

Direct single-phase meter

MK-M

Electromechanical single-phase energy meter with direct connection for DIN rail mounting



Description

- Active energy meter (kW·h).
- 6-digit rotary mechanical display
- Metering verification LED
- It can meter up to 120 A, depending on the type
- It has a digital output with an optoisolated transistor

Application

- In applications with severe temperature conditions. The working life of the unit's mechanical display is not affected by high temperatures.
- Control of partial consumption in homes, commercial areas, etc. where it is important to know the consumption in each room or plot and produce accurate information during a determined period.

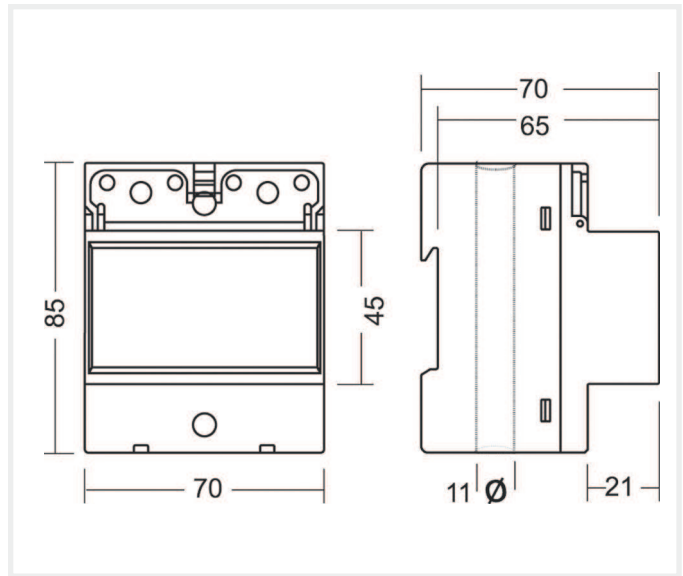
Features

Power circuit / Measurement	Single-phase 110 V - 230 Vac (-15...+10%)
Consumption	3 V·A
Frequency	50...60 Hz
Minimum current	300 mA / 600 mA (depending on type)
Nominal current	30 A / 60 A (depending on type)
Maximum current	60 A / 120 A (depending on type)
Maximum meter value	999,999 kW·h (Minimum resolution of the display 100 w.h)
Class/Accuracy	Class 1
Output transistor	Optoisolated (collector open) NPN
Maximum switching voltage	24 V dc
Maximum switching current	50 mA
Maximum Impulse frequency	1 impulse / s
Impulse duration	500 ms ON / 500 ms OFF
Energy output	100 impulses / kW·h (no programmable)
Build features	
Type of box	Self-extinguishing plastic
Degree of protection	Fitted unit (frontal): IP 51 Terminals: IP 20
Dimensions	70 x 80 x 75 mm (4 modules)
Weight	200 g
Ambient conditions	
operating temperature	0 ... +50 °C
Humidity	95% without condensation
Altitude	2000 m
Safety	
	Category III-300 Vac EN 61010 . Protection to electric shock class II
Standards	
	EN 61036, EN 61010

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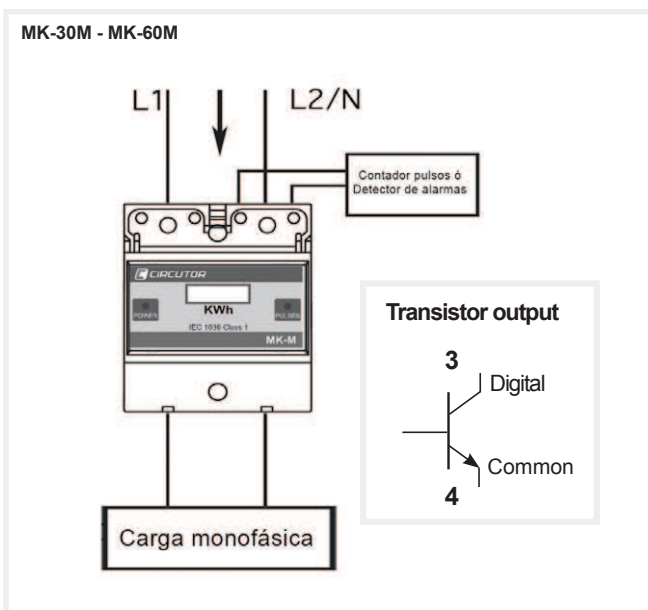
Dimensions



