Aclara

SGM1300™
Smart Energy Meter Family

ELECTRICITY METERS FOR SMARTER INSTALLATIONS

Aclara metering products have over 130 years' heritage of providing reliable and robust metering solutions to utility companies and their customers. That tradition of excellence continues with the SGM1300, part of Aclara's SGM1000 series of digital energy meters. Providing innovative and robust technology, the SGM1300 provides a feature rich platform for accurate billing, real time information and enhanced communications solutions.

BENEFITS

- Increased number of installations per day due to added value information available on the custom designed LCD
- Modular communications capability via an Intimate Communications Hub for choice of Home Area Network (HAN) and Wide Area Network (WAN) Communications
- ZigBee HAN supports dual-fuel meter installations (electricity and gas)
- Extensive billing features and comprehensive event logging, with enhanced tamper-proofing for effective fraud detection
- Optimised, compact footprint enables faster deployment when replacing existing legacy meters

FEATURES

Accurate Billing

- Approved to MID Class B, BS EN 50470-1 and -3
- Support for active energy class B, reactive energy Class 2 and apparent energy
- Comprehensive tariff structure with 48 TOU rates and a 4x8 block tariff matrix
- Extensive power quality data
- Billing data storage: 13 months + current; 5 Weeks + current; or 31 days
- Load profile data storage: 12 months

Credit/Prepayment Mode

- Meter balance
- Emergency credit and balance with indication of low credit
- Time base debts and recovery rates
- Accumulated debt registers
- UTRN top-ups (local and remote)
- Change of supplier/tenant

Extensive Communications

- Secure, modular Intimate Communications Hub for HAN and WAN field replaceable communications, with Optical IEC 62056-21 port
- GPRS WAN supporting DLMS COSEM
- HAN interface using ZigBee technology for gas and micro-generation meter connectivity
- Support for consumer In Home Display

Over-the-Air Updates

- Firmware Over-the-Air updates to Electricity Meter, Gas Meter and In Home Display

Enhanced Security Monitoring

- Tamper-proofing of main meter cover, meter terminal cover, and Intimate Communications Hub, guarding against unauthorised removal

SGM1300™
Smart Energy Meter Family

APPLICATIONS

Domestic
- Domestic installation for consumer energy awareness
- Control and management of debt for prepayment customers

Small Commercial
- On-time and accurate billing for users
- Real-time energy information for energy management systems

MOVING TO A SMARTER GRID

Aclara's SGM1300 smart meter is designed for domestic and small-business properties and fulfills the European goals of smart metering technology deployment. These are in line with EC Directives 2009/72/EC and 2009/73/ EC, which have the following targets:

- All homes and small and medium-sized businesses by the year 2020 should be equipped with smart electricity and gas meters and an In Home Display for domestic consumers.
- A 20% reduction in CO_2 emissions by 2020, and 40% by 2040. This will help Britain towards the long-term challenges it faces to ensure an affordable, secure and sustainable energy supply.
- Accurate, real-time, and on-time billing to consumers.
- Ability of suppliers to introduce innovative tariffs, plus better management of customer billing and debt.

FLEXIBLE COMMUNICATIONS

Equipped with two-way, real-time, secure communication, the SGM1300 supports a ZigBee RF HAN for communication to Flonidan's gas meters and consumer In Home Displays. A GPRS WAN complements communications and is capable of scheduled and ad-hoc reads and alert data via DLMS COSEM to the head-end system. On-time, reliable and accurate billing information is thus possible and consumers can use the information to actively manage consumption to help reduce bills.

INTEROPERABILITY

A key objective of the smart metering solution is that equipment on consumer premises be fully interoperable, so that products procured by different energy suppliers from different manufacturers can communicate with each other without the need for pre-configuration or multiple site visits. Device interoperability is required in situations where consumers have separate gas and electricity suppliers or where equipment has to be replaced or augmented. The SGM1300's Intimate Communications Hub has been designed to provide flexibility in the choice of HAN/WAN communications for current and emerging communications technologies to ensure complete interoperability.

EXTENSIVE FEATURE SET

The standard meter is supplied with an integrated 100A switch for connect/disconnect of the consumer supply. The SGM1300 also offers an optional 2A load control relay for control of other ancillary devices, such as night storage heating, and pumps. The SGM1300 can also be supplied in a duel-element form factor, supporting two integrated 100A load switches.

