



## UNIVERSAL MEASURING DEVICES MC 3x0

- **RELEVANT FOR** ELECTRICITY DISTRIBUTION AND ENERGY PRODUCTION COMPANIES, UTILITIES, DWELLINGS, ENERGY MANAGEMENT SOLUTION PROVIDERS, INDUSTRY, BUSINESS BUILDINGS, DESIGNERS OF SMALL POWER STATIONS, PANEL BUILDERS, MARINE.

# NETWORK RECORDER MC 350, MULTIMETER MC 330, NETWORK RECORDER WITH HARMONICS MC 350H

## KEY FEATURES

- **MEASUREMENTS OF INSTANTANEOUS VALUES FOR MORE THAN 60 QUANTITIES** (U, I, P, Q, S, PF, PA, f,  $\phi$ , THD, MD ...), (MC 330, MC 350).
- **HARMONICS MEASUREMENTS** UP TO 31ST HARMONIC
- MEASUREMENTS OF **MINIMUM AND MAXIMUM VALUES**
- **4 ENERGY** COUNTERS
- **8 MB FLASH MEMORY** RECORDER
- **ACCURACY CLASS U, I, P 0.5** (ACTIVE ENERGY CLASS 1, OPTIONAL CLASS 0.5S)
- **FREQUENCY RANGE** FROM 16 HZ TO 400 HZ
- **UP TO 4 I/O** (TWO MODULES WITH 2 I/O) ARE AVAILABLE AS OPTION: 2 TARIFF INPUTS, 2 DIGITAL INPUTS, 2 DIGITAL OUTPUTS (SO OR RELAY) OR 2 ANALOGUE OUTPUTS
- **AC OR UNIVERSAL** (OPTION) **POWER SUPPLY**
- **GRAPHICAL LCD**; 128 X 64 DOTS WITH ILLUMINATION
- **AUTOMATIC RANGE OF NOMINAL CURRENT** (MAX. 12.5 A) AND VOLTAGE (600 V<sub>L-N</sub>)
- **USER-ADJUSTABLE DISPLAY** OF MEASUREMENTS
- **MULTILINGUAL SUPPORT** (13 LANGUAGES)
- **ISOLATED COMMUNICATION RS485 OR RS232** UP TO 115.200 bit/s, USB 2.0 (OPTION) OR PROFIBUS (OPTION) UP TO 12Mbit/s
- SUPPORTED COMMUNICATION PROTOCOLS: **MODBUS, DNP3, PROFIBUS DP-V0 (OPTION)**
- **USER-FRIENDLY PC MIQEN SOFTWARE** FOR SETTING VIA COMMUNICATION (OPTION)

## FOR WHOM

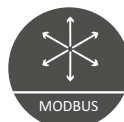
- FOR ELECTRICITY DISTRIBUTION AND ENERGY PRODUCTION COMPANIES, UTILITIES, DWELLINGS, ENERGY MANAGEMENT SOLUTION PROVIDERS, INDUSTRY, BUSINESS BUILDINGS, DESIGNERS OF SMALL POWER STATIONS, PANEL BUILDERS, ETC.



MULTIMETER **MC 330**



NETWORK RECORDER **MC 350**



# TECHNICAL DATA

## ACCURACY

ACCURACY IS PRESENTED AS PERCENTAGE FROM NOMINAL VALUE OF THE MEASURAND EXCEPT WHEN IT IS STATED AS AN ABSOLUTE VALUE.

MEASURAND		ACCURACY
RMS CURRENT (I1, I2, I3, Iavg, In, MD)		0.5
RMS PHASE VOLTAGE (U1, U2, U3, Uavg, MD)	25 ... 600 V	0.5
PHASE-TO-PHASE VOLTAGE (U12, U23, U31, Uavg)		0.5
FREQUENCY (f)		10 mHz
POWER FACTOR (PF)		0.5
PHASE AND PHASE-TO-PHASE ANGLE ( $\varphi$ , $\varphi_{12}$ , $\varphi_{23}$ , $\varphi_{31}$ )		0.5°
ACTIVE POWER		0.5
REACTIVE AND APPARENT POWER		0.5
ACTIVE ENERGY	EN 62053-21	CLASS 1
ACTIVE ENERGY (OPTIONAL)	EN 62053-22	CLASS 0.5s
REACTIVE ENERGY	EN 62053-23	CLASS 2
PULSE OUTPUT	EN 62053-31	CLASS A & B

## INPUTS

INPUT SIGNALS	CURRENT	VOLTAGE
NOMINAL FREQUENCY RANGE	50, 60 Hz	50, 60 Hz
MEASURING FREQUENCY RANGE	16 – 400 Hz	16 – 400 Hz
NOMINAL VALUE ( $I_N$ , $U_N$ )	1/5 A	75, 120, 250, 500 V <sub>L-N</sub>
MAXIMAL VALUE	12.5 A	600 V <sub>L-N</sub>
CONSUMPTION	< 0.1 VA	< 0.1 VA

## POWER SUPPLY

POWER SUPPLY	UNIVERSAL	AC
NOMINAL VOLTAGE RANGE	48 - 276 V	57.7 & 63.5 / 100 & 110 / 230 / 400
NOMINAL FREQUENCY	40 – 65 Hz	40 – 65 Hz
NOMINAL VOLTAGE DC	20 - 300 V	-
CONSUMPTION	< 3 VA	< 3 VA
SELF-POWERED L <sub>1</sub>	-	< 3 VA

# FAMILY FEATURES / CHARACTERISTICS

INSTRUMENT	MC 330	MC 350	MC 350H
<b>HARDWARE CONFIGURATION</b>			
BACKLIGHT LCD 128X64	●	●	●
KEYBOARD KEYS	5	5	5
POWER SUPPLY	UNIV, AC	UNIV, AC	UNIV, AC
ENERGY METERS	4	4	4
REAL TIME CLOCK	–	–	–
MEMORY SIZE	–	8 MB	8 MB
AUTO RANGE CURRENT	●	●	●
AUTO RANGE VOLTAGE	○	●	●
<b>COMMUNICATION</b>			
COMMUNICATION PORTS	1	1	1
RS232 / RS485 / USB	○	●	●
SERVICE USB	○	○	–
MODBUS and DNP3	●	●	●
PROFIBUS DP-VO	○	○	○
<b>I/O MODULES</b>			
MODULE 1 2SO / 2RO	○/○	○/○	○/○
MODULE 2 2TI / 2DI / 2 AO	○/○/○	○/○/○	○/○/○
<b>AVAILABLE FUNCTIONS</b>			
SETUP WIZARD	●	●	●
WRONG CONNECTION WARNING	●	●	●
CUSTOM SCREENS	●	●	●
PROGRAMMABLE REFRESH TIME	●	●	●
MD CALCULATION (TF - THERMAL FUNCTION)	●	●	●
TARIFF CLOCK	–	●	●
PROGRAMMABLE ALARMS	16	16	16
ALARMS RECORDING	–	●	●
MEASUREMENTS RECORDING	–	●	●
PC SOFTWARE	MIQEN	MIQEN	MIQEN
<b>AVAILABLE MEASUREMENTS</b>			
ACTUAL VALUES: U, I, P, Q, S, PF, PA, F,Φ	●	●	●
ENERGY	●	●	●
MAXIMUM DEMANDS	●	●	●
THD (ACTUAL)	●	●	●
HARMONICS MEASUREMENTS UP TO 31 <sup>st</sup> HARMONIC	–	–	●
HARMONICS OF MINIMUM AND MAXIMUM VALUES	–	–	●

**LEGEND:** – FEATURE NOT SUPPORTED    ● MC HAS FEATURE    ○ OPTIONAL FEATURE

**MODULES:** SO - SOLID STATE (PULSE) OUTPUT  
RO - ELECTROMECHANICAL RELAY OUTPUT  
TI - TARIFF INPUT  
DI - DIGITAL INPUT  
AO - ANALOGUE OUTPUT (0 - 20 mA)

## DATA FOR ORDERING

GENERAL ORDERING CODE CAN BE FOUND ON OUR WEBSITE [WWW.ISKRA.EU](http://WWW.ISKRA.EU)

