

COUNTIS **E25/E26**

*Three-phase active energy meter
63A direct M-BUS*

Operating instructions **EN**



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1. Documentation

All the documentation for **COUNTIS E25/E26** equipment is available online at:

www.socomec.com/en/countis-e2x



2. Danger and warning

This equipment must only be installed by professionals.

The manufacturer shall not be held responsible for failure to comply with the instructions in this manual.

2.1. Risk of electrocution, burns or explosion

- The device must be installed and serviced only by qualified personnel.
- Always use an appropriate voltage detection device to confirm the absence of voltage.
- Replace all devices, doors, and covers before turning on power to this equipment.
- Always supply the device with the correct rated voltage.

Failure to take these precautions could cause serious injuries.

2.2. Risk of damaging device

Check the following:

- the mains frequency (50 Hz).
- the maximum voltage at the voltage input terminals is 276 VAC phase/neutral.
- a maximum current of 63 A.

3. Preliminary operations

For personnel and product safety, please carefully read the contents of these operating instructions before installation.

Check the following points as soon as you receive package containing the **COUNTIS E25/E26**:

- the packaging is in good condition,
- the product has not been damaged during transportation,
- the product reference number conforms to your order,
- the packaging contains the product, two sealable covers, two plastic seals and a Quick Start guide.

4. Overview

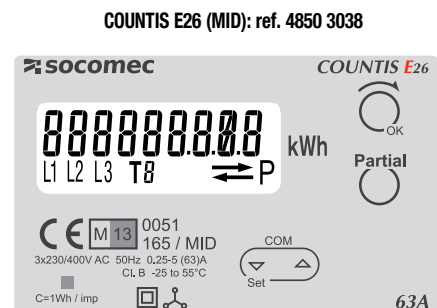
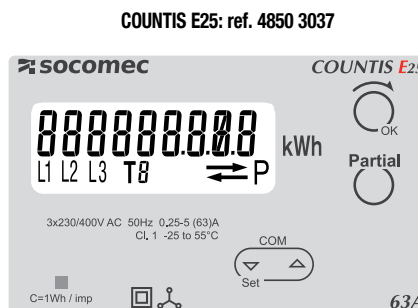
COUNTIS E25 and **E26** are active modular electrical energy meters for monitoring kWh. They are designed for three-phase networks and enable direct connection up to 63A. They are equipped with a M-BUS communication bus.

4.1. Main functions

- Measurement and display of total and partial active energy (Ea+/Ea-)
- Management of two tariffs: T1/T2
- Measurement of electrical parameters accessible via the communication
 - Voltage P-P: U12/U23/U31
 - Voltage P-N: V1, V2, V3
 - Frequency: F
 - Current: I1/I2/I3/I_N
 - Active power \pm : P1/P2/P3/ Σ P
 - Reactive power \pm : Q1/Q2/Q3/ Σ Q
 - Apparent power: S1/S2/S3/ Σ S
 - Power factor \pm : PF1/PF2/PF3/ Σ PF
 - Total and partial active energy: Ea+ / Ea-
 - Total reactive energy: Er+
 - Active energy per tariff: Ea+
 - Reactive energy per tariff: Er+
- M-BUS communication
- MID version (according to reference)

Description	Reference
COUNTIS E25	4850 3037
COUNTIS E26 (MID)	4850 3038

4.2. Display views



88888888.00



9-digit LCD display

Active energy imported ->/exported <-

L1 L2 L3

Phase detection

T8

Current tariff

P

Partial active energy

C=1Wh / imp.

