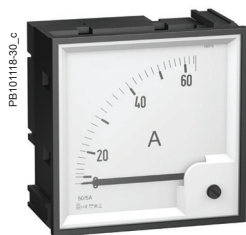
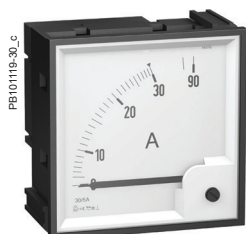


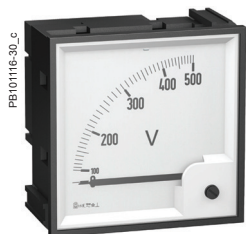
72 x 72 analogue ammeters and voltmeter



AMP for standard feeder.



AMP for motor feeder.



VLT.

Function

The 72 x 72 measurement devices are designed for flush-mounted installation on doors, wicket doors and front plates of enclosures and cubicles.

AMP

The ammeters measure in amps the current flowing through an electrical circuit.

VLT

The voltmeter measure in volts the potential difference (voltage) of an electrical circuit.

Common technical data

- Accuracy: class 1.5.
- Compliance with standard IEC 60051-1, IEC 61010-1 and IEC 61000-4.
- Ferromagnetic device.
- Scale length: 62 mm over 90°.
- Mounting in enclosure or in cubicle.
- Degree of protection: IP52.
- Maximum operating position: 30° / vertical.
- Temperature:
 - operation: -25°C to +50°C
 - reference: 23°C.
- Influence of temperature on accuracy: $\pm 0.003\% / ^\circ\text{C}$.
- Utilisation frequency: 50/60 Hz.

AMP specific technical data

- Needs a In/5 CT to be ordered separately.
- Interchangeable dials to be ordered separately.
- Consumption: 1.1 VA.
- Permanent overload: 1.2 In.
- Maximum overload for 5 s: 10 In.

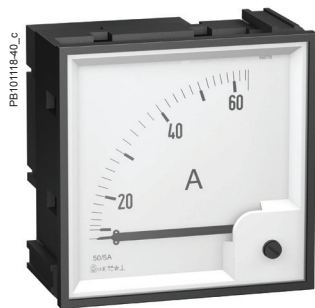
VLT specific technical data

- Consumption: 3 VA.
- Permanent overload: 1.2 Un.
- Maximum overload for 5 s: 2 Un.

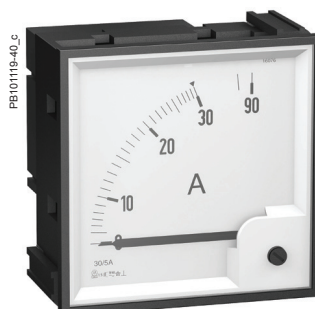
Catalogue numbers

Type	Scale	Connection on CT	Cat. no.
AMP for standard feeder			
Basic device (delivered without dial)		X/5	16004
1.3 In dial	0-50 A	50/5	16009
	0-100 A	100/5	16010
	0-200 A	200/5	16011
	0-400 A	400/5	16012
	0-600 A	600/5	16013
	0-1000 A	1000/5	16014
	0-1250 A	1250/5	16015
	0-1500 A	1500/5	16016
	0-2000 A	2000/5	16019
AMP for motor feeder			
Basic device (delivered without dial)		X/5	16003
3 In dial	0-30-90 A	30/5	16006
	0-75-225 A	75/5	16007
	0-200-600 A	200/5	16008
VLT			
	0-500 V		16005

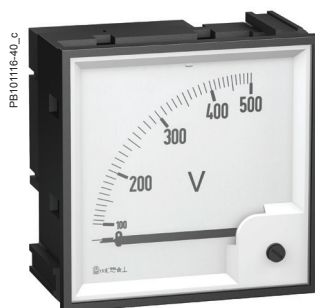
96 x 96 analogue ammeters and voltmeter



AMP for standard feeder.



AMP for motor feeder.



VLT.

Function

The 96 x 96 measurement devices are designed for flush-mounted installation on doors, wicket doors and front plates of enclosures and cubicles.

AMP

The ammeters measure in amps the current flowing through an electrical circuit.

VLT

The voltmeter measure in volts the potential difference (voltage) of an electrical circuit.

Common technical data

- Accuracy: class 1.5.
- Compliance with standard IEC 60051-1, IEC 61010-1 and IEC 61000-4.
- Ferromagnetic device.
- Scale length: 80 mm over 90°.
- Mounting in enclosure or in cubicle.
- Degree of protection: IP52.
- Maximum operating position: 30° / vertical.
- Temperature:
 - operation: -25°C to +50°C
 - reference: 23°C.
- Influence of temperature on accuracy: $\pm 0.003\%$ / °C.
- Utilisation frequency: 50/60 Hz.

AMP specific technical data

- Needs a In/5 CT to be ordered separately.
- Interchangeable dials to be ordered separately.
- Consumption: 1.1 VA.
- Permanent overload: 1.2 In.
- Maximum overload for 5 s: 10 In.

VLT specific technical data

- Consumption: 3 VA.
- Permanent overload: 1.2 Un.
- Maximum overload for 5 s: 2 Un.

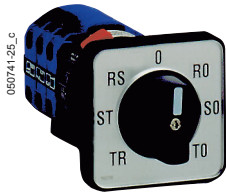
Catalogue numbers

Type	Scale	Connection on CT	Cat. no.
AMP for standard feeder			
Basic device (delivered without dial)		X/5	16074
1.3 In dial	0-50 A	50/5	16079
	0-100 A	100/5	16080
	0-200 A	200/5	16081
	0-400 A	400/5	16082
	0-600 A	600/5	16083
	0-1000 A	1000/5	16084
	0-1250 A	1250/5	16085
	0-1500 A	1500/5	16086
	0-2000 A	2000/5	16087
	0-2500 A	2500/5	16088
	0-3000 A	3000/5	16089
	0-4000 A	4000/5	16090
	0-5000 A	5000/5	16091
	0-6000 A	6000/5	16092
AMP for motor feeder			
Basic device (delivered without dial)		X/5	16073
3 In dial	0-30-90 A	30/5	16076
	0-75-225 A	75/5	16077
	0-200-600 A	200/5	16078
VLT			
	0-500 V		16075

48 x 48 CMA and CMV selector switches



CMA.



CMV.

Function

The 48 x 48 selector switches are designed for flush-mounted installation on doors, wicket doors and front plates of enclosures and cubicles.

CMA

The ammeter selector switch uses a single ammeter (by means of current transformers) for successive measurement of the currents of a three-phase circuit.

CMV

The voltmeter selector switch uses a single voltmeter for successive measurement of the voltages (phase-to-phase and phase-to-neutral) of a three-phase circuit.

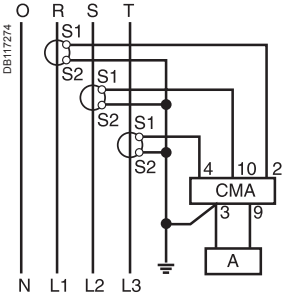
Common technical data

- Durability:
 - electrical: 100 000 operations
 - mechanical: 2 000 000 operations.
- AgNi contact.
- Operating temperature: -25°C to +50°C.
- Compliance with standards IEC/EN 60947-3.
- Degree of protection:
 - IP65 on front face
 - IP20 at terminal level.

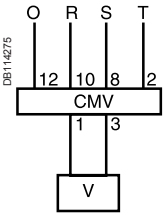
Catalogue numbers

Type	Rating (A)	Voltage (V)	Number of positions	Cat. no.
CMA	20		4	16017
CMV		500	7	16018

Connection



CMA.



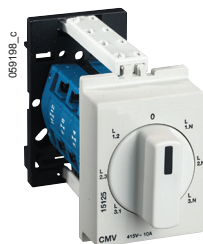
CMV.

Reading 3 phase-to-earth voltages + 3 phase-to-phase voltages.

Note: when connecting do not remove the pre-cabling.



CMA.



CMV.

Function

CMA
This 4-position ammeter selector switch uses a single ammeter (using current transformers) for successive measurement of the currents of a three-phase circuit.

CMV
This 7-position voltmeter selector switch uses a single voltmeter for successive measurement of voltages (phase-to-phase and phase-to-neutral) of a three-phase circuit.

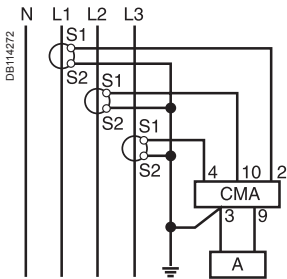
Common technical data

- Rotary handle.
- Maximum operating voltage: 440 V, 50/60 Hz.
- Nominal thermal current: 10 A.
- Operating temperature: -20°C to +55°C.
- Storage temperature: -25°C to +80°C.
- Mechanical durability (AC21A-3 x 440 V): 2 000 000 operations.
- Degree of protection:
 - IP66 on front face
 - IP20 at terminal level.
- Electrical durability: 1 000 000 operations.
- Connection: jumper terminals with captive screws, for cables up to 1.5 mm².
- Complies with standards: IEC/EN 60947-3.

