SMARTG-02 INDIRECT THREE PHASE METER
EM341-5ID2

Transformer / Bulk Applications

Active Reactive

Modular

Cut-Off Relay

Tampers

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.

EM341-5ID2, is a four wire, Prepaid/Postpaid compact electronic meter (indirect connection meter), with accuracy class 0.2, capable of measuring Active & Reactive Energy and is type approved according to IEC & EN standards. This makes it perfectly suitable for Transformer / Bulk 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 (Imax)	6 A
Nominal Frequency	50 Hz
Frequency Variations	±5%
Accuracy Class	0.2 Active according to IEC 62053-22 2 Reactive
Starting Current	0.1 % Ib according to IEC 62053-22
Wiring	3 PH, 4 wires Network
Number of elements	3
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	• Fully electronic (LCD) with backlight
Load Profile	• The meter is capable of storing two profiles. One for energy and one for other parameters. • Each profile has an integration period of 1 to 60 minutes • The profiling period extends for at least 45 days
Events	• The EM341-5-SmartG-02 records a considerable amount of data for extended periods of time • In addition, the EM341-5-SmartG-02 stores up to 400 events • Events are logged with a date/time stamp
Tamper Proofing	• The EM341-5-SmartG-02 has the ability to detect the following types of tamper attempts: ✓ Meter Cover Open ✓ Terminal Cover Open ✓ Module Cover Open ✓ Reverse Connection ✓ Earth or Current Bypass Connection ✓ Overload ✓ Over Voltage ✓ Under Voltage ✓ Phase Sequence ✓ Missing Potential
Alarms	• The meter supports two alarm methods ✓ LED Indicator ✓ Audible Alarm ✓ Messages on LCD • The meter can be configured to give any combination of alarms as required
Relay Operation	• The relay control modes include: ✓ Remote Disconnect ✓ Local Disconnect • The relay is configurable to be triggered in the event of: ✓ Meter cover open ✓ Meter Terminal Cover Open ✓ Module Cover Open ✓ Energy Reverses ✓ Earth or Current Bypass Connection ✓ Meter Current Overload ✓ Meter Over Voltage and Under Voltage ✓ At Low Battery ✓ Phase Sequence ✓ Missing Potential ✓ Low Credit
Auto-diagnostics	• With each power-up or firmware update, the meter shall diagnose: ✓ Meter and memory integrity ✓ Display, alarms & battery status ✓ External communication module status

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