The meter complies with a comprehensive tariff developed in association with the UK SSWG standard and provides both standard time of day and block tariffs.

Storing 365 days of load profile data, the meter is capable of independent profiling of instrumentation values, typically line voltage, current and frequency. Enhanced power quality measurements, such as voltage sag/swell, under/over voltage and maximum/minimum are all included.

SGM1300™
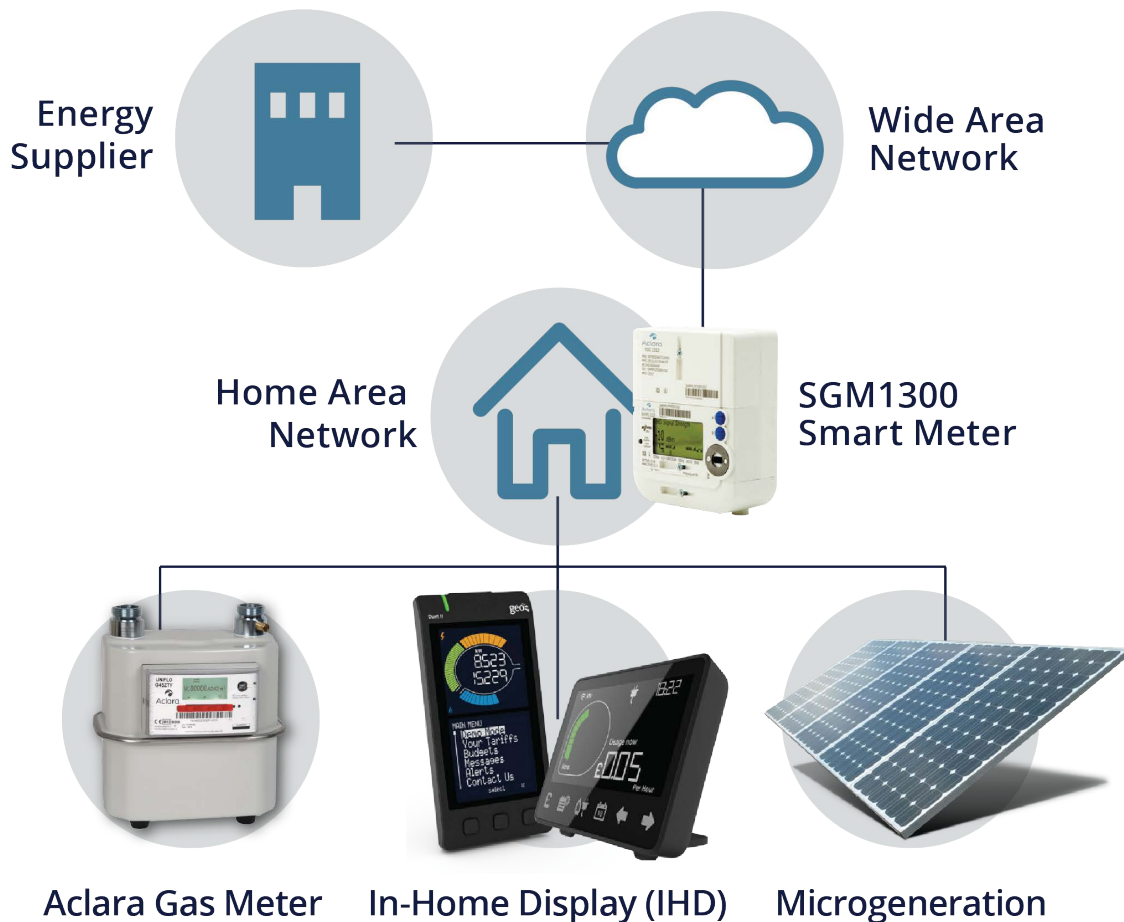## Smart Energy Meter Family

EASE OF INSTALLATION
Developed to greatly simplify the installation process, the SGM1300 has been designed with an optimal footprint for easier deployment. The custom designed dot matrix LCD provides an abundance of information in clear detail including pairing information, status messaging and UTRN (Unique Transaction Reference Number) for local prepayment top-ups.

SGM1300 INTIMATE COMMUNICATIONS HUB
A convenient, secure, field replaceable, modular design for support of existing and emerging HAN and WAN technologies. Tamper-proof fastening and even alerting help ensure installation and operation integrity.