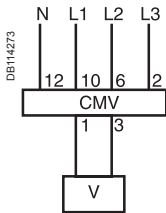
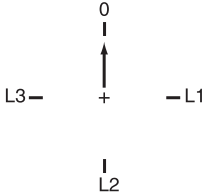
Catalogue numbers

Type	Rating (A)	Voltage (V AC)	Width in mod. of 9 mm	Cat. no.
CMA	10	415	4	15126
CMV	10	415	4	15125

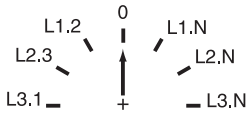
Connection

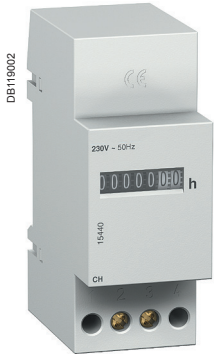


CMA.



CMV.





CH "DIN".



CH "48 x 48".

Function

Electromechanical counter that counts the operating hours of a machine or piece of electrical equipment. Giving a precise indication of operating time, the counter is used to decide when to carry out preventive maintenance.

Common technical data

- Electromechanical display.
- Maximum display: 99999.99 hours.
- Display accuracy: 0.01 %.
- Without reset.
- Storage temperature: -25°C to +85°C.
- Connection: tunnel terminals for 2.5 mm² cable.

Specific technical data

CH "DIN"

- Consumption: 0.15 VA.
- Operating temperature: -10°C to +70°C.
- Mounting on DIN rail.

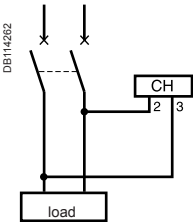
CH "48 x 48"

- Consumption:
 - 15607: 0.25 VA
 - 15608: 0.15 VA
 - 15609: 0.02 VA to 12 V and 0.3 VA to 36 V.
- Operating temperature: -20°C to + 70°C.
- Degree of protection: IP65 on front face.
- Mounting on front face of monitoring switchboards.

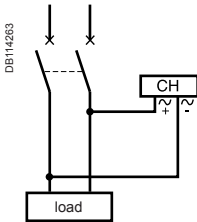
Catalogue numbers

Type	Voltage (V)	Width in mod. of 9 mm	Cat. no.
CH "DIN"	230 V AC ± 10 %/50 Hz	4	15440
CH "48 x 48"	24 V AC ± 10 %/50 Hz		15607
	230 V AC ± 10 %/50 Hz		15608
	12 to 36 V DC		15609

Connection



CH "DIN".



CH "48 x 48".



Function

Electromechanical counter designed to count impulses emitted by: kilowatt hour meters, temperature overrun detectors, people meters, speed meters, etc.

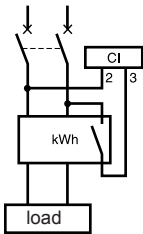
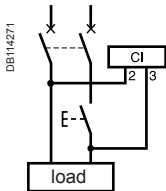
Common technical data

- Supply and metering voltage: 230 V AC \pm 10 %, 50/60 Hz.
- Consumption: 0.15 VA.
- Maximum display: 9 999 999 impulses.
- Without reset.
- Metering data:
 - minimum impulse time: 50 ms
 - minimum time between 2 impulses: 50 ms.
- Storage temperature: -25°C to +85°C.
- Operating temperature: -10°C to +70°C.
- Connection: tunnel terminals for 2.5 mm² cable.

Catalogue number

Type	Width in mod. of 9 mm	Cat. no.
CI	4	15443

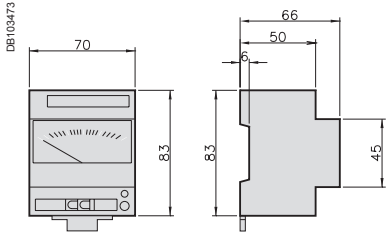
Connection



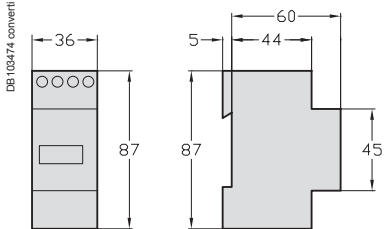
Dimensions

Ammeters, voltmeters, selector switches, impulse counter, hour counters

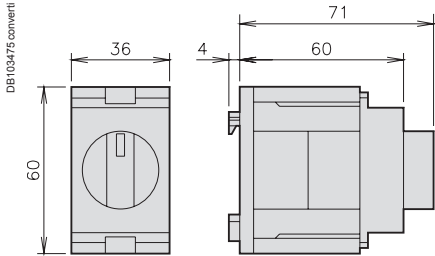
Analogue ammeters and voltmeters



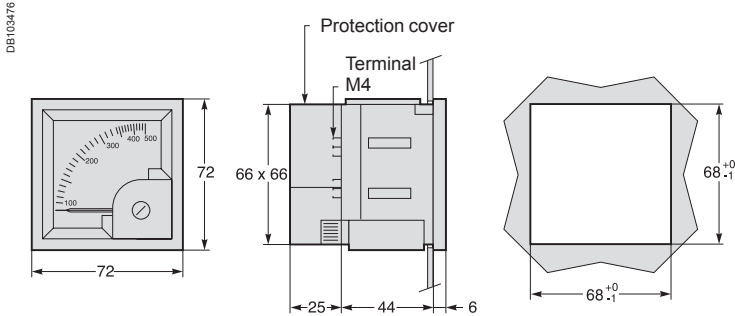
Digital ammeters, voltmeter and frequency meter