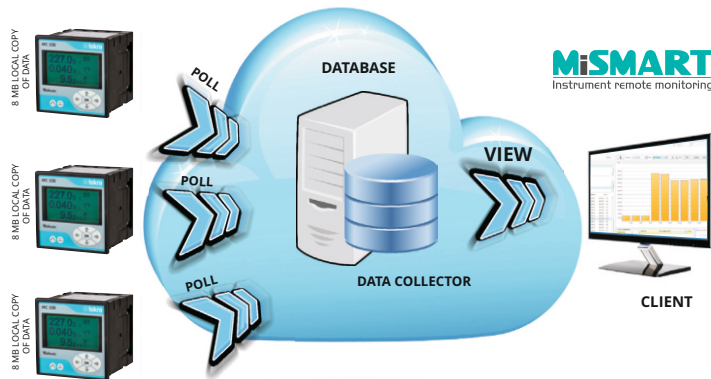
# PROPERTIES

## MiQEN

**MIQEN SOFTWARE** IS INTENDED FOR SUPERVISION OF THE METER ON PC. IT ENABLES SETTING METER PARAMETERS THAT ARE TRANSFERRED INTO THE INSTRUMENT VIA COMMUNICATION (OPTION) AND ENABLES ANALYSE RECORDED DATA. MULTILINGUAL SOFTWARE FUNCTIONS ON WINDOWS OPERATING SYSTEMS.

## MiSMART

- **DATA ACQUISITION & ANALYSIS**
- **THREE ARCH** ARCHITECTURE
- **REAL TIME ALARM** MANAGEMENT
- **DATA ACCESS** ADMINISTRATION
- **POWER QUALITY** REPORTS
- **GRAPHICAL MONITORING**



## MEASURANDS

- **RMS VALUES** OF CURRENTS AND VOLTAGES (MC 350, MC 330)
- MEASUREMENTS OF **ACTIVE, REACTIVE, APPARENT POWER AND POWER FACTOR** (MC 350, MC 330)
- MEASUREMENTS OF **ENERGY IN ALL 4 QUADRANTS**
- **DATA ACCESS** ADMINISTRATION
- **AVERAGE VALUES** OF MEASURANDS PER INTERVAL (MC 350, MC 330)

## INPUT / OUTPUT MODULES

THE MODULES ARE AVAILABLE WITH DOUBLE INPUTS/OUTPUTS. EACH MODULE HAS THREE TERMINALS. THE METER IS AVAILABLE WITHOUT, WITH ONE OR WITH TWO MODULES. THE FOLLOWING MODULES ARE AVAILABLE:

- **PULSE (DIGITAL) OUTPUT** (S0) 2 OUTPUTS
- **RELAY OUTPUT** (MC330, MC350, MC350H ONLY) 2 OUTPUTS
- **ANALOGUE OUTPUT** (MC350, MC350H ONLY) 2 OUTPUTS
- **TARIFF INPUT** 2 INPUTS
- **DIGITAL INPUT** (MC330, MC350, MC350H ONLY) 2 INPUTS
- PULSE (DIGITAL) OUTPUT MODULE IS AVAILABLE AS: PULSE OUTPUT **ACCORDING EN 62053-31** (27 V, 27 mA)

## COMMUNICATION

THIS INSTRUMENT CAN BE EQUIPPED WITH COMMUNICATION MODULES. DIFFERENT OPTIONS ARE POSSIBLE:

- SERIAL **RS485**
- SERIAL **RS232**
- **USB 2.0** (OPTION WITH MC330, MC350, MC350H)
- **PROFIBUS** + SERVICE USB (OPTION WITH MC330, MC350, MC350H)
- **SERVICE USB** (OPTION WITH MC330)

## SUPPLY

**STANDARD AC POWER SUPPLY ENABLES CONNECTION OF THE METER TO AC VOLTAGE** (57.7 & 63.5 / 100 & 110 / 230 / 400). **OPTIONAL IS UNIVERSAL POWER SUPPLY**, WHICH ENABLES CONNECTION OF THE METER TO DC (20–300 V) OR AC VOLTAGE (48–276 V / 50 Hz).

# POSSIBLE USE

## APPLICATIONS

