finder
SWITCH TO THE FUTURE

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.38.8.400.0312 (with NFC)
Direct connection up to 80 A, dual tariff, Multi-function energy meter with M-Bus 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

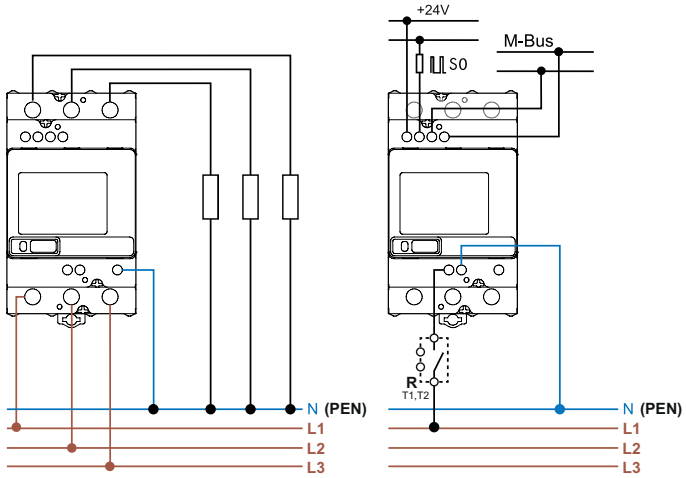
- Display of total or partial (resettable) consumption: kWh, kVAh, kvarh
- 2 active energy MID counters + 2 reactive energy nationally certified counters
- 16 resettable counters
- Scroll to view the following instantaneous values: V, A, PF, kW, kVA, kvar, Hz, THD V, THD A, phase angle and direction of power flow
- M-Bus 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

* M-Bus default transmission baud rate: 2400 bps

For outline drawing see page 15

NEW **7M.38.8.400.0312**

- Reference current 5 A (80 A Maximum)
- M-Bus 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	≤ 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
M-Bus technical data		
Bus System		M-Bus
Baud rate*	Baud	300…9600
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)		CE

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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.

7 M . 2 4 . 8. 2 3 0 . 0 0 0 1

Series

Type
2 = 1-phase, backlit display

Current
4 = 40 A

Supply version
8 = AC

Supply voltage
230 = 230 V

Special version
0 = Standard

Option
0 = S0 pulse output
1 = IR comms. port + S0 pulse output + NFC
2 = RS485 Modbus integrated interface + IR comms. port + NFC
3 = M-Bus integrated interface + IR comms. port + NFC

Version
1 = Conforms to MID directive

Special version
0 = Single tariff
1 = kWh only (0001)

Available versions
7M.24.8.230.0001
7M.24.8.230.0010
7M.24.8.230.0110
7M.24.8.230.0210
7M.24.8.230.0310

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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.

7 M . 3 8 . 8 . 4 0 0 . 0 1 1 2

Series

Function
3 = 3-phase, backlit display, direct connection

Current
8 = 80 A

Supply version
8 = AC 50/60 Hz

Supply voltage
400 = 3 x 230/400 V AC 50/60 Hz

Special version
0 = Standard

Option
1 = Infra-red comms. port + two S0 pulse outputs + NFC
2 = RS485 Modbus integrated interface + S0 pulse output + IR comm. port + NFC
3 = M-Bus integrated interface + S0 pulse output + IR comm. port + NFC

Version
1 = Conforms to MID directive

Special version
2 = Dual tariff

Available versions
7M.38.8.400.0112
7M.38.8.400.0212
7M.38.8.400.0312

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

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	0.6

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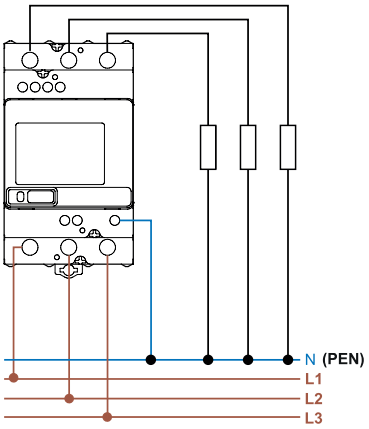
Wiring diagrams

