Liberty 100

Single phase single element electricity meter with intimate modular communications hub

Installation efficiency

Remote firmware upgrade

Pay as you go (PAYG)

Smart, flexible and future proof

Secure Meters has developed Liberty 100 single phase smart electricity meter to meet UK smart metering requirements. Liberty 100 has modular architecture for both WAN/HAN enabling multiple communications options to be deployed. The modules can be replaced in the field so that investment in the meter is protected even if communications technology needs to be changed during the life of the meter. The communications module acts as hub for communication to head end system and to the gas meter/in home display. The meter and communications hub are capable of remote firmware upgrade after installation to allow features and functionality to be changed. Liberty 100 supports both credit and Pay As You Go (PAYG) modes of operation.

Application

- Smart electricity meter with communication hub for dual fuel (electricity + gas) and single fuel (electricity) domestic customers in both credit and PAYG modes
- Metering for small commercial premises including credit and PAYG modes
- Import and export metering for local generation

Benefits

- Modular communication module allows multiple WAN and HAN options for different communications providers
- Simple installation, registration and pairing process
- Remotely switchable between credit and PAYG modes
- Assists consumers in reducing energy consumption

Features

- Meets requirements of SMETS1 and SSWG
- Four-quadrant measurement with import/export registration
- Time of use/complex tariffs and maximum demand
- Logging of multi parameter load survey, billing data, events including power outage and abnormalities
- Integrated contactor
- Multiple WAN communication options – GPRS, long range radio
- Liberty 100 communication hub acts as coordinator for Zigbee HAN and mirror for gas meter data
- Credit and PAYG modes (meter maintains account and tariffs)
- Keypad to enable local entry of Pay as You Go token if WAN not available
- Remote firmware upgrade (not metrology)

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Liberty 100

Technical specifications

Electrical

Connection type	Direct connected
Wiring configuration	Single phase, two wire
Voltage range	230 Vac (nom)
Current range	0.5-20 (100) A
Accuracy	Active energy MID class B, reactive energy class 2.0
Mains frequency	50 Hz ± 5%
Burden	Compliant with relevant standard

Compliance

Standards	MID class B EN 50470-1,3; IEC62053-23

Mechanical

Modular design	Field replaceable communication module
Dimensions (W x H x D)	140 x 175 x 60 mm
Terminals	Tunnel type with 2 screws compliant to Bs7856
Weight	1 kg (approx.)
Enclosure	Flame retardant polycarbonate

Environmental

Ingress protection	IP 54
Insulation class	Protective class II
Temperature	-25 ^{o}C to +55°C (operating), -25 ^{o}C to +70 ^{o}C (storage)
Humidity	95% non-condensing

Features

Firmware	Remote firmware upgrade with rollback
Tariff	Time of use (TOU) and complex (slab within TOU) supported
	Pending tariff structures supported
Load survey	13 months, 4 channels
Display	Backlit 10-character alphanumeric starburst display with icons for status
Keypad	12 way - 0-9, A, B for local entry of PAYG code and access to displays
PAYG functionality	Credit and PAYG modes (meter maintains account and tariffs)
	Display of current and historical consumption with cost of consumption data
	Emergency credit with optional load limiting
	Friendly credit (avoids disconnection during unsocial hours or weekends)
	Debt recovery
Security	AES128 encryption
Tamper detection	Removal of terminal cover, main meter cover, communications hub
	Excessive magnetic field

Communication

Local diagnostic port	Optical 1107 hardware-compatible port
Communication module options	GPRS WAN + ZigBee HAN (SEP 1.x)
	Multi operator (roaming) SIMs supported

Liberty 110

Single phase single/twin element electricity meter with intimate modular communications hub

Inbuilt heating load control

Remote firmware upgrade

Pay as you go (PAYG)

Smart, flexible and future proof

Secure Meters has developed the Liberty 110 single phase, single/twin element, five terminal smart electricity meter to meet UK smart metering requirements. Liberty 110 has five terminals suitable for use with installations with switched heating or hot water loads operating on economy 7 - an additional 100A switched output is provided on the fifth terminal. Liberty 110 has modular architecture for both WAN and HAN. The module can be changed in the field. The communications module acts as a gateway for communications with head-end systems and with a gas meter and an in home display. Both the meter and communications hub support remote firmware upgrade after installation to allow features and functionality to be changed. Both credit and pay as you go (PAYG) modes of operation are supported. The meter can be remotely switched between modes through its operational life.

Application

- Smart electricity single/twin element, five terminal meter for use in installation with switched loads for heating and hot water
- Dual fuel (electricity + gas) and single fuel (electricity only) domestic customers in both credit and PAYG modes
- Metering for small commercial premises including credit and PAYG modes
- Import and export metering for local generation

Benefits

- Five terminal meter with 100A switched output on fifth terminal - designed with the same physical terminal arrangement as a radio telemeter
- Modular communication module allows multiple WAN and HAN options for different communications providers
- Simple installation, registration and paring process
- Assists consumers in reducing energy consumption

Features

- Meets requirements of SMETS1
- Four-quadrant measurement with import/export registration (on primary element)
- Time of use/complex tariffs and maximum demand
- Logging of multi parameter load survey, billing data, events including power outage and abnormalities
- Integrated contactors for main and switched outputs.
- GPRS communications
- Communication hub acts as coordinator for ZigBee HAN and mirror/proxy for gas meter data
- ACredit and PAYG modes (meter maintains account and tariffs)
- Keypad to enable local entry of PAYG UTRN token if WAN not available
- Remote firmware upgrade

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Liberty 110

Technical specifications

Electrical

Connection type	Direct connected
Wiring configuration	Single phase, single or twin element, five terminal meter
Voltage range	230 Vac (nom)
Current range	0.5-10 (100) A
Accuracy	Active energy MID class B, reactive energy class 2.0
Mains frequency	50 Hz ± 5%
Burden	Compliant with EN 50470-1-3
Contactor	2 x 100A Uc3
Audible alarm	

Compliance

Standards*	MID class B EN 50470-1,3; IEC62053-23

Mechanical

Modular design	Field replaceable communication module
Dimensions (W x H x D)	140 x 175 x 90 mm
Terminals	Tunnel type with 2 screws
Weight	1.2 kg (approx.)
Enclosure	Flame retardant polycarbonate

Environmental

Ingress protection	IP 54
Insulation class	Protective class II
Temperature	-25 ^{o}C to +55°C (operating), -25 ^{o}C to +70 ^{o}C (storage)
Humidity	95% non-condensing

Features

Firmware	Remote firmware upgrade
Tariff	Element 1: slab, time of use (TOU) and complex (slab within TOU) supported
	Element 2: Time of Use (TOU) supported
	Pending tariff structures supported
Load survey	13 months active import (elements 1 & 2), 3 months active export (element 1)
	3 months reactive import (element 1), 3 months reactive export (element 1)
Display	Backlit 10-character alphanumeric starburst display with icons for status
Keypad	12 key 0-9, A, B for local entry of PAYG code and access to displays
PAYG functionality	Credit and PAYG modes (meter maintains account and tariffs)
	Display of current and historical consumption with cost of consumption data
	Emergency credit with optional load limiting
	Friendly credit (avoids disconnection during unsocial hours, weekends or special days)
	Debt recovery
Security	AES128 encryption
Tamper detection	Removal of terminal cover, main meter cover or communications hub
	Excessive magnetic field

Communication

Local diagnostic port	Optical 1107 hardware-compatible port
Communication module options	GPRS WAN + ZigBee HAN (SEP 1.x)
	Multi operator (roaming) SIMs supported

Specifications are subject to change without prior notice