

SMART Energy meters

7M
SERIES



Panels for electrical distribution



Control panels



Electrical energy control



Industrial robots



Road / tunnel lighting



Elevators and lifts



Three-phase multi-function Bi-directional energy meters with NFC technology and backlit Matrix LCD display. MID certified for 3 or 4 wire system and single phase application up to 80 A @ 70°C.

Type 7M.38.8.400.0212 (with NFC)
Direct connection up to 80 A, dual tariff
Multi-function energy meter with RS485
Modbus integrated interface and and S0
output
NFC technology allows reading the measured energy even in the absence of mains voltage and to program and customize the counters via smartphone

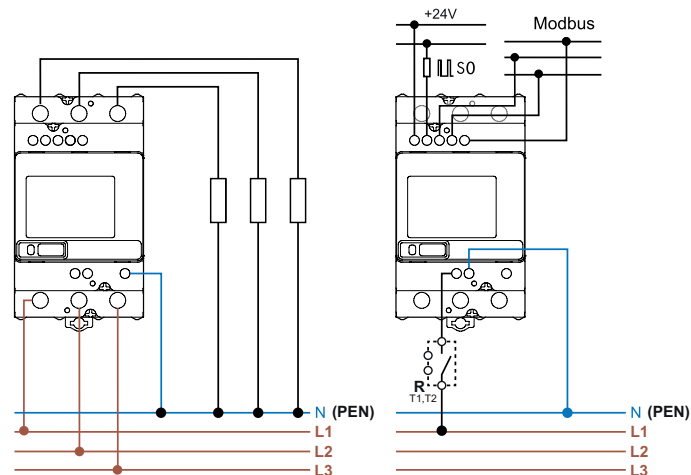
- Display of total or partial (resettable) consumption: kWh, kVAh, kvarh
- 2 active energy MID counters + 2 reactive energy nationally certified counters
- 16 resettable counters
- Scroll to view the following instantaneous values: V, A, PF, kW, kVA, kvar, Hz, THD V, THD A, phase angle and direction of power flow
- RS485 Modbus integrated communications port
- S0 pulse outputs for remote energy monitoring according to EN 62053-31
- Matrix backlit LCD display
- Multi-function touch button
- Active energy accuracy Class B according to EN 50470-3 (MID)
- Reactive energy accuracy Class 2 to EN 62053-23
- Sealable tamperproof terminal shield
- Protection category II
- 35 mm rail (EN 60715) mount

* Modbus default transmission baud rate: 19 200 bps
 For outline drawing see page 15

NEW 7M.38.8.400.0212



- Reference current 5 A (80 A Maximum)
- RS485 Modbus integrated interface and IR communication port and NFC technology
- 3-phase 230/400 V 50/60 Hz system: 3L+N, 3L, 1L+N
- MID certified up to 70°C



Specification

Reference/Maximum current I_n/I_{max}	A	5/80
Starting current I_{st}	A	0.02
Minimum measured current I_{min}	A	0.25
Current range (within accuracy class)	A	0.5...80
Maximum peak current	A	2400 (10 ms)
Supply (& monitored) voltage U_N	V AC	3 x 230/400
Operating range		$(0.8...1.15)U_N$
Frequency	Hz	50/60
Power consumption per phase	W/VA	$\leq 1/7.5$
Display		Matrix - LCD
Max. totalising count/Min. increment	kWh	999 999.9/0.1
LED pulses per kWh		1000
LED pulse length	ms	4±0.5

Output specification (S0+/S0-)

Number/Type		1 opto-isolated output
Voltage range/Maximum current (conforming to EN 62053-1)	VDC/mA	3.3...27/1...27
Pulse per kWh	Imp/kWh	500
Pulse length	ms	32 ± 2
Maximum cable length	m	1000

Modbus technical data

Bus System		Modbus RS485
Frame (default)		8, N, 2
Max bus length	m	1000
Max. Modbus energy meters connectable		32
Baud rate*	Baud	1200...115 200

