

# เอกสารข้อมูลผลิตภัณฑ์

ข้อมูลจำเพาะ



## PowerLogic™ ION9000 meter, DIN mount, 192 mm display, B2B adapter, HW kit

METSEION92040

### Main

|                           |                                                                                                                                                                                 |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Range                     | PowerLogic                                                                                                                                                                      |
| Device short name         | ION92040                                                                                                                                                                        |
| Product or component type | Energy and power quality meter                                                                                                                                                  |
| Device application        | Power monitoring<br>WAGES metering<br>Net metering<br>Medium voltage<br>High voltage                                                                                            |
| Metering type             | Demand current I1, I2, I3, I4, I5<br>Peak demand currents<br>Demand power P, Q, S<br>Peak demand power PM, QM, SM<br>Calculated active and reactive energy (+/- W.h, +/- VAR.h) |
| Provided equipment        | Remote display<br>Remote display adapter<br>Mounting instructions<br>Mounting hardware                                                                                          |

### Complementary

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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| Power quality analysis    | EN 50160 compliance checking<br>conforming to IEEE 519 harmonic limit<br>conforming to IEC 61000-4-30: class A compliance reporting<br>conforming to IEEE 519 compliance reporting<br>waveform capture<br>total demand distortion<br>total harmonic distortion<br>up to the 63rd harmonic<br>up to the 127th harmonic with software<br>disturbance direction detection<br>dip, swell and transient<br>half cycle data acquisition<br>transient detection (20 µs) |
| Type of measurement       | Voltage sags and swells<br>Current sags and swells<br>Voltage<br>Current<br>Frequency<br>Active and reactive power total<br>Apparent power total<br>Active and reactive power per phase<br>Apparent power per phase<br>Power factor total<br>Power factor per phase<br>Active and reactive energy<br>Apparent energy<br>Harmonic distorsion (I THD & U THD)                                                                                                      |
| [Us] rated supply voltage | 90...480 V AC 45...66 Hz +/- 10 %<br>90...120 V AC 400 Hz +/- 10 %<br>110...480 V DC +/- 15 %                                                                                                                                                                                                                                                                                                                                                                    |
| Network frequency         | 50 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

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|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 | 60 Hz                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Ride-through time               | 100 ms 6 cycles at 60 Hz 120 V AC typical<br>400 ms 24 cycles at 60 Hz 240 V AC typical<br>1200 ms 72 cycles at 60 Hz 480 V AC typical                                                                                                                                                                                                                                                                                            |
| [In] rated current              | 1 A<br>5 A                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Type of network                 | 3P + N + E                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Power consumption in VA         | 38 VA at 480 V AC                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Maximum power consumption in VA | 80 VA at 480 V AC                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Display resolution              | 800 x 480 pixels                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Display type                    | Remote LCD display<br>Colour touchscreen                                                                                                                                                                                                                                                                                                                                                                                          |
| Sampling rate                   | 1024 samples/cycle                                                                                                                                                                                                                                                                                                                                                                                                                |
| Measurement current             | 0.01...20 A                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Input type                      | Voltage (impedance 5 MOhm)<br>External CT (impedance 0.3 mOhm)5 x                                                                                                                                                                                                                                                                                                                                                                 |
| Measurement voltage             | 57...400 V AC 42...69 Hz between phase and neutral<br>100...690 V AC 42...69 Hz between phases                                                                                                                                                                                                                                                                                                                                    |
| Frequency measurement range     | 20...450 Hz                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Number of inputs                | 8 digital 30 V AC/60 V DC                                                                                                                                                                                                                                                                                                                                                                                                         |
| Measurement accuracy            | Voltage +/- 0.1 %<br>Current +/- 0.1 %                                                                                                                                                                                                                                                                                                                                                                                            |
| Accuracy class                  | Class 0.1S active energy conforming to IEC 62053-22<br>Class 0.1 active energy conforming to IEC 61557-12<br>Class 0.1 active energy conforming to ANSI C12.20<br>Class 0.5S reactive energy conforming to IEC 62053-24<br>Class 0.1 current conforming to IEC 61557-12<br>Class 0.1 voltage conforming to IEC 61557-12<br>Class 0.1 active power conforming to IEC 61557-12<br>Class 0.5 power factor conforming to IEC 61557-12 |
| Number of outputs               | 4 digital<br>2 form C relay output                                                                                                                                                                                                                                                                                                                                                                                                |
| Communication port protocol     | Modbus RTU at 2400...115200 bps - 2-wire<br>ION at 2400...115200 bps - 2-wire<br>DNP3 at 2400...115200 bps - 2-wire<br>Modbus TCP at 10/100 Mbit/s<br>ION TCP at 10/100 Mbit/s<br>DNP3 TCP at 10/100 Mbit/s<br>IEC 61850<br>Ethernet Modbus TCP/IP daisy chain at 10/100 Mbit/s<br>DHCP<br>DNS<br>DLMS                                                                                                                            |
| Communication port support      | RS485 2 removable screw terminal block                                                                                                                                                                                                                                                                                                                                                                                            |
| Port Ethernet                   | 10/100BASE-TX 2 RJ45                                                                                                                                                                                                                                                                                                                                                                                                              |
| Communication gateway           | Ethernet/serial                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Time synchronisation protocol   | GPS<br>IRIG-B<br>NTP<br>SNTP<br>PTP                                                                                                                                                                                                                                                                                                                                                                                               |
| Data recording                  | Time stamping<br>Min/max of instantaneous values<br>User-definable data logs<br>Continuous logging or snapshot<br>Trending/forecasting<br>Event logs<br>Alarm logs<br>Configuration change<br>Power outage<br>User login/logout<br>Data logs<br>GPS synchronisation<br>Sequence of event recording                                                                                                                                |
| Memory capacity                 | 2 GB                                                                                                                                                                                                                                                                                                                                                                                                                              |

