

Energy meters

7E
SERIES



Panels for electrical distribution



Control panels



Electrical energy control



Industrial robots



Road / tunnel lighting



Elevators and lifts



Single-phase

Single-phase Bi-directional energy meters with backlit LCD display

Type 7E.64.8.230.0001 kWh, kW, V

- Display of active energy consumption (kWh)
- Scroll to view instantaneous voltage (V) and active power (kW)
- 7 digit backlit LCD display
- Class 1 accuracy according to EN 62053-21
- S0 output for remote energy monitoring according to EN 62053-31. Active energy (kWh) only

Type 7E.64.8.230.0010

Multifunction MID certified

- Display of total or partial (resettable) energy consumption: kWh, kVAh or kvarh
- Scroll to view the following instantaneous values: V, A, PF, kW, kVA, kvar, Hz and direction of power flow
- 7 digit backlit LCD display
- Active power accuracy Class B according to EN 50470-3
- Programmable* S0 pulse output for remote energy monitoring according to EN 62053-31
- Accessories: sealable tamperproof terminal cover
- Protection category II
- 35 mm rail (EN 60715) mount

7E.64.8.230.00xx
Box clamp



* S0 output can be associated with kWh, kVAh or kvarh.

For outline drawing see page 11

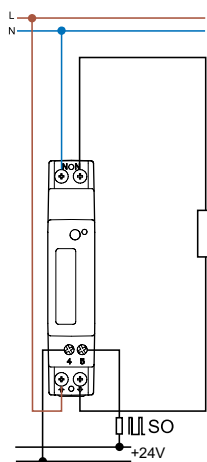
Specification

Reference/Maximum current I_N/I_{max}	A	5/40	5/40
Starting current I_{st}	A	0.02	0.02
Minimum measured current I_{min}	A	0.25	0.25
Current range (within accuracy class)	A	0.5...40	0.5...40
Maximum peak current	A	1200 (10 ms)	1200 (10 ms)
Supply (& monitored) voltage U_N	V AC	230	230
Operating range		$(0.8...1.2)U_N$	$(0.8...1.2)U_N$
Frequency	Hz	50/60	50/60
Power consumption	W/VA	$\leq 0.5/1.5$	$\leq 0.5/1.5$
Display		Seven digit counter - backlit LCD display	
Max. totalising count/Min. increment	kWh	999 999.9/0.1	999 999.9/0.1
LED pulses per kWh		5000	5000
LED pulse length	ms	4 ± 0.5	4 ± 0.5
Output specification (S0+/S0-)			
Number/Type		1 opto-isolated output	1 opto-isolated output
Voltage range/Maximum current (conforming to EN 62053-1)	V DC/mA	3.3...27/1...27	3.3...27/1...27
Pulses per kWh*	Imp/kWh*	1000	1000
Pulse length	ms	100 ± 0.5	100 ± 0.5
Maximum cable length	m	1000	1000
Technical data			
Accuracy class EN 62053-21 (non MID)/ EN 50470-3 (MID)		1	B
Ambient temperature (Within accuracy class)	°C	-25...+55	-25...+55
Protective class		II	II
Protection category: Housing/terminals		IP 50/IP 20	IP 50/IP 20
Approvals (according to type)			

7E.64.8.230.0001



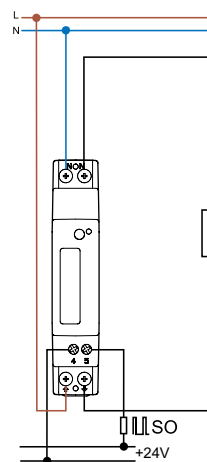
- Reference current 5 A (40 A Maximum)
- 1-phase 230 V AC
- kWh + instantaneous voltage & kW, V



7E.64.8.230.0010



- Reference current 5 A (40 A Maximum)
- 1-phase 230 V AC
- kWh, kVAh or kvarh + instantaneous V, A, PF, kW, kVA, kvar & Hz
- MID certified



Three-phase

Multifunction Dual tariff energy meters
Bi-directional, MID certified, two S0 outputs
with backlit LCD display for 3 or 4 wire systems
Infra-red communications port

Type 7E.78.8.400.0112

Direct connection up to 80 A, dual tariff

Type 7E.86.8.400.0112

6 A direct connection, up to 50 000 A using
current transformer, dual tariff

- Display of total or partial (resettable) energy consumption: kWh, kVAh or kvarh - for both T1 and T2 tariffs - for the total system or per phase
- Scroll to view the following instantaneous values: V, A, PF, kW, kVA, kvar, Hz and direction of power flow
- Fault indication in the event of loss or incorrect phase sequence
- 8 digit backlit LCD display
- Active power accuracy Class B according to EN 50470-3
- Reactive power accuracy Class 2 according to EN 62053-23
- Two programmable** S0 pulse outputs for remote energy monitoring according to EN 62053-31
- Infra-red communications port for data exchange with various field protocols, using optional modules
- Protection category II
- Accessories: sealable tamperproof terminal cover
- 35 mm rail (EN 60715) mount

* Minimum CT ratio: 1:1
 Maximum CT ratio: 10 000:1
 CT full scale programmable: 1 or 5 A

** S0 output can be associated with kWh, kVAh or kvarh.

For outline drawing see page 11

Specification

Reference/Maximum current I_n/I_{max}	A	5/80	1/6
Starting current I_{st}	A	0.02	0.002
Minimum measured current I_{min}	A	0.25	0.01
Current range (within accuracy class)	A	0.5...80	0.05...6
Maximum peak current	A	2400 (10 ms)	120 (500 ms)
Supply (& monitored) voltage U_N	V AC	3 x 230/400...3 x 240/415	3 x 230/400...3 x 240/415
Operating range		$(0.8...1.2)U_N$	$(0.8...1.2)U_N$
Frequency	Hz	50/60	50/60
Power consumption per phase	W/VA	$\leq 0.5/7.5$	$\leq 0.5/7.5$
CT burden (per phase)	VA	—	0.04

Display

Eight digit counter - backlit LCD display

Max. totalising count/Min. increment	kWh	999 999.99/0.01	999 999.99/0.01
LED pulses per kWh		1000	10 000
LED pulse length	ms	10±0.5	10±0.5

Output specification (S0+/S0-)

Number/Type		2 opto-isolated outputs	2 opto-isolated outputs
Maximum values (conforming to EN 62053-31)	V AC-DC/mA	250/100	250/100
Pulses per kWh**	Imp/kWh**	100	See table page 10
Pulse length	ms	50 ± 2	50 ± 2
Maximum cable length (30 V/20 mA)	m	1000	1000

Tariff input - opto-isolated

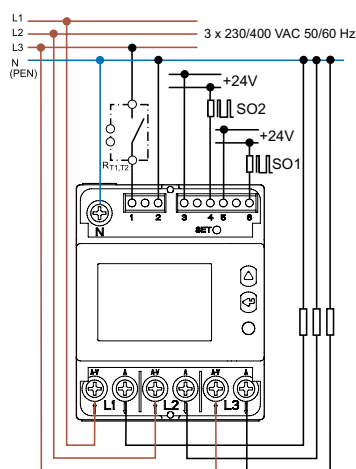
Voltage range	V AC/DC	80...275	80...275
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Technical data

Accuracy class EN 50470-3 (MID)		B	B
Ambient temperature	°C	-25...+55 °C	-25...+55 °C
Protective class		II	II
Protection category: Housing/terminals		IP 50/IP 20	IP 50/IP 20

Approvals (according to type)**7E.78.8.400.0112**

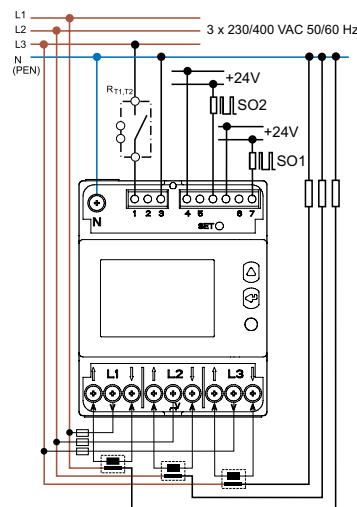
- Reference current 5 A (80 A Maximum)
- Three-phase systems - 3 or 4 wire
- Dual tariff
- MID certified



$R_{T1,T2}$ = Tariff switching equipment

7E.86.8.400.0112

- Reference current 1 A (6 A Maximum)
- Three-phase systems - 3 or 4 wire
- Usable with current transformer*
- Programmable CT secondary*
- Dual tariff
- MID certified



$R_{T1,T2}$ = Tariff switching equipment

Single-phase

Multifunction, Bi-directional energy meter MID certified with RS485 Modbus integrated interface and backlit LCD display

- Display of total or partial (resettable) energy consumption: kWh, kVAh or kvarh
- Scroll to view the following instantaneous values: V, A, PF, kW, kVA, kvar, Hz and direction of power flow
- 7 digit backlit LCD display
- Active power accuracy Class B according to EN 50470-3
- RS485 Modbus integrated communications port
- Programmable** S0 pulse output for remote energy monitoring according to EN 62053-31
- Accessories: sealable tamperproof terminal cover
- Protection category II
- 35 mm rail (EN 60715) mount

7E.64.8.230.0210
Box clamp



- * Default transmission baud rate: 19 200 bps
- ** S0 output can be associated with kWh, kVAh or kvarh.

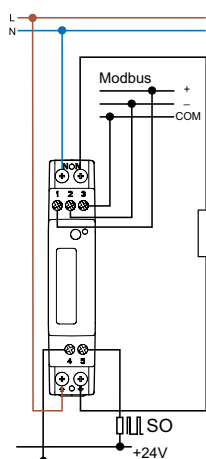
For outline drawing see page 11

Specification		
Reference/Maximum current I_N/I_{max}	A	5/40
Starting current I_{st}	A	0.02
Minimum measured current I_{min}	A	0.25
Current range (within accuracy class)	A	0.5...40
Maximum peak current	A	1200 (10 ms)
Supply (& monitored) voltage U_N	V AC	230
Operating range		$(0.8...1.2)U_N$
Frequency	Hz	50/60
Power consumption	W/VA	$\leq 0.5/1.5$
Display		Seven digit counter - backlit LCD display
Max. totalising count/Min. increment	kWh	999 999.9/0.1
LED pulses per kWh		5000
LED pulse length	ms	4 ± 0.5
Modbus technical data		
Bus System		RS485 Modbus
Conforms to standard		EIA RS485
Max. bus length	m	1000
Max. Modbus energy meters connectable		32
Baud rate*	Baud	2400, 4800, 9600, 19 200, 38 400
Output specification (S0+/S0-)		
Number/Type		1 opto-isolated output
Voltage range/Maximum current (conforming to EN 62053-31)	V DC/mA	3.3...27/1...27
Pulses per kWh**	Imp/kWh**	1000
Pulse length	ms	100 ± 2
Technical data		
Accuracy class		B
Ambient temperature (Within accuracy class)	°C	-25...+55
Protective class		II
Protection category: Housing/terminals		IP 50/IP 20
Approvals (according to type)		 

