THREE-PHASE CT CONNECTION SMART WATT-HOUR METER

UNIQUE M3020CTL

3×5(20)A I 230V, 127V, and 110V configuration available I 50/60Hz I Wall Mounted

Designed for advanced smart energy measurement, and seamless integration into AMI environments.

Product Overview

The M3020CTL is a static three-phase watt-hour meter for CT connection in low voltage applications. It measures both active and reactive energy, voltage per phase and reports information via multiple communication channels.

Communication Architecture

Data is transmitted from the meter to a local concentrator via Power Line Communication (PLC) and RF LoRa, and from the concentrator to the home office via GSM 4G or Ethernet. Alternatively, the meter can communicate directly with the home office via an optional GSM module. Data is sent by email to pre-programmed email addresses.

Features

Measurement & Metering

- Measures active and reactive energy and voltage
- Supports energy import/export measurement
- Time-of-Use (TOU) tariff support, with remote TOU tariff schedule table update
- Supports wireless RF water meter integration
- Reports data and status periodically and upon request
- Comparison of energy supplied by transformers to energy billed (at concentrator level)
- Data readings recorded with time stamps

Security & Reliability

- Tamper detection: terminal and cover open alerts
- Alerts for leakage, bypass, and voltage fluctuations
- Backup battery and non-volatile memory

Communication interfaces

- Two-way PLC and RF LoRa 433MHz communication with concentrator
- Optional plug-in GSM 4G module for direct communication with back office
- Email reporting
- Optical port for local reading (IEC 62056-21 compatible)
- Repeats and amplifies signals sent by other units effectively eliminating distance limitations

Installation and Usage

- Automatic self-calibration
- Graphic LCD Display with back light able to display during outage
- Directly energized by power lines

Remote Control & Automation

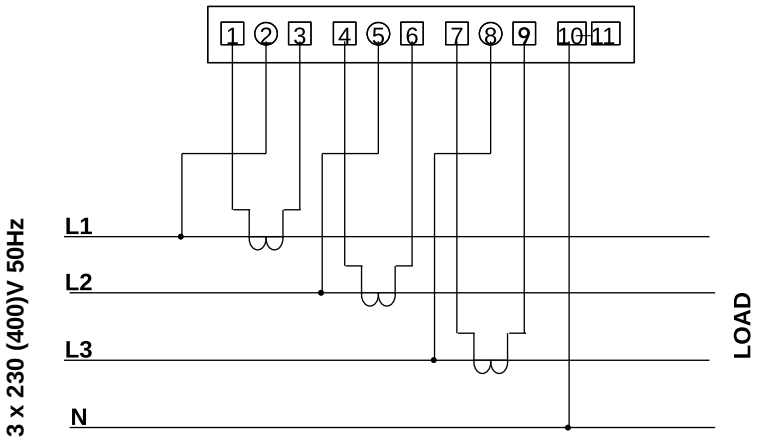
- Remote TOU table and firmware updates
- Real-time clock with remote synchronization
- CT ratio remotely configurable

Industry Standards

- IEC 62052-11 Class 0.5 (active energy), Class 1 (reactive energy); IEC 62053-21; IEC 62053-23; SANS 1524-1 (for South Africa)

Connection Diagram

Meter Terminals



Technical Specifications

Parameter	Specification
Nominal Voltage (Un)	3×230(400)VAC, 3×127(220)VAC, or 3×110(190)VAC
Supply Voltage Range	80% – 115% Un
Nominal Frequency (fn)	50Hz / 60Hz
System Connection	3-phase, 4-wire
Power Consumption at Un	6W / 4.1 Var (capacitive)
Accuracy Class (IEC 62053-21)	Active– Class .5 / Reactive energy – Class 1
Basic Current (Ib)	3×5A
Maximum Current (Imax)	3×20A
Operating Temperature	–10°C to 55°C
Storage Temperature	–25°C to 70°C
IEC60529 Protection Rating	IP54 (standard), IP66 (with optional enclosure)
Insulation Class	Class II (IEC 62052-11)
Display	Graphic LCD with backlight
LED Indicators	Red (Peak), Yellow (Standard), Green (Off-peak)
Energy Flash Rate	1000 pulses/kWh (Active) Red LED, 1000 pulses/kVarh (Reactive) Yellow LED
PLC Frequency range	A-band 60-90 kHz
PLC Method	Spread FSK
RF LoRa	433 MHz
GSM	Optional plug-in 3G module
Optical Port	IEC 62056-21
Dimensions (W×H×D)	170 × 280 × 85 mm
Weight	2100 g
Mounting	Wall-mounted
Standards Compliance	IEC 62052-11, IEC 62053-21