Technical data

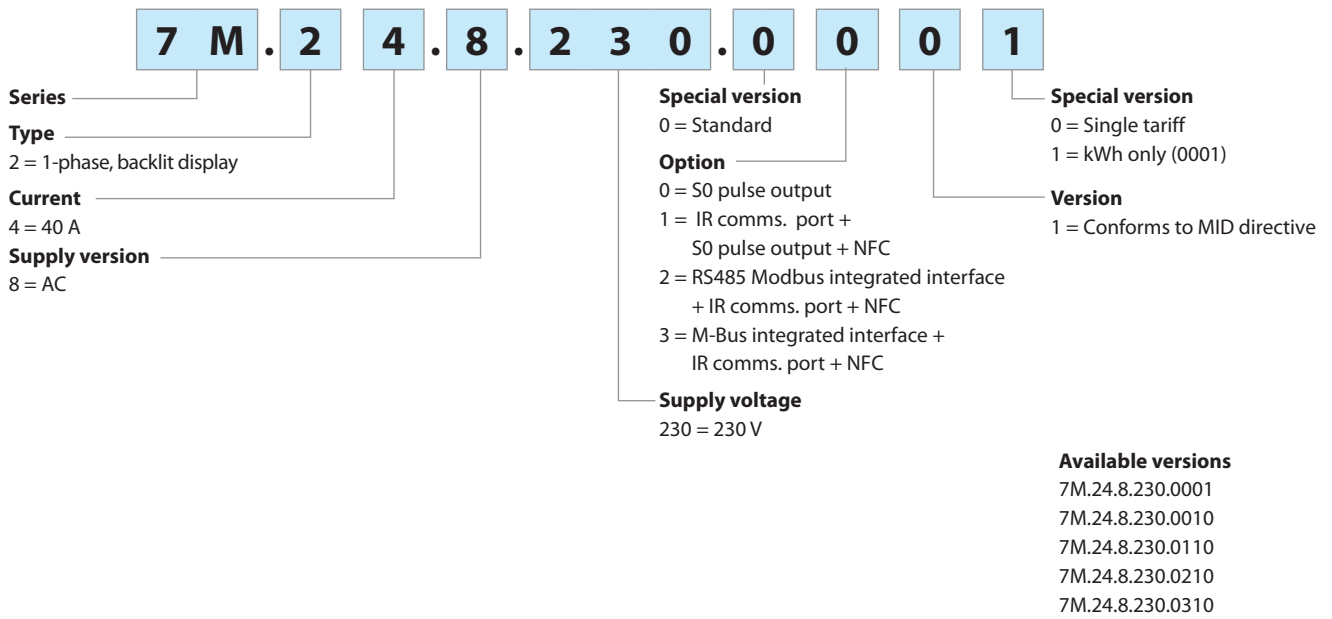
Accuracy class IEC EN 50470-3 / IEC EN 62053-23		B/2
Ambient temperature (Within accuracy class)	°C	-25...+70
Protective class		II
Protection category: Housing/terminals		IP 50/IP 20

Approvals (according to type)

