



410-QD1A-80B10, Three-phase energy meters direct connection

Code: QB4E0

> Type Consumer: 4

> Communications: RS-485 | RS-485 > Class (Active/Reactive): B (1) / 2

> System: Three-phase

> Measure: Direct

> Measurement Range (V): 3x230/400 > Measurement Range (A): 10 (100)

> Quadrants: 4> Frequency (Hz): 50

## Description

CIRWATT-B410D is a direct three-phase meter, ideal for three-phase industrial applications. It is classified as Class B for active energy as per the European MID Directive (EN 50470) or Class 1 as per IEC-62053-21. It offers multiple communication options and expansion modules, allowing it to adapt to any type of direct measurement installation.

## **Application**

CIRWATT-B410D is suitable for low-voltage applications (for currents up to 100 or 120 A maximum). Offering solutions for a wide variety of installations such as: shopping centres, small industry and high-consumption residential areas (Consumer type 4). Available in 2 quadrants for energy consumption or 4 quadrants for photovoltaic plants (energy generation and consumption).







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## **Specifications**

| AC power supply                          |  |
|--|--|
| Tolerance                                | 80 % 115 % Un                                    |
| Consumption                              | < 2 W; < 10 VA                                   |
| Frequency                                | 50 / 60 Hz                                       |
| Nominal voltage                          | 3 x 230 (400) V - 3 x 127 (230) V                |
| Battery specification                    |  |
| Performance-guarantee                    | > 20 years @ 30 °C                               |
| Туре                                     | Lithium  |
| Mechanical characteristics               |  |
| Size (mm) width x height x depth         | 172 x 255 x 67 (mm)                              |
| Envelope                                 | DIN 43859  |
| Weight (kg)                              | 1,6  |
| Environmental characteristics            |  |
| Relative humidity (without condensation) | 95 % max.  |
| Storage temperature                      | -40 +85 °C                                       |
| Working temperature                      | -40 +70 °C                                       |
| Voltage measurement circuit              |  |
| Connection                               | Asymmetrical                                     |
| Consumption                              | < 2 W; 10 VA                                     |
| Nominal frequency                        | 50 / 60 Hz                                       |
| Nominal voltage                          | 3 x 230/400 V (Request for other configurations) |
| Current measurement circuit              |  |
| Consumption                              | < 0,1 V·A  |
| Reference current (Iref)                 | 10 A   |
| Maximum current                          | 100 A  |
| Minimum current measurement              | < 0,5 x ltr                                      |
| Optical communication interface          |  |
| Hardware                                 | IEC 62056-21                                     |
| Protocol                                 | REE, based on IEC 870-5-108                      |
| Туре                                     | Serial;bi-directional                            |







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| Resolution of the display | up to 8 digits (8 mm) |
|---------------------------|-----------------------|
| Display type              | LCD                   |

### Memory

| Memory capacity | Data: non-volatile memory, Setup and events: serial-flash |
|-----------------|---|
| Write time      | 4000  |
| Туре            | Serial flash  |

### Standards

| Standards | UNE-EN 50470-1 Electricity metering equipment (a.c.) Part 1: General requirements, tests and test conditions - Metering equipment -class indexes B-) UNE-EN 50470-3 Electricity metering equipment (a.c.) Part 3: Particular requirements - Static meters for active energy -class indexes B-) IEC 62052-11, IEC 62053-21, IEC 62053-22 (Standards for static active energy meters for alternating current of class 0.2s, 0.5s) UNE-EN 55022 (Conducted Emissions: Class B, Radiated Emissions: Class B) UNE-EN 61000-4-2, UNE-EN 61000-4-3, UNE-EN |
|-----------|---|
|           | 61000-4-4, UNE-EN 61000-4-5, UNE-EN 61000-4-6, UNE-EN 61000-4-8, UNE-<br>EN 61000-4-11  |
|           |   |

### PLC

| Hardware          | CENELEC A or CENELEC B                   |
|-------------------|--|
| Protocol          | CirPLC & PEP (PLC Encapsulated Protocol) |
| Modulation system | DSCK with repeater system                |

### Measurement accuracy

| Reactive energy measurement (kvarh) | IEC 62053-23 (Class 2)                    |
|-------------------------------------|---|
| Active energy measurement (kWh)     | EN 50470 (Class B) IEC 62053-21 (Class 1) |

### Features / performance

| Billing closures   | 12 locks per contract. Programable date and hour  |
|--------------------|---|
| Load curve         | 2 load curves, programmable integration time (1 253 min)  |
| Optional           | Communications: RS-232 / PLC ,RS-485 / PLC, RS-232 / RS-232 , RS-485 / RS-485, RS-232 / RS-485, RS-232 / Ethernet, R-485 / Ethernet. Expansion boards: No inputs / outputs, 4 relay outputs (Rate Indicator), 2 relay inputs / 4 pulse outputs, 4 pulse inputs, Differential current measurement, 2 relay outputs / 2 pulse outputs, / 2 pulse inputs |
| Tariff programming | 12 days 10 types of data 9 types of tariffs 30 public holidays 12 special days  |
|                    |   |

### Clock

| Source              | Temperature compensated oscillator |
|---------------------|------------------------------------|
| Accuracy (EN 61038) | < 0,5 s/day (23 °C)                |
| Туре                | Gregorian calendar                 |







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### Serial communication

| Protocol          | REE, basado en IEC 870-5-102 |
|-------------------|------------------------------|
| Technology / Type | RS-485 RS-485                |

#### **CIRWATT B 410D**

Direct three-phase meter, ideal for three-phase industrial applications. It is classified as Class B for active energy as per the European MID Directive (EN 50470) or Class 1 as per IEC-62053-21

| CODE      | ТҮРЕ                               | Measurement<br>Range (V) | Measurement<br>Range (A) | Communications    | Class<br>(Active/Reactive) | System      | Measure  |
|-----------|------------------------------------|--------------------------|--------------------------|-------------------|----------------------------|-------------|----------|
| CIRWATT B | 410D                               |                          |                          |                   |                            |             |          |
| QB4A0     | 410-QD1A-70B10                     | 3x230/400                | 10 (100)                 | RS-232   RS-232   | B (1) / 2                  | Three-phase | Direct   |
| QB4B0     | 410-QD1A-90B10                     | 3x230/400                | 10 (100)                 | RS-232   RS-485   | B (1) / 2                  | Three-phase | Direct   |
| QB4E0     | 410-QD1A-80B10                     | 3x230/400                | 10 (100)                 | RS-485   RS-485   | B (1) / 2                  | Three-phase | Direct   |
| QB4C0     | 410-QD1A-A0B10                     | 3x230/400                | 10 (100)                 | RS-232   Ethernet | B (1) / 2                  | Three-phase | Direct   |
| QB4D0     | 410-QD1A-C0B10                     | 3x230/400                | 10 (100)                 | RS-485   Ethernet | B (1) / 2                  | Three-phase | Direct   |
| QB4H0     | 410-QD1B-90B10                     | 3x230/400                | 10 (100)                 | RS-232   RS-485   | B (1) / 2                  | Three-phase | Direct   |
| QB4I0     | 410-QD1B-A0B10                     | 3x230/400                | 10 (100)                 | RS-232   Ethernet | B (1) / 2                  | Three-phase | Direct   |
| QB7A0     | 410-ND1A-70B10                     | 3x127/220                | 10 (100)                 | RS-232   RS-232   | B (1) / 2                  | Three-phase | Direct   |
| QB7B0     | 410-ND1A-90B10                     | 3x127/220                | 10 (100)                 | RS-232   RS-485   | B (1) / 2                  | Three-phase | Direct   |
| QB7E0     | 410-ND1A-80B10                     | 3x127/220                | 10 (100)                 | RS-485   RS-485   | B (1) / 2                  | Three-phase | Direct   |
| QB7C0     | 410-ND1A-A0B10                     | 3x127/220                | 10 (100)                 | RS-232   Ethernet | B (1) / 2                  | Three-phase | Direct   |
| QB7D0     | 410-ND1A-C0B10                     | 3x127/220                | 10 (100)                 | RS-485   Ethernet | B (1) / 2                  | Three-phase | Direct   |
| QB4B0D60  | 410-QD1A-90B10-TRIPLE TARIFA-3.0TD | 3x230/400                | 10 (100)                 | RS-232   RS-485   | B (1) / 2                  | Three-phase | Indirect |
|           |                                    |                          |                          |                   |                            |             |          |

Please contact us for other configurations (Inputs, outputs and other communications)







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Connections **Dimensions** 







