

Indirect three-phase meter

EDMk

Electronic three-phase energy meter with indirect connection for DIN rails or adaptable to panels

**Description**

Electronic three-phase meter (active and reactive energy) with an indirect connection for DIN rails or adaptable to a panel; 4 quadrants (measures the active (kW·h) and reactive (kvar·h) energy consumed and generated, both capacitive and inductive).

Other features include:

- Galvanic insulation transformers - ITF
- RS-485 Communications, depending on the type
- Two digital outputs with optoinsulated transistor
- Informs about possible connection errors on the display

Application

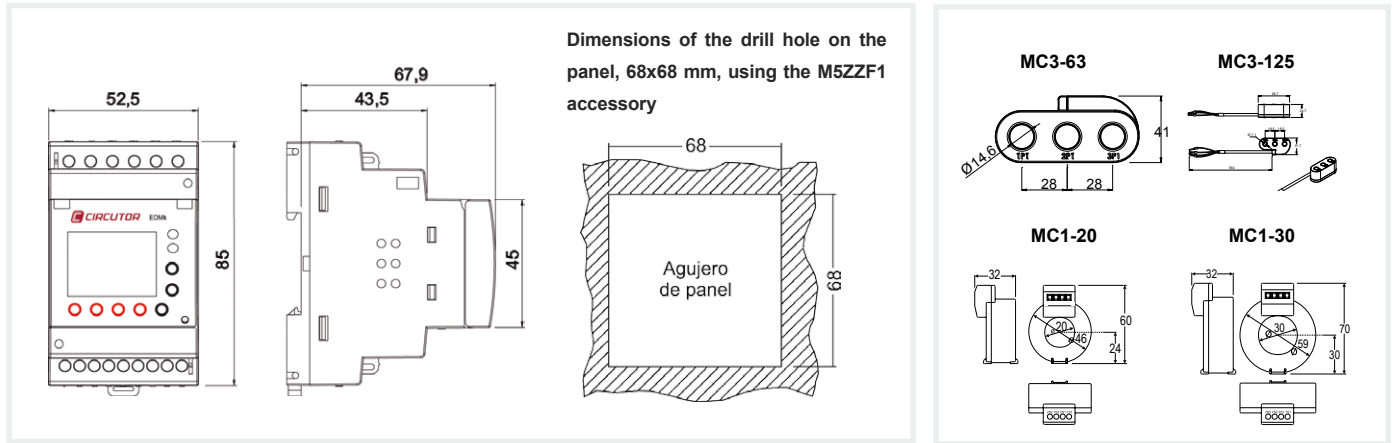
- Used as a redundant energy meter to verify the energy charged by the company. The unit is fully sealable so that it can not be tampered with
- Billing meter: measures energy in the different tariff categories (up to 3, depending on the type). Used to define the different billing periods or to control the production shifts.
- Cost control to obtain the consumption/unit ratio in industrial processes, etc. This type of control facilitates the definition of more precise cost prices

Features

Power supply circuit	230 V _{a.c.} (-15...+10%) / 85 ... 265 V _{a.c.} / 95 ... 300 V _{d.c.}
Consumption	5 V-A
Frequency	0...65 Hz
Metering circuit	
Nominal voltage	300 V _{ac} (phase-neutral) 520 V _{ac} (phase-phase)
Frequency	45..0.65 Hz
Consumption of the circuit, voltage per phase	0.3 V-A
Consumption of the circuit, current per phase	0.3 V-A at 5 A or 0.06 V-A at 1 A
Minimal current	120 mA
Nominal current	.../5 A or .../1 A (ITF-type insulated input) 250 mA mod. MC
Overload (permanent)	1.2 I _n
Maximum meter value	9,999,999 kW
Class	
Class in active energy	Class 1 - EN 62053-21
Class in reactive energy	Class 2 - EN 62053-23
Output transistor	Optoinsulated (collector open) NPN
Maximum switching voltage	24 V _{d.c.}
Maximum switching current	50 mA
Max. Impulse frequency	10 impulse / s (5 impulse / s in manual)
Duration of the Impulse	50 ms ON 50 ms OFF
Output 1	Terminals 9-8
Output 2	Terminals 7-8
Communications	
Type	RS-485 (3 wires)
Communication parametres	1200-1920 bps, 7/8, no even odd, 1/2
Ambient conditions	
Operating temperature	-20 ... +60 °C
Humidity (non-condensing)	5 ... 95 %
Altitude	2000 m
Build features	
Minimum display resolution	10 W·h
Type of box	V0 self-extinguishing plastic
Degree of protection	Fitted unit (frontal): IP 51 Non-fitted unit (sides and rear cover): IP 31
Dimensions	85 x 52 x 70 mm (3 modules)
Weight	195 g
Safety	
Category III EN-61010-1 . Protection to electric shock class II	
Standards	
EN 62052-11, EN 62053-21, EN 62053-23, EN 61010-1	

