



Energy meters

Single phase electrical energy meters WM1-6 / WM1M6

- Single phase direct connected DIN-rail mounting meter
- Class 1 for active energy according to EN 62053-21 and B according to EN 50470-3
- Basic current 5 A (I_b)
- Maximum current 65 A (I_{max})
- Serial communication (option)
- MID approval (option)

PROPERTIES

- Single phase direct connected DIN-rail mounting meter
- MID approval (option)
- Class 1 for active energy according to EN 62053-21 and B according to EN 50470-3
- Class 2 for reactive energy according to EN 62053-23
- Basic current 5 A (I_b)
- Maximum current 65 A (I_{max})
- 230V rated system voltage input (U_n)
- Voltage operating range -20% ... +20% U_n
- Reference frequency 50 and 60 Hz
- Power consumption voltage circuit < 8 VA at U_n
- Temperature range climatic condition as indoor meter according EN 62052-11
- Display LCD 7+1 digit (100Wh resolution)
- Multifunctional front red LED
- Pulse output (option) according to EN 62053-31
- Serial communication (option)
- Tariff input (option)
- DIN-rail mounting according to EN 60715
- Sealable terminal cover
- 2 DIN modules width

DESCRIPTION

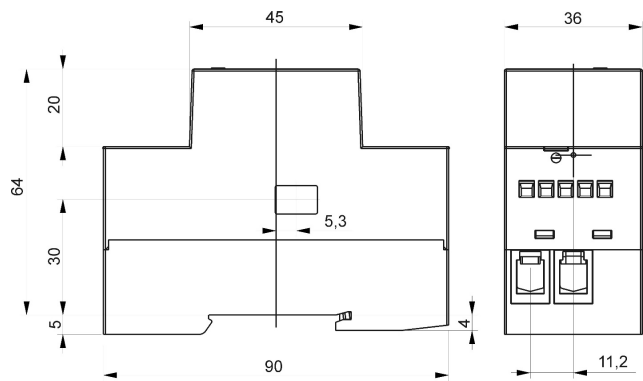
The meters WM1-6 and WM1M6 (MID certified) are intended for energy measurements in single-phase electrical power network and can be used in residential, industrial and utility applications. Meters measure energy directly in 2-wire networks according to the principle of fast sampling of voltage and current signals. A built-in microprocessor calculates energy and other electrical quantities from the measured signals. It also controls LCD, LED and installed modules.

Housing is provided with terminals protection covers, which can be sealed up against non-authorized access. They are built to be fastened to EN 60715 standard guides. Meters have built-in optical (IR) communication port on the side as a standard. Special WM-USB adapter (size 1 DIN module) can easily be attached to it. It can be used for direct communication with PC to change settings of devices without RS485 communication.

Optional the meters can be equipped with a RS485 serial communication with the MODBUS protocol, which enables data transmission and thus connection of the measuring places into the network for the control and management with energy. They can also be equipped with tariff input (option).

A built-in pulse output (option) is designed for sending data to the devices for checking and monitoring consumed energy.

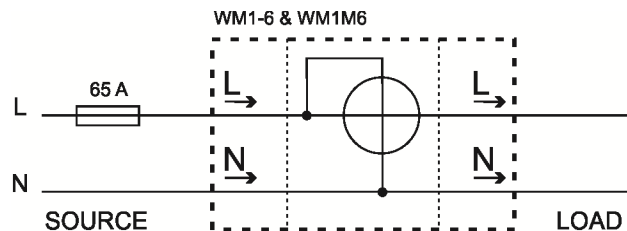
DIMENSIONAL DRAWINGS



INSTALLATION

Warning: Installation must be carried out and inspected by a specialist or under his supervision.

When working on the meter, switch off the mains voltage! It is recommended to use 65 A fuse for the line protection.



