

# TRANSFORMER ENERGY METER IEM3255 3-PHASE MODBUS

*Item No.: 424,207*



## DESCRIPTION OF FUNCTIONS

The energy meter offers all the essential measurement functions (for example, current, voltage and energy) that are needed for monitoring three-phase electrical installations. The main functions of the energy meter are:

- Measuring voltage, current, active and reactive power, as well as active and reactive energy
- Can be used as a bidirectional meter for measuring grid feed-in and load
- Multi-tariff measurement
- MID approval
- Pulse output
- Display (current, voltage and power measurements)
- Communication via Modbus RTU
- Current and voltage transformer connections

## TECHNICAL DATA

Conductor systems:	1P + N (100...277 V AC) 3P (173...480 V AC) 3P + N (173...480 V AC)	
Current measurement range:	0.02...6 A Transformer inputs: 1 A or 5 A	
Precision class:	Active power: Class C as per EN 50470-3 Active power: Class 0.5S as per IEC 61557-12 Active power: Class 0.5S as per IEC 62053-22	
Rated current in operation [ $I_n$ ]:	1 A / 5 A	
Nominal voltage:	173...480 V 100...277 V	
Grid frequency:	50 Hz / 60 Hz	
Maximum / startup / minimum current (active power):	for x / 1 A current input: $I_{max} = 1.2 \text{ A}$ , $I_{st} = 0.002 \text{ A}$ , $I_{min} = 0.01 \text{ A}$	for x / 5 A current input: $I_{max} = 6 \text{ A}$ , $I_{st} = 0.005 \text{ A}$ , $I_{min} = 0.05 \text{ A}$
Power consumption:	< 0.036 VA at 6 A	
Sampling rate:	32 samplings / cycle	
Tariff input:	4 tariffs	
Communication interface:	RS485, Modbus RTU 9,600, 19,200 and 38,400 baud odd/even or no parity	
Inputs:	1 digital input 0...5 V DC / 11...40 V DC (rated voltage 24 V DC)	
Outputs:	1 digital output (static) 5...40 V DC < 50 mA	
Display type:	LCD display	
Active power display range:	99,999,999 [kWh] or [MWh]	

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## INTERFACES

### Communication interface

No. of ports:	1 RS485
Protocol:	Modbus RTU
Baud rate:	9,600, 19,200, 38,400
Selectable address range:	1...247
Data format:	8N1, 8E1, 8O1
Insulation:	4.0 kV <sub>eff</sub>

### Programmable digital output

Number:	1
Type:	Normally open (NO)
Load voltage:	5...40 V DC
Maximum load voltage:	50 mA
Output resistor:	0.1...50 Ω
Insulation:	3.75 kV <sub>eff</sub>

### Programmable digital input

Number:	1
Type:	Type 1 (IEC 61131-2)
Input:	Voltage: max. 40 V DC Current: max. 4 mA
Voltage OFF-position:	0...5 V DC
Voltage ON-position:	11...40 V DC
Nominal voltage:	24 V DC
Insulation:	3.75 kV <sub>eff</sub>

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## PRODUCT CERTIFICATES

Product certificates:	UL NMI CULus as per UL 61010-1 CE as per IEC 61010 MID as per EN 50470-3 MID as per EN 50470-1
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## MEASUREMENT VALUES RECORDED

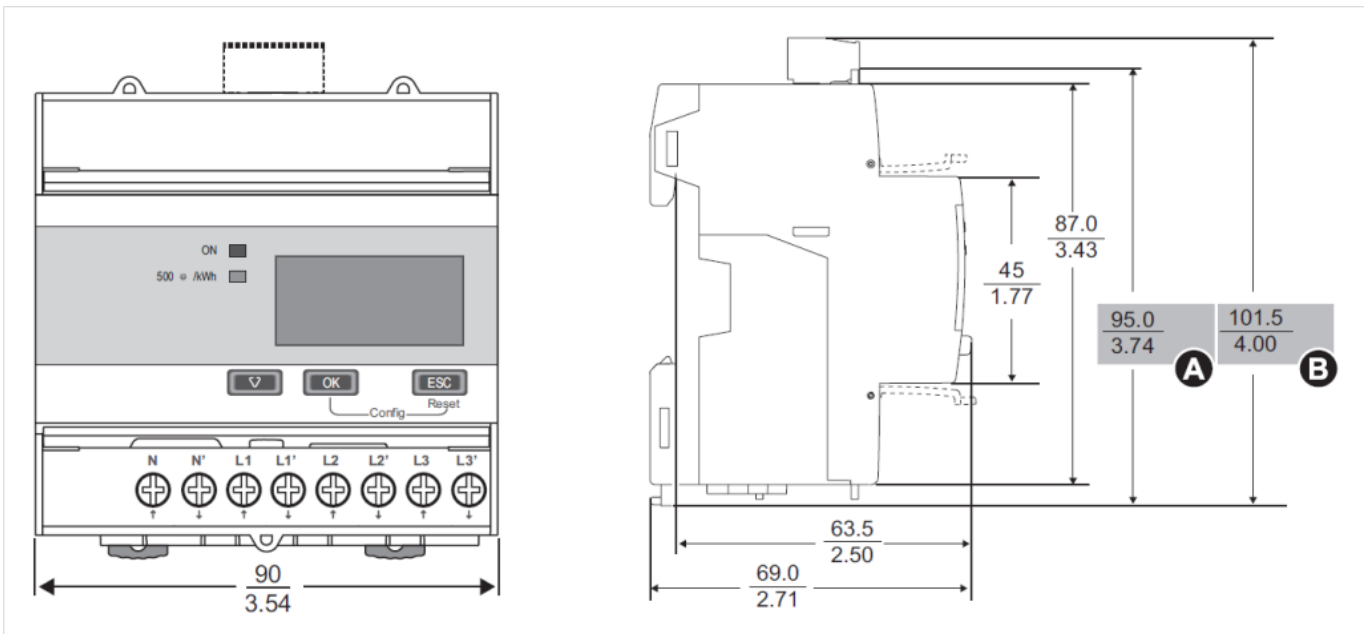
M_AC_U (1, 2, 3)	Voltage (phase 1, 2, 3)
M_AC_U_L1L2	Voltage (phase L1-L2)
M_AC_U_L2L3	Voltage (phase L2-L3)
M_AC_U_L3L1	Voltage (phase L3-L1)
M_AC_I (1, 2, 3)	Current (phase 1, 2, 3)
M_AC_P(1, 2, 3)	Active power (phase 1, 2, 3)
M_AC_P	Active power
M_AC_Q	Reactive power
M_AC_S	Apparent power
M_AC_PF	cos φ
M_AC_F	Frequency
M_AC_E_EXP	Active power (export)
M_AC_E_IMP	Active power (import)

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## INSTALLATION

Installation:	DIN top-hat rail (TS 35)
IP protection class:	IP20 (enclosure) as per IEC 60529 IP40 (front panel) as per IEC 60529
Overvoltage category:	III as per DIN EN 60664-1
Operating temperature:	-25...+55 °C
Storage and transport temperature:	-40...+85 °C
Relative humidity:	5 ~ 95 % (non-condensing)
Position:	Only indoors, not for use in humid and wet areas
Installed height:	≤ 2,000 m above MSL
Dimensions (W x H x D):	90 x 95 x 69 mm
Weight:	466 g

## SCALE DRAWING



**A:** Without communications interface

**B:** With communications interface