

## ENERGY REVENUE METERING



### About Iskraemeco

In Iskraemeco, we successfully unite almost 60 years (starting 1945) of experience with innovations and new technologies in order to satisfy the various needs of electricity distribution in the area of metering and billing electricity consumption. In terms of sales of meters, we are among the largest in the world, with products carrying our trademark being familiar in almost one hundred countries on all five continents. To date, we have supplied customers with more than 40 million products, almost two million of which are electronic.

Today, the Iskraemeco group has, in addition to the parent company in Kranj, a further eight production companies with various ownership shares, four of its own trading companies and three licensed production partners. Through local trade representatives we are present all over the world, since we wish to be as familiar as possible with customers' actual needs and to offer them suitable solutions.

Iskraemeco can provide total solutions for metering electricity for all segments of the electricity market: from production and transmission to distribution. We offer a range of individual devices for different levels of measurement: residential, trade, small and large industrial consumers, as well as for transmission and production. The offer of meters as the basic elements of the system of measurement and management of electric energy is extended by our systems for management and billing. In addition to products, we also offer consultancy, project preparation and engineering.

### Product range

1. **RESIDENTIAL METERS** (Tariff TDL : R1, R2, & B1)
2. **RESIDENTIAL DLC\* METERS** (Tariff TDL : R1, R2, B1)
3. **RESIDENTIAL/SMALL COMMERCIAL METERS**  
(Tariff TDL : R3 & B2 : = 197 kVA)
4. **INDUSTRIAL / COMMERCIAL METERS**  
(Tariff TDL : B2, I2: = 197 kVA, & TM > 200 kVA)
5. **METERS FOR SUBSTATIONS** (High Accuracy Class 0.2s)
6. **SYSTEMS FOR AMR AND ELECTRIC ENERGY MANAGEMENT**








## RESIDENTIAL METERS (Tarif TDL : R1, R2, & B1)

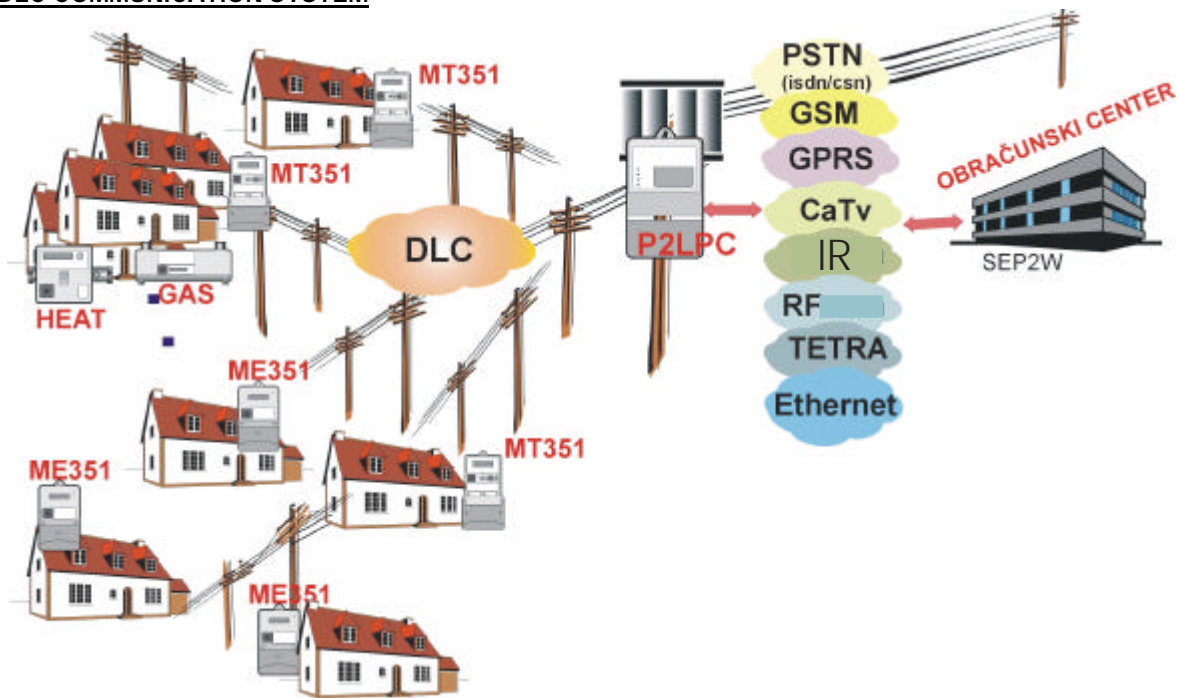
<p><b>ME 161</b></p>  <p><b>Single-phase meter</b>          A single-phase electronic meter, Class. 1          Display: LCD (8 mm), load range: 10-100 A,          4 rates, optical interface (IEC 1107).          Designed according to standards: metrology IEC 61036;          meter case BS 5685.</p>	<p><b>ME162</b></p>  <p><b>Single-phase meter</b>          A single-phase electronic meter, Class.1          Display: LCD (8 mm), Load range: 10-100 A,          4 rates (LWBP/WBP Ready), optical interface (IEC 1107),          Internal Clock (RTC), <u>Absolute Registration</u>          Designed according to standards: metrology IEC 61036;          meter case BS 5685.</p>
<p><b>ME162i (Anti Fraud)</b></p>  <p><b>Single-phase meter (Anti Fraud)</b>          A single-phase electronic meter, Class.1          LCD : 7-segment,8 characters&amp;7 signal flags          Load range: 5-30 A,optical interface (IEC 1107),          Measuring RMS Voltage, Current &amp; Demand          Internal Clock (RTC), 4 rates (LWBP/WBP Ready),          Fraud detection : Magnetic field influence, 2 measuring          element-alarm activated if 6% different, Always positive          registration (Absolute), tampering          Comply with the IEC 62053-21 &amp; IEC 62052-11</p>	<p><b>MT171</b></p>  <p><b>Absolute Register Multi-phase meter</b>          A single phase or 3 phase (Multiphase) electronic meter          Class 1          Load range:; 5-120 A or 5 (6) A CT Operated          Double direction or Absolute registration          4 tariff (LWBP/WBP ready), LCD display;          Internal RTC ; impulse output SO          Communication via IR (for local); CS (for remote)          Antifraud/Tampering protection features.          LMK PLN Litbang Certified</p>
<p><b>Local Data Reading for Residential Meters</b></p>  <p>Local Reading via Hand Held Unit and IR Probe</p>	



