printed scales and bar knife-edge pointers. Black dials with white or yellow scales and pointers are also available.

Standard options include red supplementary pointers, and non-reflecting glass. Other options available on request.

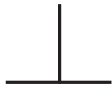
GENERAL SPECIFICATIONS

Performance	BS EN60051 1 1/2% of full scale deflection (FSD)
Measuring ranges	DIN43701
Accuracy overload	BS EN60051
Dimensions	DIN43700 see detail on following page
Scale marking generally to	DIN43802
Magnetic influence	BS EN60051
Safety	BS EN61010-1
Terminals	Clamp strap M4 for up to 15 A. Clamp strap M6 for 15 to 40 A.
Humidity range	Up to 75% RH (non condensing)
Test voltage @50Hz	2 kV RMS for 1 minute
Overload AC current	x 1.2 continuous, or x 10 for 5 seconds max
AC voltage and frequency	x 1.2 continuous, or x 2 for 5 seconds max
Standard calibration	23°C. Calibration at other temperatures available on request
Operating temperature	-10°C to +55°C
Damping time	Less than 3 seconds
Enclosure code	IP52 as standard IP54 on request
Case and base	Grade UL94V0
Case	Dimensions and panel cut out conform to IEC473, DIN43700. Case made from glass filled polycarbonate self-extinguishing and non drip in accordance with UL94V-0
Bezel	Slim-line DIN43802, black as standard
Bezel window	Standard sheet glass, with zero adjusters where appropriate. Non reflecting glass and polycarbonate windows are available
Installation	Installations in switchboard panel or mosaic arrangement on equipment or machine with a panel thickness of up to 40 mm in a horizontal or vertical plane
Fixing on panel	2 captive fasteners (optional 4 on request)
Mounting position	Normal vertical mounting or as indicated on the scale in accordance with DIN16257. A deviation of ±15° is permissible
Insulation group	Insulation resistance more than 5 MΩ@ 500 V
Environmental	Measurement category III IEC 1010-1 Pollution degree 2 IEC 1010-1 Electrical rating 600 V RMS (920 V peak)
Approvals	EMC and LVD, BV Approval

DIN panel meters – dimensions

DIN16257 SYMBOL MEANING FOR CALIBRATION POSITION

VERTICAL



HORIZONTAL



INCLINED

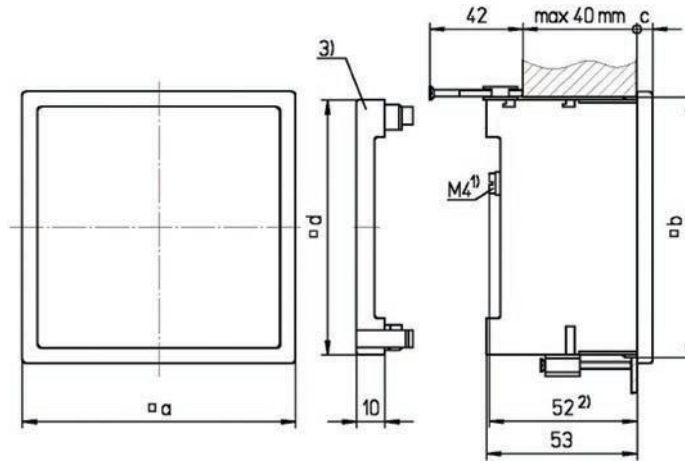


Inclination of dial surface.

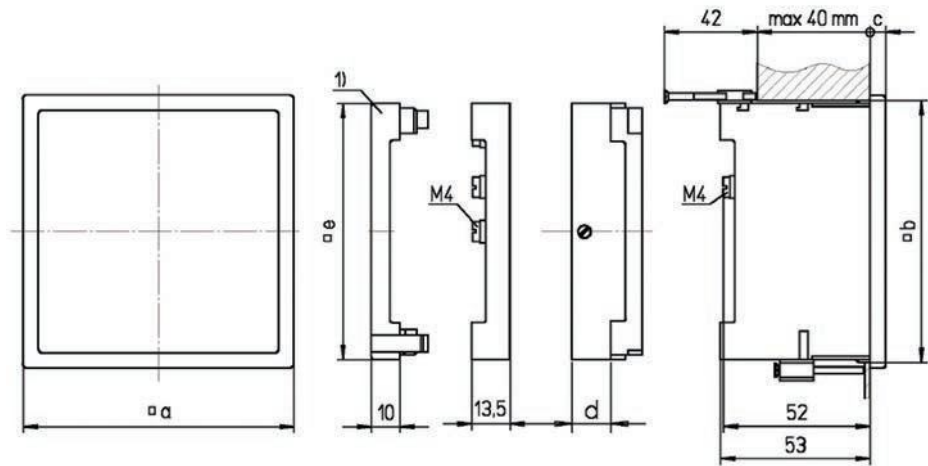
Required orientation must always be stated when ordering if other than vertical mounting is required.

