



# 5CTB - 1ph

Meters & More PLC smart meter



Single phase Smart meter designed with field proven **ZIV's own technology** according to Meters and More protocol

**5CTB-1** single phase meter is part of a family of digital meters incorporating metering, load recording and Time of Use (TOU) functionality. More specifically, this meter platform has been designed for energy metering in customers with AMM (Automatic Meter Management) capabilities through one built-in PLC (Power line Communications) module in the meter, in this case, 9600 bps BPSK modulation enforced with Viterbi convolutional coding) and Smart Metering Information and Telecommunication Protocol (SMITP), this is, meters and more protocol.

This smart meter provides valuable information about low voltage network and offers new opportunities for network management (voltage and current monitoring, Quality of service events...) and local and remote communication capabilities enable complete meter operation and facilitate technical or commercial support tasks to consumers or prosumers. This includes data reading, contract configuration changes, RTC synchronization and operation of the built-in breaker.

**meters**  
AND **more**  
OPEN TECHNOLOGIES

Making the Smart Grid Real

## Key features

- Flexible and configurable Dot matrix display for meter readings and standardized messages/symbols. Visible area of 73.5x24.5mm with a resolution of 132x42 pixels.



- Instantaneous measurements: RMS current and voltage, active and reactive power with sign, power factor, and network frequency.
- Energy registers (bidirectional active and reactive in the 4 quadrants) total and per tariff rate.
- Energy load profile (6 channels) with configurable integration period.
- Measurand load profile with configurable measurements (instantaneous, average, maximum, minimum values for voltage, current, power, energy, network frequency, neutral current, angle, and power factor) and integration period configurable.
- Versatile Time of Use (TOU) module based on an annual tariff structure with up to 8 seasons, 3 available week schedules where each day could be split into a maximum of 8 intervals (with a 15-minutes resolution) using up to 6 rate periods. Public holidays can be configured as well.
- Maximum Demand Recording (MDR), total and per tariff rate with timestamp.
- Monthly and daily billing data
- Real time clock which keeps the actual date and time of the equipment with an accuracy of  $\pm 5$ ppm (EN 62054-21). Clock synchronization capabilities.
- Information about power interruptions and voltage variations according to EN 50160.
- Three event recording logs with independent memory and POP-OUT (once is read, it is removed from the event log) and FIFO (first event generated, first event deleted) operation.
- Self-Diagnostics and monitoring. Status flags to provide information about the incidences or operations.
- Breaking and reconnection elements for remote switching operations, demand control or demand side management.
- Protection against temporary overvoltage (e.g., earth fault) by opening the disconnecter in a very short time frame.
- Battery for RTC and fraud events maintenance.
- Enhance anti-tampering protection system.
- Secured access and encrypted data transmission.

## A custom-made smart meter

- The 5CTB-1 meter provides robust automated meter reading solutions for distribution companies using Meters and more protocol. It integrates energy measurement, load profile and Time of Use (TOU) features.
- A set of configurable parameters make it the right solution for all domestic energy consumers and prosumers.
- Local and remote communication capabilities enable complete meter operation, including remote firmware upgrade to address improvements, regulatory changes, or new challenges.

## Technical information

<b>Active and reactive energy accuracy</b>	Class B (EN 50470-3) / Class 2 (IEC 62053-23)
<b>Verification test constant</b>	4000 pulses /kWh or kvarh
<b>Minimum, Reference and maximum current</b>	0.25-5(80) A
<b>Starting current</b>	20 mA
<b>Power absorbed by the current circuit (Iref)</b>	<0.1 VA
<b>Voltage rated values</b>	127-230 V ; 50 Hz
<b>Power Consumption</b>	<1.1 W / 11 VA
<b>Specified operating range</b>	-25°C to 70°C
<b>Built-in breaker</b>	250 Vca / 90 A. UC2 according to IEC 62052-31
<b>Optical port</b>	According to IEC 61056-21
<b>Degree of protection</b>	IP51
<b>Lifetime</b>	15 years
<b>Meter with long terminal cover dimensions (mm)</b>	12.27 x 124.7 x 64
<b>Meter with short terminal cover dimensions (mm)</b>	171,46 x 124.7 x 64