COMPREHENSIVE CONNECTIVITY
The SGM1300 has the capability to do more than just send electricity information back to the utility company. It has been designed to act as a communications hub for other HAN-enabled devices, such as gas meters and household appliances, and can provide real-time information about a consumer's energy usage to In Home Displays, allowing consumers to make intelligent and cost-effective decisions about their energy consumption.
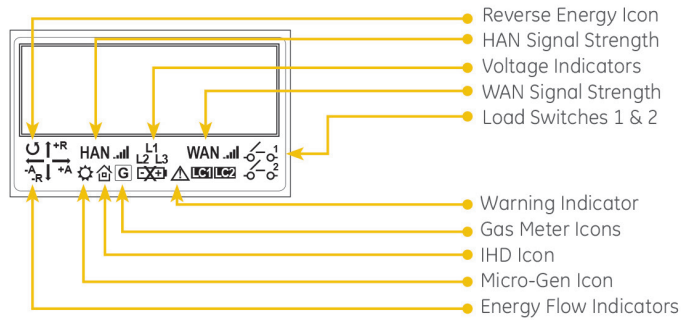
Energy Supplier

Wide Area Network

Home Area Network

SGM1300 Smart Meter

Aclara Gas Meter

In-Home Display (IHD)

Microgeneration

SGM1300™
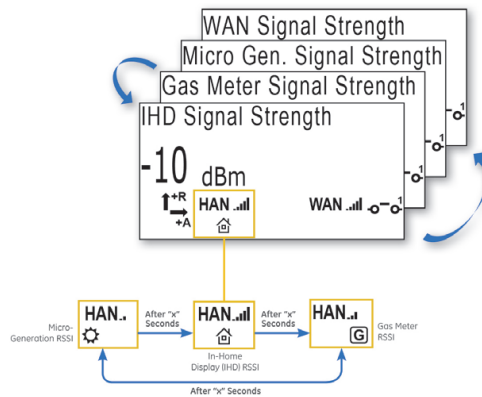## Smart Energy Meter Family

DETAILED LCD DISPLAY

Aclara's custom LCD design is a unique, purposely developed, dotmatrix display, which has been designed based on extensive customer feedback. It provides added-value information to improve the installation and operational experience of the SGM1300. This visual information includes:

• Dedicated icons for the gas meter, In Home Display, and a micro-generation meter
• HAN pairing progress with notification to the installation team of pairing completeness
• Received Signal Strength Indication (RSSI) for HAN and WAN connections

Reverse Energy Icon
HAN Signal Strength
Voltage Indicators
WAN Signal Strength
Load Switches 1 & 2

Warning Indicator
Gas Meter Icons
IHD Icon
Micro-Gen Icon
Energy Flow Indicators

DISPLAY EXAMPLE

The SGM1300 supports special icons to aid the installation process and provides on-going indication of proper functioning of the various features of the smart meter, including the RF connections within the HAN.
Unique icons for the gas meter, In Home Display and micro-generation meters show that the HAN devices are paired (connected) and working correctly, as in this example.

Display toggles to show Received Signal Strength Indication (RSSI) of connected HAN devices

SGM1300™
Smart Energy Meter Family

TECHNICAL SPECIFICATIONS

Standards	MID Class B, BS EN 50470-1 AND BS EN 50470-3
Accuracy	Class B Active Energy, Class 2 Reactive Energy
Nominal voltage	230V, -20% to +15%
Frequency	50Hz
Tariffs	48 TOU and 4 Block (Consumption) Tariff Rates
Current	1...10(100) Amps
Display	Dot Matrix LCD, Supports 8 Digits and Specialist Icons Backlight
Service Types	1-Phase, 2-Wires Dual Element Variant Available
Operating Temperature	-25°C to 55°C
Relative Humidity	≤ 95%
Test Pulse Output	Optical LED x Imp/kwh. Configurable for kVArh
Data Storage	Non-Volatile Memory
Time Keeping	Battery to Maintain Real-Time Clock
Enclosure Rating	IP53
Weight	0.625 kg
Terminals	BS Compliant to BS 7856:1996
Internal Load Switch	Contactor Rated at 100A
Auxiliary Relay Output	2 Amps
Local Interface	2 x Pushbuttons to Support Scrolling of LCD, Local Reconnection of Supply and UTRN Top-Ups
Communications	Intimate Communications Hub Comprising HAN and WAN Technology GPRS WAN with Internal Bi-Directional Antenna Supporting DLMS COSEM (Optional Module to Support External Antenna Variant) Zigbee HAN 2.4 GHz Supporting SEP V1.2 HAN and WAN Compliant with SSWG UK Extensions Local Optical Port - IEC 62056-21 (physical)
Tamper Detection	Meter Terminal Cover Main Meter Cover Communications Module
Terminal Cover	Short

