Description

The **5CTB-3** meter is designed, tested and manufactured for:

- **M1** mechanical environment, and therefore, it does not present any danger in normal use conditions.
- **E2** electromagnetic environment, corresponding to electrical measuring devices.

The device has an **IP51** degree of protection (according to **EN 60529** standard) and intended to be used as indoor and double isolation meter.

The **5CTB-3** meter enclosure is made of high impact resistance thermoplastic and double isolation. The display cover is UV resistant.

The enclosure consists of a base, meter cover and terminal cover. The terminal cover is intended to protect the terminals, the wiring and the fixing screws to the panel. The terminal cover has a perforated screw for sealing. The unit is equipped with opening sensors for cover and terminal cover.

The equipment has an information display on the front panel, a verification LED (4000 imp/kWh or kvarh), an optical port according to **UNE EN 62056-21** and an information push button.

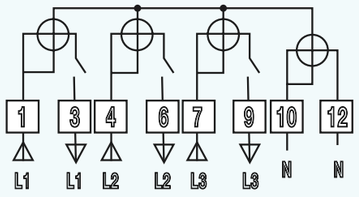
Installation

For a correct installation, it is necessary to carry out a preliminary inspection of the device, checking that the meter is in perfect mechanical conditions, all its parts are properly fixed and there is no missing screws. Check that the model code and characteristics match those related to the meter order.

This device must be installed by technical personnel authorised by the distributor. It is the technician's responsibility to be familiar with the regulations applicable to the installation, as well as the protection requirements.

The installation technician is responsible for coordinating the rating and characteristics of the overcurrent protection devices, taking into account the maximum current and the UC rating of the equipment.

Each meter has a diagram showing the correct connection method permanently engraved in the terminal cover. The terminals are numbered with engraved digits from left to right (with the meter in the operating position).



It is necessary to check that there are no perforations or cracks in the insulation of the cables, that there are no wires on the outside of the terminal blocks and that all the screws are properly tightened.

All terminals present double screw and admit inside stranded wires up to 20mm of diameter with a cross section from 6 to 35mm2. The maximum torque for tightening all the screws of the equipment (including the terminal cover screws) is defined as **2.5Nm**.

Sart-up

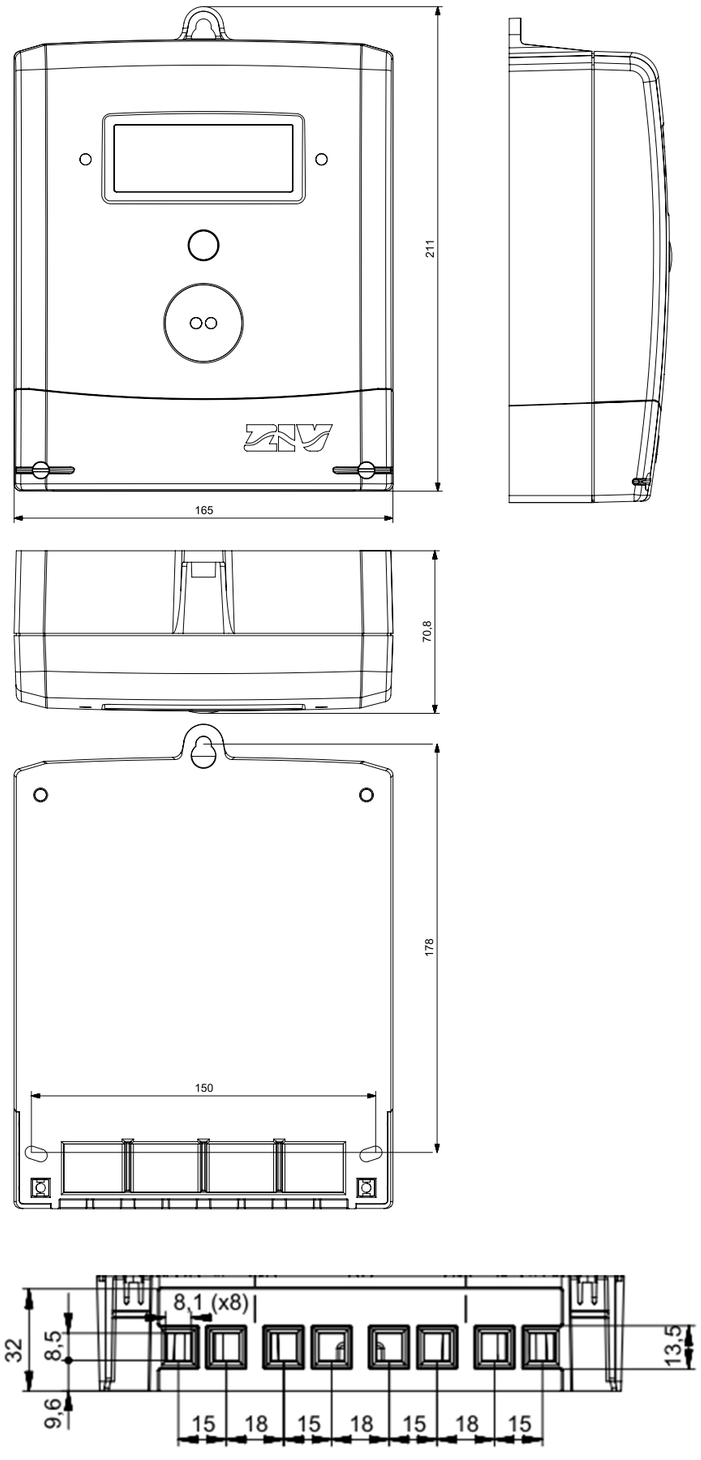
Once the meter has been fixed to the wall or panel and the connections have been made, the following checks will be carried out on the display using the available symbols:

- Breaker element status.
- Voltage and current presence. Current direction. Equipment quadrant.
- Verification of PLC communications (if applicable).

Maintenance

The equipment does not require any maintenance or cleaning procedures other than periodic inspections/reviews, if required by the utility company's operating standards or applicable regulations.

Dimensions



Dimensions

With terminal cover	211 x 165 x 70.8 mm (dimension drawing)
With long terminal cover	264 x 165 x 70.8 mm

5CTB-3

Dual Stack PRIME 1.3 & 1.4 Three Phase Smart Meter



Meter Installation and Commissioning Instructions

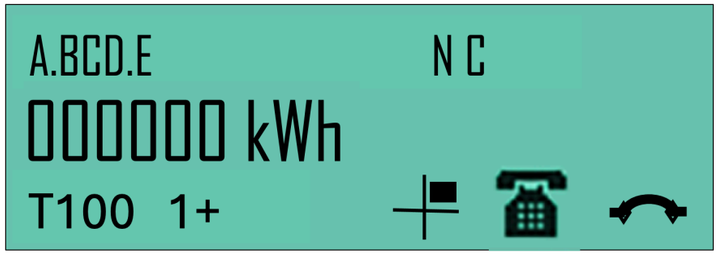
The **5CTB-3** three-phase meters family covers the metrological needs of the residential market, providing automated meter reading (AMR) solutions to the distribution companies based on a modular platform.

Technical Data

Internal Battery (not replaceable)	
Voltage	**3 V**
Useful life	**15 years**
Current Input	
Reference value	**3 x 5 A**
Minimum current	**0.25 A**
Maximum current	**80 A**
Surge withstand capability	**100 A** (continuously) **2400 A** (for 0.010 s)
Power absorbed by the current circuit (at Iref)	**< 0.2 VA**
Voltage Measurement / Power Supply	
Nominal values	**Un = 3 x 127 - 230 V**
Frequency	**50 Hz**
Operating limit	**Un ±20%**
Neutral loss protection	**400 V** (for 6 hours)
Voltage circuit load	**230 V <1.2 W**
Measuring Accuracy	
Active energy	**Class B** (EN 50470-3:2022) or **Class 1** (EN IEC 62053-21:2021)
Reactive energy	**Class 2** (IEC 62053-23:2021)
Test constant	**4000 imp/kWh** (kvarh)
Communications Interfaces	
Optical port	**EN 62056-21**
PLC port	**PRIME dual 1.3 & 1.4** **FCC**
Breaking and Reconnection Element (Three-pole)	
Maximum switching voltage	**250 VCA**
Nominal load	**90 A**
Maximum switching power	**22500 VA**
Operating time	**<20 ms**
Mechanical endurance	**10^5**
Dielectric strength	**4KV**
Safety Characteristics (IEC 62052-31:2015)	
Class II	**Double isolation**
Rated impulse voltage	**6 kV**
Utilization category	**UC2**
Protection degree (in accordance with IEC 60529)	**IP51**
Operating Conditions	
Specified operating range	de **-25° C** a **70° C**
Operating and storing limit range	de **-25° C** a **70° C**
Humidity limit	**95 %** (without condensation)

Customer Information

LCD dot matrix Display (132x42):



The first line displays the OBIS code for the data shown on the second line. The data on the second line includes the corresponding unit, where applicable.

The third line displays additional information using symbols:

T100: current tariff for each of the contracts.

1+: presence of voltage (1) and presence of current and direction (+/-).

: Active energy quadrant.

: meter registered at the base node.

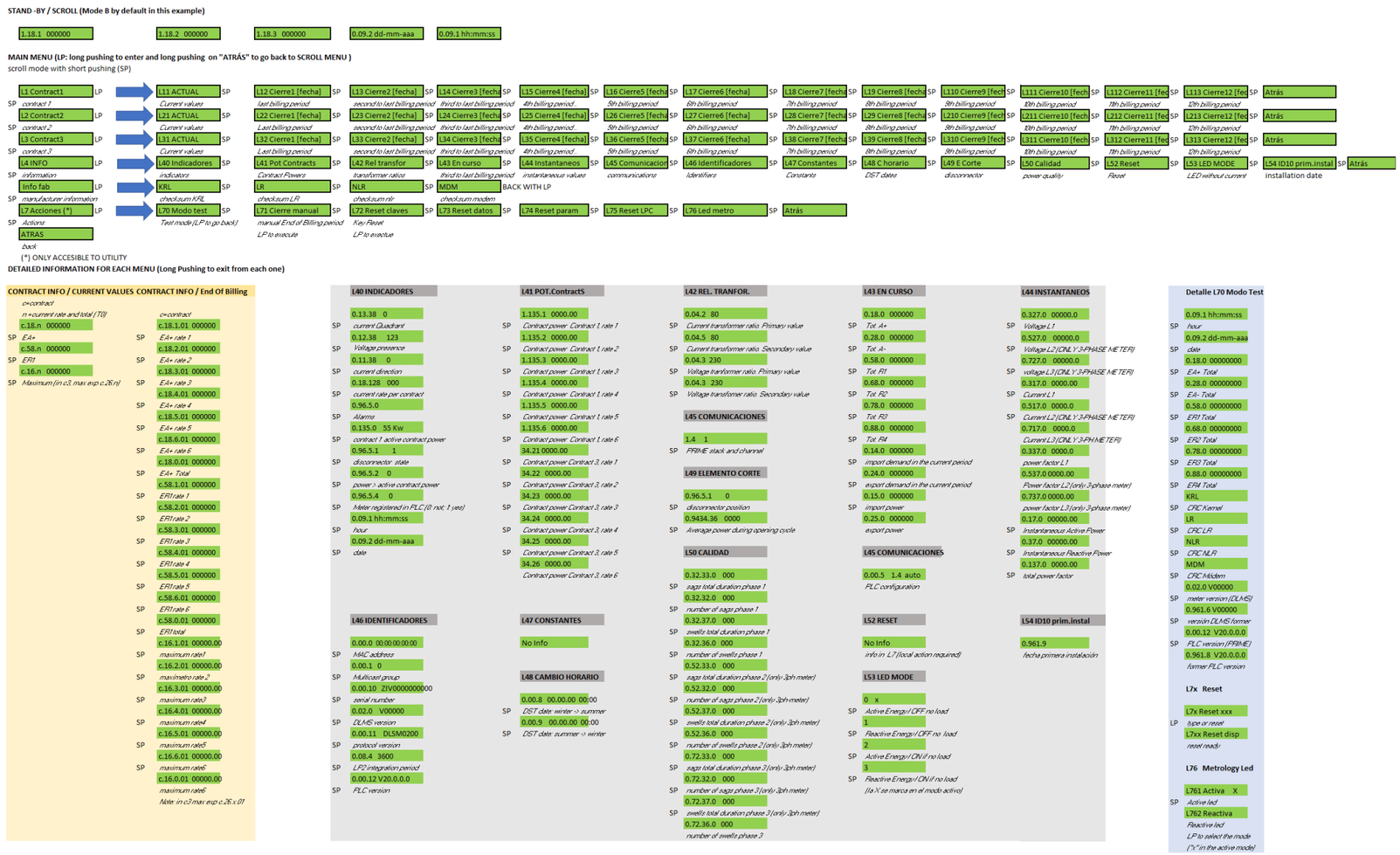
: Breaking element (shown in the closed position in the image).

When the internal breaker is open, the power supply is interrupted but there is no isolation from the power grid.

Basic Functionality

- Instantaneous Measurements: voltages, currents, active and reactive power with sign, bidirectional and reactive energy in the 4 quadrants, total and per phase power factor and average active power last integration period.
- 3 bidirectional contracts with a complete tariff system based on an annual structure with up to 12 seasons, up to 12 type of days, 24 possible rate changes in a day with a resolution of 15 minutes which can be configured with different tariffs (up to 6). Possibility to configure up to 30 holidays or special days.
- The meter will store 12 end-of- billing monthly registers.
- Daily billing summaries.
- Load profiles.
- Breaking and Reconnection Element. Manual reconnection system (via display or by operating the IGA).
- RTC with 5 ppm accuracy and configurable automatic seasonal time change..
- Errors, Alarms and Events Recording.
- Power Quality Recording (according to **EN 50160**)
- Fraud Detection.
- Remote firmware update.
- Encryption and authentication.

Screen Tree





The improper manipulation of the equipment may present risks of serious personal and material damage. Therefore, this type of equipment must be exclusively manipulated by qualified staff and familiar with the corresponding safety rules. Only qualified personnel should carry out the handling of the meter.



Environmental Information

This equipment contains a lithium battery and electronic parts. Once the meter has reached the end of its useful life, it must be disposed of by an Authorized Waste Management Service.

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