References

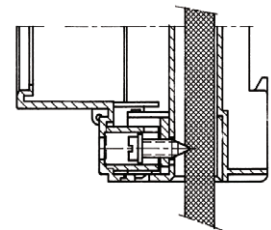
Parameters measured	input range	Quadrants	Rates	Digital output	DIN Modules	Type	Code
kW-h	0.3..0.60 A	2	1	1	4	MK-30 M	M30110
kW-h	0.6...120 A	2	1	1	4	MK-60 M	M30210

Connections



Diagram

Details of the voltage tap



Description of terminals

No. of Terminals	Description of terminals
1	Not used
2	Not used
3	RL1 Relay Output
4	Common Relay
5	L1 Voltage/Current input
6	N/L2 Voltage input

Direct single-phase meter

MK-LCD

Electronic single-phase energy meter with direct connection for DIN rail mounting



Description

Electronic single-phase meter for active energy, with direct connection for DIN rails.

Other features include:

- Connection error indicator Current up to 120 A (depending on the type)
- RS-485 Communications, (depending on the type)
- 1 digital output with optoinsulated transistor
- Partial meters
- Displays instant parameters, such as the voltage, current and power.

Application

Features

Power circuit / Measurement	Single-phase: 110 V - 230 V ac (-15...+20%)
Consumption	3 V·A
Frequency	50...60 Hz
Minimum current	300 mA / 600 mA (depending on type)
Nominal current	30 A / 60 A (depending on type)
Maximum current	60 A / 120 A (depending on type)
Maximum meter value	999,999 kW·h (Minimum resolution of the display 10 W·h)
Class/Accuracy	Class 1
Output transistor	Optoinsulated (collector open) NPN
Maximum switching voltage	24 V dc
Maximum switching current	50 mA
Maximum Impulse frequency	1 impulse / s
Duration of the Impulse	500 ms ON / 500 ms OFF
Energy output	100 impulses / kW·h (no programmable)
Communications	
Type	RS-485
Communication parameters	9600 bps, 8, n, 1
Build features	
Type of box	Self-extinguishing plastic
Degree of protection	Fitted unit (frontal): IP 51 Terminals: IP 20
Dimensions	70 x 80 x 75 mm (4 modules)
Weight	200 g
Ambient conditions	
operating temperature	0 ... +50 °C
Humidity	95% without condensation
Altitude	2000 m
Safety	
	Category III-300 Vac EN 61010 . Double-insulated electric shock protection class II
Standards	
	EN 61010

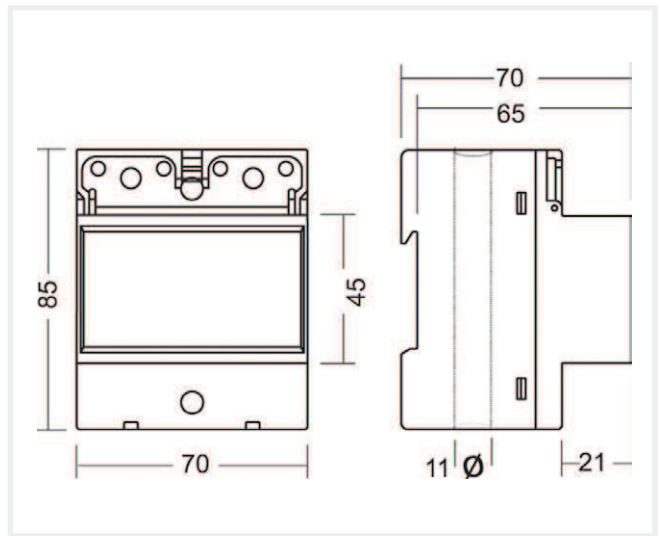
Direct single-phase meter

MK-LCD

Electronic single-phase energy meter with direct connection for DIN rail mounting