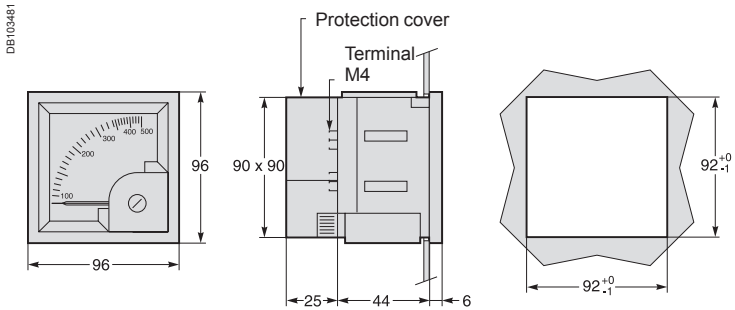
CMA and CMV selector switches



72 x 72 analogue ammeters and voltmeter



96 x 96 analogue ammeters and voltmeter

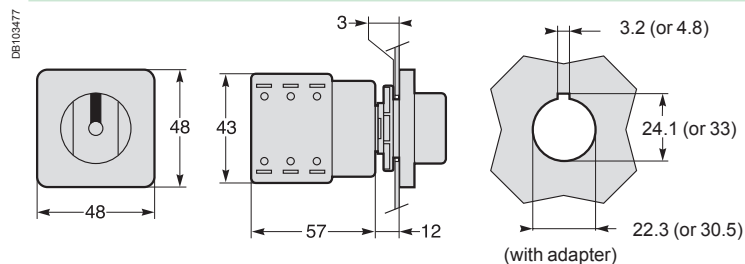




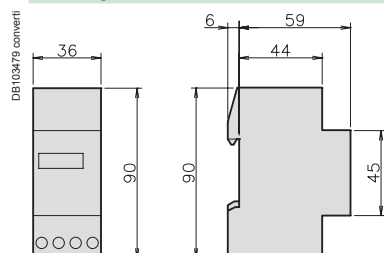
Dimensions (cont.)

Ammeters, voltmeters, selector switches, impulse counter, hour counters

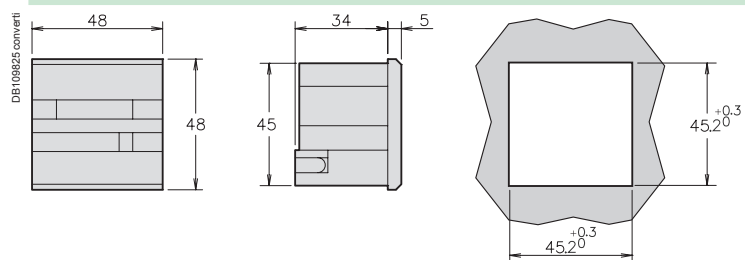
48 x 48 CMA and CMV selector switches



CI impulse counter and CH hour counter



48 x 48 CH hour counters



DM6000 series

Functions and characteristics



DM6000 series digital panel meter front display (above), and rear (below)



The PowerLogic DM6000 series digital panel meters offer the basic measurement capabilities required to monitor an electrical installation.

Characterized by their rugged construction, compact size, and low installation costs, these state-of-the-art meters are ideal for control panels, motor control centres and genset panels.

The PowerLogic DM6000 series digital meter is available in two different versions to better fit specific applications:
DM6000, basic version;
DM6200, basic version plus an RS485 port for Modbus communication.

Applications

- Power monitoring operations.
- Equipment monitoring.
- Preventive maintenance.

Main characteristics

Easy to read display

The bright, alphanumeric 15mm high LED display provides 3 lines for measurement values with 4 digits per line. This display auto-scales for Kilo, Mega and Giga values. Auto scrolling mode allows for easy reading.

Analogue load bar

The colour-coded analogue load bar indicates the percentage of load through 12 LED segments.

Turbo Key access to information

The Turbo Key gives access to the most commonly viewed parameters or enter set up mode with a single push of the button.

Quick and easy installation

Setup is done through the front panel keys. Quick entry to setup during power up by TURBO key. Direct connection for metering voltage inputs up to 480 V AC L-L.

Colour-coded terminal board labeling

The colour-coded label on the terminal board helps ensure accurate wiring.