## RESIDENTIAL DLC\* METERS (Tariff TDL : R1, R2, B1)

ME371	MT371	P2LPC DATA CONCENTRATOR
 <p><b>Single Phase DLC meter</b>                      Active energy (reactive) in both energy flow directions – import (A+), export (A-) and absolute IAI, Accuracy Class 1 (kWh) &amp; Class 2 (kVARh)                      Load, range 5-85 A or 10-120 A,                      4 rates (LWBP/WBP ready)                      2 independent load profiles (LP1, LP2) 16 channels each                      Log book 64 events with a time stamp                      Real time clock Accuracy according to IEC 62052-21, Super Capacitor for backup power supply (up to 10 days)                      Network Quality : Instantaneous voltage and current, Under/over voltages                      Tamper-proof features : The meter detects the main cover and the terminal cover opening and records it in a logbook and Neutral line break-off detection                      Client Remote Disconnecting via DLC network                      IR optical port : IEC 61107 and DLMS.                      AMR communication via DLC network</p>	 <p><b>3-Phase DLC meter</b></p>	 <p><b>Data Concentrator</b>                      Collecting data from system meters via DLC network.                      Data from meters are stored on Compact Flash 512 Mb (CF)                      Finding and managing all meters on DLC network                      Concentrator – AMR Center via built-in GSM/ GPRS, PSTN, IP stack                      IP protocol Concentrator-AMR SW                      Up to 1000 DLC meters connected                      Up to 5 km distance from Concentrator to last meter on DLC networks</p>

### DLC COMMUNICATION SYSTEM



\* = Distribution Line Carrier

## RESIDENTIAL/SMALL COMMERCIAL METERS (Tariff TDL : R3 & B2 : = 197 kVA)

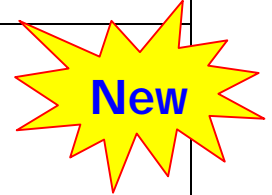
### MT372



MT372 with Disconnecting Block



MT372



#### Multi-phase meter with GSM Modem & Client Remote Disconnecting

A single phase or 3 phase (Multiphase) electronic meter.  
 Class.1 (kWh) , Class.2 (kVARh), Class.2 (kVAh)  
 Load range: 5-80A, 5-120A, or 5-6A CT Operated. Double  
 direction kWh or absolute registration .  
 4 rates (LWBP/WBP ready),  
 LCD VDEW requirement w/ OBIS code (IEC 62056-61,  
 RTC, impulse output SO  
 10 ch. Load Profile, Logbook 256 events

Real-time measurement : Voltage, Current per phase Cosfi &  
 Frequency  
 Relay for client remote disconnecting, with optional 85 A  
 disconnecting block or MCCB Shunt trip for CT connection  
 Communication: Optical port (local), GSM Modem on board  
 (remote) or RS485 (Cascading system with external  
 modem/Communicator). Antifraud/Tampering protection.  
 LMK PLN Litbang Certified

