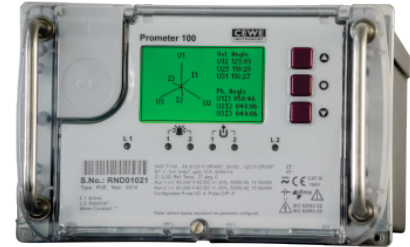


# Prometer 100

precision metering series

## in-built IEC 61850 support

Prometer 100 is a series of next generation energy meters designed for power transfer points requiring precise measurements and revenue transactions. Multiple communication options ensure easy integration with AMR/AMI/SCADA systems and upgrade to future sub-station automation systems. Four-quadrant energy measurement allows monitoring of generation, transmission and bulk power transfer points.



### Applications

- Energy transfer measurement and reconciliation
- Power plants, feeder monitoring, grid substations, wind turbines
- On-line monitoring of energy exchange at various interface points
- Energy accounting, automation and system integration

### Benefits

- Minimal integration cost through multiple communication interfaces
- Suitable for diverse applications through wide-range voltage, current and auxiliary supply inputs
- Support of industry standard DLMS and MODBUS meter reading protocols
- Meter reading and display viewing under power outage
- Multi-lingual support on display (Swedish, German, English, French, Spanish and Italian)

### Features

- 0.2s accuracy for active and reactive measurement
- Wide-range dual auxiliary supply with options for AC/DC and self-power (VT powered)
- Power quality features including THD, sag, swell, voltage unbalance and interruption recording
- Dynamic error compensation for CT/VT
- Transformer/line loss adjustment (copper and iron losses)
- Intuitive graphical display including vector diagram, wave forms and bar chart for consumption
- Remote configuration of communication ports
- Simultaneous DLMS and MODBUS over Ethernet port
- Supports meter reading and display using field replaceable battery
- In built IEC61850/RS232 port along with RS485 and Ethernet ports in a single product, with simultaneous communication capability
- Dual loggers for energy and instantaneous parameters
- Flexible time-of-day tariff, maximum demand, DST (Daylight saving time) support, with automatic billing dates

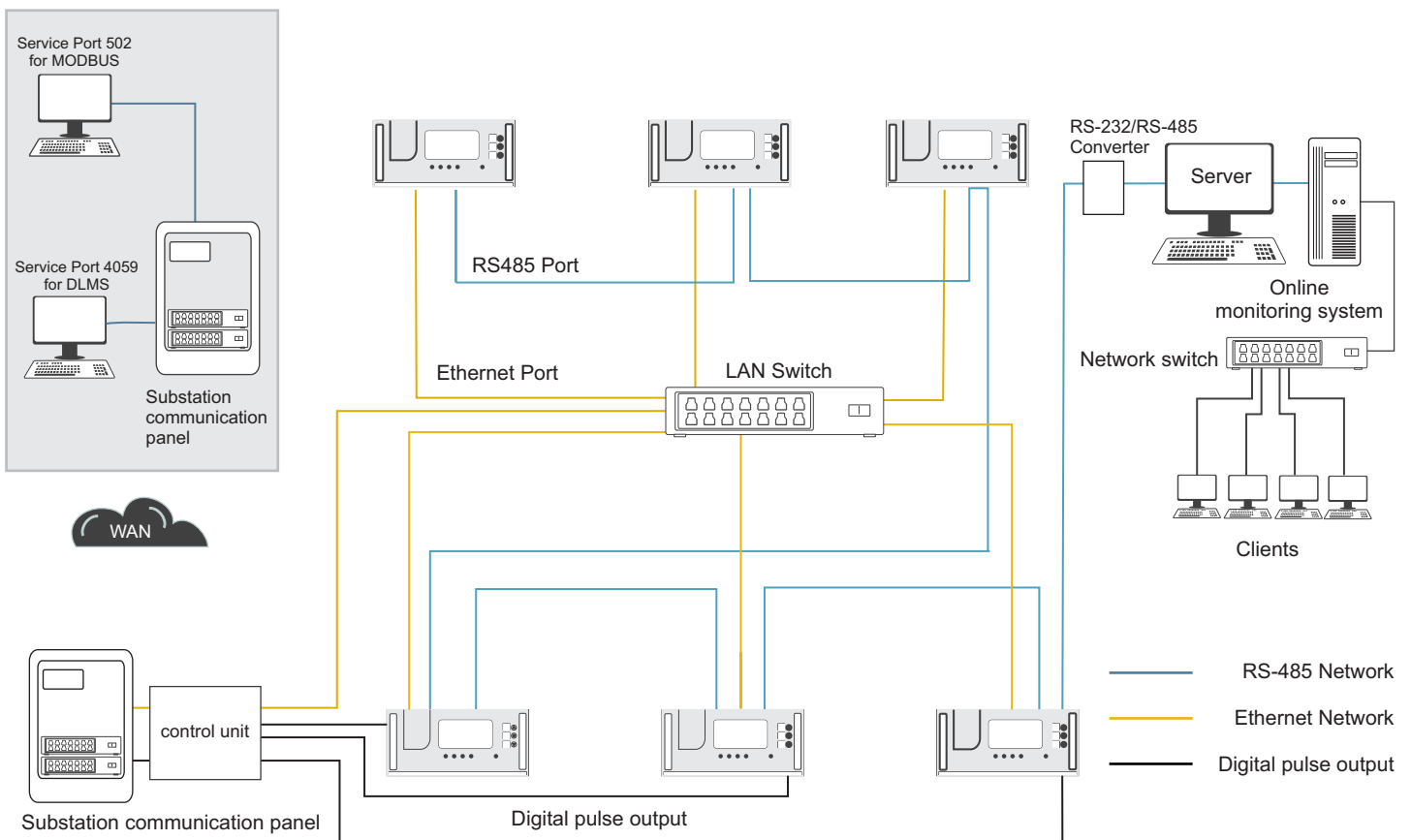
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## System architecture

Prometer 100 offers various communication modules, such as RS-232 with output to power up terminal modem, RS-485 for multi-drop connectivity and Ethernet for integrating into communication bus. The communication modules can be hot-plugged in field and locally or remotely configured for ids and IP addresses. Dual-socket support on Ethernet allows for simultaneous communication over MODBUS and DLMS through different clients. All communication ports can simultaneously transfer data at high speeds.

