



## CEM C10 212

CEM C10 212, Single-phase energy meter

Code: Q21112.

- > Módulos: 2
- > Tariff: 1
- > Certification: IEC
- > Transistor output: 1
- > System: Single-phase
- > Measure: Direct
- > Measurement Range (V): 1 x 230
- > 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)
- 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.
- 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.



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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 ~ ±20 % |

#### Mechanical characteristics

|                                  |                   |
|----------------------------------|-------------------|
| Size (mm) width x height x depth | 35 x 90 x 61 (mm) |
| Weight (kg)                      | 0,14              |

#### 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

|                   |             |
|-------------------|-------------|
| Nominal frequency | 50 ó 60 Hz. |
|-------------------|-------------|

#### Electrical characteristics

|                             |                              |
|-----------------------------|------------------------------|
| Insulation voltage, circuit | 4 kV RMS 50 Hz durante 1 min |
|-----------------------------|------------------------------|

#### Standards

|                                       |  |
|---------------------------------------|--|
| Electrical safety, Maximum height (m) | 2000   |
| Standards                             | IEC 62053-21, IEC 62053-23, EN 50470-1, EN 50470-3 |

#### User interface

|               |   |
|---------------|---|
| LED           | 2 LED: kWh, 1000 imp/kWh, kvarh, 1000 imp/kvarh |
| Keyboard      | 2 Keys  |
| Display type  | LCD   |
| Maximum value | 999999.9 kWh                                    |

#### Digital transistor outputs

|  |             |
|--|-------------|
| Quantity                               | 1           |
| Pulse output, time period (Ton / Toff) | Ton: 200 ms |



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|                 |        |
|-----------------|--------|
| Maximum current | 50 mA  |
| Maximum voltage | 24 Vcc |

### Measurement accuracy

|                                     |                          |
|-------------------------------------|--------------------------|
| Reactive energy measurement (kvarh) | Class 2.0 (IEC 62053-23) |
| Active energy measurement (kWh)     | Class 1 (IEC 62053-21)   |

### Wireless communication

|                   |   |
|-------------------|---|
| Technology / Type | Optical IR port (additional external receiver required) |
|-------------------|---|

### CEM-C Energy meter

| CODE                        | TYPE               | Measurement Range (V)     | Measurement Range (A) | Communications | Protocol   | Transistor output | Digital inputs | Tariff | Certification |
|-----------------------------|--------------------|---------------------------|-----------------------|----------------|------------|-------------------|----------------|--------|---------------|
| <b>Direct three-phase</b>   |                    |                           |                       |                |            |                   |                |        |               |
| Q22411.                     | CEM-C21-T1         | 3 x 127/220...3 x 230/400 | 5 (65) A              | -              | -          | 1                 | -              | 1      | IEC           |
| Q22421.                     | CEM-C21-485-T1     | 3 x 127/220...3 x 230/400 | 5 (65) A              | RS-485         | Modbus/RTU | 1                 | -              | 1      | IEC           |
| Q22431.                     | CEM-C21-485-DS     | 3 x 127/220...3 x 230/400 | 5 (65) A              | RS-485         | Modbus/RTU | 0                 | 1              | 2      | IEC           |
| Q22412.                     | CEM-C21-T1-MID     | 3 x 127/220...3 x 230/400 | 5 (65) A              | -              | -          | 1                 | -              | 1      | MID           |
| Q22422.                     | CEM-C21-485-T1-MID | 3 x 127/220...3 x 230/400 | 5 (65) A              | RS-485         | Modbus/RTU | 1                 | -              | 1      | MID           |
| Q22432.                     | CEM-C21-485-DS-MID | 3 x 127/220...3 x 230/400 | 5 (65) A              | RS-485         | Modbus/RTU | 0                 | 1              | 2      | MID           |
| <b>Indirect three-phase</b> |                    |                           |                       |                |            |                   |                |        |               |
| Q23511.                     | CEM-C31-T1         | 3 x 57/100...3 x 230/400  | .../ 5 (10) A         | -              | -          | 1                 | -              | 1      | IEC           |
| Q23521.                     | CEM-C31-485-T1     | 3 x 57/100...3 x 230/400  | .../ 5 (10) A         | RS-485         | Modbus/RTU | 1                 | -              | 1      | IEC           |
| Q23531.                     | CEM-C31-485-DS     | 3 x 57/100...3 x 230/400  | .../ 5 (10) A         | RS-485         | Modbus/RTU | 0                 | 1              | 2      | IEC           |
| Q23512.                     | CEM-C31-T1-MID     | 3 x 57/100...3 x 230/400  | .../ 5 (10) A         | -              | -          | 1                 | -              | 1      | MID           |
| Q23522.                     | CEM-C31-485-T1-MID | 3 x 57/100...3 x 230/400  | .../ 5 (10) A         | RS-485         | Modbus/RTU | 1                 | -              | 1      | MID           |
| Q23532.                     | CEM-C31-485-DS-MID | 3 x 57/100...3 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 Additional table  
Frequency: 50/60 Hz. Parameters: V, A, kW, kVA, kWh, cos phi

CEM-XXX-T1 encoding table - Devices with pulse output (transistor)  
CEM-XXX-DS-Devices with digital input for tariff change and impulse meter

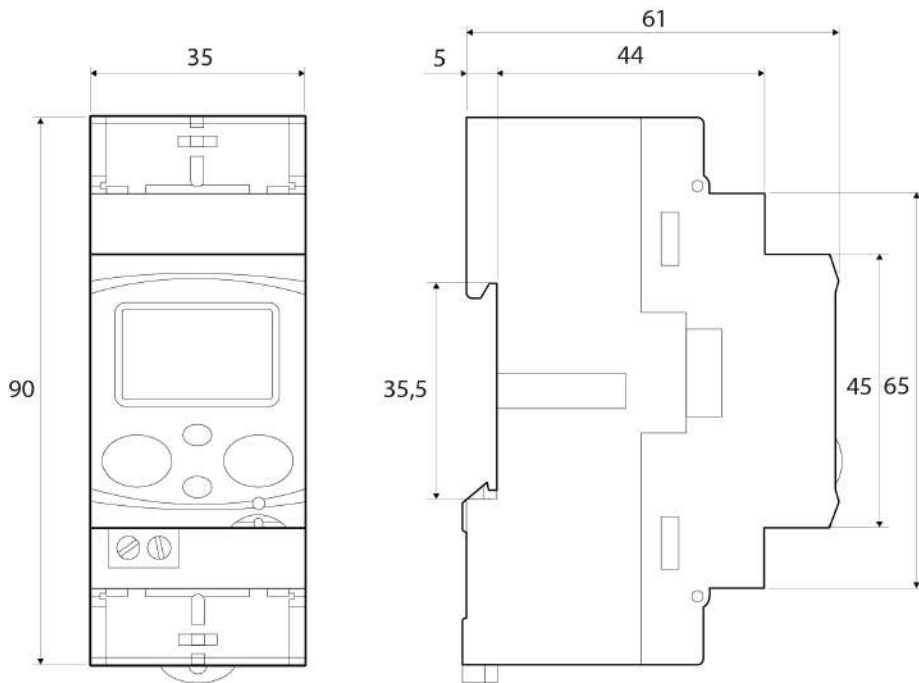


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### Dimensions



### Connections

