

i-Credit 500 family

Modular Single Phase Smart Meter

The i-Credit 500 family are intelligent single phase meters for Smart Metering applications with capability for monitoring, data storage and load control.

The provision of Mesh Radio, 3G / GPRS / GSM or Distribution Line Carrier (DLC / LV PLC) communications technologies makes i-Credit 500 meters easy to integrate with remote meter management infrastructures for smart metering installations. The range includes models with modular design - enabling communications module to be changed in the field without breaking meter calibration or installation seals.

ZigBee® communications makes i-Credit 500 easy to integrate with Home Area Network (HAN) and In-Home Displays (IHD).

i-Credit 500 meters have supply disconnection contactor, with optional load control relays for demand side management applications.



Application

- Domestic single-phase metering with remote billing and disconnect
- Metering for small commercial premises
- Smart metering deployment
- Metering for micro-generation installations

Benefits

- Remote reading and disconnection functions reduce the need for routine meter visits
- Can be easily integrated into smart meter systems
- Easy diagnosis of installation faults via a complete set of instantaneous electrical parameters
- Assists consumers in reducing energy consumption and corresponding carbon dioxide emissions
- Provides an upgrade path via remote firmware upgrades
- Modular design allows change of communication module within the life of the meter – without breaking meter or installation seals

Features

- True four-quadrant measurement with import/export registration
- Time-of-use tariffs and maximum demands
- Integrated single phase mains disconnect contactor and optional auxiliary load control switch
- Full Smart Meter functionality – including Time of Use based switch control, supply capacity control, remote firmware upgrades
- Logging of multi-parameter load survey, billing data, events such as power outage and abnormalities
- Easy diagnosis of installation faults via a complete set of instantaneous electrical parameters
- Quality-of-supply (QoS) metering
- Automatic remote notification of user-selected events to back-office system
- Communications options including mesh radio, long-range radio, DLC and 3G/GRPS/GSM

i-Credit 500 family

Technical specifications

Electrical

Connection type	Direct connected
Wiring configuration	1- phase 2-wire
Voltage range	230 V (L-N)
Current range	15 - 100 A, MID 1-20 (100) A
Accuracy	Class 1.0, MID Class B
Mains frequency	50 Hz \pm 5%
Burden	Voltage Circuit: < 1 W, 1.5 VA per phase Current Circuit: < 0.1 VA per phase

Compliance

Standards	MID Class B, EN 50470-1, 3
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Mechanical

Dimensions (W x H x D)	145 x 230 x 112 mm (with standard terminal cover) 145 x 245 x 112 mm (with extended terminal cover)
Weight	1.2 kg (approx.)
Enclosure	Flame -retardant polycarbonate

Environmental

Ingress protection	IP 53
Insulation class	Protective class II
Impulse withstand	10 kV @ 0.5 J 4 kV AC for 1 minute (RJ-45 port)
Temperature	-40 °C to +70 °C (operating) - 40 °C to +80 °C (storage)
Humidity	95% non-condensing

Features

Tariff rates registers	Up to 4 rate registers for five energy channels
Maximum demand registers	Up to 2 types across 4 registers
Load survey	600 parameter/days with 30 minute integration period
Communication options	LAN: Mesh radio, DLC WAN: 3G/GPRS/GSM long-range radio (via RJ-45 port) HAN: ZigBee® (2.4 GHz) Smart Energy Profile IEC 1107 hardware-compatible port for local reads
Quality of supply	Maximum/minimum voltage, over-voltage, under-voltage, minimum power factor, maximum current, supply failure, exception logging
Load control	Supply disconnect switch: 100A Optional auxiliary load control switch: 31.5 A

I-Credit 350

Direct-connected Single-phase Energy Meter

i-Credit is the name of our family of single-phase direct-connected 'intelligent credit' meters, stemming from our experience at the forefront of metering technology. i-Credit 350 is the latest member of this family, featuring enhanced tamper detection facilities and interoperable DLMS communication protocol.