Secure settings

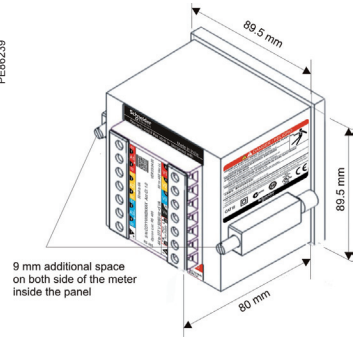
Safeguard access to setup parameters with unique password protection. A keypad lock lets you display a user-selected page by default.

Part numbers

Description	Schneider Electric
DM6000 digital meter with basic readings; no communications	METSEDM6000
Same as DM6000 plus an RS485 communication port	METSEDM6200

DM6000 series

Functions and characteristics (cont.)



PowerLogic DM6000 series digital panel meter dimensions.

Selection guide		DM6000	DM6200
General			
Use on LV and HV systems		■	■
Current and voltage accuracy		1.0 %	1.0 %
Number of samples per cycle		20 at 50 Hz	20 at 50 Hz
Instantaneous rms values			
Current	Per phase & Neutral	■	■
Voltage	Average Phase to Neutral & Phase to Phase	■	■
Frequency		■	■
Power factor	Average & per phase	■	■
Unbalance	Current, voltage	■	■
Phase angle	Between V & I, Ph1, Ph2, Ph3	■	■
RPM	For generator only, speed calculated on generator voltage output and number of machine poles.	■	■
Other measurements			
ON hours	Operating time for meter in hours	■	■
INTR	Number of interruptions	■	■
Display			
LED display		■	■
Communication			
RS-485 port		-	1
Modbus protocol		-	■

DM6000 series

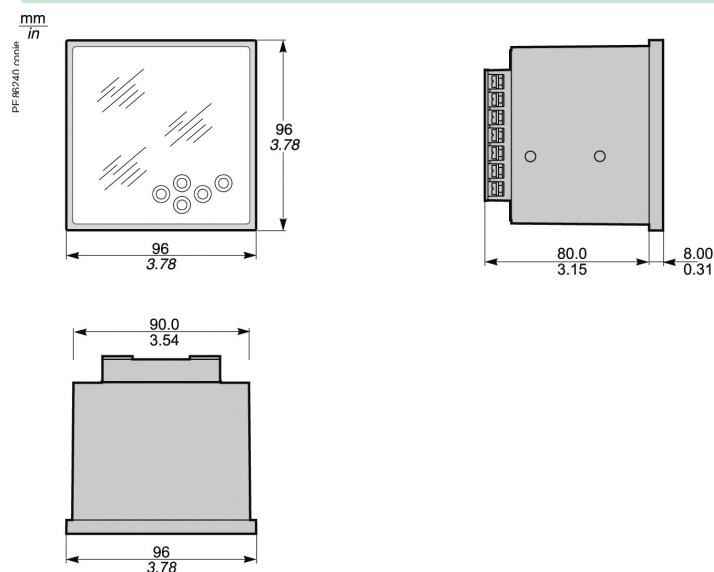
Functions and characteristics (cont.)

Electrical characteristics			
Type of measurement		True RMS up to the 9th harmonic 20 samples per cycle at 50 Hz	
Measurement accuracy*	Current and voltage		1.0 % of reading
	Frequency		0.1 % of reading
	Power factor		1.0 % of reading
* Additional error of 0.05% of full scale, for meter input current below 100mA			
Data update rate		1 second	
Input-voltage characteristics	Inputs		V1, V2, V3, Vn
	Measured voltage		80 - 480 V AC L-L without PTs Up to 999 kV with external PTs
	Permissible overload		1.10 Un (480 V L-L)
	Burden		0.2 VA per phase max.
	Impedance		VLL - 4 Mohms, VLN – 2 Mohms
	Frequency range		45 - 65 Hz
Input-current characteristics	CT ratings	Primary	1 A - 99.0 kA
		Secondary	1 A - 5 A
	Measurement range		50 mA - 6 A (5 mA is the starting)
	Permissible overload		10 A continuous
	Burden		0.2 VA per phase max.
	Impedance		< 0.1 ohm
Power supply	AC		44 - 277 V AC at 50 Hz/60 Hz
	DC		44 - 277 V DC
	Ride-through time		100 ms at 50 V
	Burden		3 VA max.
Mechanical characteristics			
Weight		0.500 kg (shipping), 0.400 kg (unpacked)	
IP degree of protection		Front: IP 51; Back: IP 40	
Dimensions		Bezel: 96 x 96 mm Depth: 80 mm behind bezel Panel cutout: 92 x 92 mm	
Environmental conditions			
Operating temperature		-10°C to +60°C	
Storage temperature		-25°C to +70°C	
Humidity rating		5 to 95 % RH non-condensing	
Altitude		2000 m	
Measurement CAT		III	
Pollution degree		2	
Protection class		2	
Electromagnetic compatibility			
Electrostatic discharge		IEC 61000-4-2	
Immunity to electromagnetic RF fields		IEC 61000-4-3	
Immunity to electrical fast transients		IEC 61000-4-4	
Immunity to surge waves		IEC 61000-4-5	
Conducted disturbance immunity		IEC 61000-4-6	
Damped oscillatory waves immunity		IEC 61000-4-12	
Impulse voltage withstand		6 kV for 1.2/50 µS per IEC 60060-1	
Conducted and radiated emissions		CISPR11 Class A, FCC Part 15 Class A	
Safety and standards			
Safety construction		Self extinguishable V0 plastic; UL 508	
CE certification IEC61010		Yes	
Complies with Regulation (EC) n° 1907/2006 of Dec 18 2006 named REACH (related to the Registration, Evaluation, Authorization and restrictions applicable to Chemical substances)			
Communication			
RS-485 port		2 terminals only; Baud rate up to 19,200 bps Protocols: Modbus RTU	
Display characteristics			
Integrated LED display		View 3 parameters together on 3 line, 4 digits per line display. Auto-scaling capability for Kilo Mega, and Giga values. User-selectable default display page. Password protection for setup parameters.	
Analogue load bar		Colour-coded analogue indicator provides an option to select the full scale of the load bar based on the sanctioned power limit	

