

# Product data sheet

Specifications



ION8650 meter 32MB, FT21 panel,  
120VAC/160VDC 50Hz, Ethernet 1I  
+5O, password

M8650C4C0H5E1C1A

## Main

|                           |                                 |
|---------------------------|---------------------------------|
| Range                     | PowerLogic                      |
| Device short name         | ION8650C                        |
| Product or component type | Revenue and power quality meter |

## Complementary

|                                 |                                                                                                                                                                                                                                         |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power quality analysis          | up to the 31st harmonic<br>harmonic distortion<br>voltage sag and swell detection<br>programmability (logic and math functions)                                                                                                         |
| Device application              | Load curtailment<br>Co-generation and IPP monitoring<br>Instrument transformer correction<br>Tariff metering<br>Energy pulsing and totalisation<br>Equipment monitoring and control<br>Demand and power factor control                  |
| 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<br>65...120 V AC 47...63 Hz<br>80...160 V DC                                                                                                                                     |
| Network frequency               | 50 Hz                                                                                                                                                                                                                                   |
| Outlet standard                 | American                                                                                                                                                                                                                                |
| [In] rated current              | 5 A<br>2 A<br>1 A                                                                                                                                                                                                                       |
| Type of network                 | 1P + N<br>3P<br>3P + 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                                                                                                                                                                                                       |

|                               |                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                               | 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>DNP3 at 10/100 Mbit/s<br>ION at 10/100 Mbit/s<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                                                                                                                                                                                                                                                                                   |
| Time synchronisation protocol | IRIG-B<br>GPS: Truetime/Datum                                                                                                                                                                                                                                                                                                                                 |
| Data recording                | GPS synchronisation<br>Historical logs<br>Time stamping<br>Sag and swell logs<br>Harmonics logs<br>Event logs<br>Alarms<br>Data logs<br>Revenue logs                                                                                                                                                                                                          |
| Transmission rate             | 10/100 Mbit/s<br>300...115200 bauds<br>57600 bauds<br><= 19200 bauds                                                                                                                                                                                                                                                                                          |
| Memory capacity               | 32 MB                                                                                                                                                                                                                                                                                                                                                         |
| Web services                  | Port addressing user designed<br>Robust security logs<br>Alarm notification by e-mail<br>Web server                                                                                                                                                                                                                                                           |
| Ethernet service              | SNMP-Traps and SYSLOG<br>Enable/disable Ethernet protocols<br>Enable/disable serial ports                                                                                                                                                                                                                                                                     |
| Tamperproof of settings       | Hardware lock by jumper<br>Protected by access code                                                                                                                                                                                                                                                                                                           |
| Provided equipment            | Break out panel                                                                                                                                                                                                                                                                                                                                               |
| Compatibility code            | ION8650C                                                                                                                                                                                                                                                                                                                                                      |

## 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 |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                       |                                                                                                                                                                                                      |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                       | 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             | 26.0 cm |
| Package 1 Width              | 28.0 cm |
| Package 1 Length             | 44.0 cm |
| Package 1 Weight             | 4.5 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>          |

### Recommended replacement(s)