METROLOGICAL AND DATA CAPABILITY

The SGM1300 provides comprehensive support for metrological and billing data values as follows:

- Measurement of import/export active, reactive and apparent energy
- 10 x Cumulative Registers
- 10 x Demand Registers
- 4 x Maximum Demand Registers
- 48 Time of Use Registers
- 4 block tariff registers
- 365 days load profile data storage
- 3 months instrumentation profile data
- Daily, weekly and monthly billing data
- Voltage sag/swell, under and over voltage, maximum and minimum
- Over and under frequency
- Power factor threshold
- Comprehensive event logging
- Support for up to 512 events
- Standard, Fraud Detection, Power Quality and Communications Events
- Firmware Upgrade, Change of Tenant, Disconnection, Prepayment and HAN Events
- Full dual fuel support via HAN for Gas Meter and In Home Display data sets
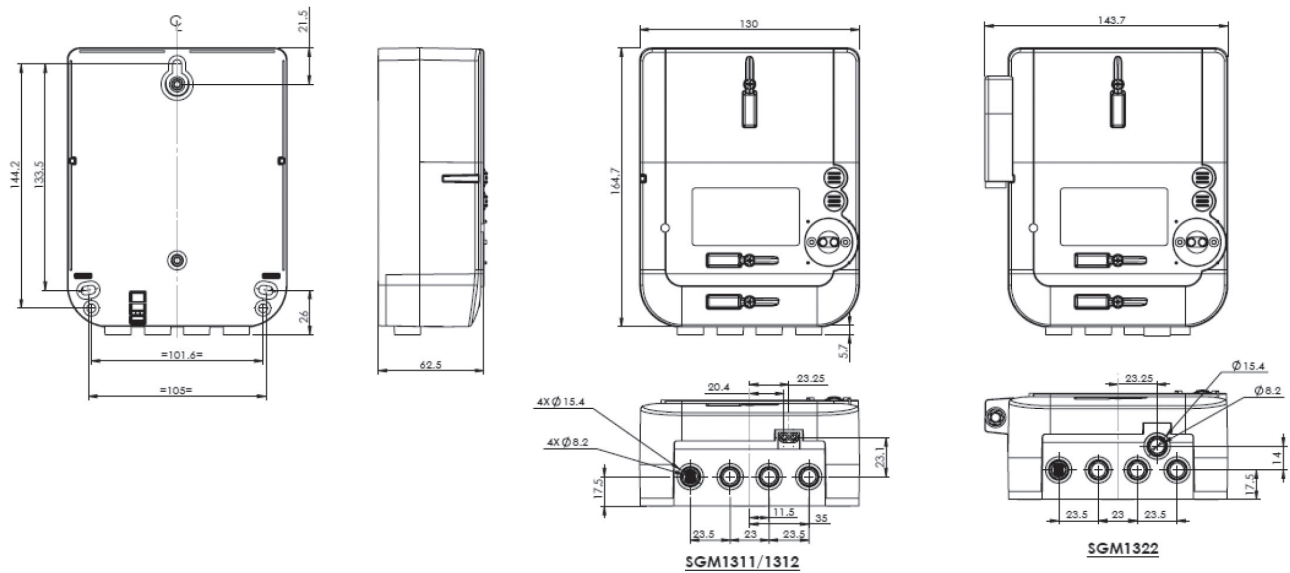
SGM1300™
Smart Energy Meter Family

SGM1300 ELECTRICITY METERS

Order Codes	8	*	3	X	*	0	4	5	*	0	*	0	-	0	0	0	Description
Number of Phases and Elements		2															Single-phase meter, single-element
Relay					1 2 5												Main 100A single pole relay Main 100A single pole relay + 2A auxiliary relay Main and secondary 100A single pole relays (2 x 100A)
Human Interface									2 4 8								Dot-matrix LCD Dot-matrix LCD with backlight Segmeted LCD and pushbutton buzzer/tone

METER DIMENSIONS (MILLIMETRES)

WITH INTERNAL ANTENNA

WITH EXTERNAL ANTENNA

SGM1311/1312

SGM1322

M-0917SGM13900uk