Application

- Domestic billing
- Small commercial premises

Benefits

- Compact and accurate
- Protects against tamper attempts

Features

- Consumer-friendly display
- Envelope architecture (integrated base and cover design)
- Open DLMS protocol for meter reading
- Load profile recording
- Time-of-use tariffs
- Historical registration of billing data
- Optical communication port for data retrieval
- High-intensity LED for testing and calibration
- Power factor recording
- Meter reading in absence of mains
- Deficiency metering in absence of neutral
- Support forward recording in case of current reversal

I-Credit 350

Technical specifications

Electrical

Connection type	Direct connected
Wiring configuration	Single phase, two wire
Voltage range	230/240 V (L-N)
Current range	5-30 A or 10-60 A
Accuracy	Class 1.0
Mains frequency	50 Hz \pm 5%
Burden	As per standards

Compliance

Standards*	IS 13779, IEC62052-11, IEC62053-21
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Mechanical

Dimensions (W x H x D)	129 x 133 x 84 mm (approx.)
Weight	0.5 kg (approx.)
Enclosure	Engineering plastic
Sealing	Provision for sealing on meter enclosure

Environmental

Ingress protection	IP 51
Insulation class	Protective class II
Impulse withstand	10 kV
Temperature	-10 °C to +55 °C (operating) -25 °C to +70 °C (storage)
Humidity	95% non-condensing

Features

Tariff	Up to 4 rates
Maximum demand	Up to 2 types, configurable in 4 registers
Load survey	Up to 60 parameter-days with 30-minute integration period

Communication

IEC 1107 physical port for local communication

* Standard compliance and communication facilities depend on product variant.

i-Credit 300

Direct-connected Single-phase Energy Meter

i-Credit 300 is an accurate, compact and intelligent single-phase credit meter for domestic and small commercial applications. Its revenue protection features make it the ideal choice for electricity distribution companies and estate management agencies.



Application

- Domestic billing
- Small commercial premises

Benefits

- Compact and accurate
- Protects against tamper attempts
- Elimination of manual reading errors through encrypted codes (ABC)

Features

- Optical communication port for data retrieval
- High intensity LED for calibration and testing
- Power factor calculation
- Load profile recording
- Support for multi-rate time-of-use (ToD) tariffs
- Historical registration of billing data
- Generation of authenticated billing codes (ABC) containing encoded consumption data
- Phase-to-neutral protection (450 V continuous)
- Meter reading in the absence of mains
- Deficiency metering (energy recording in absence of neutral)
- Supports 'forwarded' energy registration in case of current reversal
- Optional ultrasonic welding

I-Credit 300

Technical specifications

Electrical

Connection type	Direct connected
Wiring configuration	Single phase, two wire
Voltage range	230/240 V (L-N), -40% to +30%
Current range	5-20 A, 5-30 A, 5-60 A, 10-60 A, 10-100 A
Accuracy	Class 1.0, Class B
Mains frequency	50 Hz \pm 5%
Burden	Voltage circuit: < 1 W, 1.75 VA Current circuit: < 0.1 VA

Compliance

Standards	IS 13779, CBIP88, IEC 62052-11, IEC 62053-21, EN 50470-1, EN 50470-3*
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Mechanical

Dimensions (W x H x D)	135 x 168 x 56 mm
Weight	0.6 kg (approx.)
Enclosure	Engineering plastic
Sealing	Two sealing screws on main cover. Single sealing screw on terminal cover.

Environmental

Ingress protection	IP 51
Insulation class	Protective class II
Impulse withstand	6 kV
Temperature	-20 °C to +65 °C (operating) -30 °C to +70 °C (storage)
Humidity	95% non-condensing

Features

Tariff	Up to 4 rates
Maximum demand	Up to 2 types, configurable in 4 registers
Load survey	Minimum 35 parameter-days with 30-minute integration period

Communication

Optical 1107 hardware-compatible port for local and remote communications

* Standards compliance and communications facilities depend on product variant.

i-Credit 510

Single phase meter - modular communications

The i-Credit 510 single phase meter provides communications flexibility using a modular design and DLMS/COSEM to readily accommodate the latest communication technologies. The communication module can be factory installed or field installed/replaceable. This allows for greater flexibility by utilising best of breed technologies and future proofing your investment.

i-Credit 510 paves the way for easy and convenient data transfer from the meter to the utility's back office and is the perfect solution for AMI applications. Provision for a range of communication technologies including Mesh Radio, GPRS/3G devices, among others, ensures the i-Credit 510 will meet your current and future needs.