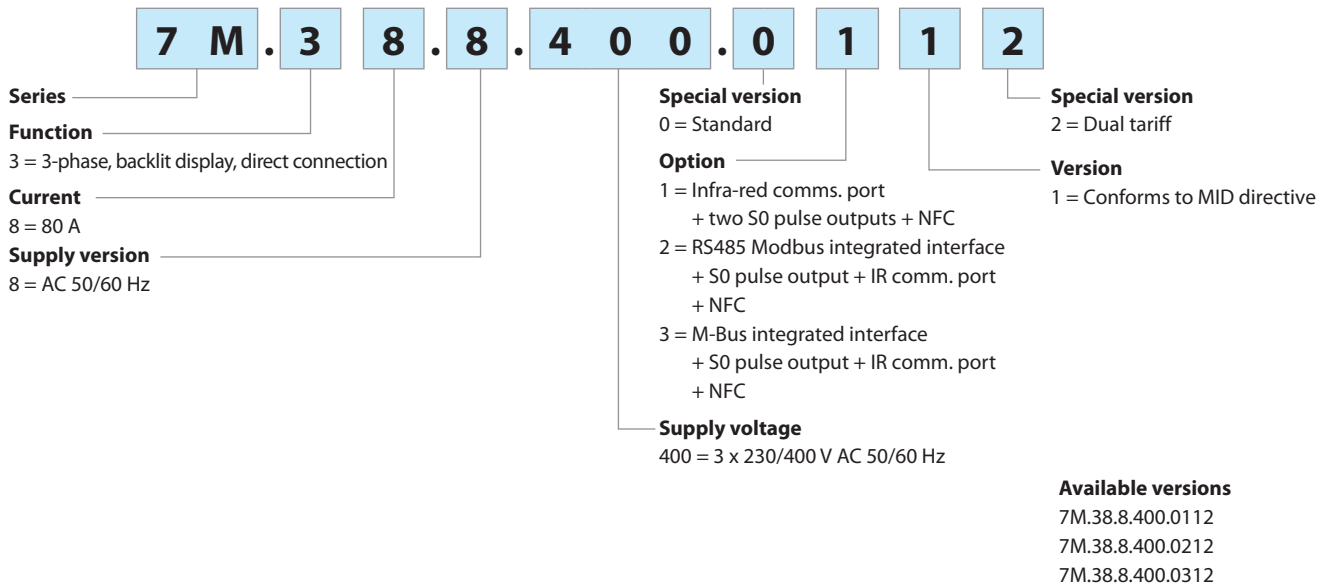


Ordering information

Example: 1-phase energy meter for direct connection up to 40 A, S0 pulse output, Class B accuracy, for 35 mm rail (EN 60715) mounting, with integral sealable tamperproof terminal shield.



Example: 3-phase energy meter for direct connection up to 80 A, with MID certification, Class B accuracy, for 35 mm rail (EN 60715) mounting.

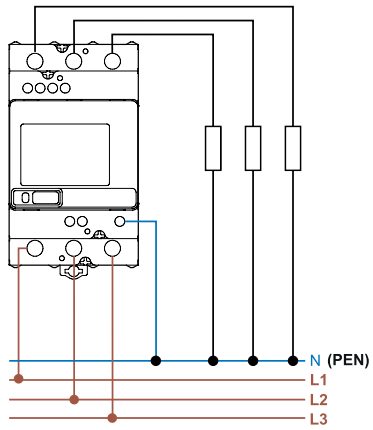


Technical data

Insulation		7M.24.8.230.0xxx		7M.38.8.400.0xxxx	
Insulation rated voltage		V 250		250	
Insulation	between active parts and S0+/S0- terminals	kV (1.2/50 µs)		6	
	between supply and Modbus, M-Bus terminal	kV (1.2/50 µs)		6	
	between adjacent phases	kV (1.2/50 µs)		6	
Insulation	between active parts and S0+/S0- terminals	V AC		4000	
	between supply and Modbus, M-Bus terminal	V AC		4000	
Protection class				II	
EMC Specification according to 61000-4-(2/3/4)		7M.24.8.230.0xxx		7M.38.8.400.0xxxx	
Electrostatic discharge	contact discharge			8 kV	
	air discharge			15 kV	
Radio frequency Electromagnetic field (80...2000)MHz				30 V/m	
Fast Transients (burst) (5-50 ns, 5 kHz)	on Supply terminals			4 kV	
	on S0+/S0- terminals			2 kV	
	Modbus, M-Bus terminal			2 kV	
Surge (1.2/50 µs)	on Supply terminals			4 kV	
Other data		7M.24.8.230.0xxx		7M.38.8.400.0xxxx	
Pollution degree				2	
Vibration resistance		EN 60068-2-6		EN 60068-2-6	
Shock resistance		EN 60068-2-27		EN 60068-2-27	
Power lost to the environment		max value per phase		0.5W/1.5 VA	
				1W/7.5VA	
Supply terminals		7M.24.8.230.0xxx		7M.38.8.400.0xxx	
Max. wire size		solid cable	stranded cable	solid cable	stranded cable
	mm ²	1.5...10	1.5...10	1.5...25	1.5...25
	AWG	16...8	16...8	16...4	16...4
Screw torque for I _{max}		Nm	0.8	0.8	3.5
				3.5	3.5
S0+/S0- terminals, RS485 Modbus, M-Bus		7M.24.8.230.0xxx		7M.38.8.400.0xxx	
Max. wire size		solid cable	stranded cable	solid cable	stranded cable
	mm ²	0.14...2.5	0.14...2.5	0.14...2.5	0.14...2.5
	AWG	26...14	26...14	26...14	26...14
Screw torque		Nm	0.6	0.6	0.6