7E.64.8.230.0210



- Reference current 5 A (40 A Maximum)
- RS485 Modbus integrated interface
- 1-phase 230 V 50/60 Hz
- MID certified



Note regarding energy meters with Modbus interface (Types 7E.64.8.230.0210, 7E.78.8.400.0212 and 7E.86.8.400.0212):

The energy meter's Modbus protocol contains pre-configured information. Should you need to change any parameter - use the configuration software. The configuration software can be found at www.findernet.com

Three-phase

Multifunction Dual tariff energy meters
Bi-directional, MID certified with RS485
Modbus integrated interface, single S0 output
and backlit LCD display for 4 wire systems

Type 7E.78.8.400.0212

Direct connection up to 80 A, dual tariff

Type 7E.86.8.400.0212

6 A direct connection, up to 50 000 A using
current transformer, dual tariff

- Display of total or partial (resettable) energy consumption: kWh, kVAh or kvarh - for both T1 and T2 tariffs - for the total system or per phase
- Scroll to view the following instantaneous values: V, A, PF, kW, kVA, kvar, Hz and direction of power flow
- Fault indication in the event of loss or incorrect phase sequence
- 8 digit backlit LCD display
- RS485 Modbus integrated communications port
- Programmable*** S0 pulse output for remote energy monitoring according to EN 62053-31
- Active power accuracy Class B according to EN 50470-3
- Reactive power accuracy Class 2 according to EN 62053-23
- Protection category II
- Accessories: sealable tamperproof terminal cover
- 35 mm rail (EN 60715) mount

* Minimum CT ratio: 1:1

Maximum CT ratio: 10 000:1

CT secondary programmable: 1 or 5 A

** Default transmission baud rate: 19 200 bps

*** S0 output can be associated with kWh, kVAh or kvarh.

For outline drawing see page 12

Specification

Reference/Maximum current I_n/I_{max}	A	5/80	1/6
Starting current I_{st}	A	0.02	0.002
Minimum measured current I_{min}	A	0.25	0.01
Current range (within accuracy class)	A	0.5...80	0.05...6
Maximum peak current	A	2400 (10 ms)	120 (500 ms)
Supply (& monitored) voltage U_N	V AC	3 x 230/400...3 x 240/415	3 x 230/400...3 x 240/415
Operating range		(0.8...1.2) U_N	(0.8...1.2) U_N
Frequency	Hz	50/60	50/60
Power consumption per phase	W/VA	$\leq 1/3.5$	$\leq 1/3.5$
CT burden (per phase)	VA	—	0.04

Display

Eight digit counter - backlit LCD display

Max. totalising count/Min. increment	kWh	999 999.99/0.01	999 999.99/0.01
LED pulses per kWh		1000	10 000
LED pulse length	ms	10±0.5	10±0.5

Modbus technical data

Bus system		RS485 Modbus	RS485 Modbus
Conforms to standard		EIA RS485	EIA RS485
Max. bus length	m	1000	1000
Max. Modbus energy meters connectable		32	32
Baud rate**	Baud	300...57 600	300...57 600

Output specification (S0+/S0-)

Number/Type		1 opto-isolated output	1 opto-isolated output
Voltage range/Maximum current (conforming to EN 62053-31)	V DC/mA	3.3...27/1...27	3.3...27/1...27
Pulse per kWh***	Imp/kWh***	100	See table page 10
Pulse length	ms	50 ± 2	50 ± 2

Tariff input - opto-isolated

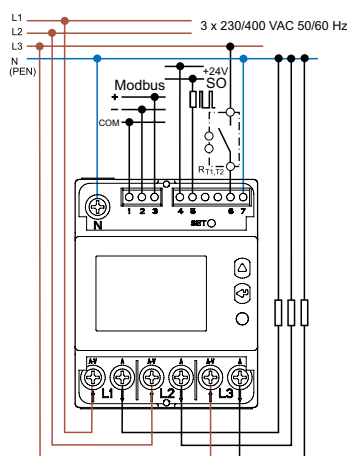
Voltage range	V AC/DC	80...275	80...275
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Technical data

Accuracy class		B	B
Ambient temperature (Within accuracy class)	°C	-25...+55	-25...+55
Protective class		II	II
Protection category: Housing/terminals		IP 50/IP 20	IP 50/IP 20

Approvals (according to type)**7E.78.8.400.0212**

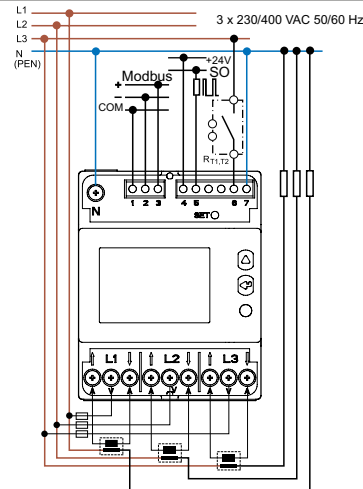
- Reference current 5 A (80 A Maximum)
- RS485 Modbus integrated interface
- Three-phase systems - 4 wire
- Dual tariff
- MID certified



