

CENTRAL CONCENTRATOR UNIT

UNIQUE C3020CTG

3×5(20)A | Works with 230V, 127V, and 110V networks | 50/60Hz | Wall Mounted

Product Overview

The Central Concentrator serves as the hub of Unique's advanced AMR/AMI system and Street Light Control & Dimming System (SLCDS). Installed on the low-voltage side of the distribution transformer, it collects readings from up to 500 smart meters and/or e-light controllers managing LED lighting units.

The concentrator communicates with field units using dual-channel communication: Power Line Communication (PLC) and RF LoRa. It transmits aggregated data and status reports to the utility control center via GSM/GPRS or Ethernet (wired LAN or optical uplink).

Advanced communication capabilities support real-time detection of power disturbances, tamper or bypass attempts, and other grid events.

In addition, the concentrator operates as a three-phase check meter (available in CT-connected or direct-connected versions), providing local metering of transformer-level energy flow.



Key Features



Control & Automation

- ✓ Manages up to 400 smart meters and/or e-light units
- ✓ Remote download of firmware and tariff tables
- ✓ Supports load control and prepayment options (via software modules)
- ✓ Optional management software for LED lighting control
- ✓ Records 10 most recent power failures



Metering & Monitoring

- ✓ Internal three-phase check meter: IEC 62053-21 Class 0.5 (active), Class 1 (reactive), IEC 62053-23
- ✓ CT-connected 3×5(20)A or direct-connected 3×10(100)A models available
- ✓ Measures active/reactive energy and voltage per phase
- ✓ Reports transformer loading, voltage, and total consumption per phase
- ✓ Displays phase association for each connected meter or device
- ✓ Sends periodic readings and load curves via email
- ✓ Immediate SMS alert of power failure



Communication Interfaces

- ✓ Two-way PLC (Power Line Communication) RF LoRa
- ✓ GSM 4G (optional plug-in module)
- ✓ Ethernet (copper or fiber optic uplink)
- ✓ Optical port (Android-compatible)



Time & Data Management

- ✓ Real-time clock with network synchronization
- ✓ Accumulates 24-hour load curves for all connected meters and lighting units
- ✓ Supports TOU (Time-of-Use) management



Power Supply & Installation

- ✓ Powered by 100–240 VAC, 50/60 Hz
- ✓ Mounts on low-voltage side of transformers
- ✓ Simple and fast installation



Security & Alarms

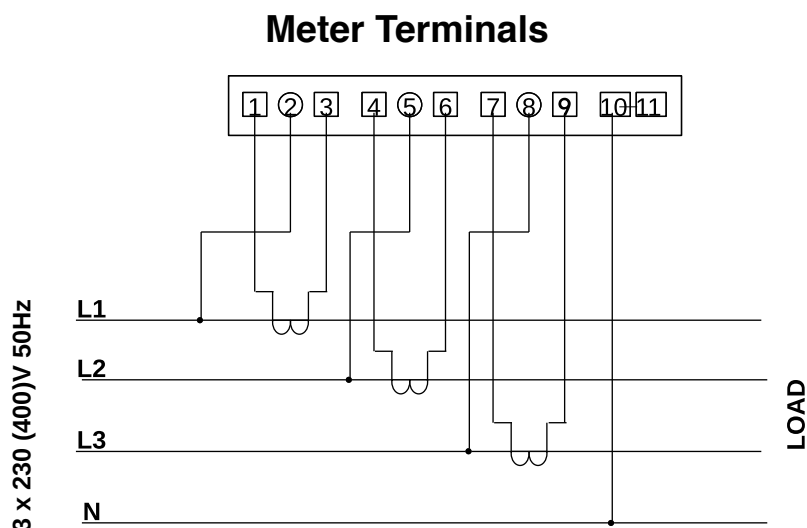
- ✓ Monitors field devices for tamper/bypass conditions
- ✓ Terminal cover open detection
- ✓ Voltage fluctuation alerts (optional)
- ✓ Automatic self-calibration
- ✓ Non-volatile memory



System Capacity & Integration

- ✓ Integrates with AMI / AMR systems and SLCDS (Street Light Control & Dimming System)
- ✓ Works with utility control center via Ethernet or GSM
- ✓ Supports direct integration with existing fiber networks

Connection Diagram



Technical Specifications

Parameter	Specification
Nominal Voltage (Un)	3x230(400)VAC, 3x127(220)VAC, or 3x110(190)VAC
Supply Voltage Range	80% – 115% Un
Nominal Frequency (fn)	50Hz / 60Hz
System Connection	3-phase, 4-wire
Power Consumption at Un	6 W / 4.1 Var (capacitive)
Accuracy Class	Active energy – Class 0.5 Reactive energy – Class 1 (IEC 62053-21)
Basic Current (Ib)	3x5A
Maximum Current (Imax)	3x20A
Operating Temperature	–10°C to 55°C
Storage Temperature	–25°C to 70°C
Insulation Class	Class II (IEC 62052-11)
Display	Graphic LCD with backlight
IEC60529 Protection Rating	IP54 (standard), IP66 (with optional enclosure)
LED Indicators	Red (Peak), Yellow (Standard), Green (Off-peak)
Energy Flash Rate	1000 pulses/kWh Red LED(Active), 1000 pulses/kVarh Yellow LED (Reactive)
PLC Frequency range	A-band 60-90 kHz
PLC Method	Spread FSK
RF LoRa	433 or 866 MHz
GSM	Optional plug-in 4G module
Optical Port	IEC 62056-21
Dimensions (WxHxD)	170 x 280 x 85 mm
Weight	2100 g
Standards Compliance	IEC 62052-11, IEC 62053-21

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