# Product data sheet

## Characteristics

**M8650A4C0H5E1B0A**  
ION8650 meter 128MB, FT21 panel, 120VAC/160VDC 50Hz, Ethernet 3I+4O

**Main**

<table>
<thead>
<tr>
<th>Range</th>
<th>PowerLogic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device short name</td>
<td>ION8650A</td>
</tr>
<tr>
<td>Product or component type</td>
<td>Energy and power quality meter</td>
</tr>
</tbody>
</table>

**Complementary**

Power quality analysis  
- conforming to IEC 61000-4-15 flicker  
- magnitude harmonic up to the 50th  
- transient capture  
- conforming to EN 50160: ed. 4 compliance report  
- harmonic distortion  
- voltage sag and swell detection  
- waveform capture  
- programmability (logic and math functions)  
- up to the 63rd harmonic  
- conforming to IEC 61000-4-30: class A power quality measurement

Device application  
- Tariff metering  
- Co-generation and IPP monitoring  
- Load curtailment  
- Demand and power factor control  
- Instrument transformer correction  
- Equipment monitoring and control  
- Energy pulsing and totalisation

Type of measurement  
- Current  
- Voltage  
- Frequency  
- Apparent power total  
- Power factor total  
- Apparent power per phase  
- Power factor per phase  
- Active power total  
- Active power per phase  
- Reactive power total  
- Reactive power per phase

Supply voltage  
- 120...277 V AC 47...63 Hz  
- 120...480 V AC 47...63 Hz  
- 65...120 V AC 47...63 Hz

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.
<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network frequency</td>
<td>80...160 V DC</td>
</tr>
<tr>
<td>Outlet standard</td>
<td>50 Hz</td>
</tr>
<tr>
<td>[In] rated current</td>
<td>2 A, 5 A, 1 A</td>
</tr>
<tr>
<td>Type of network</td>
<td>1P + N, 3P + N, 3P</td>
</tr>
<tr>
<td>Power consumption in VA</td>
<td>24 VA</td>
</tr>
<tr>
<td>Maximum power consumption in VA</td>
<td>33 VA</td>
</tr>
<tr>
<td>Display type</td>
<td>FSTN transflective LCD</td>
</tr>
<tr>
<td>Form designation</td>
<td>36S 2½-element 4, 9 3-element 4, 35 2-element 3, 29 2½-element 4</td>
</tr>
<tr>
<td>Sampling rate</td>
<td>1024 samples/cycle</td>
</tr>
<tr>
<td>Measurement current</td>
<td>0.001...24 A</td>
</tr>
<tr>
<td>Input type</td>
<td>Current 0.01...20 A (impedance 0.05 Ohm)</td>
</tr>
<tr>
<td>Measurement voltage</td>
<td>57...277 V AC phase to neutral, 100...480 V AC phase to phase</td>
</tr>
<tr>
<td>Number of inputs</td>
<td>3 digital 0.001...100 mA 30 V DC</td>
</tr>
<tr>
<td>Measurement accuracy</td>
<td>Current 0.1 %, Voltage 0.1 %, Power 0.1 %, Power factor 0.1 %, Frequency 0.001 Hz, Energy 0.1 %</td>
</tr>
<tr>
<td>Accuracy class</td>
<td>Class 0.2S energy conforming to IEC 62053-23, Class 0.2 energy conforming to ANSI C12.20, Class 0.2S energy conforming to IEC 62053-22</td>
</tr>
<tr>
<td>Number of outputs</td>
<td>2 pulse, 4 form C relay output</td>
</tr>
<tr>
<td>Communication port protocol</td>
<td>DNP3 at 300...115200 bauds, ION at 300...115200 bauds, ANSI C12.18 at &lt;= 19200 bauds, IEC 61850 ed. 2 at 10/100 Mbit/s, TCP/IP at 10/100 Mbit/s, DLMS at 300...115200 bauds, Modbus at 57600 bauds, DNP3 at 10/100 Mbit/s, ION at 10/100 Mbit/s, Modbus RTU, master/slave at 300...115200 bauds, Modbus TCP, master/slave at 10/100 Mbit/s, EtherGate</td>
</tr>
<tr>
<td>Time synchronisation protocol</td>
<td>GPS: Truetime/Datum, IRIG-B</td>
</tr>
<tr>
<td>Data recording</td>
<td>Harmonics logs, Historical logs, GPS synchronisation, Sag and swell logs, Data logs, Transient logs, Time stamping, Alarms, Event logs, Revenue logs</td>
</tr>
<tr>
<td>Transmission rate</td>
<td>300...115200 bauds, 10/100 Mbit/s, &lt;= 19200 bauds, 57600 bauds</td>
</tr>
<tr>
<td>Memory capacity</td>
<td>128 MB</td>
</tr>
</tbody>
</table>
| Web services | Alarm notification by e-mail  
| Port addressing user designed  
| Web server  
| Robust security logs  
| Ethernet service | Enable/disable serial ports  
| Enable/disable Ethernet protocols  
| SNMP-Traps and SYSLOG  
| Tamperproof of settings | 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  
| Conducted RF disturbances conforming to IEC 61000-4-6  
| Immunity to impulse waves conforming to IEC 61000-4-4  
| Electrical fast transient/burst immunity test conforming to IEC 61000-4-4  
| Susceptibility to electromagnetic fields conforming to IEC 61000-4-3  
| 1.2/50 μs shock waves immunity test conforming to IEC 61000-4-5  
| 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:  
| 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  
| IEC 62052-11  
| Width | 163 mm  
| Depth | 228 mm  
| Height | 285 mm  
| Net weight | 7 kg  

**Offer Sustainability**

| Sustainable offer status | Green Premium product  
| REACh Regulation | REACh Declaration  
| EU RoHS Directive | Compliant  
| EU RoHS Declaration  
| Toxic heavy metal free | Yes  
| Mercury free | Yes  
| RoHS exemption information | Yes  
| China RoHS Regulation | China RoHS declaration  
| Pro-active China RoHS declaration (out of China RoHS legal scope)  
| Environmental Disclosure | Product Environmental Profile  
|Circularity Profile | End of Life Information  
| WEEE | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins  

**Contractual warranty**

| Warranty | 18 months  