

# Prometer 100

## Precision metering series

Prometer 100 is a series of next generation energy meter designed for power transfer points requiring precise measurements and revenue transactions. Flexible and modular communications ensure easy integration with existing AMR / AMI / SCADA systems and upgrade to future SAS systems. Four quadrant energy measurement allows monitoring of generation, transmission and distribution loads.



### Application

- Energy transfer measurement and reconciliation
- Power plants, feeder monitoring, grid substations, wind turbines, renewable/PV, industrial and commercial premises
- On-line monitoring of energy exchange at various interface points

### Benefits

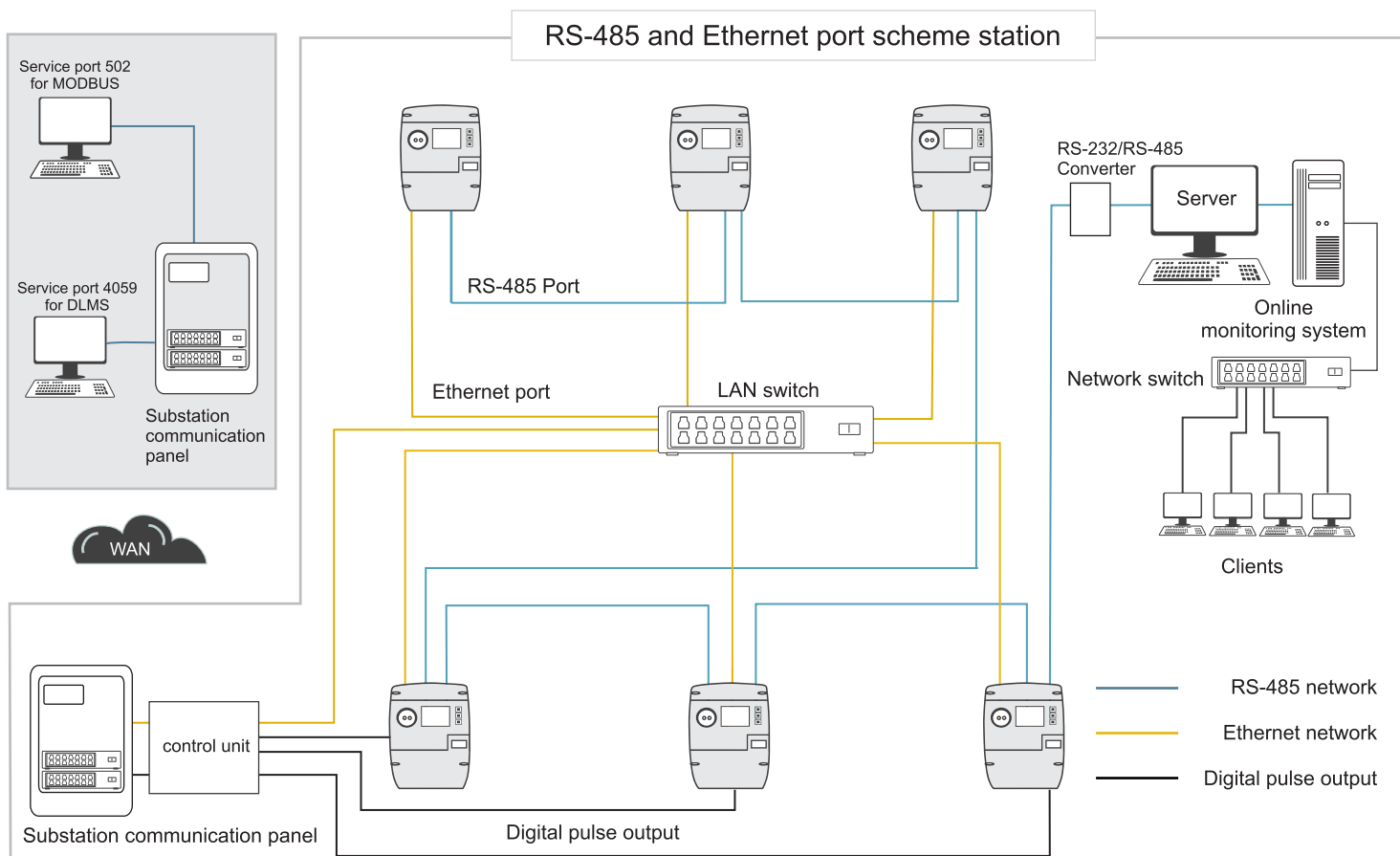
- Minimal integration cost through multiple communication interfaces
- Suitable for diverse applications through wide-range voltage, current and auxiliary supply inputs
- Support of industry standard DLMS and MODBUS meter reading protocols
- Meter reading and display viewing under power outage
- Field-replaceable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

### Features

- 0.2s/0.5s 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
- Availability of RS-232, RS-485 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 and DST (Daylight saving time) support with automatic billing dates
- Meter cover and terminal cover open detection
- RS-232 port compatible with meter-powered modem

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The Prometer 100 offers various communication modules, such as RS-232 with output to power up terminal modem, RS485 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, 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.



## Product options\*

| Class                  | Power supply 1                | Communication port 1        | Pulse input / output                     |
|------------------------|-------------------------------|-----------------------------|--|
| 0.2s                   | Self- powered                 | Ethernet                    | No pulse I/O                             |
| 0.5s                   | 60-240 V AC/DC ( $\pm 20\%$ ) | <b>Communication port 2</b> | 4 configurable I/O                       |
| <b>Measurement</b>     | <b>Power supply 2</b>         | RS-232                      | 4 configurable I/O and 7 fixed pulse O/P |
| Common for HV3/HV4/LV4 | 60-240 V AC/DC ( $\pm 20\%$ ) | RS-485                      | none                                     |
| LV4                    | 24-48 V DC ( $\pm 20\%$ )     | <b>Communication port 3</b> |  |
|                        |                               | RS-232                      |  |
|                        |                               | RS-485                      |  |

## Technical specifications

### Electrical

|  |  |
|--|--|
| Connection type                            | HV3/HV4/LV4  |
| Measurement voltage range                  | 57.7 V to 240 V (L-N), 100 V to 415 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:<br>< 0.1 VA/phase @ 1 A, < 0.5 VA/phase @ 5 A<br>Voltage circuit in case of Aux power:<br>< 0.1 VA/phase<br>Voltage circuit in case of internal / self power:<br>< 6 VA/phase |
| Accuracy                                   | Class 0.2s and class 0.5s  |
| Maximum overload voltage                   | 1.5 times of nominal voltage continuously<br>2 times of nominal voltage for 0.5 second   |
| Maximum overload current                   | 1.5 times of I <sub>max</sub> continuously<br>10 times I <sub>max</sub> for 1 second<br>20 times I <sub>max</sub> for 0.5 second   |

### Compliance

|           |  |
|-----------|--|
| Standards | IEC 62052-11, IEC 62053-22, IEC 62053-23, IEC 62056-52, IEC 61010-1, IEC 61010-2-030, CE, MID (EN 50470-1, EN 50470-3) |
|-----------|--|

### Environmental

|                          |                          |
|--------------------------|--------------------------|
| Ingress protection       | IP54                     |
| Operating temperature    | -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 |

### Mechanical

|            |                                      |
|------------|--------------------------------------|
| Dimension: | 200 mm x 300 mm x 100 mm (W x H x D) |
| Weight:    | 2 kg ( $\pm 0.2$ kg)                 |

### 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>• 8 time-of-use tariffs, 16 seasons, 16 day types and 16 time zones, 53 billing dates, 30 DST dates</li><li>• Logging of up to 100 days 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 31st individual harmonic component measurement   |
| Power quality features, including voltage sag, swell, unbalance recording  |
| Delta values monitored and logged  |

# Prometer 100

## Features

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

## Inputs and Outputs

|   |
|---|
| 7 fixed pulse outputs<br>4 configurable as pulse inputs/outputs<br>Pulse outputs:<br>Type: volt-free, 100 mA<br>Voltage: 48-240 V AC/DC, option for 24-40 V DC,<br>Pulse width: 20 to 300 ms (for 50Hz); 16 to 300 ms (for 60Hz)<br>Configurable as pulse input/output:<br>Pulse output type: volt-free, 100mA<br>Pulse input type: optical isolator<br>Voltage: 24-240 V AC/DC<br>Indicator<br>Six LEDs: 2 for metrology, 2 for pulse outputs, 2 for alarms/events |
|---|

## Communication

|   |
|---|
| Optical 1107 port<br>Protocol: DLMS, Baud rate: 1200 to 19200 bps, half duplex  |
| RS232 port<br>Built-in supply of 4 V @ 550 mA, protocol: DLMS,<br>Baud rate: 1200 to 57600 bps, half duplex   |
| RS485 port<br>Protocol: Configurable DLMS/MODBUS RTU,<br>Baud rate: 1200 to 57600 bps, half duplex  |
| Ethernet port<br>10/100 Mbps, protocol: DLMS and MODBUS TCP simultaneous client<br>Full duplex<br>Connector type: standard RJ-45 for all the ports except optical |

|                        |   |
|------------------------|---|
| Accessories (optional) | Panel mounting kit / RS-232 communication module /<br>RS-485 communication module/terminal modem/software |
|------------------------|---|

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

Specifications are subject to change without prior notice.

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