R_{T1,T2} = Tariff switching equipment

7E.86.8.400.0212

- Reference current 1 A (6 A Maximum)
- RS485 Modbus integrated interface
- Three-phase systems - 4 wire
- Usable with current transformer*
- Programmable CT secondary*
- Dual tariff
- MID certified



R_{T1,T2} = Tariff switching equipment

Single-phase

Multifunction energy meter

Bi-directional, MID certified with M-Bus integrated interface and backlit LCD display

- Display of total or partial (resettable) energy consumption: kWh, kVAh or kvarh
- Scroll to view the following instantaneous values: V, A, PF, kW, kVA, kvar, Hz and direction of power flow
- 7 digit backlit LCD display
- Active power accuracy Class B according to EN 50470-3
- M-Bus integrated communications port
- Programmable** S0 pulse output for remote energy monitoring according to EN 62053-31
- Accessories: sealable tamperproof terminal cover
- Protection category II
- 35 mm rail (EN 60715) mount

7E.64.8.230.0310
Box clamp



- * Default transmission baud rate: 2400 bps
- ** S0 output can be associated with kWh, kVAh or kvarh.

For outline drawing see page 11

Specification

Reference/Maximum current I_n/I_{max}	A	5/40
Starting current I_{st}	A	0.02
Minimum measured current I_{min}	A	0.25
Current range (within accuracy class)	A	0.5...40
Maximum peak current	A	1200 (10 ms)
Supply (& monitored) voltage U_N	V AC	230
Operating range		$(0.8...1.2)U_N$
Frequency	Hz	50/60
Power consumption per phase	W/VA	$\leq 0.5/1.5$
Display		Seven digit counter - backlit LCD display
Max. totalising count/Min. increment	kWh	999 999.9/0.1
LED pulses per kWh		5000
LED pulse length	ms	4 ± 0.5

M-bus technical data

Bus System	M-Bus
Conforms to standard	EN 13757-1-2-3
Baud rate*	Baud
	300, 2400, 9600

Output specification (S0+/S0-)

Number/Type	1 opto-isolated output
Voltage range/Maximum current (conforming to EN 62053-31)	V DC/mA
	3.3...27/1...27
Pulses per kWh**	Imp/kWh**
	1000
Pulse length	ms
	100 ± 0.5

Technical data

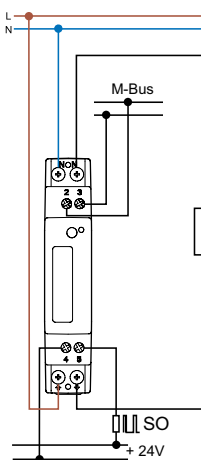
Accuracy class	B
Ambient temperature (Within accuracy class)	°C
	-25...+55
Protective class	II
Protection category: Housing/terminals	IP 50/IP 20

Approvals (according to type)

7E.64.8.230.0310



- Reference current 5 A (40 A Maximum)
- M-Bus integrated interface
- 1-phase 230 V 50/60 Hz
- MID certified



Note regarding energy meters with M-Bus interface (Types 7E.64.8.230.0310, 7E.78.8.400.0312 and 7E.86.8.400.0312):

The energy meter's M-Bus protocol contains pre-configured information. Should you need to change any parameter - use the configuration software. The configuration software can be found at www.findernet.com

Three-phase

Multifunction Dual tariff energy meters
Bi-directional, MID certified with M-Bus
integrated interface, single S0 output and
backlit LCD display for 3 or 4 wire systems

Type 7E.78.8.400.0312

Direct connection up to 80 A, dual tariff

Type 7E.86.8.400.0312

6 A direct connection, up to 50 000 A using
current transformer, dual tariff

- Display of total or partial (resettable) energy consumption: kWh, kVAh or kvarh - for both T1 and T2 tariffs - for the total system or per phase
- Scroll to view the following instantaneous values: V, A, PF, kW, kVA, kvar, Hz and direction of power flow
- Fault indication in the event of loss or incorrect phase sequence
- 8 digit backlit LCD display
- M-Bus integrated communications port
- Programmable*** S0 pulse output for remote energy monitoring according to EN 62053-31
- Active power accuracy Class B according to EN 50470-3
- Reactive power accuracy Class 2 according to EN 62053-23
- Protection category II
- Accessories: sealable tamperproof terminal cover
- 35 mm rail (EN 60715) mount

- * Minimum CT ratio: 1:1
 Maximum CT ratio: 10 000:1
 CT secondary programmable: 1 or 5 A
- ** Default transmission baud rate: 2400 bps
- *** S0 output can be associate with kWh, kVAh or kvarh.