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 with indirect connection for DIN rail mounting

Dimensions


* Others dimensions consult M7

References

Parameters measured	Metering range	Partial meters	Quadrants	Communications with the MODBUS (RTU) protocol	Rates	Digital output	DIN Modules	Type	Code
kW-h, kVarL-h, kvarC-h	2 mA.../1 A or 5 A	Yes	4	-	1	2	3	EDMk-ITF-C2	M31741
kW-h, kVarL-h, kvarC-h	2 mA.../1A or 5 A	Yes	4	-	3	2	3	EDM3k-ITF-C2	M31743
kW-h, kVarL-h, kvarC-h	2 mA.../1 A or 5 A	Yes	4	RS-485	1	2	3	EDMk-ITF-RS485	M31751
EDMk-MC, efficient measuring system									
kW-h, kVarL-h, kvarC-h	2 mA.../1A or 5 A	Yes	4	-	3	2	3	EDMk-MC-ITF	M31771
kW-h, kVarL-h, kvarC-h	2 mA.../1 A or 5 A	Yes	4	RS-485	1	2	3	EDMk-MC-ITF-RS485	M31781
MC1 single-phase and MC3 three-phase Efficient transformers									
A max.	Ranges	Class 0,5 Power	Measure	Internal Diameter					
63	-	0,1 VA	3 Phases	7,1 mm				MC3-63	M73121
125	-	0,1 VA	3 Phases	14,6 mm				MC3-125	M73122
250	-	0,1 VA	3 Phases	26 mm				MC3-250	M73123
250	150/200/250	0,25 VA	1 Phase	20 mm				MC1-20-150/200/250	M73113
500	250/400/500	0,25 VA	1 Phase	30 mm				MC1-30-250/400/500	M73114
1500	500/1000/1500	0,25 VA	1 Phase	55 mm				MC1-55-250/500/1500	M73115

* More information see M7

Coding table

M	3	X	X	X	X	0	0	X	0	0	X
Code						Internal Code					
Power supply voltage	Standard (230 Vac)				0						
	85...265 Vac				C						
	95...300 Vdc										
Other	Standard (w/o battery)										0
	With battery (to read the meters when there is no power supply).										3

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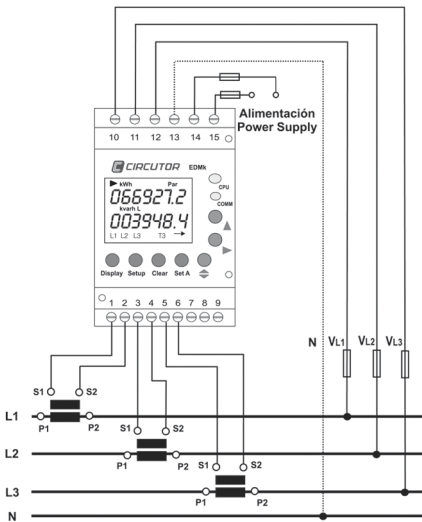
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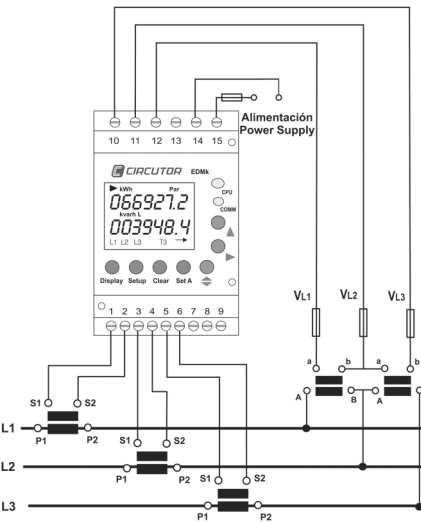


