

Long Scale Moving Coil DC Ammeters and Voltmeters

Moving coil meters are suitable for all DC systems. The linear scale is calibrated down to zero and the accuracy maintained down to 10%. Suppressed and centre zero models are available.

Specifications

DC Ammeter inputs	DC Voltmeter inputs
0/400uA DC	0/50mV DC
0/600uA DC	0/60mV DC
0/1mA DC	0/75mV DC
0/10mA DC	0/100mV DC
0/20mA DC	0/150mV DC
0/1A DC	0/2.5V DC
0/2.5A DC	0/10V DC
0/5A DC	0/30V DC
500/0/500uA DC	0/60V DC
1/0/1mA DC	0/100V DC
20/0/20mA DC	0/150V DC
4/20mA DC	0/250V DC
	0/300V DC
	0/400V DC
	0/500V DC
	0/600V DC
	50/0/50mV DC
	60/0/60mV DC
	75/0/75mV DC
	100/0/100mV DC
	150/0/150mV DC
	5/0/5V DC
	10/0/10V DC

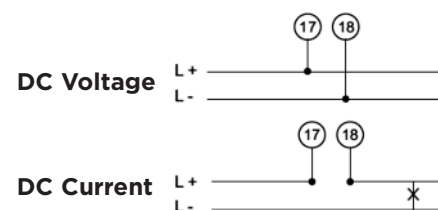
Accuracy:	Class 1.5
Impedance:	Ammeters: 75mV internal shunt Voltmeters: 1000Ω/V

Dimensions

Bezel size mm	72	96
Scale length mm	65	94

Product codes

Ammeters	E243-05A	E244-05A
Ammeters centre zero	E243-05C	E244-05C
Ammeters suppressed zero	E243-05R	E244-05R
Voltmeters	E243-05V	E244-05V
Voltmeters centre zero	E243-05N	E244-05N



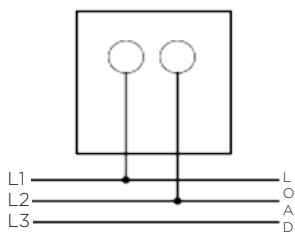
Elapsed Time Meters (Hours Run Meters)

Elapsed time meters (ETM) or hours-run meters monitor "ON/RUN" time of plant and equipment, allowing the user to effectively control production efficiency, cost estimation and service period monitoring for preventative maintenance. Time is measured in increments of 0.01h up to 99999.99 hours after which the meter automatically resets to zero. Meters are non-resettable before this time to prevent accidental resetting.

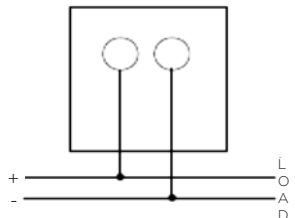
Specifications

AC	
Display:	99999.99
Voltage:	100-125V AC 200-250V AC 380-440V AC
Frequency:	50 or 60Hz
Operating temperature:	-25°C to +80°C
IP Protection:	IP52
Burden:	1VA (100-125V AC) 2VA (200-250V AC) 3.5VA (380-440V AC)
DC	
Display:	99999.99
Voltage:	12-36V DC 10-80V DC 110V DC
Operating temperature:	-20°C to +70°C
IP Protection:	IP52
Burden:	0.5VA (12-36V AC) 1VA (10-80V AC) 1.5VA (110V AC)

Elapsed Time/Hours Run Meters AC



Elapsed Time/Hours Run Meters DC



Bezel size product codes	48mm	72mm	96mm
100-125V AC 50Hz	M242-155-G-PL-ZH-C5	M243-155-G-PL-ZH-C5	M244-155-G-PL-ZH-C5
200-250V AC 50Hz	M242-155-G-RN-ZH-C5	M243-155-G-RN-ZH-C5	M244-155-G-RN-ZH-C5
380-440V AC 50Hz	M242-155-G-RY-ZH-C5	M243-155-G-RY-ZH-C5	M244-155-G-RY-ZH-C5
100-125V AC 60Hz	M242-156-G-PL-ZH-C6	M243-156-G-PL-ZH-C6	M244-156-G-PL-ZH-C6
200-250V AC 60Hz	M242-156-G-RN-ZH-C6	M243-156-G-RN-ZH-C6	M244-156-G-RN-ZH-C6
380-440V AC 60Hz	M242-156-G-RY-ZH-C6	M243-156-G-RY-ZH-C6	M244-156-G-RY-ZH-C6
12-36V DC	M242-157-G-BU-ZH-DC	M243-157-G-BU-ZH-DC	M244-157-G-BU-ZH-DC
10-80V DC	M242-157-G-NR-ZH-DC	M243-157-G-NR-ZH-DC	M244-157-G-NR-ZH-DC
110V DC	M242-157-G-PM-ZH-DC	M243-157-G-PM-ZH-DC	M244-157-G-PM-ZH-DC



DIN Panel Meters – Long Scale

A range of 72mm and 96mm DIN style panel meters measuring all electrical parameters and featuring moving coil movements. All meters incorporate slide-in dials and terminal covers as standard. A range of customised options is available.

Movements

Moving Coil Meter

Centre cored, self shielding moving coil movement, using pivots, hairsprings and sprung jewels. Seven variations have been designed in movement ranges: all intermediate ranges are achieved by shunting the next lowest range. All DC voltmeters are 1000 ohms per volt, rectified product run at 900 ohms per volt. Millivolt meters use the 5 milliamp movement.

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. Interchangeable slide-in dials are used on the E243 and E244 240° moving coil and frequency meter models.

Standard options include red supplementary pointers, and non-reflecting glass.

Features

- A range of the most popular long scale measuring instruments in 2 case sizes
- Shock resistant sprung pivot and jewel movement
- Terminal covers supplied as standard
- EMC hard frequency meter are fully EMC and LVD compliant

Benefits

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

Applications

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

General Specifications

Performance:	BSEN60051
Measuring ranges:	DIN43701
Accuracy overload:	BSEN60051
Dimensions:	DIN43700
Scale marking generally to:	DIN43802
Magnetic influence:	BSEN60051
Safety:	BSEN61010-1
Terminals:	Clamp strap M4 for up to 25A. Clamp strap M8 for over 25A
Humidity range:	Up to 75% RH (non condensing)
Test voltage @50Hz:	3kV 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 (Lexan 500R)
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-O
Bezel:	Slim-line DIN43802, black as standard
Bezel window:	Standard sheet glass, with zero adjusters where appropriate. Non reflecting glass windows are available
Installation;	Installations in switchboard panel or mosaic arrangement on equipment or machine with a panel thickness of up to 40mm in a horizontal or vertical plane
Fixing on panel:	Swivel captive fasteners, which can be fixed at either corner
Mounting position:	Normal vertical mounting or as indicated on the scale in accordance with DIN16257. A deviation of $\pm 15^\circ$ is permissible
Insulation group:	Insulation resistance more than $5M\Omega$ @ 500V
Environmental:	Measurement category III IEC 1010-1 Pollution degree 2 IEC 1010-1 Electrical rating 600V RMS (920V peak)
Approvals:	EMC and LVD

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.

Dimensions

Moving coil measuring range

6-60A	C=67mm
>60A	C=78mm

Dimensions

D	A	B
72 x 72mm	68 x 68mm	4
96 x 96mm	92 x 92mm	4