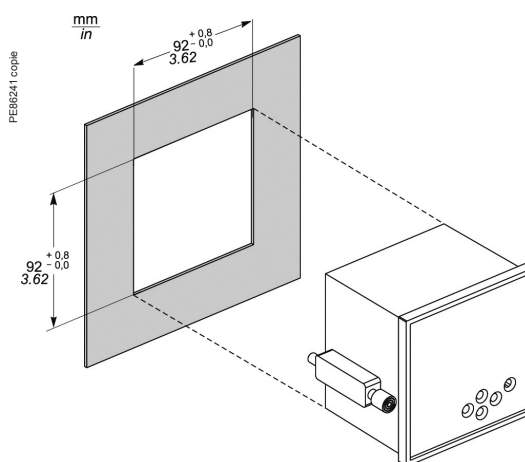
DM6000 series

Installation and connections

DM6000 series meter dimensions



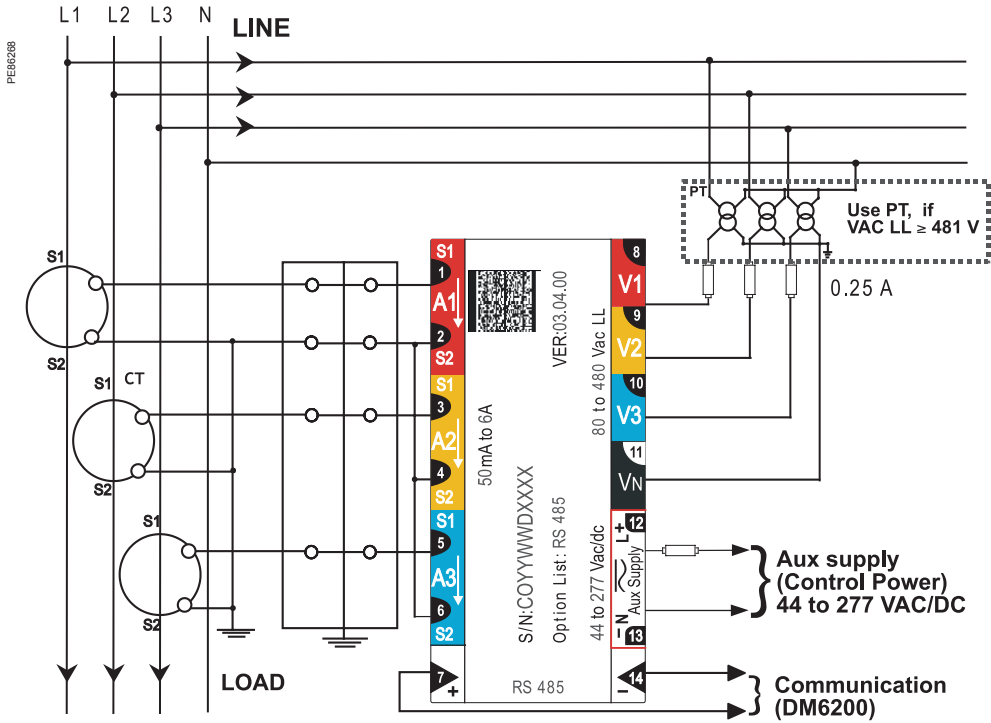
Front-panel mounting



DM6000 series

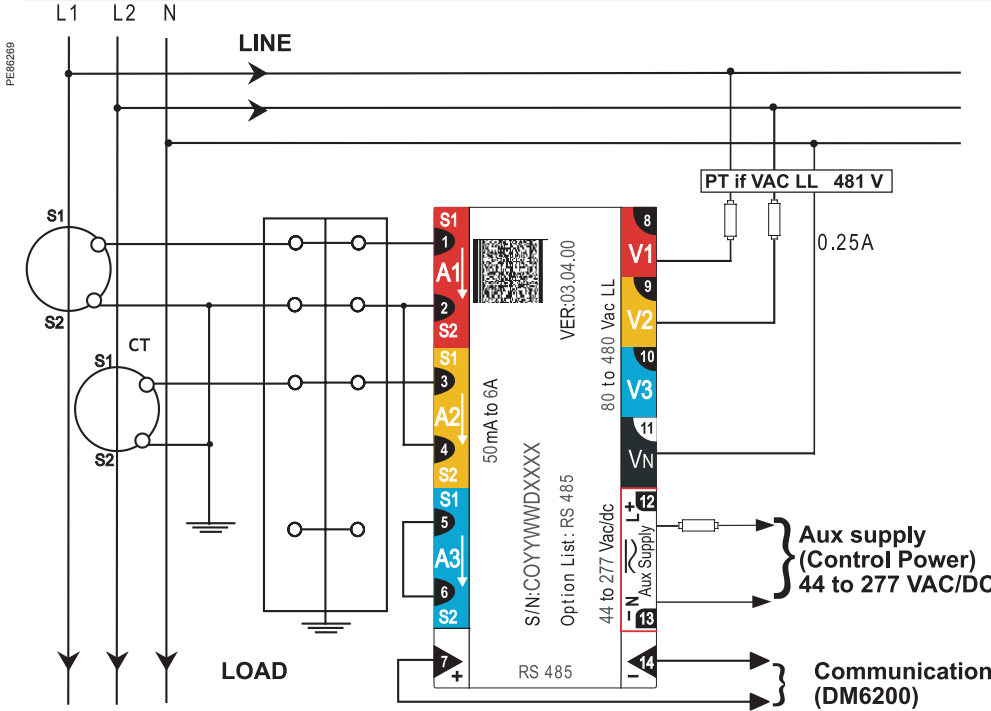
Installation and connections

3 phase 4-wire WYE connection with 3CTs and 3PTs



Connection representation only. Other types of connection are possible.
Refer to the DM6000 series Quick Start Guide for details.

2 phase 3-wire connection with 2 CTs



Connection representation only. Other types of connection are possible.
Refer to the DM6000 installation guide for details.

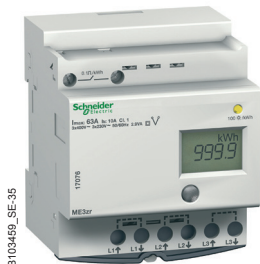




iEM2000T



iEM1zr/ME1zr.



iME3zr/ME3zr.



iME4zrt/ME4zrt.

Function

Digital kilowatt-hour meters designed for sub-metering of active energy (rms) consumed by a single-phase or three-phase electric circuit with or without distributed neutral.

iEM2000T

40 A Single-phase kilowatt-hour meter with pulse output.

iME1 / ME1

Single-phase kilowatt-hour meter.

iME1z / ME1z

Single-phase kilowatt-hour meter with partial meter.

iME1zr / ME1zr

Single-phase kilowatt-hour meter with partial meter and remote transfer of metering impulses (relay output).

iME3 / ME3

Three-phase kilowatt-hour meter without neutral.

iME3zr / ME3zr

Three-phase kilowatt-hour meter without neutral, with partial meter and remote transfer of metering impulses (relay output).

iME4 / ME4

Three-phase + neutral kilowatt-hour meter.

iME4zr / ME4zr

Three-phase + neutral kilowatt-hour meter with partial meter and remote transfer of metering impulses (relay output).

iME4zrt/ME4zrt

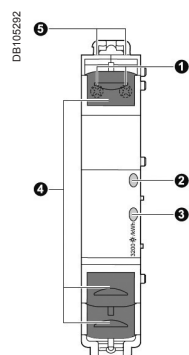
Three-phase kilowatt-hour meter with or without neutral associated with external CTs (not supplied), with partial meter and remote transfer of metering impulses (relay output).

