

# Product data sheet

Specifications



ION8650 meter 128MB, FT21 panel,  
277VAC 50Hz, Full comm 1I+5O,  
password

M8650A4C0E5C7C1A

## Main

|                           |                                 |
|---------------------------|---------------------------------|
| Range                     | PowerLogic                      |
| Device short name         | ION8650A                        |
| Product or component type | Revenue and power quality meter |

## Complementary

|                                 |                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power quality analysis          | conforming to IEC 61000-4-15 flicker<br>magnitude harmonic up to the 50th<br>transient capture<br>conforming to EN 50160: ed. 4 compliance report<br>harmonic distortion<br>voltage sag and swell detection<br>waveform capture<br>programmability (logic and math functions)<br>up to the 63rd harmonic<br>conforming to IEC 61000-4-30: class A power quality measurement |
| Device application              | Co-generation and IPP monitoring<br>Tariff metering<br>Load curtailment<br>Equipment monitoring and control<br>Instrument transformer correction<br>Demand and power factor control<br>Energy pulsing and totalisation                                                                                                                                                      |
| Type of measurement             | Current<br>Voltage<br>Frequency<br>Apparent power total<br>Power factor total<br>Apparent power per phase<br>Power factor per phase<br>Active power total<br>Active power per phase<br>Reactive power total<br>Reactive power per phase                                                                                                                                     |
| Supply voltage                  | 120...277 V AC 47...63 Hz<br>120...480 V AC 47...63 Hz                                                                                                                                                                                                                                                                                                                      |
| Network frequency               | 50 Hz                                                                                                                                                                                                                                                                                                                                                                       |
| [In] rated current              | 5 A<br>1 A<br>2 A                                                                                                                                                                                                                                                                                                                                                           |
| Type of network                 | 3P<br>3P + N<br>1P + N                                                                                                                                                                                                                                                                                                                                                      |
| Power consumption in VA         | 24 VA                                                                                                                                                                                                                                                                                                                                                                       |
| Maximum power consumption in VA | 33 VA                                                                                                                                                                                                                                                                                                                                                                       |
| Display type                    | FSTN transfective LCD                                                                                                                                                                                                                                                                                                                                                       |

|                               |                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Form designation              | 36S 2½-element 4<br>9 3-element 4<br>35 2-element 3<br>29 2½-element 4                                                                                                                                                                                                                                                                                                                                    |
| Sampling rate                 | 1024 samples/cycle                                                                                                                                                                                                                                                                                                                                                                                        |
| Measurement current           | 0.001...24 A                                                                                                                                                                                                                                                                                                                                                                                              |
| Input type                    | Current 0.01...20 A (impedance 0.05 Ohm)                                                                                                                                                                                                                                                                                                                                                                  |
| Measurement voltage           | 57...277 V AC phase to neutral<br>100...480 V AC phase to phase                                                                                                                                                                                                                                                                                                                                           |
| Number of inputs              | 1 digital 0.001...100 mA 30 V DC                                                                                                                                                                                                                                                                                                                                                                          |
| Measurement accuracy          | Current 0.1 %<br>Voltage 0.1 %<br>Power 0.1 %<br>Power factor 0.1 %<br>Frequency 0.001 Hz<br>Energy 0.1 %                                                                                                                                                                                                                                                                                                 |
| Accuracy class                | Class 0.2S energy conforming to IEC 62053-23<br>Class 0.2 energy conforming to ANSI C12.20<br>Class 0.2S energy conforming to IEC 62053-22                                                                                                                                                                                                                                                                |
| Number of outputs             | 2 pulse<br>4 form C relay output<br>1 form A triac output                                                                                                                                                                                                                                                                                                                                                 |
| Communication port protocol   | DNP3 at 300...115200 bauds<br>ION at 300...115200 bauds<br>Ansi C12.18 at <= 19200 bauds<br>IEC 61850 ed. 2 at 10/100 Mbit/s<br>TCP/IP at 10/100 Mbit/s<br>DLMS at 300...115200 bauds<br>Modbus at 57600 bauds<br>TCP/IP at 300...57600 bauds<br>DNP3 at 10/100 Mbit/s<br>ION at 10/100 Mbit/s<br>ModemGate<br>Modbus RTU, slave at 300...115200 bauds<br>Modbus TCP, slave at 10/100 Mbit/s<br>EtherGate |
| Communication port support    | RJ45: ETHERNET<br>SUB-D 9: RS485/RS232<br>Terminal block: RS485<br>Infrared<br>RJ11: modem                                                                                                                                                                                                                                                                                                                |
| Time synchronisation protocol | GPS: Truetime/Datum<br>IRIG-B                                                                                                                                                                                                                                                                                                                                                                             |
| Data recording                | GPS synchronisation<br>Harmonics logs<br>Revenue logs<br>Time stamping<br>Historical logs<br>Event logs<br>Alarms<br>Sag and swell logs<br>Transient logs<br>Data logs                                                                                                                                                                                                                                    |
| Transmission rate             | 10/100 Mbit/s<br>300...57600 bauds<br><= 19200 bauds<br>57600 bauds<br>300...115200 bauds                                                                                                                                                                                                                                                                                                                 |
| Memory capacity               | 128 MB                                                                                                                                                                                                                                                                                                                                                                                                    |
| Web services                  | Web server<br>Robust security logs<br>Port addressing user designed<br>Alarm notification by e-mail                                                                                                                                                                                                                                                                                                       |
| Ethernet service              | Enable/disable serial ports<br>Enable/disable Ethernet protocols<br>SNMP-Traps and SYSLOG                                                                                                                                                                                                                                                                                                                 |
| Tamperproof of settings       | Hardware lock by jumper<br>Protected by access code                                                                                                                                                                                                                                                                                                                                                       |
| Provided equipment            | Break out panel                                                                                                                                                                                                                                                                                                                                                                                           |
| Compatibility code            | ION8650A                                                                                                                                                                                                                                                                                                                                                                                                  |

Environment

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Electromagnetic compatibility         | Electrostatic discharge immunity test conforming to IEC 61000-4-2<br>Conducted RF disturbances conforming to IEC 61000-4-6<br>Immunity to impulse waves conforming to IEC 61000-4-12<br>Electrical fast transient/burst immunity test conforming to IEC 61000-4-4<br>Susceptibility to electromagnetic fields conforming to IEC 61000-4-3<br>1.2/50 µs shock waves immunity test conforming to IEC 61000-4-5<br>Conducted and radiated emissions B conforming to CISPR 22 |
| Mounting mode                         | Flush-mounted                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Enclosure type                        | FT21 switchboard                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Type of installation                  | Indoor installation                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Overvoltage category                  | III                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| IP degree of protection               | IP50 front face:<br>IP30 back:                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Relative humidity                     | 5...95 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Pollution degree                      | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Ambient air temperature for operation | -40...85 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Ambient air temperature for storage   | -40...85 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Operating altitude                    | 0...3000 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Standards                             | ANSI C12.1<br>IEC 62052-11                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Width                                 | 163 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Depth                                 | 228 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Height                                | 285 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Product weight                        | 7 kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

Packing Units

|                              |         |
|------------------------------|---------|
| Unit Type of Package 1       | PCE     |
| Number of Units in Package 1 | 1       |
| Package 1 Height             | 29.0 cm |
| Package 1 Width              | 29.0 cm |
| Package 1 Length             | 41.0 cm |
| Package 1 Weight             | 7.0 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>                                        |
| California proposition 65  | WARNING: Cancer and Reproductive Harm - <a href="#">www.P65Warnings.ca.gov</a> |

Recommended replacement(s)