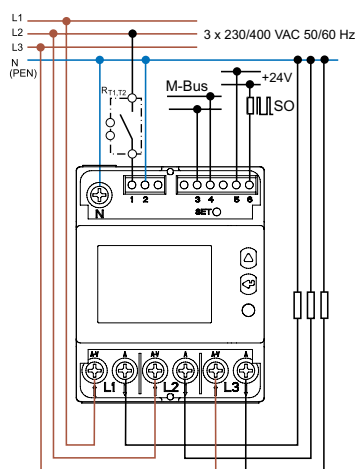
For outline drawing see page 12

Specification

Reference/Maximum current I_n/I_{max}	A	5/80	1/6
Starting current I_{st}	A	0.02	0.002
Minimum measured current I_{min}	A	0.25	0.01
Current range (within accuracy class)	A	0.5...80	0.05...6
Maximum peak current	A	2400 (10 ms)	120 (500 ms)
Supply (& monitored) voltage U_N	V AC	3 x 230/400...3 x 240/415	3 x 230/400...3 x 240/415
Operating range		$(0.8...1.2)U_N$	$(0.8...1.2)U_N$
Frequency	Hz	50/60	50/60
Power consumption per phase	W/VA	$\leq 0.5/7.5$	$\leq 0.5/7.5$
CT burden (per phase)	VA	—	0.04
Display		Eight digit counter - backlit LCD display	
Max. totalising count/Min. increment	kWh	999 999.99/0.01	999 999.99/0.01
LED pulses per kWh		1000	10 000
LED pulse length	ms	10±0.5	10±0.5
M-bus technical data			
Bus system		M-Bus	M-Bus
Conforms to standard		EN 13757-1-2-3	EN 13757-1-2-3
Baud rate**	Baud	300...9600	300...9600
Output specification (S0+/S0-)			
Number/Type		1 opto-isolated output	1 opto-isolated output
Voltage range/Maximum current (conforming to EN 62053-31)	V DC/mA	3.3...27/1...27	3.3...27/1...27
Pulses per kWh***	Imp/kWh***	100	See table page 10
Pulse length	ms	50 ± 2	50 ± 2
Tariff input - opto-isolated			
Voltage range	V AC/DC	80...275	80...275
Technical data			
Accuracy class		B	B
Ambient temperature (Within accuracy class)	°C	-25...+55	-25...+55
Protective class		II	II
Protection category: Housing/terminals		IP 50/IP 20	IP 50/IP 20
Approvals (according to type)			

7E.78.8.400.0312

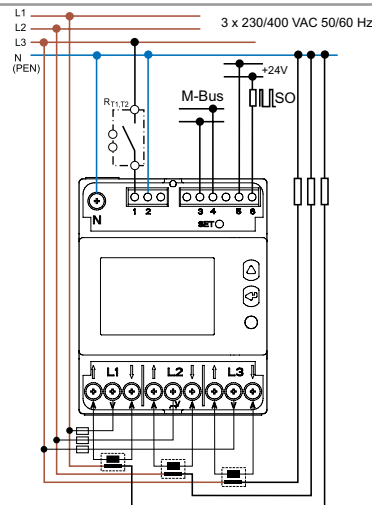
- Reference current 5 A (80 A Maximum)
- M-Bus integrated interface
- Three-phase systems programmable 3 or 4 wire
- Dual tariff
- MID certified



R_{T1,T2} = Tariff switching equipment

7E.86.8.400.0312

- Reference current 1 A (6 A Maximum)
- M-Bus integrated interface
- Three-phase systems programmable 3 or 4 wire
- Usable with current transformer*
- Programmable CT secondary*
- Dual tariff
- MID certified



R_{T1,T2} = Tariff switching equipment

Three-phase

Multifunction energy meter
Bi-directional, MID certified with Ethernet
Modbus TCP integrated interface and backlit
LCD display for 4 wire systems

Type 7E.78.8.400.0410:
Direct connection up to 80 A

Type 7E.86.8.400.0410:
6 A direct installation, up to 50 000 A using
current transformer

- Display of total or partial (resettable) energy consumption: kWh, kVAh or kvarh - for the total system or per phase
- Scroll to view the following instantaneous values: V, A, PF, kW, kVA, kvar, Hz and direction of power flow
- Fault indication in the event of loss or incorrect phase sequence
- 8 digit backlit LCD display
- Ethernet Modbus TCP integrated communications port
- Programmable** S0 pulse output for remote energy monitoring according to EN 62053-31
- Active power accuracy Class B according to EN 50470-3
- Reactive power accuracy Class 2 according to EN 62053-23
- Protection category II
- Accessories: sealable terminal cover tamper
- 35 mm rail (EN 60715) mount

- * Minimum CT ratio: 1:1
Maximum CT ratio: 10 000:1
CT secondary programmable: 1 or 5 A
- ** S0 output can be associate with kWh, kVAh or kvarh.

