

# INSM-300

## Three Phase Smart Energy Meter with Disconnect and Reconnect



• 10-60A •

### Features

- Smart AMI with Programmable Post/Pre-payment and Net metering Modes
- Real-time Interoperable for Technology SWAP (GPRS-RF-PLC-IoT-WiFi-BLE)
- End to end DLMS complaint complies IS 16444/IS 15959 Part II
- Multi-vendor Inter operable Communication with self-integrable capability
- Anti-Tamper and Tamper alerts by Event Push
- Last GASP and First Breath capable
- Multi-vendor – MDMS Capable
- Programmable TOU/TOD
- WAN – HAN upgradable
- UC1 load switch with Configurable Demand and Peak load

### Key Features

Powered by: 

AMI

AMI READY



DISCONNECT  
RECONNECT

LCD

DISPLAY



TECHNOLOGY  
INTEROPERABLE

P-PAY

PREPAYMENT



TAMPER PROOF



PLUGGABLE  
WAN



OTA  
READY

## PRODUCT INFORMATION

A State of the art smart<sup>4</sup> Powered AMI Smart meter with remote disconnect/reconnect, Demand management, real-time configurability for all key features with real-time pluggable WAN communication module. Comes in handy with ready to go AMI in GPRS 2G/3G/IoT/LTE/PLC/RF communication modules.

An indigenous designed global technology from India which can perform as Post payment, Prepayment and Net meter for whichever the mode its configured at site.

The real-time pluggable options gives a complete flexibility for the user to use any convenient and economic technology for communication in the region It supports multi-vendor communication and multi-technology swap in real-time.

The advanced Inesh Smart Energy meter is designed to Utility standards complying IEC and IS standards can be used in Smart homes,office,cities and villages for monitoring and controlling the energy efficiently. This is a best for Smart prepayment system for Smart gated homes and Smart commercial buildings where you get a complete control on payment and usage. Inesh supports the end to end solution in Smart metering and Smart billing.

## SPECIFICATION

### Measurement

- Class 1.0 Accuracy
- Compliance with IS 16444
- Four Quadrant measurement
- Three Phase 4Wire 60A/90/120A Load switch
- Active and Apparent measurements both in import and export
- 0.00001kWh Resolution measurement
- Load survey and Day survey as per standards
- R, Y, B measurements
- Programmable Block Window and Sliding Window MD Calculation methods
- Programmable MD integration period and Reset dates
- Active, apparent, Import and Export MD registers

### Electrical

- Voltage and Power supply
- Voltage – 3 x 240V AC
- Frequency - 50Hz (Standard) , Range : 47.5Hz -52.5Hz
- Power supply surge - 440V
- Burden < 10VA/Phase (as per IS 16444)
- Power consumption = 5 Watt(As per Standard)

### Current

- Current ranges 10-60A/10-100A/5-10A
- Overcurrent: 30 times I<sub>max</sub> for 0.5 cycles
- Burden < 0.5VA/Phase
- Operating Temperature 27°C
- UC1 Load switch ranges 120A

### Measured Energy Values

- Three element four quadrant
- Import/Export/Net Wh ,Varh and VAh
- Per quadrant Wh ,Varh and VAh
- Absolute Wh ,Varh and VAh
- Phase A,B,C and Total

### Security

- Multi-level security (user name and password including encrypted log-in)
- Up to seven independent security levels
- Up to six individual users
- AES128 bit encryption

### Meter Variants

- 3 Phase 4W 5-30A
- 3 Phase 4W 10-60A
- 3 Phase 4W 10-100A

### Time of Use

- Programmable TOD
- 8 TOD Timings

### LCD Display

- LCD seven segment display
- Real-time Programmable display parameters
- Auto, Push and INFO Mode
- Feature icons for special conditions
- Communication indication
- Display digit size: 10mm (H)\*5mm
- Definable enunciators
- Display available even without mains power

### Environmental

- Operating temperature range: -25°C to 60°C
- Limit range: -40°C to 70°C
- Storage range: -40°C to 80°C
- Relative humidity: Up to 75% mean, 95% non-condensing for 30 days
- Ingress protection: IP51
- Sealing: break-open sealing provision as per Standards
- Material: Engineering plastic/PC/Brass terminals