Catalogue numbers

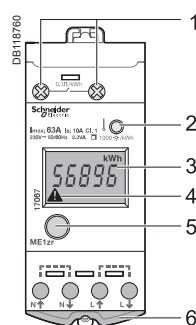
Type	Cat. no.	Type	Cat. no.	Rating (A)	Voltage (V AC)	Tolérance (V AC)	Width in mod. of 9 mm
Single-phase circuit (1L + N)							
iEM2000T	A9MEM2000T		15237	40	230	±20	2
iME1	A9M17065	ME1	17065	63	230	±20	4
iME1z	A9M17066	ME1z	17066	63	230	±20	4
iME1zr	A9M17067	ME1zr	17067	63	230	±20	4
Three-phase circuit (3L)							
iME3	A9M17075	ME3	17075	63	3 x 400-3 x 230	±20	8
iME3zr	A9M17076	ME3zr	17076	63	3 x 400-3 x 230	±20	8
iME4zrt	A9M17072	ME4zrt	17072	40...6000	3 x 400-3 x 230	±20	8
Three-phase + neutral circuit (3L + N)							
iME4	A9M17070	ME4	17070	63	3 x 230/400	±20	8
iME4zr	A9M17071	ME4zr	17071	63	3 x 230/400	±20	8
iME4zrt	A9M17072	ME4zrt	17072	40...6000	3 x 230/400	±20	8

Main technical data

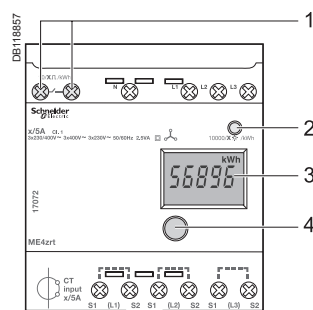
	ME	iEM2000T
Accuracy class	1	1
Frequency	48/62 Hz	48/62 Hz
Consumption	2.5 VA	< 10 VA
Operating temperature	-25°C to +55°C	-25°C to +55°C -25°C to +65°C (32 A)
Connection by tunnel terminals	Top terminals: 6 mm ² Bottom terminals: 16 mm ²	Top terminals: 4 mm ² Bottom terminals: 10 mm ²
Compliance with standard	IEC 61557-12: - PMD/DD/K55/1 - PMD/SD/K55/1 (ME4zrt)	IEC 62053-21 / IEC 61557-12: - PMD/DD/K55/1
	IEC 62053-21 (accuracy)	IEC 62053-21
Sealable screw shield	Except ME4zrt	Yes



iEM2000T



iME1zr / ME1zr.



iME4zrt / ME4zrt.

Description

iEM2000T

- 1 Pulse output for remote transfer.
- 2 Green on/off indicator or to display a wiring error (status: Off).
- 3 Flashing yellow meter indicator (can be used to check accuracy of the equipment).
- 4 Terminal covers and lead sealing accessory.
- 5 Free holes for the comb busbar.

iME1/ME1, iME1z/ME1z, iME1zr/ME1zr

- 1 Pulse output for remote transfer (iME1zr/ME1zr).
- 2 Flashing meter indicator.
- 3 Total or partial meter display (iME1z/ME1z, iME1zr/ME1zr).
- 4 Wiring error indicator.
- 5 Push-button: total or partial meter display, reset partial meter (ME1z, ME1zr).
- 6 Sealing connection.

iME3/ME3, iME3zr/ME3zr, iME4/ME4, iME4zr/ME4zr, iME4zrt/ME4zrt

- 1 Pulse output for remote transfer (iME3zr/ME3zr, iME4zr/ME4zr, iME4zrt/ME4zrt).
- 2 Flashing meter indicator.
- 3 Total or partial meter display (iME3zr/ME3zr, iME4zr/ME4zr, iME4zrt/ME4zrt) and CT rating display (iME4zrt/ME4zrt).
- 4 Push-button: total or partial meter display (iME3zr/ME3zr, iME4zr/ME4zr, iME4zrt/ME4zrt), reset partial meter, display or selection of CT rating (iME4zrt/ME4zrt).

Installation

- The front panel of the product is IP40 and its housing is IP20.
- Its installation must be appropriate to the operating conditions.
- The protection must not be less than IP65 for outdoor use.

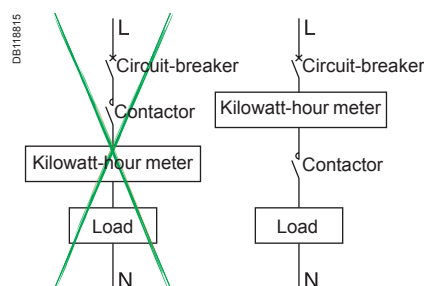
Use with a contactor

A measurement instrument is normally continually supplied.

For a non-continuous supply (load switching), we recommend that you place the breaking device downstream from the measurement instrument to limit disturbances on the module inputs.

These disturbances, particularly on inductive loads, may result in early ageing of the device.

You must also place the measurement instrument at a distance from the breaking device to limit the risk of disturbance.



Example: meter on a load switching