For outline drawing see page 12

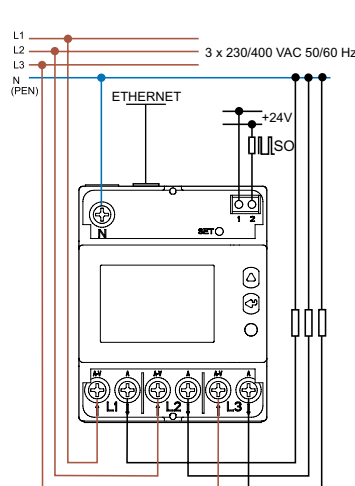
Specification

Reference/Maximum current I_n/I_{max}	A	5/80	1/6
Starting current I_{st}	A	0.02	0.002
Minimum measured current I_{min}	A	0.25	0.01
Current range (within accuracy class)	A	0.5...80	0.05...6
Maximum peak current	A	2400 (10 ms)	120 (500 ms)
Supply (& monitored) voltage U_N	V AC	3 x 230/400...3 x 240/415	3 x 230/400...3 x 240/415
Operating range		$(0.8...1.2)U_N$	$(0.8...1.2)U_N$
Frequency	Hz	50/60	50/60
Power consumption per phase	W/VA	$\leq 1/3.5$	$\leq 1/3.5$
CT burden (per phase)	VA	—	0.04
Display		Eight digit counter - backlit LCD display	
Max. totalising count/Min. increment	kWh	999 999.99/0.01	999 999.99/0.01
LED pulses per kWh		1000	10 000
LED pulse length	ms	10±0.5	10±0.5
Ethernet technical data			
Bus system		Ethernet TCP	Ethernet TCP
Protocol		Modbus TCP, HTTP, NTP, DHCP	Modbus TCP, HTTP, NTP, DHCP
Conforms to standard		IEEE 802.3	IEEE 802.3
Communication speed	Mbps	10/100	10/100
Open collector- output specification (S0+/S0-)			
Number/Type		1 opto-isolated output	1 opto-isolated output
Voltage range/Maximum current (conform to EN 62053-31)	V DC/mA	3.3...27/1...27	3.3...27/1...27
Pulses per kWh**	Imp/kWh**	100	See table page 10
Pulse length	ms	50 ± 2	50 ± 2
Technical data			
Accuracy class		B	B
Ambient temperature (Within accuracy class)	°C	-25...+55	-25...+55
Protective class		II	II
Protection category: Housing/terminals		IP 50/IP 20	IP 50/IP 20
Approvals (according to type)			

7E.78.8.400.0410



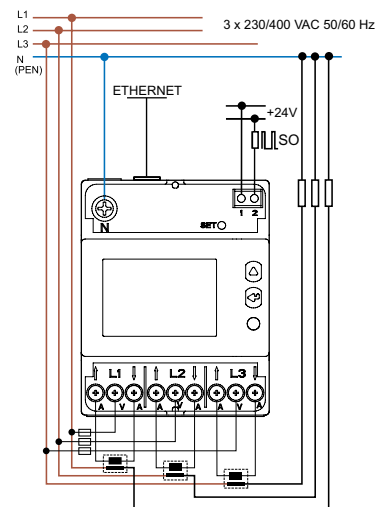
- Reference current 5 A (80 A Maximum)
- Ethernet Modbus TCP integrated interface
- Three-phase systems - 4 wire



7E.86.8.400.0410



- Reference current 1 A (6 A Maximum)
- Ethernet Modbus TCP integrated interface
- Three-phase systems - 4 wire
- Usable with current transformer*
- Full scale (FSA) programmable*



Ordering information - Energy meter

Example: 3-phase energy meter for current transformer operation (6A/400 V AC), with MID certification, Class B accuracy, for 35 mm rail (EN 60715) mounting. Supplied accessories: Tamper-proof lead sealed cover as accessory.

7 E . 8	6 . 8 . 4 0 0 . 0	1 1 2
Series Function 6 = 1-phase, backlit display 7 = 3-phase, backlit display, direct connection 8 = 3-phase, backlit display, for current transformer operation Current 4 = 40 A 6 = 6 A (up to 50 000 A, using 7E.86 and CT) 8 = 80 A Supply version 8 = AC 50/60 Hz	Special version 0 = Standard Option 0 = S0 pulse output 1 = Infra-red comms. port + two S0 pulse outputs 2 = RS485 Modbus integrated interface + S0 pulse output 3 = M-Bus integrated interface + S0 pulse output 4 = Ethernet integrated interface plus S0 pulse output Supply voltage 230 = 230 V AC 50/60 Hz 400 = 3 x 230/415 V AC 50/60 Hz	Special version 0 = Single tariff 1 = kWh only (0001) 2 = Dual tariff Version 0 = Standard 1 = Conforms to MID directive

Table 1

Imp/kWh*	CT ratio
1000	1...4
200	5...24
40	25...124
8	125...624
1	625...3124
0.1	3125...10 000

*Imp/kWh, Imp/kvarh, Imp/kVAh

Available versions

Infra-red comms. port for use with
communication modules

7E.78.8.400.0112

7E.86.8.400.0112

Modbus

7E.64.8.230.0210

7E.78.8.400.0212

7E.86.8.400.0212

M-Bus

7E.64.8.230.0310

7E.78.8.400.0312

7E.86.8.400.0312

Ethernet

7E.78.8.400.0410

7E.86.8.400.0410

S0 only

7E.64.8.230.0001

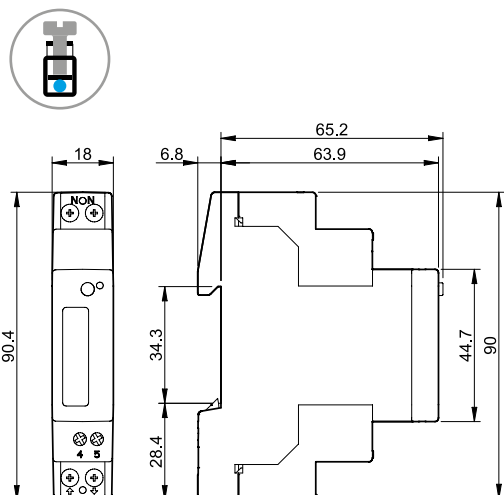
7E.64.8.230.0010

Technical data

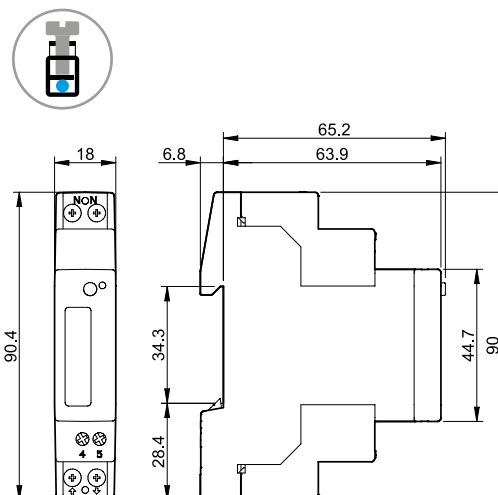
Insulation		7E.64.8.230.0xxx	7E.78.8.400.0xxx	7E.86.8.400.0xxx
Insulation rated voltage		V 250	250	250
Insulation	between active parts and S0+/S0- terminals	kV (1.2/50 µs)	6	6
	between supply and Modbus, M-Bus terminal	kV (1.2/50 µs)	6	6
	between adjacent phases	kV (1.2/50 µs)	n/a	n/a
Insulation	between active parts and S0+/S0- terminals	V AC	4000	4000
	between supply and Modbus, M-Bus terminal	V AC	4000	4000
	between adjacent phases	V AC	n/a	n/a
Protection class		II		
EMC Specification according to 61000-4-(2/3/4)		7E.64.8.230.0xxx	7E.78.8.400.0xxx	7E.86.8.400.0xxx
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		
	on S0+/S0- terminals	1 kV		
	Modbus, M-Bus terminal	1 kV		
Other data		7E.64.8.230.0xxx	7E.78.8.400.0xxx	7E.86.8.400.0xxx
Pollution degree		2		
Vibration resistance		EN 60068-2-6	EN 60068-2-6	EN 60068-2-6
Shock resistance		EN 60068-2-27	EN 60068-2-27	EN 60068-2-27
Power lost to the environment	Max value per phase	0.5 W/1.5 VA	1 W/7.5 VA	1 W/7.5 VA
	CT burden	—	—	0.04 VA/per phase
Supply terminals		7E.64.8.230.0xxx	7E.78.8.400.0xxx	7E.86.8.400.0xxx
Max. wire size	solid cable	solid cable	solid cable	solid cable
	stranded cable	stranded cable	stranded cable	stranded cable
	mm ²	max 6	max 35	max 6
Screw torque for I _{max}	AWG	—	—	—
	Nm	1.5	2	1.5
S0+/S0- terminals, RS485 Modbus, M-Bus		7E.64.8.230.0xxx	7E.78.8.400.0xxx	7E.86.8.400.0xxx
Max. wire size	solid cable	solid cable	solid cable	solid cable
	stranded cable	stranded cable	stranded cable	stranded cable
	mm ²	max 2.5	max 2.5	max 2.5
Screw torque	AWG	—	—	—
	Nm	0.5	0.5	0.5

Outline drawings

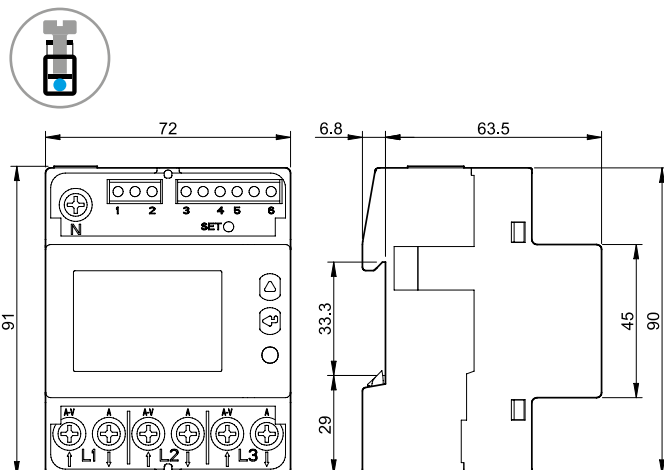
Type 7E.64.8.230.0001
Box clamp



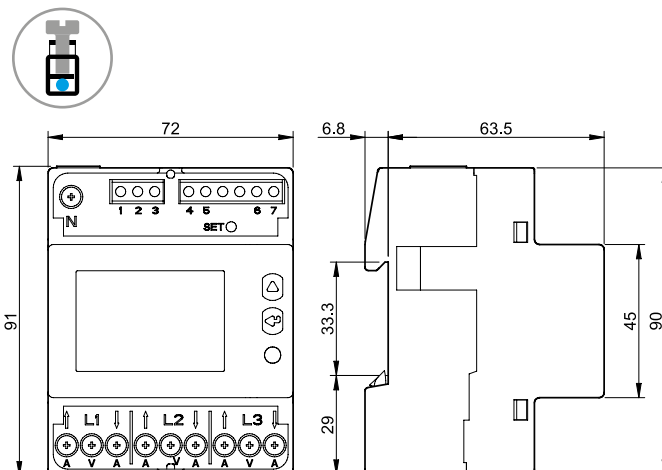
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Box clamp



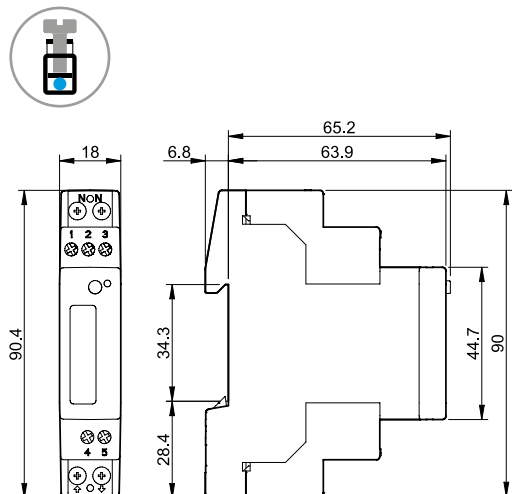
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Box clamp