TECHNICAL DATA

Rail mounting according DIN EN60715

MECHANICAL INPUT:

Main inputs

Contacts capacity:	1.5 ... 16 (25) mm ²
Connection screws:	M5
Max torque:	3.5 Nm (PZ2)

Optional modules

Contact capacity:	0.05 ... 1 (2.5) mm ²
Screws:	M3
Max torque:	0.6 Nm

MEASURING INPUT:

Type:	single phase (1b)
Reference current (I_{ref}):	5 A
Maximum current (I_{max}):	65 A
Minimum current (I_{min}):	0.25 A
Transitional current (I_{tr}):	0.5 A
Starting current:	20 mA
Power consumption at I_{ref}	< 0.1 VA
Nominal voltage (U_n):	230 V ($\pm 20\%$)
Power consumption at U_n :	< 8 VA
Nominal frequency (f_n):	50 and 60 Hz

ACCURACY:

Active energy: class 1 **EN 62053-21**,
class B **EN 50470-3**
Reactive energy: class 2 **EN 62053-23**

LCD:

Number of digits: 8 (7+1)
Height of digits: 4.52 mm

LED:

Colour: red
Pulse rate: 1 imp/Wh
LED on: no load indication

PULSE OUTPUT (OPTION):

Pulse rate: 1 imp/Wh
Pulse duration: 32 ± 2 ms
Rated voltage DC: 40 V max
Switched current: 40 mA max
Standard: EN 62053-31 (A&B)

Serial Communication (option):

Type: RS485
Speed: 1200 to 19200 bit/s
Frame: 8, N, 2
Protocol: MODBUS RTU

Optical communication:

Type: IR
Connection: via WM-USB adapter
Speed: 19200 bit/s
Frame: 8, N, 2
Protocol: MODBUS RTU
Address: 33 - fixed

Tariff input (option):

Rated voltage: 230 V (+/- 20%)
Input resistance: 450 kOhm

Ambient conditions and Safety:

According standards for indoor active energy meters.
Temperature and climatic condition according to EN 62052-11

Dust/water protection: IP50
Operating temp. range: -25 ... 55°C
Storage temp. Range: -40 ... 70°C
Enclosure material: self extinguish
complying UL94 V
Indoor meter: yes
Degree of pollution: 2
Protection class: II
AC voltage test: 4 kV
Installation Category: 300 Vrms cat. III
Standard: **EN 50470**

EC Directives conformity:

EC Directive on Measuring Instruments **2014/32/EU**
EC Directive on EMC **2014/30/EU**
EC Directive on Low Voltage **2014/35/EU**
EC Directive WEEE **2002/96/EC**

Disposal



It is forbidden to deposit electrical and electronic equipment as municipal waste.
The manufacturer or provider shall take waste equipment free of charge.

DATA FOR ORDERING

	WM1-6 230 CP N A
Meter type	_____
WM1-6	
WM1M6 (MID version)	
Voltage input range (phase to neutral)	_____
230	
I/O module (option)	_____
WW Without	
TW Tariff module	
CW Comm. RS 485	
WP Pulse output	
TP Tariff input + pulse output	
CP Comm. RS485 + pulse output	
Push button for LCD	_____
N No	
Counter and LCD settings	_____
A Absolute counter	
B Bidirectional counter	
C Custom settings	

Description of default counter and LCD settings, type A,B:

I/O module	Counter setting	Energy counters				LCD
		E1	E2	E3	E4	
WW, WP, CW, CP	A	Ep	Eq			E1,E2
	B	Ep+	Ep-	Eq+	Eq-	E1,E2,E3,E4
TW, TP	A	Ep T1	Ep T2	Eq T1	Eq T2	E1,E2,E3,E4
	B	Ep+ T1	Ep+ T2	Ep- T1	Ep- T2	E1,E2,E3,E4

OPTIONS FOR CUSTOM SETTINGS:
COUNTER SETTING (E1 TO E4):

Type of energy:

- Total Absolute Active Energy (kWh) - Ep
- Total Absolute Reactive Energy (kvarh) - Eq
- Total Absolute Apparent Energy (kVAh) – Es
- Import Active Energy (kWh) – Ep+
- Export Active Energy (kWh) – Ep-
- Import Reactive Energy (kvarh) – Eq+
- Export Reactive Energy (kvarh)- Eq-

Tariff: none, T1, T2, both

LCD settings: E2, E3, E4, P, Q, S, PF, U, f, I

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