Connections

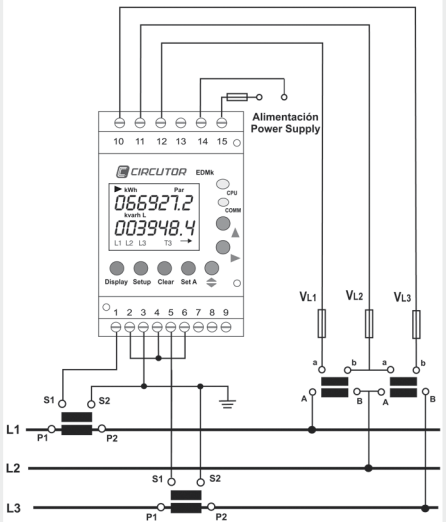
EDMk, 3 or 4 wires (low voltage) MC1



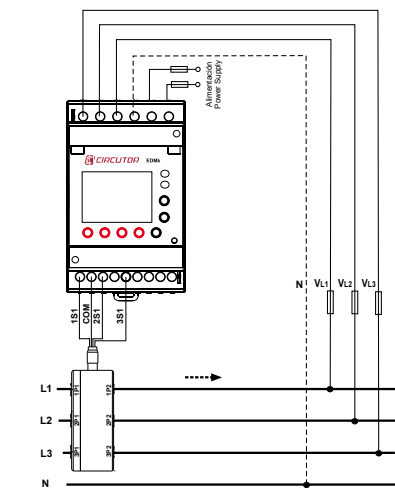
EDMk, 3 wires (2 TT and 3 TC)



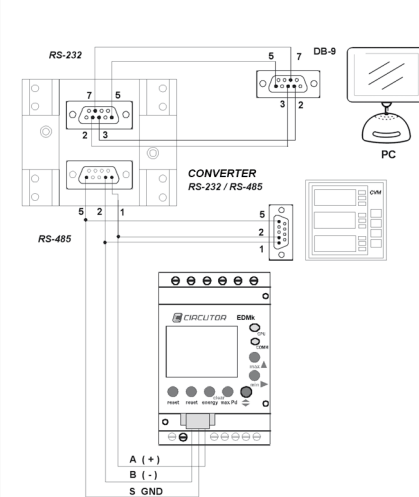
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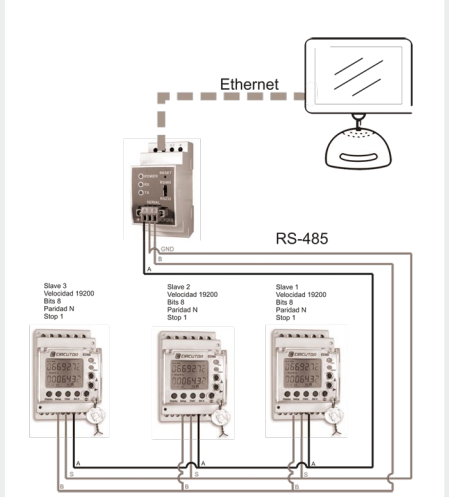
MC3 efficient transformers



RS-485 Connection diagram



Connection of Ethernet communications with TCP2RS 232 / 485 converter



Transistor output diagrams