PRODUCT DIMENSIONS

Description		M242-01*, M242-02*, M242-05*	M243-01*, M243-02*, M243-05*	M244-01*, M244-02*, M244-05*, M244-41R*, M244-41E*, M244-41L*, M244-41D*, M244-80*	M246-01*, M246-02*, M246-05*
Bezel (mm)	a	48	72	96	144
Panel cut out (mm)	b	45 (+0.6)	68 (+0.8)	92 (+0.8)	138 (+1.0)
Bezel height (mm)	c	5.0	5.5	5.5	8.0
Terminal cover (mm)	d	42.5	66.5	90	90



M242-01*, M242-02*, M242-05*, M243-01*, M243-02*, M243-05*,
M244-01*, M244-02*, M244-41R*, M244-41E*, M244-05*, M246-01*,
M246-02*, M246-05*



M244-41L*, M244-41D*, M244-41S*,
M244-80* (d = 27,3 mm)

Long scale rectified AC ammeter and voltmeter

FEATURES

- Measures AC current or voltage
- CT connected ammeters
- Direct and VT connected voltmeters
- Linear scaling
- 240° long scale version
- x6 overload



APPLICATIONS

- AC switchgears, panels and distribution boards

CONSTRUCTION

- Mean value measurement of current or voltage
- Containing germanium diodes of low reverse current
- Slot in screw fixing

APPROVALS

- CE marked



BENEFITS

- Easy to operate
- Exchangeable dial
- Low consumption
- Terminal cover included

SPECIFICATION

Accuracy class	1.5
Maximum continuous overload	1.2 x In, 1.2 x Un
Maximum short duration overload	10xIn - 9x0.5s+1x5s/60s - 2xUn - 9x0.5s+1x5s/60s
Frequency	50/60 Hz

PRODUCT CODES

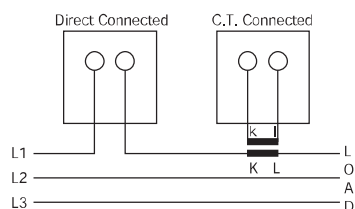
Bezel size (mm)	48	72	96	144
Scale length (mm)	71	113	155	235
AC ammeter rectified 240°	M242-05B	M243-05B	M244-05B	M246-05B
AC voltmeter rectified 240°	M242-05W	M243-05W	M244-05W	M246-05W
AC ammeter rectified 240° x6 overload		M243-056B	M244-056B	

Standard input ranges

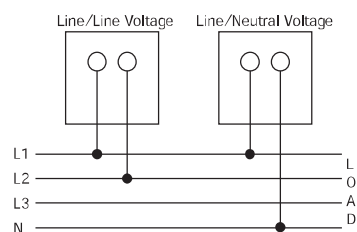
AC ammeter rectified 240° scaling (0/x A) meter (0/x A), (0/ x A x6), 1, 5A M243, M244	1, 5 A (M242-05B delivered with separated current transformer)
AC voltmeter rectified 240° scaling (0/x V)	20, 15, 20, 30, 60, 100, 150, 250, 300 (limit at M242), 400, 500, 600 V
AC voltmeter for VT connection (0/x V)	120 V (for use with VT's x/100 V), 132 V (for use with VT's x/110 V), 144 V (for use with VT's 120 V), 125 V, 137.5 V, 150 V (for use with some VT's having primary voltage less than 1 kV)

CONNECTION DIAGRAMS

AC ammeter



AC voltmeter



ORDER DATA/EXAMPLES

AMMETER

- 1) Select type: M243-05B,
- 2) Specify input: 0-1 A,
- 3) Specify scaling: 0-1 kA,
- 4) Specify frequency: 50/60 Hz

VOLTMETER

- 1) Select type: M244-05 W,
- 2) Specify input: 0-500 V,
- 3) Specify scaling: 0-500 V,
- 4) Specify frequency: 50/60 Hz

VOLTMETER, VT CONNECTED

- 1) Select type: M244-05 W,
- 2) Specify input: 0-120 V,
- 3) Specify scaling: 0-12 kV,
- 4) Specify frequency: 50/60 Hz,
- 5) Specify VT ratio: 10/0.1 kV