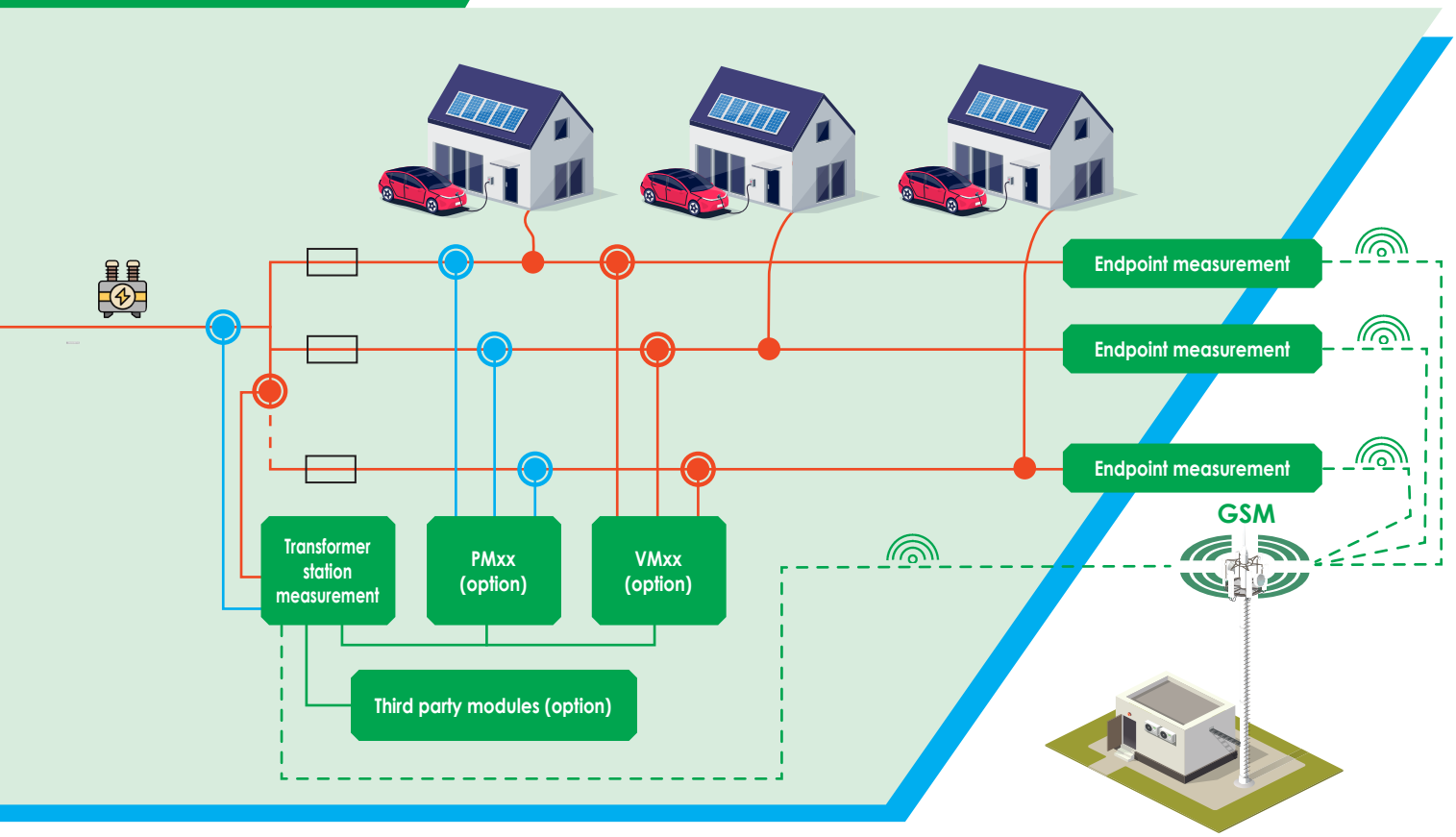
PROLAN

LV-NODE



MEASUREMENTS

Periodically Generated Data (Statistics):