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| Cybersecurity               | Syslog protocol support<br>Robust security logs<br>Port hardening<br>Enable/disable communication ports<br>Hardware metrology lock                                                                                                                      |
| Web services                | Viewing of captured waveform<br>Web page<br>Pass/fail report for IEEE 519<br>Pass/fail report for EN 50160<br>ITIC (CBEMA) curve<br>SEMI curve<br>NEMA motor derating curve<br>Alarm notification by e-mail<br>TLS 1.2<br>Push historical data via mail |
| Ethernet service            | DHCP client<br>Device Profile Web Services (DPWS)<br>Rapid Scanning Tree Protocol (RSTP)<br>FTP/HTTP/HTTPS                                                                                                                                              |
| Communication service       | Compliant reports<br>Power quality summary<br>Energy report<br>EcoStruxure Power Events Analysis<br>SMTP e-mail notification<br>SNMP                                                                                                                    |
| Tamperproof of settings     | Protected by sealable cover                                                                                                                                                                                                                             |
| Mounting support            | DIN rail meter device<br>Door cut-out remote display                                                                                                                                                                                                    |
| Electrical insulation class | Class III conforming to EN/IEC 62052-11                                                                                                                                                                                                                 |
| Isolation voltage           | III400...690 V conforming to EN 61010-1:ed. 3<br>III347...600 V conforming to UL 61010-1:ed. 3<br>III347...600 V conforming to CSA C22.2 No 61010-1:ed. 3                                                                                               |
| Width                       | 160 mm                                                                                                                                                                                                                                                  |
| Depth                       | 135.3 mm                                                                                                                                                                                                                                                |
| Height                      | 160 mm                                                                                                                                                                                                                                                  |
| Net weight                  | 1.5 kg                                                                                                                                                                                                                                                  |

## Environment

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| Electromagnetic compatibility         | EMC immunity conforming to IEC 62052-11<br>EMC immunity conforming to IEC 61326-1<br>EMC immunity conforming to IEC 61000-6-5<br>Electrostatic discharge immunity test conforming to IEC 61000-4-2<br>Immunity to radiated fields conforming to IEC 61000-4-3<br>Immunity to fast transients conforming to IEC 61000-4-4<br>Surge immunity test conforming to IEC 61000-4-5<br>Immunity to conducted disturbances conforming to IEC 61000-4-6<br>Immunity to magnetic fields at network frequency conforming to IEC 61000-4-8<br>Immunity to conducted disturbances - test level: 2...150 kHz conforming to CLC/TR 50579<br>Voltage dips and interruptions immunity test conforming to IEC 61000-4-11<br>Immunity to impulse waves conforming to IEC 61000-4-12<br>Conducted and radiated emissions conforming to EN 55011<br>Conducted and radiated emissions class B conforming to EN 55032<br>Conducted and radiated emissions class B conforming to FCC part 15<br>Conducted and radiated emissions class B conforming to ICES-003<br>Surge withstand conforming to ANSI C37.90.1<br>Surge withstand conforming to IEEE C37.90.1 |
| IP degree of protection               | IP65 front:<br>IP30 rear:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Degree of protection                  | UL type 12, front                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Relative humidity                     | 5...95 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Ambient air temperature for operation | -25...70 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Ambient air temperature for storage   | -40...85 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Installation category                 | III                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Operating altitude                    | 0...3000 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Standards                             | ANSI C12.20<br>ANSI C37.90.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

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|                | IEC 61000-4-15<br>IEC 61000-4-30<br>IEC 61010-1<br>IEC 61326-1<br>IEC 61557-12<br>IEC 61850<br>IEC 62052-11<br>IEC 62052-31<br>IEC 62053-22<br>IEC 62053-23<br>IEC 62053-24<br>IEC 62586<br>UL 61010-1 |
| Quality labels | ISO 9001<br>ISO 14000                                                                                                                                                                                  |

Packing Units

|                              |         |
|------------------------------|---------|
| Unit Type of Package 1       | PCE     |
| Number of Units in Package 1 | 1       |
| Package 1 Height             | 30.0 cm |
| Package 1 Width              | 30.0 cm |
| Package 1 Length             | 41.0 cm |
| Package 1 Weight             | 3.6 kg  |
| Unit Type of Package 2       | S04     |
| Number of Units in Package 2 | 2       |
| Package 2 Height             | 30.0 cm |
| Package 2 Width              | 40.0 cm |
| Package 2 Length             | 60.0 cm |
| Package 2 Weight             | 4.4 kg  |

Offer Sustainability

|                            |                                                                                                                             |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Sustainable offer status   | Green Premium product                                                                                                       |
| REACH Regulation           | <a href="#">REACH Declaration</a>                                                                                           |
| REACH free of SVHC         | Yes                                                                                                                         |
| EU RoHS Directive          | Compliant<br><a href="#">EU RoHS Declaration</a>                                                                            |
| Mercury free               | Yes                                                                                                                         |
| RoHS exemption information | <a href="#">Yes</a>                                                                                                         |
| China RoHS Regulation      | <a href="#">China RoHS declaration</a>                                                                                      |
| Environmental Disclosure   | <a href="#">Product Environmental Profile</a>                                                                               |
| Circularity Profile        | <a href="#">End of Life Information</a>                                                                                     |
| WEEE                       | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins |