

# Product data sheet

Specifications



## ION8650 meter 128MB, 9S/29S/ 36S, 120VAC/160VDC 50Hz, Ethernet 3I+4O

M8650A0C0H5E1B0A

### 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              | Energy pulsing and totalisation<br>Instrument transformer correction<br>Demand and power factor control<br>Equipment monitoring and control<br>Load curtailment<br>Tariff metering<br>Co-generation and IPP monitoring                                                                                                                                                      |
| 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>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>1 A<br>2 A                                                                                                                                                                                                                                                                                                                                                           |
| type of network                 | 3P + N<br>3P<br>1P + N                                                                                                                                                                                                                                                                                                                                                      |
| Power consumption in VA         | 24 VA                                                                                                                                                                                                                                                                                                                                                                       |
| Maximum power consumption in VA | 33 VA                                                                                                                                                                                                                                                                                                                                                                       |
| Display type                    | FSTN transfective LCD                                                                                                                                                                                                                                                                                                                                                       |

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

|                               |                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Form designation              | 9S 3-element 4<br>36S 2½-element 4<br>29S 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              | 3 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                                                                                                                                                                                                                                                                                                                                            |
| 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, master/slave at 300...115200 bauds<br>Modbus TCP, master/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 | GPS: Truetime/Datum<br>IRIG-B                                                                                                                                                                                                                                                                                                                                               |
| Data recording                | Time stamping<br>Event logs<br>Harmonics logs<br>GPS synchronisation<br>Revenue logs<br>Data logs<br>Historical logs<br>Sag and swell logs<br>Transient logs<br>Alarms                                                                                                                                                                                                      |
| Transmission rate             | 57600 bauds<br><= 19200 bauds<br>300...115200 bauds<br>10/100 Mbit/s                                                                                                                                                                                                                                                                                                        |
| Memory capacity               | 128 MB                                                                                                                                                                                                                                                                                                                                                                      |
| Web services                  | Port addressing user designed<br>Alarm notification by e-mail<br>Robust security logs<br>Web server                                                                                                                                                                                                                                                                         |
| Ethernet service              | Enable/disable serial ports<br>Enable/disable Ethernet protocols<br>SNMP-Traps and SYSLOG                                                                                                                                                                                                                                                                                   |
| Tamperproof of settings       | Protected by access code                                                                                                                                                                                                                                                                                                                                                    |
| 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                         | Socket-mounted                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Mounting support                      | Enclosure door                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Type of installation                  | Indoor installation                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Overvoltage category                  | III                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| IP degree of protection               | IP65 front face:<br>IP51 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                                 | 178 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Depth                                 | 237 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Height                                | 178 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  |

# Contractual warranty

|                      |    |
|----------------------|----|
| Warranty (in months) | 18 |
|----------------------|----|



## Environmental Data

Schneider Electric aims to achieve Net Zero status by 2050 through supply chain partnerships, lower impact materials, and circularity via our ongoing “Use Better, Use Longer, Use Again” campaign to extend product lifetimes and recyclability.

[Environmental Data explained >](#)

[How we assess product sustainability >](#)



### Environmental footprint

|                                                        |                                               |
|--------------------------------------------------------|-----------------------------------------------|
| Total lifecycle Carbon footprint                       | 313 kg CO2 eq.                                |
| Carbon footprint of the manufacturing phase [A1 to A3] | 74 kg CO2 eq.                                 |
| Carbon footprint of the distribution phase [A4]        | 20 kg CO2 eq.                                 |
| Carbon footprint of the installation phase [A5]        | 0.6 kg CO2 eq.                                |
| Carbon footprint of the use phase [B2, B3, B4, B6]     | 213 kg CO2 eq.                                |
| Carbon footprint of the end-of-life phase [C1 to C4]   | 6 kg CO2 eq.                                  |
| Environmental Disclosure                               | <a href="#">Product Environmental Profile</a> |

## Use Better



### Materials and Substances

|                                        |                                                                             |
|----------------------------------------|-----------------------------------------------------------------------------|
| Packaging made with recycled cardboard | No                                                                          |
| Packaging without single use plastic   | No                                                                          |
| EU RoHS Directive                      | <a href="#">Compliant By Exemption</a>                                      |
| REACH Regulation                       | <a href="#">Free of Substances of Very High Concern above the threshold</a> |

## Use Longer



### Lifetime extension

|        |    |
|--------|----|
| Repair | No |
|--------|----|

## Use Again



### Repack and remanufacture

|                                 |                                                                                                                                                                                                                 |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Recyclability potential, in %   | 16                                                                                                                                                                                                              |
| End of life manual availability | <a href="#">End of Life Information</a>                                                                                                                                                                         |
| Take-back                       | No                                                                                                                                                                                                              |
| WEEE Label                      |  The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins |