

5CTM/5CTD 1ph & 3ph

**PRIME 1.3 PLC smart
meters**



5CTM & 5CTD meters
provide robust automated
meter reading solutions for
distribution companies.

They integrate energy measurement, load profile and Time of Use (TOU) features. Local and remote communication capabilities enable complete meter operation. This includes data reading, configuration setting changes, date synchronization and operation of the built in breaker.

A complete and flexible product family

This family of meters covers the needs of consumption points in the low voltage network: single phase meter (5CTM), direct three phase meter (5CTDE2F6 or 5CTDE2FA) and CT-connected 3 phase meter (5CTDE2FO or 5CTDE2FB).

Once the smart meter model is selected, a set of configurable parameters helps to completely suit each measurement environment: programmable CT and VT values, load profile integration period, TOU characteristics, synchronization schema, and many more.

5CTM/5CTD smart meters are operated using DLMS/COSEM application data. This implementation can be adapted to different companion standards.

Local and remote communication capabilities enable complete meter operation, including remote firmware upgrade to address improvements, regulatory changes, or new challenges.

Bidirectional communication using PRIME technology (Open Standard with ZIV technology).

5CTM & 5CTD smart meters integrate a PLC PRIME 1.3 service node that is automatically identified in the PLC network (plug & play). These meters implement ZIV's own technology for PRIME open standards. This implementation is proven with more than nine million ZIV PRIME devices installed worldwide. It ensures a robust transmission without distortion optimized also for low impedance lines, without affecting line impedance. High receiver sensitivity and efficient data provide optimized communications over noisy lines.



Key Features

- Segment LCD display with digits and symbols
- Instantaneous measurements of voltage, current, power and power factor per phase, as well as instantaneous network frequency
- Energy registers (bidirectional active and reactive in the 4 quadrants) total and per tariff rate.
- Energy load profiles (6 channels) with configurable integration period (by default hourly profile with incremental energy values and daily profile with absolute energy values).
- Three Versatile Time of Use (TOU) modules (contracts) based on an annual tariff structure with up to 12 seasons each with a weekly schedule, 12 types of day can be configured using up to 6 tariff rate periods distributed throughout the day by selecting the start time. Up to 30 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 $\pm 5\text{ppm}$ (EN 62054-21). Clock synchronization capabilities.
- Information about power interruptions and voltage variations according to EN 50160.
- Independent event recording logs with FIFO operation (first event generated, first event deleted) and with different capacity depending on the occurrence.
- Self-Diagnostics and monitoring. Error and alarm flags to provide information about the incidences or operations.
- Breaking and reconnection elements for remote switching operations, demand control or demand side management (only for direct meters).
- Battery for RTC and fraud events maintenance.
- Enhance anti-tampering protection system.
- Secured access and encrypted data transmission.

Technical information

	Single phase meter	Direct 3 phase meter	CT-connected 3 phase meter
Active and reactive energy accuracy	Class B (EN 50470-3) / Class 2 (IEC 62053-23)		
Verification test constant	1000 pulses /kWh or kvarh		4000 impulses /kWh or kvarh
Minimum, Reference and maximum current	0.25-5(80) A	0.5-10(80) A (5CTBE2F6) 0.5-10(100) A (5CTDE2FA)	0.05-5(10) A
Starting current	20 mA	40 mA	10 mA
Power absorbed by the current circuit (Iref)	< 0.3 VA	< 0.2 VA	< 0.1 VA
Voltage rated values	127-230 Vac; 50 Hz	3x127..230/400 Vac ; 50 Hz	3x57.7..230/400 Vac (5CTDE2FO) ; 50 Hz 3x127..230/400 Vac (5CTDE2FB) ; 50 Hz
Power Consumption	<2 W / 13 VA per phase IEC 62053-61		
Specified operating range	-25°C to 70°C		
Built-in breaker	Two poles. 250 Vca / 80 A. UC2 according to IEC 62055-31	Three poles 250 Vca / 80 A. UC2 according to IEC 62055-31	Non-applicable
Power free output	280 Vac / 0.5 A or 2 A (depending on the model)	280 Vac / 0.5 A or 2 A (depending on the model)	280 Vac / 0.5 A or 2 A (depending on the model)
Optical port	According to IEC 61056-21		
Serial port	RS485 (depending on the model)	RS232 or RS485 (depending on the model)	RS232 or RS485 (depending on the model)
PLC module	Built-in PLC PRIME 1.3	Built-in PLC PRIME 1.3	Built-in PLC PRIME 1.3
Degree of protection	IP51		
Lifetime	15 years		
Meter with long terminal cover dimensions (mm)	212,27 x 124.7 x 64	293 x 165 x 66 (5CTDE2F6) 268,7 x 165 x 80,8 (5CTDE2FA)	293 x 165 x 66
Meter with short terminal cover dimensions (mm)	171,46 x 124.7 x 64	236,54 x 165 x 66	236,54 x 165 x 66