

Magno COLLECTOR G3 PLC

G3 PLC Smart Data Concentrator Unit



The **Magno Collector** is an advanced, smart PLC Data Concentrator Unit (DCU) designed to function as a versatile gateway for modern smart grid applications. It features plug-and-play GPRS/3G/4G modem and Ethernet RJ45 connectivity, enabling seamless remote communication for efficient data management and monitoring. With its flexible network options, the **Magno Collector** is capable of adapting to various installations, ranging from residential to small commercial settings, and can support smart grid initiatives with ease. Its design ensures smooth integration into diverse network configurations, including PLC, which allows reliable and real-time meter data collection across a variety of use cases.



DLMS PROTOCOL



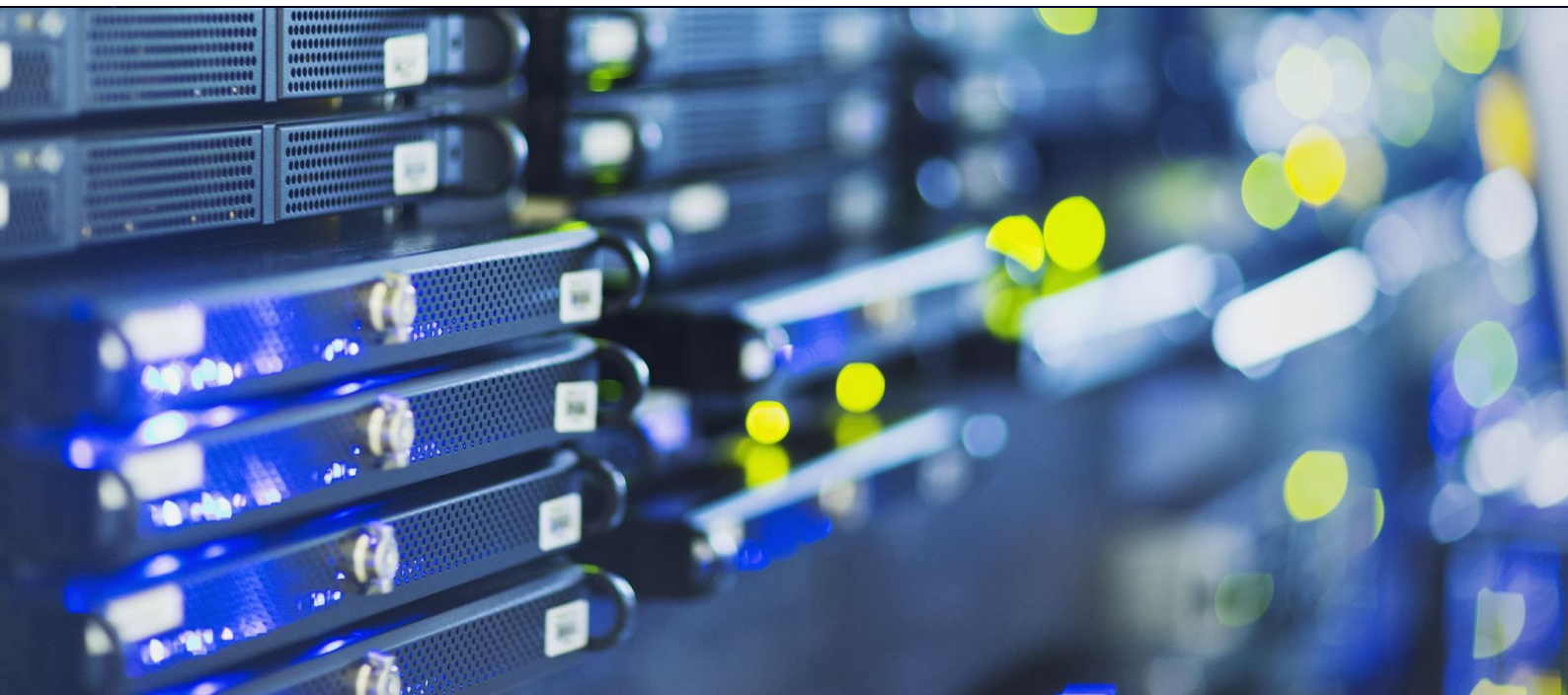
G3 PLC COMPLIANT



MESH NETWORK



INTERNAL ANTENNA



MAGNO COLLECTOR

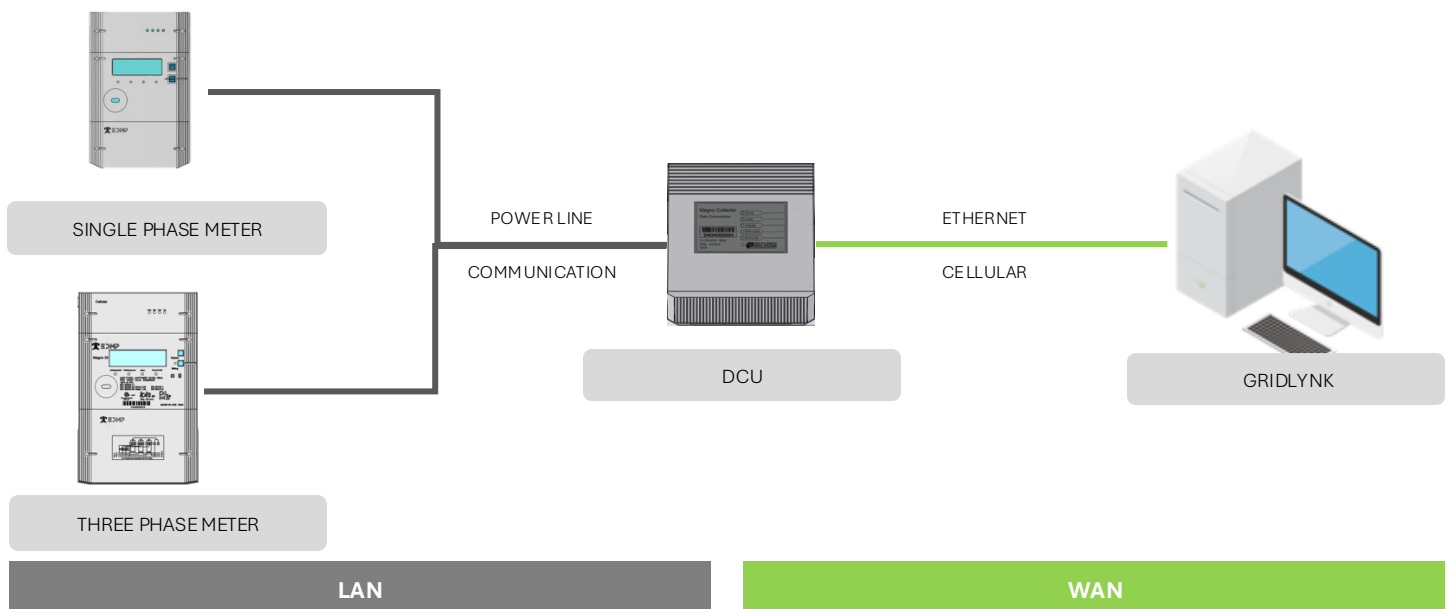
The **Magno Collector** is a compact, advanced, and intelligent Data Concentrator Unit (DCU) built on embedded Linux, specifically designed for Smart Grid applications. This versatile unit plays a critical role in Advanced Metering Infrastructure (AMI) networks, with its primary function being to facilitate scheduled meter readings. It ensures secure, reliable communication from the Head-End System (HES) to the meters, allowing for seamless data collection and transmission. Despite its compact size, the **Magno Collector** delivers exceptional performance, ensuring high reliability and operational efficiency while minimizing the Total Cost of Ownership (TCO) for utilities. Its ability to integrate into various network configurations makes it an ideal solution for both small-scale and large-scale smart grid deployments.

The **Magno Collector** supports both PLC and RS485 communication for downlink to meters, allowing flexible integration into diverse installations. For uplink communication with the Head-End System (HES), the unit uses a variety of connectivity options including cellular networks (GPRS, 3G, 4G, LTE) and Ethernet, ensuring robust, high-speed data transfer even in challenging environments. Compliance with the DLMS/COSEM protocol ensures seamless interoperability with a wide range of systems and devices, allowing utilities to easily integrate the **Magno Collector** into their existing infrastructure. This flexibility and compatibility make it a reliable and scalable solution for the management of smart metering systems, helping utilities improve operational efficiency, data accuracy, and overall network performance.

Main Features:

- Supports both concentrator and gateway functionality.
- Both G3-PLC and BPLC are supported in downlink channel.
- Interoperability is preserved by supporting DLMS/COSEM protocol both in uplink and downlink channels.
- Both polling and pushing mechanisms are supported for data reading / event reporting.
- Multi-layer security is considered both in PLC- MAC layer as well as in DLMS application layer.
- Integrated Web-server for local and remote access.