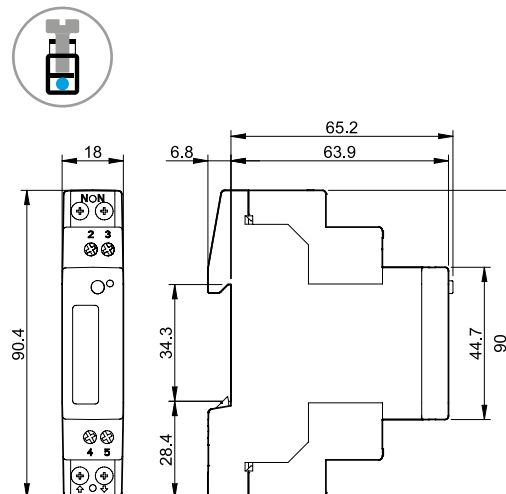
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Box clamp



Type 7E.64.8.230.0210
Box clamp



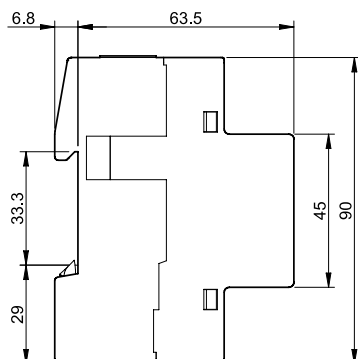
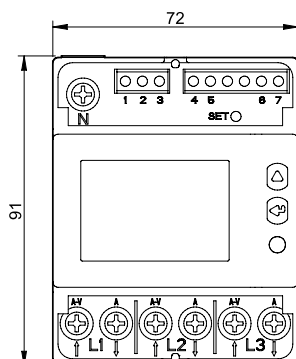
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Box clamp



Outline drawing

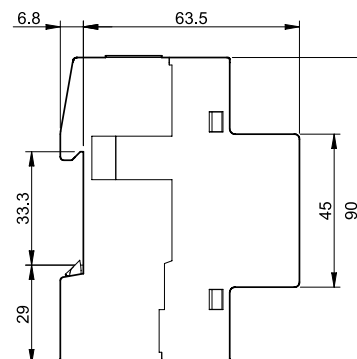
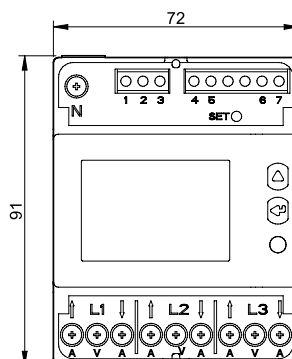
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Box clamp



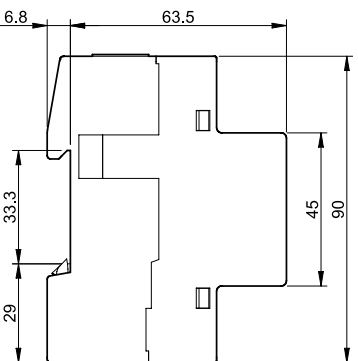
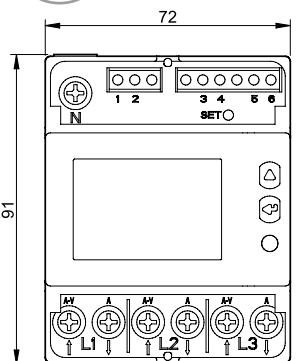
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Box clamp



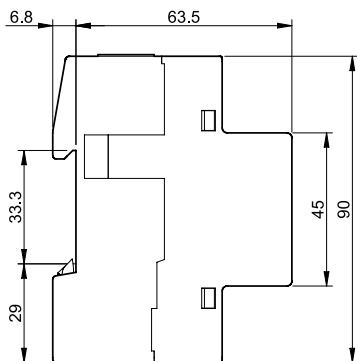
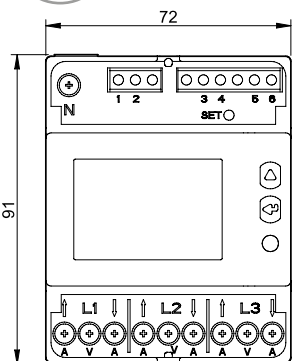
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Box clamp



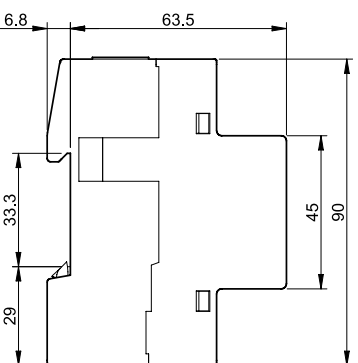
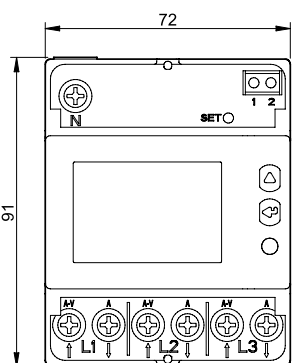
Type 7E.86.8.400.0312

Box clamp



Type 7E.78.8.400.0410

Box clamp



Type 7E.86.8.400.0410

Box clamp