## INDUSTRIAL / COMMERCIAL METERS (Tariff TDL : B2, I2: = 197 kVA, & TM > 200 kVA)

### MT830...831



MT831



Modular System on Modem & Input/Output



#### High precision kWh / kVARh multifunction meter

Active Export/Import (kWh), 4Q (kVARh) & Apparent (kVAh)  
 energy & demand  
 Accuracy Class kWh/kVARh/kVAh : 0.5S/1%/2 or 1/2/2  
 Load range : 5-6 A , 5-20A (CT Operated)  
 Voltage : 50 – 415 VAC (Auto ranging)  
 8 Tariff program (LWBP/WBP Ready), Maximum demand  
 LCD VDEW requirement with OBIS code (IEC 62056-61)  
 2 group Independent Load profile (16 ch each) & Meter log-  
 book (256 events)  
 Power quality (V,I,f,cosfi), harmonic elements Voltage & Current  
 per phase (up to 8<sup>th</sup> harmonic), Voltage dips, sags, swell.

Input / output (signal + impulse) modular type  
 No-power reading via USB optical probe  
 Anti Fraud/Tampering features : reverse current, meter/terminal  
 cover opening, wrong phase sequence, parameterization  
 Communication  

- Onboard : Optical port local (IEC 1107) (local)
- Modular : RS485, RS232, modems: PSTN,  
 GSM/GPRS/ISDN, LAN (Ethernet)

 NMI & PLN Litbang (LMK) Certified.



## METERS FOR SUBSTATIONS (High Accuracy Class 0.2s)

### MT860



MT860 Wallmounting







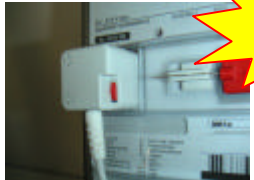
MT860 Flush mounting



### Class 0.2s High accuracy Multifunction meter

kWh Export/Import, kVARh 4 Quadrant . Load range : 1 – 5(6) A or 5-10 A  
 Accuracy Class kWh/kVARh/kVAh : 0.2s/0.5%/1 or 0.5s/2/2 4 tariff (LWBP/WBP ready)  
 4x20 Dot matrix LCD comply with OBIS code (IEC 62056-61) with Indication Phase sequence,  
 Phase presence, Energy flows, meter status, Time & Date  
 2 group independent Load profile (16 channel each) with different interval (programmable 1-60 minutes)  
 Meter log book (256 events), maximum demand, Input / output module (signal + impulse)  
 Power quality Voltage, Current, frequency per phase, V dips, sags, swell, up/down, Harmonic elements up to 8<sup>th</sup> harmonic  
 Available in Wall and Flush mounting type, No power reading/ setting via USB optical probe.  
 Communication ports : Local : Optical, Modular : RS323/ RS485, LAN (Ethernet), GSM/PSTN/ISDN modem  
 NMI & PLN Litbang (LMK) certified

## SUPPORTING DEVICES

P2CBT Communicator	CON1	CON2	IR PROBE
 <p>A P2CBT communicator is an intelligent industrial modem used for data transfer between multifunctional meter(s) and remote energy management centre.                      Input: RS232C, RS485 and CS interface (20mA current loop).                      Output: analog (PSTN) or mobile (GSM) modem.                      Supported protocols: IEC 61107 (modes A,B, C &amp; D), DIN 19244                      Power supply: 100- 230 Vac                      Case: designed for fitting to three-phase meter terminal block or stand-alone.</p>	 <p>A CON1 device converts RS485 signals to RS232C and vice versa. It is used in AMR and Energy Management Systems whenever there is a need for transformation of signals. It is usually connected to the PC side for connection with meters, supported with RS485 output.                      A converter can be mounted on a DIN rail or is stand-alone.                      Power supply: 100- 230 Vac</p>	 <p>A CON2 device converts CS (20 mA currentloop) signals to RS232C and vice versa. It is used in AMR and Energy Management Systems Whenever there is a need for transformation of signals. It is usually connected to the PC side for connection with meters, supported with CS output.                      A converter can be mounted on a DIN rail or is stand-alone.                      Power supply: 100-230 Vac</p>	 <p>IR Probe Db 9 Sonda 4 SK</p>  <p>IR Probe USB Powered Sonda 6 SK</p> <p><b>New</b></p> <p>"NO Power Reading Option" for to MT860 &amp; MT83x                      USB Connector                      Local Reading and Programming for IEC1107 and DLMS Metes</p>