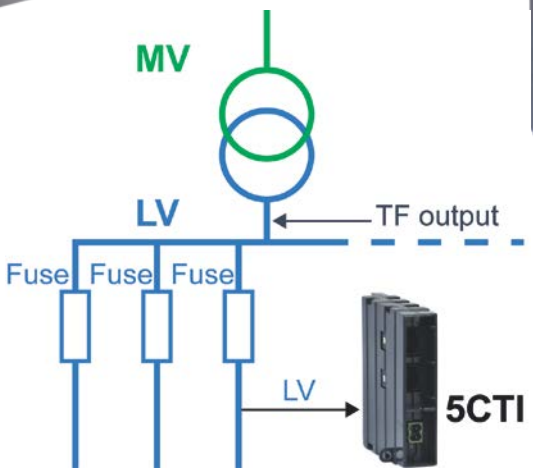
# 5CTI

## Low Voltage Feeder Supervisor




**The 5CTI is an advanced three phase meter intended for LV feeder supervision. Using well proven technologies, it is targeted at extending Smart Metering functionality into the Secondary Substation.**

**Installing one 5CTI device per feeder will improve the supervision capabilities and behaviour of the LV distribution network.**

### Additional LV network topology feedback

In addition to metrological functionality, 5CTIs provide topological information of the physical location of PLC registered meters in a LV distribution grid (feeder and phase). By the use of patented statistical algorithms, it can provide very useful topology information.

### Distribution Transformer LV feeder supervision

The 5CTI allows monitoring every LV feeder from the Distribution Transformer (DT). It enables the implementation of advanced low voltage monitoring functionality such as blowout fuses, fraud detection, consumption unbalances among the feeders, quality of supply assessment, etc. Thanks to its compact design, several DIN-rail mounted units can be installed in a small space to monitor all the LV feeders. It can also be manufactured with a customized enclosure in order to be inserted in some LV panels.

The 5CTI is connected to a LV supervision controller via RS485 bus or LV PLC communications, using DLMS/COSEM protocol.

## Key Features

- Direct three phase voltage measurement.
- Indirect (CT required) current measurement.
- Instantaneous measurements.
- Energy recording. 6 energy values (imported and exported active energy and reactive in the 4 quadrants).
- Average voltage per phase, average current per phase, average apparent power and average neutral current (calculated).
- Maximum (measurement in a cycle) voltage per phase, maximum current per phase, maximum apparent power and maximum neutral current (calculated).
- Time synchronization.
- Event recording.
- Power Quality recording. Voltage variations outside the established thresholds and long term voltage interruptions.
- Self-diagnostics and monitoring.
- Fuse blowout detection.
- Communications protocol: DLMS/COSEM.
- Remote firmware update.
- Smart meter feeder identification (requires smart meters using PRIME or G3 PLC).

## Technical Information

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|---|---|
| **Enclosure** | CH20M Weidmüller / customized |
| **Dimensions** | CH20M enclosure:<br>Height: 119.8 mm;<br>Width: 112.8 mm;<br>Depth: 22.5 mm<br>Customized enclosure:<br>Height: 108 mm;<br>Width: 88 mm;<br>Depth: 28.3 mm |
| **Mounting options** | DIN rail mount / adapted to some LV panels |
| **Communication ports** | RS485 bus |
| **LEDs** | Communications Activity<br>4000 imp/kWh |
| **Power supply** | $24V_{CC} = V_{DC}$<br>RS485 bus |
| **Nominal voltage** | 3 x 127 – 230/400 $V_{AC}$ |
| **Current** | 3 x 5 (6) A  3 x 1 (1.2)<br>(Depending on CT) |
| **Frequency** | 50/60 Hz |
| **Accuracy (Active)** | Class B (EN 50470-3) |
| **Accuracy (Reactive)** | Class 2 (EN 62053-23) |
| **Operating temperature** | -25ºC ~ +70ºC |
| **Storage temperature** | -25ºC ~ +70ºC |
| **Humidity** | < 95% (non–condensing) |
| **Vibrations** | IEC 60068-2 |



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