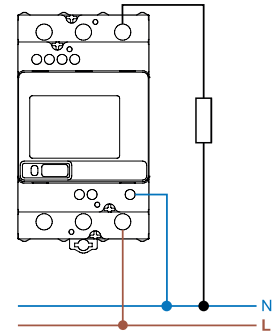
Wiring diagrams

Three-phase system



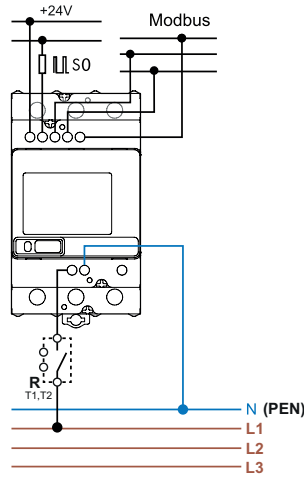
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Single-phase system

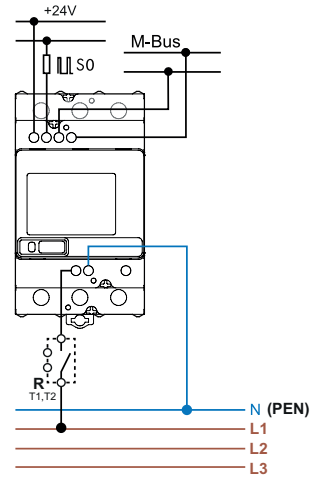


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Modbus or M-Bus system



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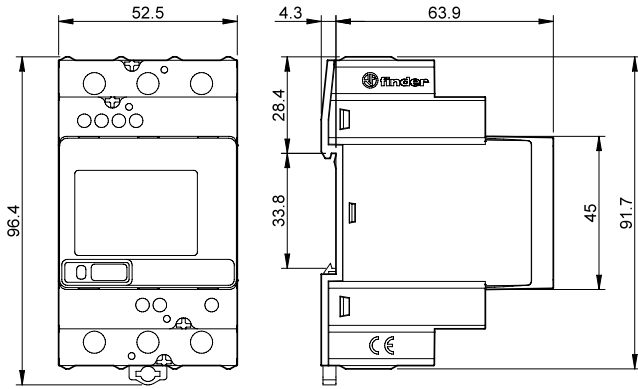


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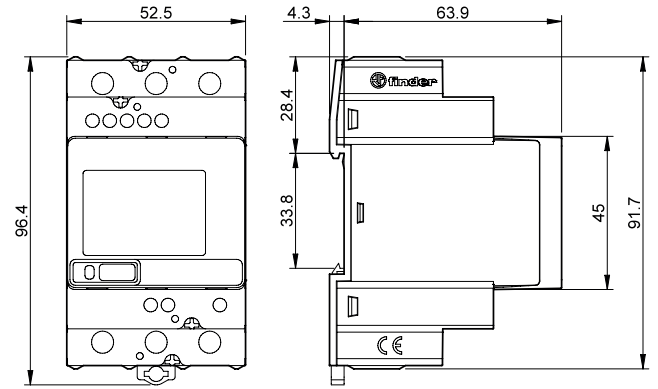
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Outline drawings

Type 7M.38.8.400.0112



Type 7M.38.8.400.0212



Type 7M.38.8.400.0312