Metrological LED



Selection button



Button to display partial active energy



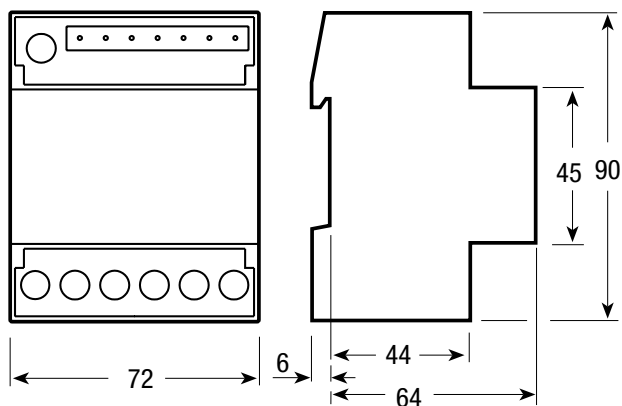
Configuration button

5. Installation

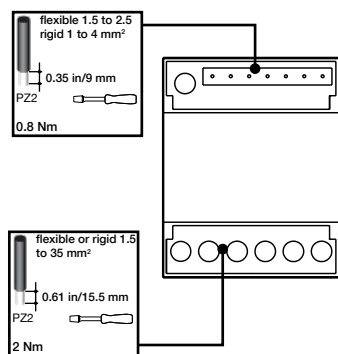
5.1. Recommendations

- avoid proximity to systems which generate electromagnetic interference,
- avoid vibrations with accelerations in excess of 1 G for frequencies below 60 Hz.

5.2. Dimensions (mm)

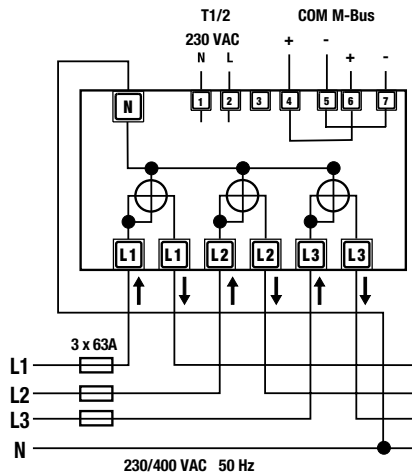


5.3. Terminals



5.4. Connections

5.4.1. 4-wire connection - 4-wire load monitoring



Tariff

1-2: Change of tariff 0 V -> Tariff 1 and 230 VAC -> Tariff 2.

M-BUS

4-6: + (terminals connected internally).

5-7: - (terminals connected internally).

Mains

L1↑: Phase input

L1↓: Phase output.

L2↑: Phase input

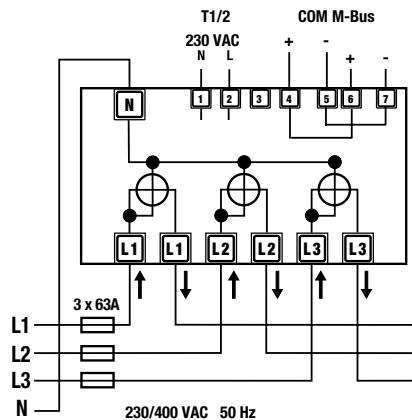
L2↓: Phase output.

L3↑: Phase input

L3↓: Phase output.

N: Neutral connection.

5.4.2. 4-wire connection - 3-wire load monitoring



Tariff

1-2: Change of tariff 0 V -> Tariff 1 and 230 VAC -> Tariff 2.

M-BUS

4-6: + (terminals connected internally).

5-7: - (terminals connected internally).

Mains

L1↑: Phase input

L1↓: Phase output.

L2↑: Phase input

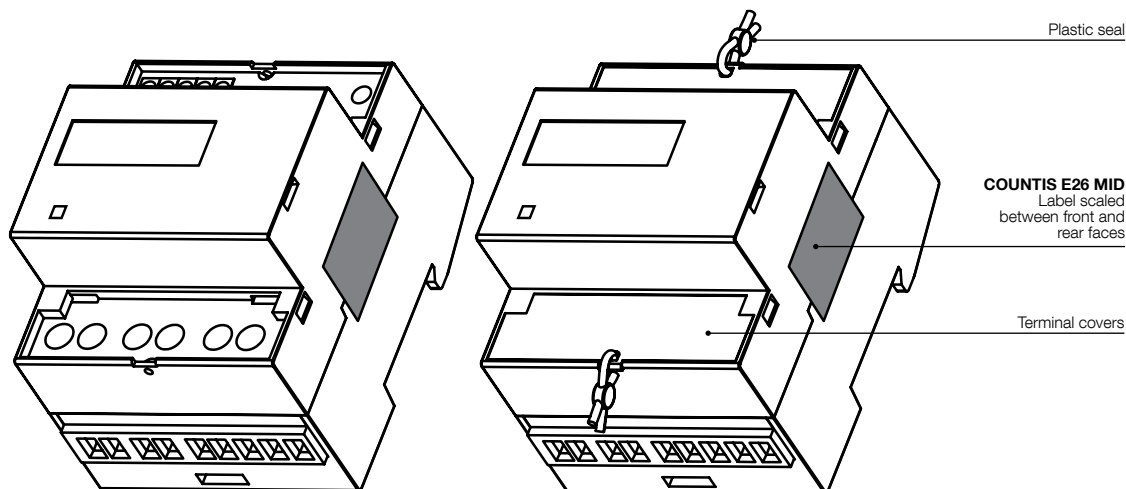
L2↓: Phase output.