Applications

- Domestic single phase metering
- Small commercial premises
- AMI (Advanced Metering Infrastructure) and non AMI
- Suitable for co-generation metering applications

Benefits

- Modular comms for easy integration with AMI system
- Reduced onsite call times and cost
- Assists consumers to manage energy consumption
- Front mounted communications module for easy access
- Multiple configurations (up to 16) can be pre-loaded in the meter and executed in the field

Options and Accessories

- Multiple factory build options including:
 - Integrated Mains Supply Contactor
 - Auxiliary load control terminals - various
 - Customer Supply Monitoring
 - Various Terminal Cover sizes
 - Single or Twin element
 - Multi Protocol Ripple Receiver
 - Comms Devices: Factory built-in (AMI) or without (AMI Ready)
- Software:
 - M-Cubed software suite including FlexTend - meter configuration tool
- In-Home Display - Zigbee compliant (See IHD Range)
- GPRS or 3G Modem
- Optical Communications Probe

Features

- Single or Twin element meter variants
- Four quadrant metering
- Class 1.0 accuracy
- Integrated Mains supply contactor (AMI Ready) and auxiliary load terminals (Build Options)
- Remote and local arm, connect and disconnect capability
- Support for AMI features: TOU based switching, Boost, Supply capacity control, Remote firmware upgrades
- Large capacity power supply to support high communications demands
- Modular Communications front belly design with support for a range of communication devices
- ANSI or IEC Optical Port
- Bidirectional: Import (consumed) and Export (generated)
- 8 main energy channels and 8 time-based registers
- Logging and remote notification (alarm) of events
- QoS (Quality of Supply) monitoring
- User friendly tariff configurability features
- User friendly Liquid Crystal Display
- Provision for tamper detection
- Interval data (Load Profile) storage for up to 4680 days including secondary load profile

Standards/Regulatory:

- Open protocols supported, including DLMS COSEM
- Smart Metering Infrastructure (NSMP) compliant, Australia (Build option)

i-Credit 510

Technical specifications

Electrical

Connection type	1 Phase, 2 Wires, Active-Neutral, Direct Connected
Load Terminals	Variant specific
Element	1 or 2 Element

Metrology Lamp Two configurable Metrological LED's for Active and Reactive energy

Compliance AS 62052.11, AS 62052.21, AS 62053.21, AS 62053.23, NMI-M6
IEC 62052.11, IEC 62052.21, IEC 62053.21, IEC 62053.23

Accuracy Class 1.0 (Active Energy), Class 2.0 (Reactive Energy)

Power Supply

Rated Voltage 230 V, -20% to +15%

Rated Frequency 50 Hz \pm 5%

Current Range 10 A I_b , 100 A I_{max}

Data Storage Capacity

Energy / Demand Load Profile 1680 days (single channel) @ 30 minute interval (Configurable Interval)

QoS Parameters 3000 days (single parameter) @ 30 minute interval (Configurable Interval)
Parameters include: Ave Voltage, Current, THD, Temperature etc.

Protection

Voltage, continuous 300V (Phase-Neutral)

Impulse Withstanding 10 kV, 0.5 Joule (12 kV, 9 Joule as per NMI M6)

Switches

Mains Supply Contactor 100A (Build option)

Auxiliary Load control 31.5A and/or 60A, 2A (Build options)

Mechanical

Dimensions (WxHxD) 145 x 190 x 112 mm
145 x 230 x 112 mm (with 35 mm TBC), 145 x 245 x 112 mm (with 50 mm ETBC)

Enclosure Fire Retardant Poly-Carbonate

Sealing Terminal Cover, Meter main cover, Config button, Communication Module

Weight 1.4 to 1.6 kg Depending on Variant

Display Liquid Crystal Display

Mounting Type Projection

Pulse Output (Optional)

Output Options 230 V ac, 2A - Voltage free
27 V dc, 27mA (Option for up to 2 outputs)

Communication

Local Communication IEC Optical Port (IEC 62056.21) or ANSI Optical Port (AS 62056.21)

Remote Communication LAN, HAN, WAN. Support for most communication topologies
Hot swappable Interchangeable modules
Sealable Separately

Outage Notification Reserve Power Supply (Build option)

Environmental

Temperature Operating: -10 °C to +60 °C | Storage: -25 °C to +70 °C

Limit Temperature Range -20 °C to +70 °C

Operating Humidity Up to 95% (Non Condensing)

For detailed specification, please refer to Technical Specification Guide