

CEM-C21-485-T1-MID, Direct three-phase energy meter with communications and MID certificate

Code: Q22422.

- > Protocol: Modbus/RTU
- > Módules: 4
- > Tariff: 1
- > Certification: MID
- > Communications: RS-485
- > Transistor output: 1
- > System: Three-phase
- > Measure: Direct
- > Measurement Range (V): 3 x 127/220...3 x 230/400
- > Measurement Range (A): 5 (65) A
- > Max. Current (A): 65

### Description

Three-phase electrical energy meter with indirect measurement, 5(10)A (, CEM-C31), direct measurement 65 A (CEM-C21) or single-phase energy meter (CEM-C10).

Built-in LCD display (7 digits) with rotating screen system. Features built-in RS-485 communications. Also features

2 buttons (1 sealable button) for viewing all the measured information. Other features include:

- MID certification, module B+D (depending on the type)
- Class 1 active energy (Class B, in accordance with MID), Class 2 reactive energy
- Complies with the EN 50470 (MID European standards) or IEC 62052-11 standards (international standards), depending on the type.
- Compact size (CEM-C10: 2 modules, 36 mm, CEM-C21 y CEM-C31: 4 modules, 72 mm)
- Resettable partial meter
- 1 programmable impulse output, in accordance with DIN 43864 (CEM-C10, CEM-C31-T1, CEM-C21-T1 models)
- o 1 Digital input for Tariff selection and impulse count (CEM-C31-D, CEM-C21-DS)
- Indicates bad connections on the screen
- Energy storage, even in the case of bad connections

### Application

- Redundant meter for verifying the energy allocated by the energy provider.
- $\circ~$  Energy consumption report sent to a remote system (PLC/BMS).
- Cost control for achieving a high consumption/unit ratio in industrial processes.
- Display of electrical parameters (V, A, kW, kW·h, PF, etc.), per phase and three-phase.

Circutor



Energy meter for DIN rail mounting

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### Specifications

| AC power supply                          |   |
|--|---|
| Installation category                    | CAT III 300 V   |
| Consumption                              | < 2 W, 10 VA  |
| Frequency                                | 50 60 Hz  |
| Nominal voltage                          | 230 V / 400 V ~ (± 20 %)  |
| Mechanical characteristics               |   |
| Size (mm) width x height x depth         | 70 x 90 x 64 (mm)   |
| Weight (kg)                              | 0,38  |
| Environmental characteristics            |   |
| Relative humidity (without condensation) | 5 95 %  |
| Current measurement circuit              |   |
| Consumption                              | 0.3 VA 10 A   |
| Reference current (Iref)                 | 5 A   |
| Maximum current                          | 65 A  |
| Minimum current measurement              | 0.250 A   |
| Transition current                       | 0.500 A   |
| Voltage measurement circuit              |   |
| Consumption                              | < 2W , < 10VA (In, Vref)  |
| Nominal frequency                        | 50 / 60 Hz  |
| Nominal voltage                          | 3 x 127/220 3 x 230/400 V ~                                     |
| Electrical characteristics               |   |
| Insulation voltage, circuit              | 4 kV RMS 50 Hz durante 1 min                                    |
| Standards                                |   |
| Electrical safety, Maximum height (m)    | 2000  |
| Standards                                | EN 50470-1, EN 50470-3, IEC 62053-21, IEC 62053-23, EN 62056-21 |
| User interface                           |   |
| LED                                      | 2 LED: kWh, 4000 imp/kW, kvarh, 4000 imp/kvarh                  |
| Keyboard                                 | 2 Keys  |
| Display type                             | LCD   |
| Maximum value                            | 999999.9 kWh  |
|  |   |





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Digital transistor outputs

Quantity

1



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| Pulse output, time period (Ton / Toff)                                 | Ton: 40 ms                                     |  |
|--|--|--|
| Maximum current  | 50 mA  |  |
| Maximum voltage  | 24 Vcc   |  |
| Measurement accuracy   |  |  |
|  |  |  |
| Reactive energy measurement (kvarh)                                    | Class 2.0 (IEC 62053-23)                       |  |
| Reactive energy measurement (kvarh)<br>Active energy measurement (kWh) | Class 2.0 (IEC 62053-23)<br>Class B (EN 50470) |  |
|  |  |  |

RS-485

#### CEM-C

Energy meter

Technology / Type

| CODE       | ТҮРЕ               | Measurement Range (V)  | Measurement<br>Range (A) | Communications | Protocol   | Transistor<br>output | Digital<br>inputs | Tariff | Certification |
|------------|--------------------|------------------------|--------------------------|----------------|------------|----------------------|-------------------|--------|---------------|
| Direct th  | ree-phase          |                        |                          |                |            |                      |                   |        |               |
| Q22411.    | CEM-C21-T1         | 3 x 127/2203 x 230/400 | 5 (65) A                 | _              | -          | 1                    | -                 | 1      | IEC           |
| Q22421.    | CEM-C21-485-T1     | 3 x 127/2203 x 230/400 | 5 (65) A                 | RS-485         | Modbus/RTU | 1                    | -                 | 1      | IEC           |
| Q22431.    | CEM-C21-485-DS     | 3 x 127/2203 x 230/400 | 5 (65) A                 | RS-485         | Modbus/RTU | 0                    | 1                 | 2      | IEC           |
| Q22412.    | CEM-C21-T1-MID     | 3 x 127/2203 x 230/400 | 5 (65) A                 | -              | -          | 1                    | -                 | 1      | MID           |
| Q22422.    | CEM-C21-485-T1-MID | 3 x 127/2203 x 230/400 | 5 (65) A                 | RS-485         | Modbus/RTU | 1                    | -                 | 1      | MID           |
| Q22432.    | CEM-C21-485-DS-MID | 3 x 127/2203 x 230/400 | 5 (65) A                 | RS-485         | Modbus/RTU | 0                    | 1                 | 2      | MID           |
| Indirect t | three-phase        |                        |                          |                |            |                      |                   |        |               |
| Q23511.    | CEM-C31-T1         | 3 x 57/1003 x 230/400  | / 5 (10) A               | _              | _          | 1                    | _                 | 1      | IEC           |
| Q23521.    | CEM-C31-485-T1     | 3 x 57/1003 x 230/400  | / 5 (10) A               | RS-485         | Modbus/RTU | 1                    | -                 | 1      | IEC           |
| Q23531.    | CEM-C31-485-DS     | 3 x 57/1003 x 230/400  | / 5 (10) A               | RS-485         | Modbus/RTU | 0                    | 1                 | 2      | IEC           |
| Q23512.    | CEM-C31-T1-MID     | 3 x 57/1003 x 230/400  | / 5 (10) A               | -              | -          | 1                    | -                 | 1      | MID           |
| Q23522.    | CEM-C31-485-T1-MID | 3 x 57/1003 x 230/400  | / 5 (10) A               | RS-485         | Modbus/RTU | 1                    | -                 | 1      | MID           |
| Q23532.    | CEM-C31-485-DS-MID | 3 x 57/1003 x 230/400  | / 5 (10) A               | RS-485         | Modbus/RTU | 0                    | 1                 | 2      | MID           |
|            |                    |                        |                          |                |            |                      |                   |        |               |

CEM-C10 and CEM-C21/C31 without built-in RS-485 communications can optionally communicate with CEM-M-ETH and CEM-M-RS485 modules.

Devices with absolute measurements (Abs). For 2 or 4 quadrants, see the Aditional table

Frecuency: 50/60 Hz. Parameters: V, A, kW, kVA, kWh, cos phi

CEM-XXX-TI encoding table - Devices with pulse output (transistor) CEM-XXX-DS-Devices with digital input for tariff change and impulse meter



Alimentación —O auxiliar

-O Power Supply

CARGA/LOAD



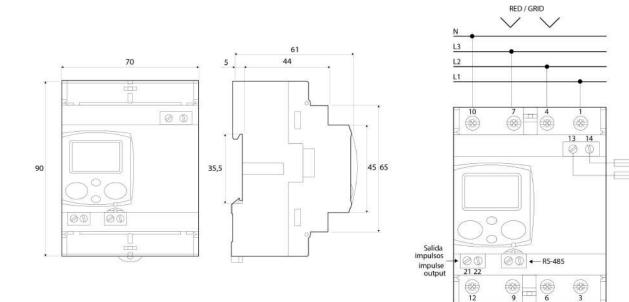
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Dimensions

Connections



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