Three-phase system



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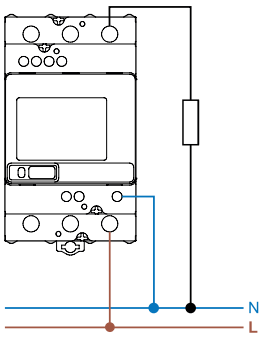
Single-phase system



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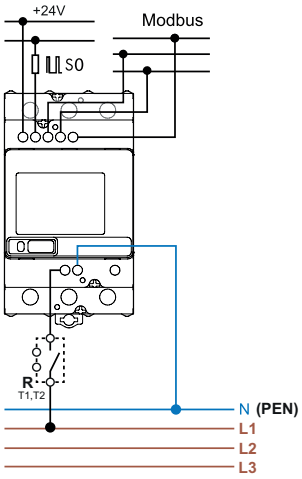
Modbus or M-Bus system



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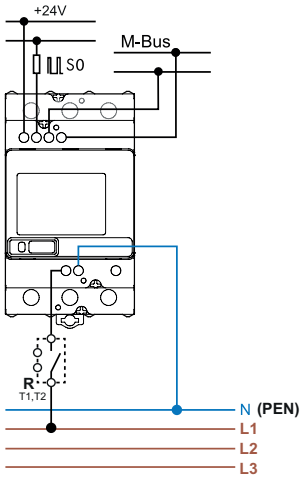

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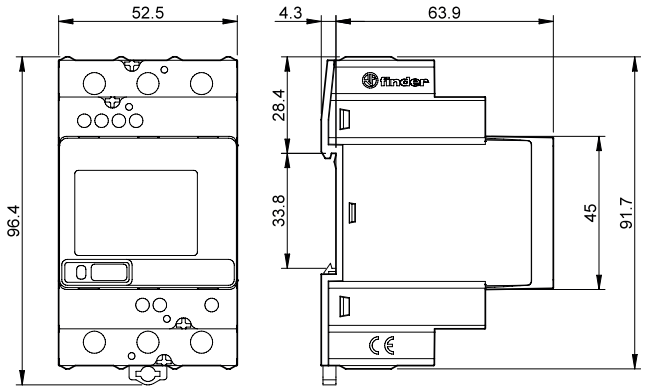
Outline drawings

Type 7M.38.8.400.0112



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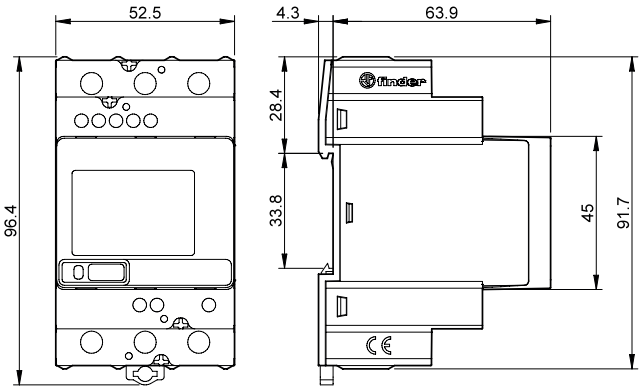

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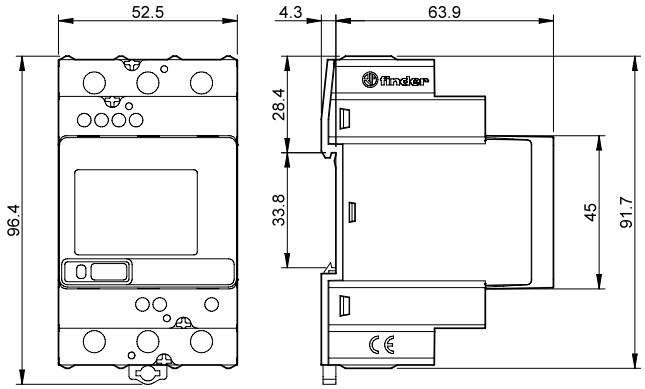

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