





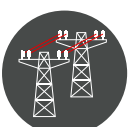



# SMARTG-02 INDIRECT THREE PHASE METER

## EM341-5ILC

Street Light Low Voltage Applications



	
Active Reactive	Modular
	
Cut-Off Relay	Tamper
	
Battery	GSM/GPRS
	
PLC	RF

### INTRODUCTION

The SmartG-02 electricity meter series are modern, electronic, fully programmable devices, designed for application in AMI systems for monitoring and control of electricity consumption.

The SmartG-02 electricity meter series meet remote data transmission requirements and enable readouts of various measurands. The meters are compliant with IEC and DLMS/COSEM standards and have been designed to serve billing purposes.

EM341-5ILC, is a four wire, compact electronic meter used for the street light control (indirect connection meter), based on sunrise & sunset timing, with accuracy class 0.5, capable of measuring Active & Reactive Energy and is type approved according to IEC & EN standards. This makes it perfectly suitable for Street Light Low Voltage Applications.

The indirect connection meter is used to measure energy consumption in 220 VAC, 50 Hz, and 1-6 Ampere, and operates in a three-phase four wire power network. It contains an independent measuring element allowing consumed energy to be measured. There is a LED mounted on the front panel of the meter, pulsing at a rate of 1000 pulses per kWh or kVar for energy registration.

The modular nature of the meter means that its communications interface supports a broad range of field-upgradable communications options including GPRS, PLC, and RF among others.

### STANDARDS

- IEC 62052-11
- IEC 62053-23:2003
- EN 50470
- IEC 695-2-1
- IEC62055 (for contactor)
- IEC 62056-42
- IEC 62056-46
- IEC 62056-53
- IEC 62056-61
- IEC 60068



## METER SPECIFICATIONS

### Electrical Characteristics

Nominal Voltage	3X220/380 V
Voltage Variation (Min)	-40% Vn
Voltage Variation (Max)	30% Vn
Nominal Current (Ibase)	1 A
Maximum Current (I <sub>max</sub> )	6 A
Nominal Frequency	50 Hz
Frequency Variations	±5%
Accuracy Class	0.5 Active 2 Reactive
Starting Current	0.2 % I <sub>b</sub>
Wiring	3 PH, 4 wires Network
Number of elements	4
Power Consumption	≤ 2W
Measurements	KWh MD(A)(KW)
Back-up Battery Type	Lithium Battery
Back-up Battery Lifetime	10 Years

### Memory

Type	Flash memory
Retention Period	More than 20 Years

### Environmental Conditions

IP Rating	IP54
Temperature Range	-5°C to +70°C
Storage Temperature	-25°C to +80°C
Humidity Range	<90%
Altitude	0-3600M
Service Life	20 Years

### Communication

Optical Interface	Standard Optical Port (IEC 62056-21) Complies with DLMS/COSEM HDLC mode-E protocol
Serial Communication Port	RS-485 Complies with DLMS/COSEM direct HDLC protocol
AMI/AMM Module	Supported through the use of a GSM/GPRS Modem, PLC Modem or RF Modem
Data Transmission Rate	Optical Port: 9600 bit/s RS-485: 9600 bit/s GPRS: 56-114 Kbit/s

## METER FEATURES

Feature	Description
Display	<ul style="list-style-type: none"> <li>Fully electronic (LCD) with backlight</li> </ul>
Load Profile	<ul style="list-style-type: none"> <li>The meter is capable of storing two profiles. One for energy and one for other parameters.</li> <li>Each profile has an integration period of 1 to 60 minutes</li> <li>The profiling period extends for at least 45 days</li> </ul>
Events	<ul style="list-style-type: none"> <li>The EM341-5-SmartG-02 records a considerable amount of data for extended periods of time</li> <li>In addition, the EM341-5-SmartG-02 stores up to 400 events</li> <li>Events are logged with a date/time stamp</li> </ul>
Tamper Proofing	<ul style="list-style-type: none"> <li>The EM341-5-SmartG-02 has the ability to detect the following types of tamper attempts: <ul style="list-style-type: none"> <li>✓ Meter Cover Open</li> <li>✓ Terminal Cover Open</li> <li>✓ Module Cover Open</li> <li>✓ Reverse Connection</li> <li>✓ Earth or Current Bypass Connection</li> <li>✓ Overload</li> <li>✓ Over Voltage</li> <li>✓ Under Voltage</li> <li>✓ Phase Sequence</li> <li>✓ Missing Potential</li> </ul> </li> </ul>
Alarms	<ul style="list-style-type: none"> <li>The meter supports two alarm methods <ul style="list-style-type: none"> <li>✓ LED Indicator</li> <li>✓ Audible Alarm</li> <li>✓ Messages on LCD</li> </ul> </li> <li>The meter can be configured to give any combination of alarms as required</li> </ul>
Relay Operation	<ul style="list-style-type: none"> <li>The relay control modes include: <ul style="list-style-type: none"> <li>✓ Remote Disconnect</li> <li>✓ Local Disconnect</li> </ul> </li> <li>The relay is configurable to be triggered in the event of: <ul style="list-style-type: none"> <li>✓ Meter cover open</li> <li>✓ Meter Terminal Cover Open</li> <li>✓ Module Cover Open</li> <li>✓ Energy Reverses</li> <li>✓ Earth or Current Bypass Connection</li> <li>✓ Meter Current Overload</li> <li>✓ Meter Over Voltage and Under Voltage</li> <li>✓ At Low Battery</li> <li>✓ Phase Sequence</li> <li>✓ Missing Potential</li> <li>✓ Low Credit</li> </ul> </li> </ul>
Auto-diagnostics	<ul style="list-style-type: none"> <li>With each power-up or firmware update, the meter shall diagnose: <ul style="list-style-type: none"> <li>✓ Meter and memory integrity</li> <li>✓ Display, alarms &amp; battery status</li> <li>✓ External communication module status</li> </ul> </li> </ul>

## MECHANICAL SPECIFICATIONS

- **Dimensions:** (L x W x D) =  
277.3 mm x 177.4 mm x 88.5 mm
- **Weight:** Approximately 1.8Kg
- **Meter Housing:** Flame Retardant Polycarbonate