- Average, minimum, and maximum for each measured quantity
- Configurable cycle time in minute resolution
- Voltage and current RMS
- Active, reactive, and apparent power
- Power factor
- Voltage and current THD
- Individual voltage and current harmonics
- Voltage and current asymmetry
- Mains frequency

Events, Alarms:

- Voltage dip
- Voltage swells
- Rapid voltage changes
- Overcurrent
- Voltage interruptions
- Medium-voltage line break
- Door opening

Other Data:

- Flicker P_{st1} and P_{st10}

MAIN FEATURES

- Power quality measurements according to EN 50160, EN 61000-4-30, and EN 61000-4-15
- Voltage measurement accuracy of 0.5%, current measurement accuracy as low as below 1%
- Three-phase voltage measurement with an internal fuse
- Three-phase (optionally four-wire) current measurement using a Rogowski sensor
- Changeable current sensors with IP65 connectors
- LTE 4G communication with either an integrated or external antenna, depending on the model
- Optional GPS location and time synchronization
- Support for multiple IoT protocols (e.g. MQTT, Microsoft Azure)
- Remote configuration and firmware updates
- Up to five minutes continuous measurement and communication in case of power failure
- Operation from a single active phase if needed
- LED status indicators on the device front panel
- UV-resistant, IP65-rated enclosure
- Installation without opening the device enclosure
- Live installation possible (no power shutdown required)

Prolan AG
2011 Budakalász, Szentendrei út 1-3.
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LV NODE PRODUCT FAMILY

TRANSFORMER STATION MEASUREMENTS

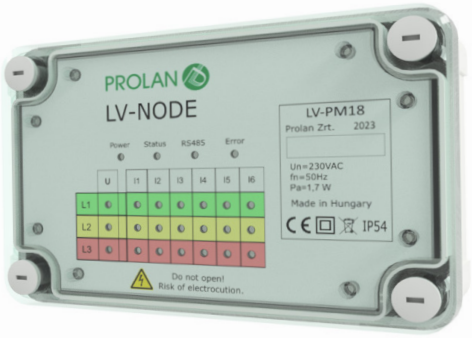
The LV-PA34 device performs supply-point measurements on the secondary side of the MV/LV transformer and transmits the data via a communications modem to the data center. Supply-point measurement involves measuring three voltages and three (or optionally four) currents. In addition to generating its own measurement data, the LV-PA34 can communicate with further proprietary or third-party devices and transmit their data as well.

TRANSFORMER STATION BRANCHING MEASUREMENTS

The LV-NODE product family's supply-point central unit, the LV-PA34, can be expanded with additional Prolan-manufactured plug & play expansion modules. This solution makes it possible to monitor multiple branches originating from a single transformer without installing multiple modem-equipped units. The LV-PMxx devices measure branches current and power, while the LV-VMxx devices check for voltage presence.

END-POINT MEASUREMENTS

Within the LV-NODE product family, the LV-VA3 device is the modem-equipped option for voltage measurement at line endpoints. Its feature set is similar to the LV-VA34, but given its intended installation environment, it cannot be expanded with additional modules and does not measure current. As a result, it has a much simpler, more efficient design and installation process.



TECHNICAL SPECIFICATIONS

Operating voltage range	100…280 VAC
Power consumption	3 W (average), max. 5 W
Operating temperature	-20…70 °C
Voltage measurement	3-phase
Voltage measurement accuracy	≤0.5%
Voltage measurement range	0…280 VAC
Voltage measurement overload capability	440 VAC (1 minute)
Internal fuse	6.3 × 32 mm, 2A, 500V, I1 ≥ 20 kA
Current measurement	Rogowski sensor
Current measurement accuracy	≤1%
Current measurement range	30…3000 A
Trip threshold for current measurement	max. 2 A
Current measurement overload capability	20 kA
Impulse withstand voltage	6 kV
Insulation strength	2.5 kVeff

Power supply holdup time	5 minutes
Module power supply	From network through voltage measurement
Sampling frequency	32 kHz
Internal clock accuracy	<1 s/day
Remote communication	LTE 4G, GPRS
Communication protocols	MQTT, MS Azure IoT Hub, Mender.io, NTP
Local communication	2 × RS485
IP protection	IP65
Mounting	With screws or band clamp (max. 18 mm width)

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