L3↑: Phase input

L3↓: Phase output.

N: Neutral connection.

5.5. Sealable covers



6. M-BUS communication

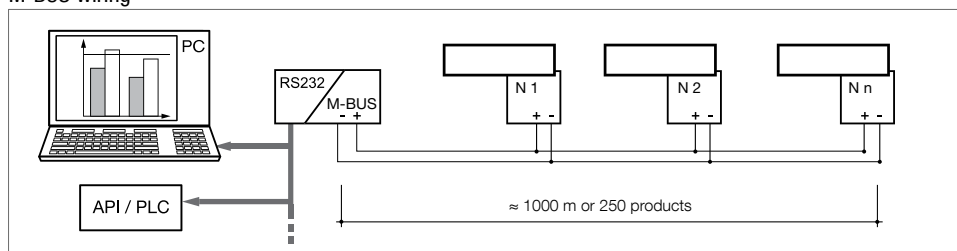
6.1. General Information

In a standard configuration, an M-BUS connection can be used to link up to 250* products with a PC or PLC, over a range of 1000 meters**.

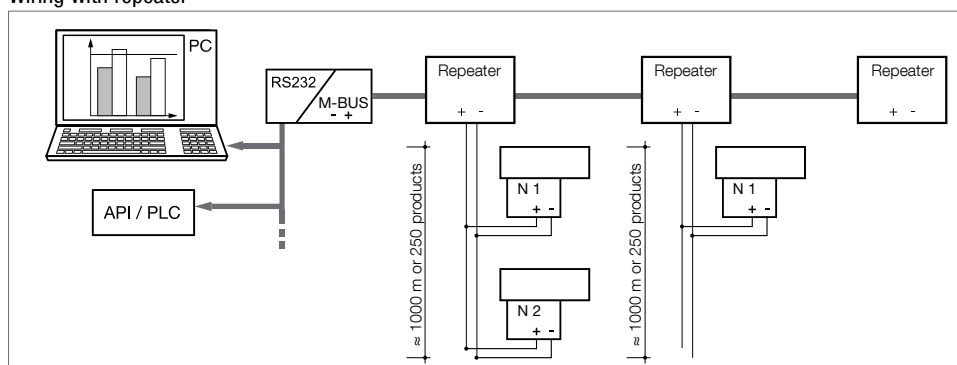
* depending on the M-BUS master

** depending on the number of products and the communication speed

M-BUS wiring



Wiring with repeater



6.2. Recommendations

A JYSTY Nx2x0.8 mm (0.5 mm²) unshielded twisted pair must be used.

A repeater should be used to connect additional products if the distance of 1000 m and/or maximum number of 250 products is exceeded.

If there are more than 250 products, only use the secondary address.

6.3. Communication structure

The product communicates via a M-BUS protocol, which involves a dialogue using a master-slave structure. COUNTIS (slave) units are compatible with both primary and secondary addressing modes. The primary and secondary addresses can be configured via the product interface.

6.4. Communication table

The communication tables and associated explanations are available on the **COUNTIS E25/E26** documentation page online at the following address:

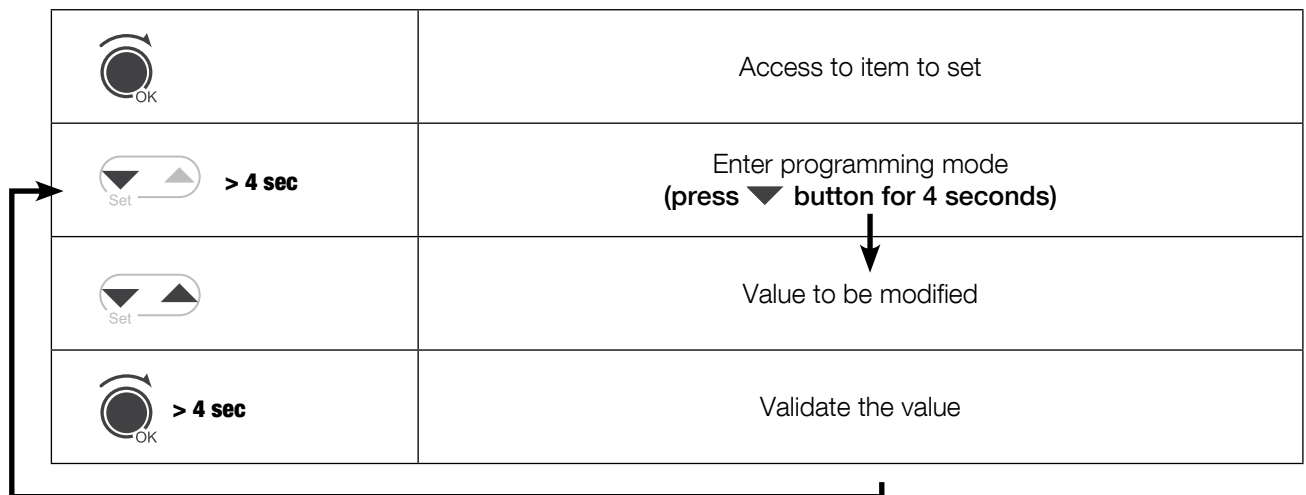
www.socomec.com/en/countis-e2x



7. Programming

7.1. Navigation principle

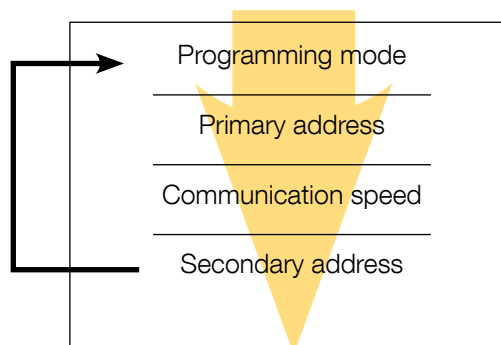
The programming mode enables the communication parameters to be modified. The process to navigate inside the programming mode is described in the following steps:



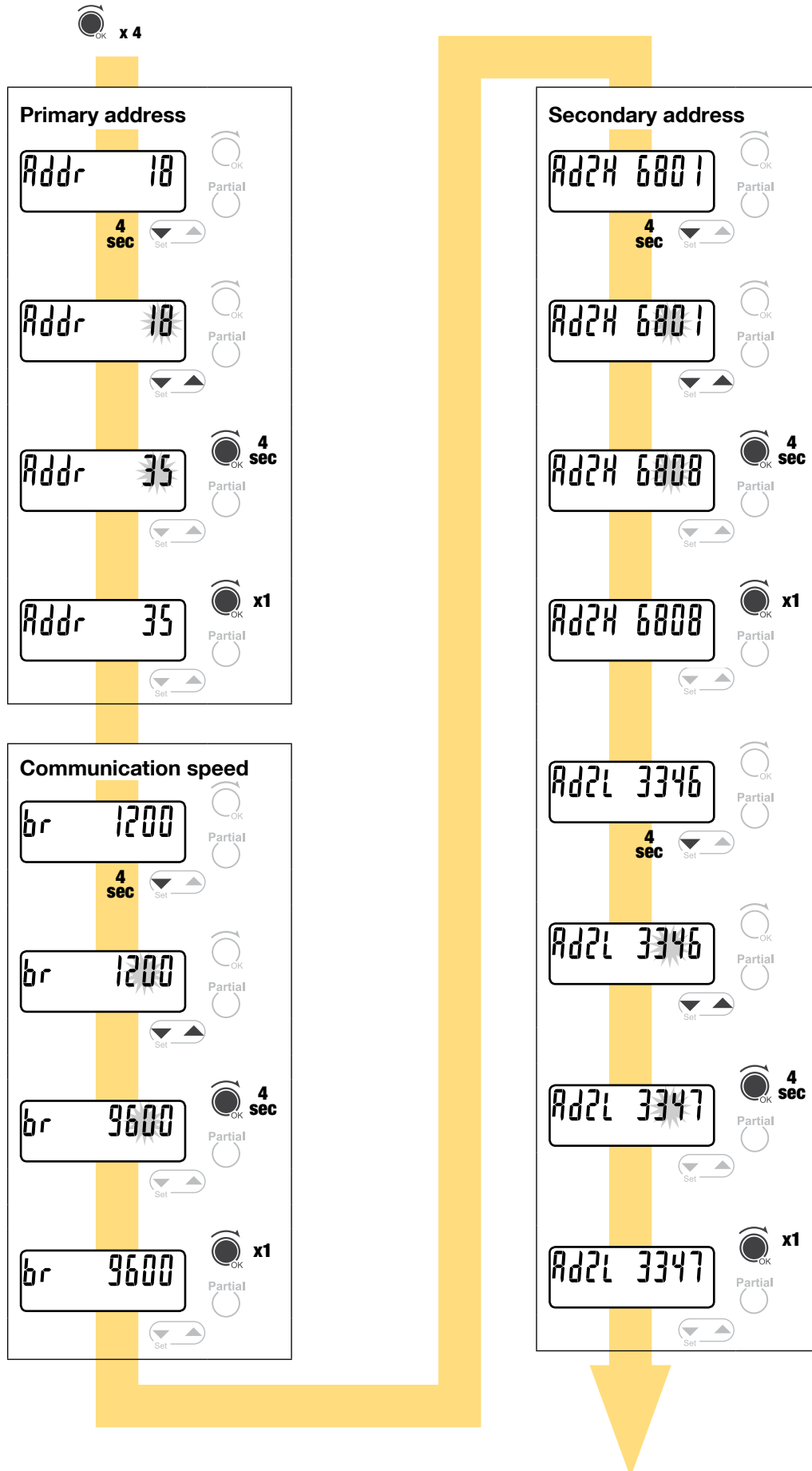
7.2. Programming menu overview

By pressing ▼ for 4 seconds, the device will enter the programming mode.

The various screens are accessible according to the sequence:

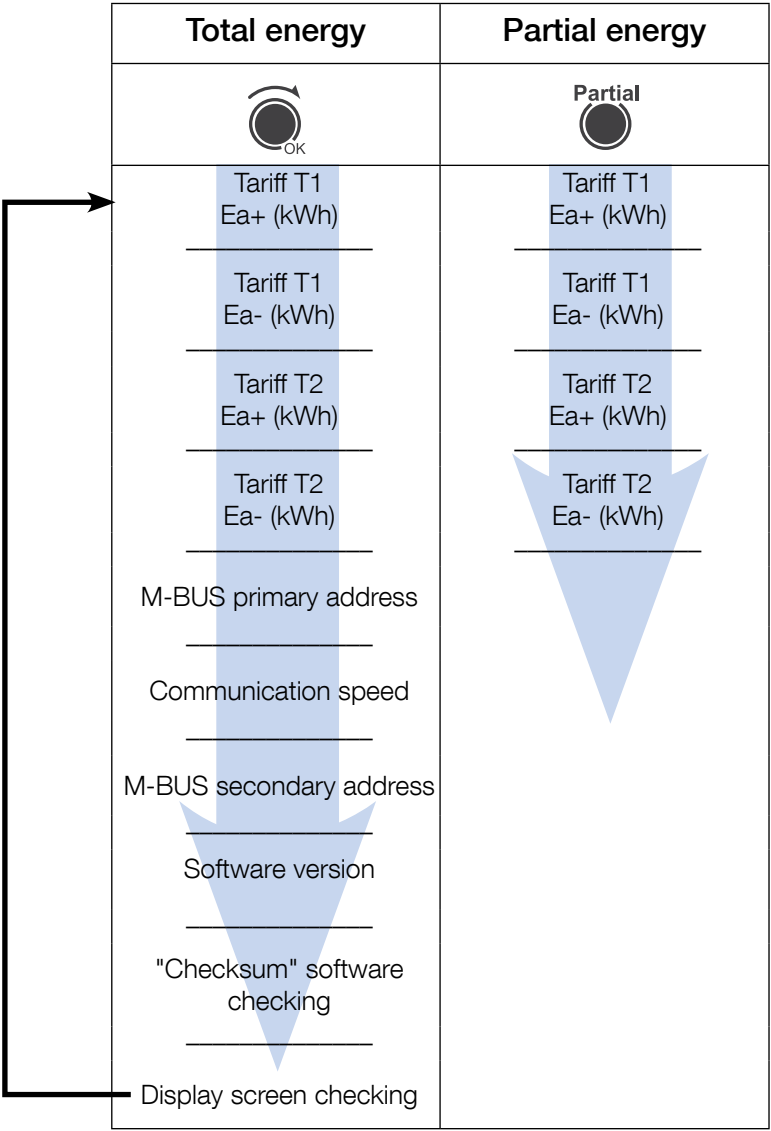


7.3. Detailed view of M-BUS programming menu

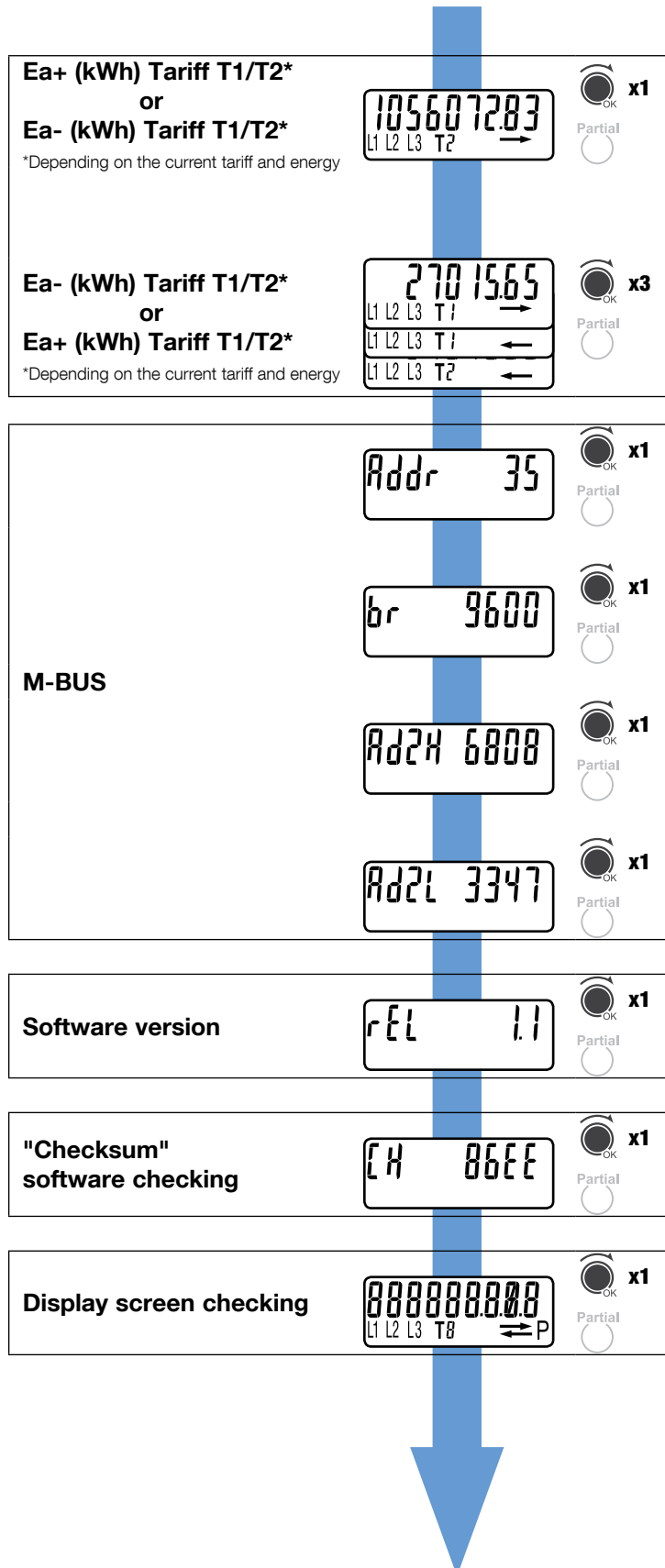


8. Operation

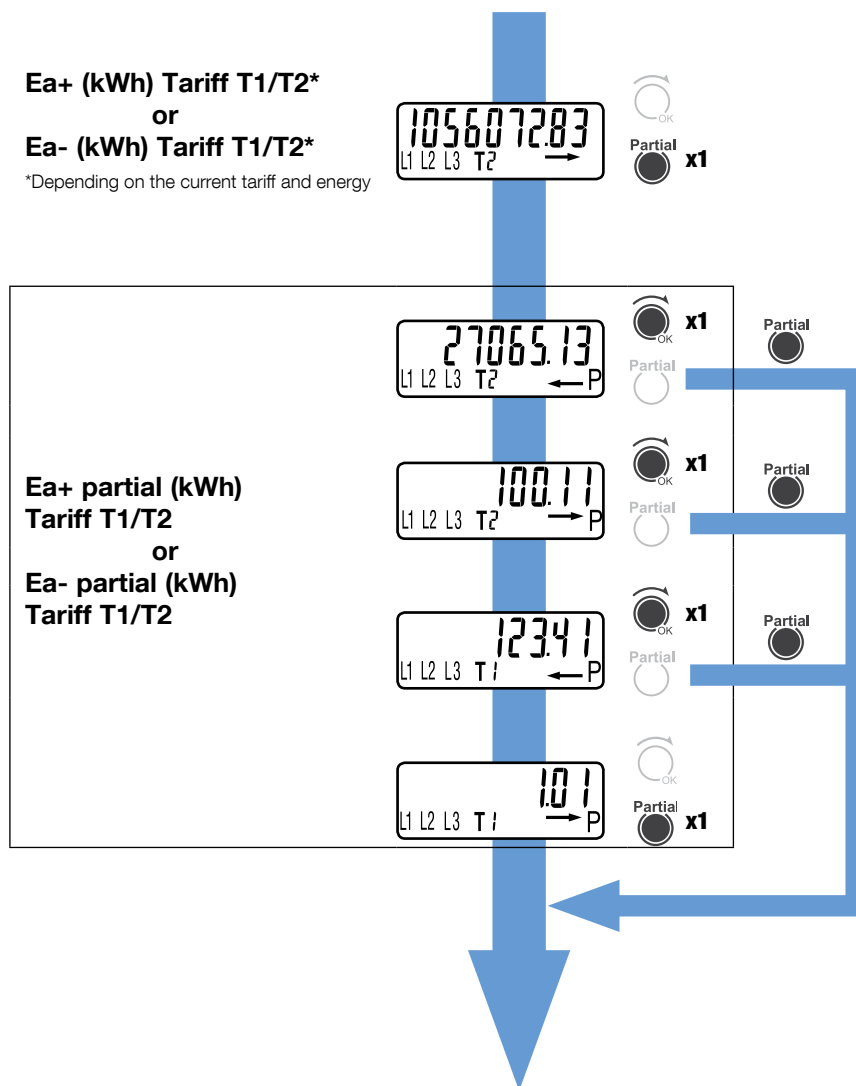
The total and partial active energy values are accessible via the dedicated buttons. Pressing the appropriate button several times displays all the available measurements. All the available information and measurements are described in the following diagram:



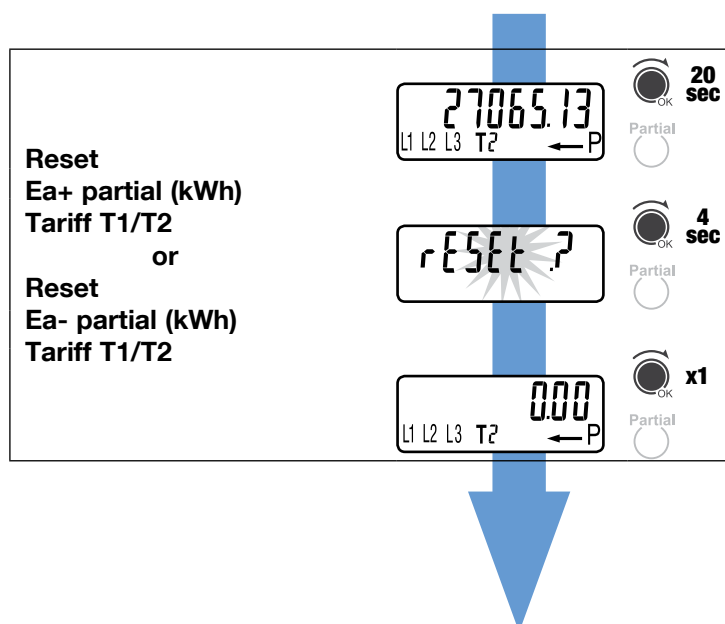
8.1. Detailed view of menus



8.2. Detailed view of "Partial energies"



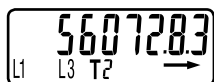
8.3. Detailed view of "Partial energies" reset



9. Diagnostic messages

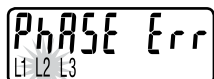
The following messages appear when there is a connection error or malfunction error.

9.1. Missing phases



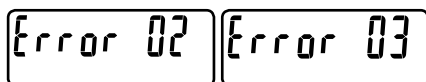
- If one or more phases cannot be detected, the corresponding icons will not be displayed on-screen.
Example: phase 2 (L2) is not detected.

9.2. Phase inversion



- If a phase inversion is detected, the phase icons flash.
- To clear this message, without changing the connection, press and hold the OK button for 4 seconds.
(Warning: the measurement may be wrong).

9.3. Malfunction



- When these messages are displayed, the meter has malfunctioned and should be replaced.

10. Assistance

Causes	Solutions
Missing phases on display	Verify the connections
Phase inversion on display	Check mains configuration
Error message	Check that the meter is working correctly

11. Electrical and Technical characteristics

Generalities	
Case	4 DIN 43880 modules
Mounting	DIN EN 60715 rail
Width	72 mm
Operating specifications	
Connectivity	Three-phase - 4-wire 230/400V
Storage of energy values and configuration	Yes: EEPROM
Tariff display identifier	T1 and T2
Power supply	
Certified voltage Un	230 VAC
Operating voltage range	184 ... 276 VAC
Certified frequency fn	50 Hz
Rated power consumption (max.) Pv	≤ 8 VA (0.6 W)
Overload	
Direct voltage Un	480 VAC phase/phase
Instantaneous voltage Un (1 s)	800 V phase/phase
Direct current Imax	63 A
Instantaneous current Imax (10 ms)	1890 A
Display	
Screen	9 digits (2 decimal places)
Active energy: 1 9-digit screen	0.01 -> 9999999.99 kWh
Measurement updating period	1 s
Measurement accuracy	
Active power and energy (E25)	Class 1 IEC 62053-21
Active power and energy (E26)	Class B EN 50470-3
Input measurement	
Connection type	400 V phase/phase
Voltage measurement range	184 ... 276 VAC phase/N
Current Iref	5 A
Current Imin	0.25 A
Current measurement range (Ist ... Imax)	0.015 ... 63 A
Certified frequency	50 Hz
Start-up current for energy measurement (Ist)	15 mA
Optical interfaces	
Pulse value	1 Wh/imp
Safety	
Internal meter	yes
Degree of pollution	2
Operating voltage	300 VAC
AC voltage test (EN 50470-3, 7.2)	4 kV
Voltage pulse test	6 kV
Protection class (EN 50470)	Class II
Case fire resistance class	Class V0
Integrated communication	
M-BUS	2-wire up to 9600 bps
Connection terminals	
Cross-section of phase connections	flexible or rigid: 1.5 to 35 mm ²
Cross-section of tariff and communication connections	flexible 1.5 to 2.5/rigid 1 to 4 mm ²
Environmental conditions	
Mechanical environment	M1
Electromagnetic environment	E2
Operating temperature	-25 ... +55°C
Storage temperature	-25 ... +70°C
Relative humidity	≤ 80%
Amplitude of 50 Hz vibrations	±0.075 mm
IP rating	IP51(*)/IP20

(*) For installation in an enclosure with at least IP51 protection.

12. MID compliance

The COUNTIS E26 meter complies with the MID directive for connection of three-phase networks (see "5.4. Connections", page 6).

After connecting the product, check that the terminal covers are correctly fitted and secured by the 2 plastic seals supplied with the product (see "5.5. Sealable covers", page 6). If the terminal covers must be removed, ensure that the same seal part numbers are used (ref. 4850 304U).

The information given via the communication bus is only sent by way of information and has no legal value.

The assigned operating conditions guaranteeing MID compliance are available in the technical specifications tables.

The MID declaration of conformity for the COUNTIS E26 is available online at: www.socomec.com/en/countis-e2x



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