

CLMS3

Advanced electronic three-phase meter
with integrated BPL module



Introduction

The CLMS3 is a three-phase IEC electronic residential meter supporting smart grid functionalities. It is designed to provide utilities with the best-in-class smart metering solution for their SMI mass rollout. The CLMS3 meter is the industry's 1st optimized fully integrated BPL meter with an aggressive cost reduction architected by Corinex and manufactured by leading meter vendor Linyang. The product is targeted to support future functionalities in smart metering and smart grid rollouts.

This is the smart meter which, without compromise, addresses current and future requirements of every utility for high-speed data communication at a low cost. It meets the strictest security requirements and its communication link enables effective future upgrades for support of current and future business plans for every utility including IoT services.

The integral part of the CLMS3 meter is its software solution to perform (controlled by Corinex smart concentrator) the demand load management on the customer site in an automated regime. The effectiveness of such a solution was validated with European utilities.

Advanced metering features

- High accuracy and stability for active, reactive and apparent energy measurement
- Solid construction and ensured reliability
- Multiple format of load profile for billing data
 - 15-minute load profile
 - 10-minute voltage profile
 - Daily register
 - Monthly maximum demand profile
- On-demand measurement of instantaneous value
- Advanced Power quality analysis and alert
 - Integrated internal disconnect relay
 - Remotely control disconnect/reconnect with disconnect validation
- Modular external relay

- Support a wide variety of ripple control application (optional)
- Support COSEM/DLMS meter protocol
- Strong anti-tamper and anti-fraud capability
- Main cover and terminal removal detection
- Magnetic field detection
- Rotation field detection
- Phase failure and power failure detection
- No voltage links detection
- Friendly tool using PDA for on-site service to read, set or program meter over optical port

Communication features

- The BPL communication interface supports up to 50Mbps speeds
- Integrated BPL module supporting high speed real-time bidirectional communication
- Advanced self-healing network protocol for maximum communication reliability
- Enough bandwidth to meet the security requirements of the world's toughest regulators to support a number of encryption methods and comes standard with **SNMP v3**, **IPv6/IPv4** and **256 AES** in all communications in all communications
- Automatically adapts to grid conditions, enabling easy automation and operation. Dynamic routing in meshed networks ensures maximum availability
- Protected by US patents: 9000945, 9018939, 9116013, and European patents: 2456083, 2456084 and 2455719



Technical Specifications

General meter specification	Three phase direct connected meter
	4-Quadrant measurement (+P, -P, +Q, -Q, Q1, Q4)
	8 digit LCD
	Integrated BPL module design for 15+ years lifespan
Normal voltage	3×230 V (-20%, +15%)
Normal (maximum current)	5(80)A , 5(100)A
Starting current	20mA
Normal frequency	50 / 60 Hz, +/-2%
Operation Voltage	80% to 120% of normal voltage
Accuracy Class	Class 1 for active energy and power Class 2 for reactive energy and power
Power Consumption	Voltage Circuit: ≤ 1.5W/9VA Current Circuit: ≤ 1VA
Tariffs	6 tariffs, 4 seasons, 8 channel
Real Time Clock	< 5ppm clock accuracy with NTP sync every 24 hours Internal battery for 10+ years
Readout without main power	Exchangeable battery for 3~5 years
Impulse constant (imp/kWh, imp/kvarh)	500~10,000 programmable
Internal Relay (connect/disconnect)	mechanical life – 100,000 switch cycles electrical endurance – 10,000 switch cycles at full rated current
External Relay output	2 × 230 V, 5A
System interface	BPL bi-direction communication 2-12 MHz, 50Mbps (max) on physical layer
Wireless connection interface	W-Mbus (Optional)
Local interface	RS485 Optical port Relay (external for ripple control) (Optional)
Optical test outputs	PDA access via optical port
Meter protocol	COSEM/DLMS
Temperature, conditions	Operation: -20° to 70° C (LCD operating temperature: -10° to 60° C) Storage: -40° to 80° C Humidity: 0% to 90% non-condensing
Housing	Protection class: IP54 Material: Polycarbonate, non-inflammable, recyclable