



## Intelligent Sensing Anywhere

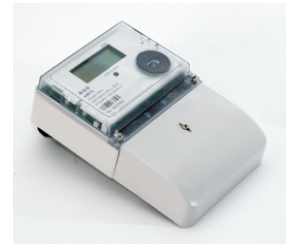
ISA is an award-winning global company specialized in Telemetry and M2M (Machine to Machine) Communications. ISA is a global leader in different market segments such as: Remote Management for Utilities, including telemetry and remote metering solutions for gas, fuel, electricity and water. The products, solutions, and services offered by ISA are based on its own technology and know-how in the fields of electronics, software development, telemetry and control, which have been accumulated over the past 20 years. The ability to develop and launch innovative products into the market in a very short time is the key to ISA's international success. Among many awards received, ISA was distinguished in the course of Metering Europe 2006 in Copenhagen with the Innovation Award of the European Utility Awards. This award cited ISA's iEyeMeter – an innovative solution which enables wireless multi-utility remote metering without the need to exchange legacy meters.

**EUA**  
EUROPEAN UTILITY AWARDS  
Winner 2006  
Innovation

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- ▣ Flexible and complex tariff structure meets different demands
- ▣ Reactive energy(kvarh) and system parameters (V, A, PF, Hz) are available in request
- ▣ Display with OBIS code (optional)
- ▣ Display with backlit (optional)
- ▣ Test mode
- ▣ Tampering proof functions
- ▣ DIN terminal configuration
- ▣ BS terminal configuration (optional)



### Metering

The meter can be supplied with either Class1 or Class 2 accuracy as defined by IEC 62053-21. The rated voltage of the meter can be specified for either the 220V-240V, 50 or 60Hz range. The meter has a wide and flexible current dynamic.

### Two standard current ranges:

5(60)A

DIN or BS terminal configuration

5(100)A

BS terminal configuration

The meter is able to offer two registration modes to meet customer requirements for fraud prevention.

The measurement mode, which is programmed at the factory prior to dispatch, allows energy to be recorded in security mode or bidirectional mode.

### Mode 1- Security mode

The meter records reverse energy as forward one and adds this value to total energy consumption, i.e.

$A=|+A|+|-A|$

### Mode 2-Bidirectional

The meter records import and reverse energy flow in separate registers, labeled import (+A) and export (-A).

### Real Time Clock

The time clock used by the meter is run from a quartz crystal clocking unit with an accuracy of +/- 5ppm at 25.

### Day-light Saving

Day-light saving is available. Customer can define the switching day thru software as fixed calendar day or different day for each year (up to 10 years).

### Tariff Control

Meter tariff control can be configured as under external switching or internal switching, which is achieved via time switch based on the built-in real time clock.

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## Tariff Management

Thru software, flexible tariff arrangement is configurable. Customer is able to define up to 8 day types, and each day type can be configured as up to 10 tariff switching.

The day table effective on a specific date is determined with the aid of below tables.

In season & week table, weekday and weekend can be configured and one year can be divided into maximum 6 seasons, each of them with different day types applied to weekday and weekend.

In holiday tables, holidays can be applied with particular day type, which deviate from the normal season & week table.

There are two different holiday tables:

- ❑ Routine holiday table  
Maximum 50 holidays, which occur regularly each year.
- ❑ Exceptional holiday table  
Maximum 50 holidays, which occur irregularly each year.

## Historical Recordings

The meter saves register information for both consumption and Maximum Demand at 00:00 on due billing date. Up to 12 sets of historical meter reading data can be stored.

## Maximum Demand

The meter calculates and displays Maximum Demand data for each tariff register. The MD window is configurable as a 5, 15 or 30 min period. It is displayed in kW to a resolution of 8888.8888 kW. MD reset can be defined as automatic reset, which means it will be reset automatically in pre-defined billing date, or as manual reset, which can be achievable thru software.

## Tampering-proof Functions (optional)

Various tampering-proof functions are available in request, which can be displayed in LCD and recorded in memory as events stamping with date and time.

- ❑ Meter cover open & terminal cover open detection
- ❑ External magnetic affection
- ❑ Bypass
- ❑ Energy reverse
- ❑ Phase and neutral line exchanged, load earthed

## Communication

The meter is fitted with an optical port to allow the meter to be programmed in the workshop or in the field under security control.

Communication is in accordance with the protocol defined by IEC 62056-21. Thru configuration software, various configurations can be made such as tariff matrix, display setting, RTC adjustment, MD reset and other register reset. These configurations are protected with different security levels. The operator ID and date & time of last configuration operation will be recorded in meter for tracing. The meter data can be downloaded using one way communication only without any security protection. As an optional application, additional series communication port (RS232 or RS485) can be built in.

Number of tariff	Up to 4
Number of MD rates	Up to 4
Day Type	Up to 8
Switching times	Up to 10 per day type
Seasonal definition	Up to 6
Weekdays / weekends	Configurable
Routine Holidays (Occur regularly each year)	Up to 50
Exceptional Holidays (Occur irregularly each	Up to 50

# Technical Specification

Parameter	Characteristic
Meter type	Single phase electronic meter
Approval	IEC62052-11 & IEC62053-21
Mechanical/Electrical compliance	DIN standards or BS standards
Measuring scope	Active energy (import and export) Reactive energy (optional)
Register	LCD display up to 8 digits Maximum Demand 4+4 (kW) Programmable display cycling
Historical registers	12 sets of historical data
Connection type	1 phase 2 wire
Reference voltage	220V-240V, 120V
Reference frequency	50 and 60 Hz
Operating voltage range	-25% to +15%
Power consumption	Voltage circuit <0.3W at 240V Current circuit <0.1VA at 5A
Class index	Class 1 or Class 2
Basic current	5A or 10A
Maximum current	60A or 100A
Meter starting current	<20mA
Meter constant	1000 imp/kWh (220V-240V) 2000 imp/kWh (120V)
Operating temperature range	-20 °C to + 60 °C (-30 °C available in request)
Limit temperature range of operation	-20 °C to + 70 °C
Storage temperature	-25 °C to + 75 °C
Relative humidity	Up to 95%
Degree of protection (IEC 60529)	IP51(IP54 in request)
Optical port	IEC62056-21 optical port, read/write
Battery life	15 years
Pulse output	In accordance with IEC 62053-31
Meter cover material	Transparent PC
Meter base material	Glass fibered PC
Terminal box material	Glass fibered PC
Terminal cover material	Glass fibered PC
Dimension	185 x 125 x 57 / 138 x 125 x 57 (mm)
Weight	Approximate 0.5kg

Product developed under a partnership between ISA and Hexing Electrical