Architectural Illustration:



MAGNO COLLECTOR

Technical Specification:

Rated Nominal Voltage	<ul style="list-style-type: none">230V AC 1Phase or230/400V AC 3Phase
Operating Voltage Range	<ul style="list-style-type: none">70%-130%Un
Rated Frequency	<ul style="list-style-type: none">47.5Hz to 52.5Hz.
Power Consumption	<ul style="list-style-type: none">Voltage circuit < 3W or 10VA ,Current circuit < 4VA
Large Data Storage	<ul style="list-style-type: none">1 GB non-volatile Flash for data storage.Stores 60 days of data of 500 meters for daily billing.
Battery and Life	<ul style="list-style-type: none">Replaceable Lithium battery, life more than 15 years
Tropical working temperature	<ul style="list-style-type: none">-40°C to +70°C, Humidity is up to 95%
EMC Performance	<ul style="list-style-type: none">Impulse voltage > 8KV, AC voltage > 4KV, Short circuitCurrent > 3KA, Electrostatic Discharge > 8KV&15KV etc.
Protection class	<ul style="list-style-type: none">IP54 comply with IEC60529Insulation grade II
Environment	<ul style="list-style-type: none">Normal operation range: -25°C to +55°C.Limit operation range: -40°C to +70°C.
Housing material	<ul style="list-style-type: none">Polycarbonate with non-conductive, high impact, smooth finish, durable, non-flammable, UV stabilized, UV resistant and high resistance to weathering
Dimensions & Installation	<ul style="list-style-type: none">Dimension (W × H × D): 160mm × 180mm × 89mmWeight: 400gInstallation Type: Din rail and hook mounting.

Main Functionalities:

SMS Function	<ul style="list-style-type: none">Support wakeup by SMSHES IP and port can be configured by SMS
LED Indication	<ul style="list-style-type: none">Power indicatorLocal Comms indicatorCellular Comms indicatorEthernet/WAN Comms indicatorEthernet/MTC Comms indicator
Events	<ul style="list-style-type: none">Up to 100 event records, such as: power on, power off, clock error, unknown meter registration etc.Support events report to HES .
Alarm	<ul style="list-style-type: none">Tamper AlarmConfigurable alarm events
Clock	<ul style="list-style-type: none">Hardware clock ICAccuracy ≤ 0.5s /day under 23°CLocal and remote clock synchronization

MAGNO COLLECTOR

Main Functionalities:

Backup Power	<ul style="list-style-type: none">▪ Large supercapacitor▪ Continue to work one minute when power off
Firmware Upgrade	<ul style="list-style-type: none">▪ DCU firmware can be upgraded both locally and remotely.▪ Receives meters firmware image from HES and manages to upgrade meters firmware independently.
Configuration	<ul style="list-style-type: none">▪ CPU frequency: 200MHz▪ Operating system: RTOS▪ Management ability: up to 800 meters▪ Flash memory size: 1 Gb▪ Eeprom memory size: 512Kb
Data Collection	<ul style="list-style-type: none">▪ Manages up to 500 PLC meters.▪ On-demand & scheduled reading of meters are supported.▪ In gateway mode provides transparent access to meters.
Data Storage	<ul style="list-style-type: none">▪ Days freezing: 31 days▪ Months freezing: 12 months▪ Load profile: time interval up to 15 min▪ Even record: up to actively report
Security	<ul style="list-style-type: none">▪ AES-256 for encryption of critical data types▪ AES-128 for communication encryption.
Remote Communication	<ul style="list-style-type: none">▪ 1x Pluggable 2G/3G/4G cellular modem▪ 1x Fast Ethernet port for uplink communication (RJ45 Port)▪ 1x Wi-Fi modem (optional)▪ Support TCP/IP server and client mode▪ Support permanent online or part time online mode
Local Communication	<ul style="list-style-type: none">▪ 1x Pluggable PLC module▪ 1x Ethernet port for local maintenance to access embedded Web-server▪ 1x RS485 port for downlink communication (baud rate up to 115200bps)▪ 2x Pulse inputs (meter enclosure door switch)▪ Support multi-thread reading
Communication Protocol	<ul style="list-style-type: none">▪ International open protocol▪ DSRM P3.2▪ HDLC DLMS and TCP/IP DLMS▪ DLMS Gateway Protocol
Web UI Maintenance	<ul style="list-style-type: none">▪ Internal web user interface that can be accessed through Ethernet.▪ Access to events, logs and operational data of DCU, diagnosis and troubleshooting.

EDMP Trading LLC

Jumeriah Business Centre 3, Office No. 1403 & 1404,
Cluster Y, JLT,, Dubai, UAE (PO Box 118398)

info@edmpco.com

www.edmp.tech



EDMI Gold Partner, Middle East & Africa
Under license of EDMI Limited