### Load/day survey/Profile

- AMI Ready – Instant push and pull
- Inbuilt storage as per standard – expandable at factory
- Intervals programmable from 1 to 60 minutes
- Two independent surveys
- Energy, instantaneous readings ,Pulsing inputs as channel sources
- Ability to store average/minimum/maximum values for interval duration

### Physical Dimension

- Dimensions LDH –292.5 mm(L) x 175mm(D) x 95mm(H)
- Weight – 2.5 Kilograms

### Time Clock and Calendar

- Inbuilt RTC
- Accuracy (internal) as per standard, within 15 seconds per month
- Backup time of 10 years without power (lithium battery)
- Supports Daylight Saving Time

### Communication Variants

- Pluggable GPRS 2G/3G
- Pluggable IoT
- Pluggable RF (865-867, 409, 433MHz)
- Pluggable Narrowband PLC (G3/PRIME)
- Pluggable WIFI/BLE
- Optional RS232/RS485 Serial port COM
- Ethernet interface (Optional)

### Communication

- TCP Client and Server mode
- IS 15959 Part II compliance, 6LoWPAN, G3/PRIME
- Optical, AMI and serial ports
- Pluggable and Technology interoperable WAN port
- Optional RS-232 with modem power supply (2G/3G supported)
- Optional RS-485 multi-drop (two or four wire RJ45 or two wire Screw terminal)
- UDP/IP/PPP/GPRS capable
- Narrow Band PLC capable
- License Free RF capable (865-867, 409, 433 Mhz)
- ZIBGEE/WIFI/BLE capable
- First Breath and Last GASP compliance
- Supports Push and Pull

### System Integration Support

- Interoperable DLMS compliance
- Self-Integrable with IS 16444 compliant MDMS
- Self-Integrable with multi-vendor Coms
- Programmable Alarms and instant push

### Battery Options

- Internal battery for Display and back up
- Separate Battery for RTC

### Tamper Detection and Alarms

- Provision for sealing with conventional wire or plastic seals
- Bypassing current and reverse current
- Advanced tamper detection and logging
- Pre-programmed alarms for meter self-check
- Alarms trigger, enunciators, relay outputs or communications event
- Alarm Trigger Push – First breath,last GASP and instant alarm push
- Alarms are stored in event logs
- Self-diagnostic feature
- Up to 200 Events storage

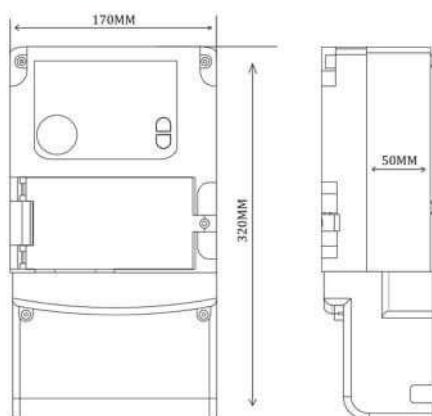
### Prepayment

- Inbuilt Prepayment mode
- Real-time prepayment and post payment selection.
- GPRS based Recharge capable
- Configuration of Mode over OTA
- Energy (kWh) and Value (Currency) based prepayment
- Programmable tariff plan

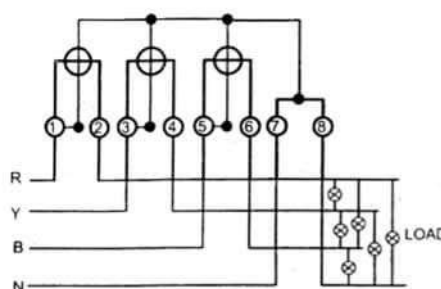
### Net Metering

- Inbuilt Net metering Mode
- Real-time Net metering Swap
- Configuration OTA remotely.
- Import, Export and Net Energy measurement

## OUTLINE DIAGRAM:



## CONNECTION DIAGRAM:



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