### RS-485 and Ethernet port scheme station



### Product options\*

Power supply 1	Power supply 2	Pulse input / output
60-240 V AC/DC ( $\pm 20\%$ )	60-240 V AC/DC ( $\pm 20\%$ )	4 configurable I/O
Self-powered	24-48 V DC ( $\pm 20\%$ )	4 configurable I/O and 8 fixed pulse O/P

# Prometer 100

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## Technical specifications

### Electrical

Connection type	HV3/HV4
Measurement voltage range	57.7 V to 69.3 V (L-N), 100V to 120 V (L-L) $\pm 30\%$
Measurement current range	1-10 A (configurable)
Frequency	50/60 Hz $\pm 5\%$
Burden with auxiliary / self-powered (VT)	Current circuit: < 0.1 VA/phase @ 1 A < 0.5 VA/phase @ 5 A Voltage circuit in case of Aux power: < 0.1 VA/phase Voltage circuit in case of internal/self power: <6 VA/phase
Accuracy	Class 0.2s or class 0.5s
Maximum overload voltage	1.5 times of nominal voltage continuously 2 times of nominal voltage for 0.5 second
Maximum overload current	1.5 times of I <sub>max</sub> continuously 10 times I <sub>max</sub> for 1 second 20 times I <sub>max</sub> for 0.5 second

### Compliance

Standards	IEC 62052-11, IEC 62053-22, IEC 62053-23, IEC 62053-24, IEC 62056-52, IEC 61010-1, IEC 61010-2-030, CE
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### Environmental

Operating temperature	IP51, IP53 over front facia -10 °C to +60 °C
Limit range of operation	-25 °C to +70 °C
Storage temperature	-40 °C to +80 °C
Temperature coefficient	<0.3%/10°C for class 0.5
Temperature coefficient	<0.1%/10°C for class 0.2

### Software

Two data loggers:
<ul style="list-style-type: none"><li>• Maximum 50 parameters configurable in each logger</li><li>• Logging of up to 22 energy channels, with integration period 5 to 60 minutes</li><li>• 80+ parameters available for logging of instantaneous values with integration period 1 to 60 minutes</li><li>• ~9600 Parameter-days capacity at 30 minute interval in each logger</li></ul>
Configurable parameters:
<ul style="list-style-type: none"><li>• 16 time-of-use tariffs, 16 seasons, 16 days types and 16 time zones, 53 billing dates, DST dates for 25 years</li><li>• Logging of up to 100 day for daily energy snapshots</li><li>• 7 configurable display sequences along with fixed, auto and sealed button sequences</li><li>• 50+ alarms and 10+compartments for event logging</li></ul>
Logging of up to 15 sets of historical data logging
Up to 31 <sup>st</sup> individual harmonic component measurement
Power quality features, including voltage sag, swell, unbalance recording
Delta values monitored and logged
Code of Practice (UK BSCP) security protection



## Technical specifications

### Features

Power supply	Dual/single auxiliary supply Range: 60-240 V AC/DC ( $\pm 20\%$ ), burden: <10 VA Optional range: 24-48 V DC ( $\pm 20\%$ ), burden: <10 VA
Display	Graphical, with green backlight Extended temperature range -20 °C to +70 °C Size: 69 x 39 mm (W x H), 128 x 80 pixels, pixel size: 0.5 mm <sup>2</sup> Max display character size 10 x 5 mm (H x W)
Battery	Field-replaceable battery for RTC backup and meter reading/display viewing during power outage

### Inputs and Outputs

	8 fixed pulse outputs 4 configurable as pulse inputs/outputs
Pulse outputs	Type: volt-free, 100 mA Voltage: 48-240 V AC/DC, option for 24-40 V DC, Pulse width: 20 - 300 ms (for 50Hz); 16 - 300 ms (for 60Hz)
Configurable as pulse input/output	Pulse output type: volt-free, 100mA Pulse input type: optical isolator Voltage: 24-240 V AC/DC
Indicator	Six LEDs: 2 for metrology, 2 for pulse outputs, 2 for alarms/events

### Communication

Optical 1107 port	Protocol: DLMS, Baud rate: 1200 – 19200 bps, Half duplex
RS232 port	Built-in supply of 4 V @ 550 mA, Protocol: DLMS, Baud rate: 1200 –57600 bps, Half duplex
RS485 port	Protocol: Configurable DLMS/MODBUS RTU, Baud rate: 1200 – 57600 bps, Half duplex
Ethernet port	10/100 Mbps, Protocol: DLMS and MODBUS TCP simultaneous client Full duplex
Inbuilt IEC61850 server edition 2.0	Logical nodes: LLNO, LPHD, MMXU, MMTR, MHAI, MABT Reports (RCB) Up to 5 clients Time synchronization – SNTP
Connector type	Standard RJ45 for all the ports except optical

### Accessories (optional)

11” rack, 19” rack, software

\* Electrical, compliance, mechanical, software and features options depend on variant selected.