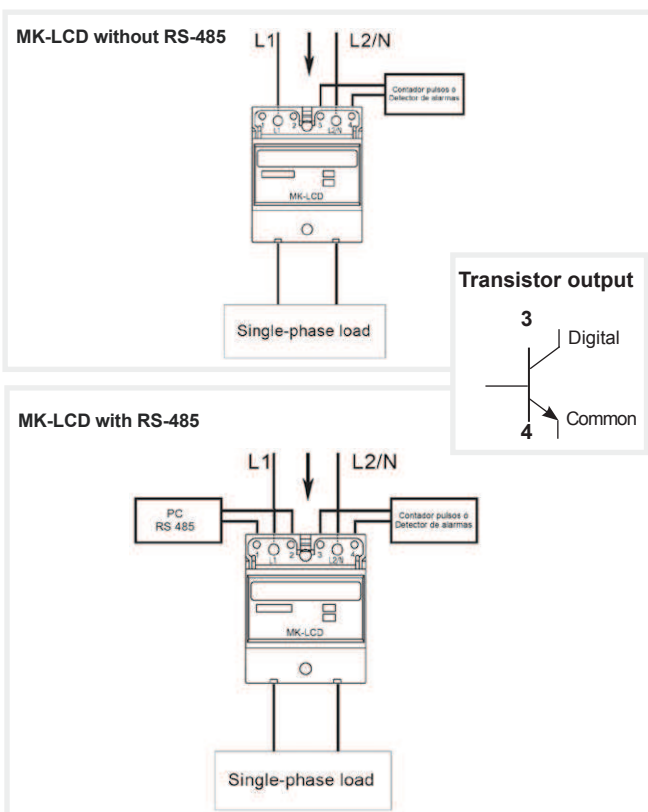
Dimensions



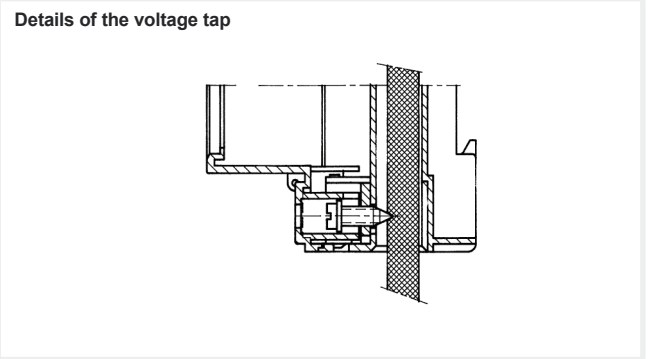
References

Parameters measured	Input range	Partial meters	Quadrants	Communications with the MODBUS (RTU) protocol	Rates	Digital output	DIN Modules	Type	Code
kW-h, V, A, W	0.3..0.60 A	Yes	2	-	-	1	4	MK-30 LCD	M30120
kW-h, V, A, W	0.6...120 A	Yes	2	-	-	1	4	MK-60 LCD	M30220
kW-h, V, A, W	0.3..0.60 A	Yes	2	RS-485	-	1	4	MK-30 LCD-RS485	M30121
kW-h, V, A, W	0.6...120 A	Yes	2	RS-485	-	1	4	MK-60 LCD-RS485	M30221

Connections



Diagram



Description of terminals

No. of Terminals	Description of terminals	
	MK-LCD without RS-485	MK-LCD with RS-485
1	Not used	RS-485 (B)
2	Not used	RS-485 (A)
3	RL1 Relay Output	RL1 Relay Output
4	Common Relay	Common Relay
5	L1 Voltage/Current input	L1 Voltage/Current input
6	N/L2 Voltage input	N/L2 Voltage input