

# SMY-CA

## Robust Waterproof Compact Analyser



Analyser of electric network parameters SMY-CA is a measuring and data logging instrument for single- and three phase low voltage (up to 230/400V) distribution networks in substations, switchgear boxes, cubicles or directly at the consumers premises such as smart buildings, hospitals, industrial infrastructures etc.

Core of the instrument is a modified SMY 133 analyser. Its features and functions closely corresponds to IP65 mini case version -CA.

With PQ S firmware module instrument becomes a fully featured power quality analysers with support for flicker indices (Pst, Plt), record of voltage events and weekly power quality evaluations according to EN 50160.

### Standard

INPUTS <b>3U, 3I</b>	MEASUREMENT <b>U,I,P,Q</b>	PF,cos,THD	+/- <b>Wh,varh</b>	HARMONICS <b>50</b>	SAMPLING <b>6,4kHz</b>	CURRENT INPUT <b>333mV</b>
FLASH <b>512MB</b>	STANDARDS <b>IEC 61557-12</b>	USB	ETH	WEBSERVER	NTP	

### Optional

STANDARDS <b>EN 50160</b>
STANDARDS <b>class S</b> IEC 61000-4-30

### Technical specification

METERING	Voltage (ULN, ULL)	U1, U2, U3, U12, U23, U31 [act, avg, avg <sub>max</sub> , avg <sub>min</sub> ]
	Current (I)	IL1, IL2, IL3 [act, avg, avg <sub>max</sub> , avg <sub>min</sub> ]
	Power (P)	P1, P2, P3, 3P (import, export, total, 1 <sup>st</sup> harmonic) [act, avg, avg <sub>max</sub> , avg <sub>min</sub> ]
	Reactive Power (Q)	Q1, Q2, Q3, 3Q (import, export, total, 1 <sup>st</sup> harmonic) [act, avg, avg <sub>max</sub> , avg <sub>min</sub> ]
	Apparent Power (S)	S1, S2, S3, 3S [act, avg, avg <sub>max</sub> , avg <sub>min</sub> ]
	Harm. Distortion Power (D)	D1, D2, D3 [act, avg, avg <sub>max</sub> , avg <sub>min</sub> ]
	Power Factor (PF), cosφ	PF1, PF2, PF3, 3PF, cosφ1, cosφ2, cosφ3, 3cosφ [act, avg, avg <sub>max</sub> , avg <sub>min</sub> ]
	Symmetrical Components	zero, negative and positive sequence components of voltage and current
	Unbalance Factor	unbl, unbU, φnsl
	Voltage THD (THDU)	THDU1, THDU2, THDU3, THDU12, THDU23, THDU31
	Current THD (THDI)	THDI1, THDI2, THDI3
	Individual Harmonics	Harmonics 1 <sup>st</sup> to 50 <sup>th</sup> of Voltage and Current and their angles
	Fundament. Harmonic (U <sub>fh</sub> , I <sub>fh</sub> )	U1fh, U2fh, U3fh, I1fh, I2fh, I3fh
	Frequency (f)	f
	DATALOGGING	Active Energy
Reactive Energy		class 2 (62053-23), 4 quadrants, per phase, per tariff, total
Main Archive		min., max., avg. values of ULN, ULL, I, P, Q, S, D, THDU, THDI, f, Avg. values of harmonics and their angles, U <sub>fh</sub> , I <sub>fh</sub> , Symmetrical components, Unb. factors, state of I/Os
Electricity Meter Readings		Active and reactive imp. and exp. energy per phase (L1, L2, L3) and per tariff (T1, T2, T3)
OTHERS	Voltage Event logging	optional firmware module PQ S
	Waveforms recording	optional firmware module GO
	Alarms	Logical functions, under/over limit of U, I, P, Q, S, unbl, THD, cos, f
	Inputs/Outputs	-
	Memory Size	512MB
	RTC	seconds, minutes, hours, days, months, years
	Communication	USB, Ethernet

POWER	aux. voltage	10 ÷ 275 V <sub>AC</sub> / 90 ÷ 350 V <sub>DC</sub>	
	power	8 VA / 3 W	
	overvoltage cat.	CAT III / 300 V	
INPUT	VOLTAGE	measuring range	173 ÷ 476 V <sub>LL</sub> / 100 ÷ 275 V <sub>LN</sub>
		measurement category	CAT III / 300V
	CURRENT	measuring range	2 mV ÷ 500 mV

OTHER	TEMP	operating	-25 ÷ 60°C, <95% non-condens.
		storage	-40 ÷ 80°C, <95% non-condens.
	EMC	emission	EN 61000 – 4 – 2, 3, 4, 5, 6, 11
		immunity	EN 55011, EN 55022 - class A
		protection rating	IP 65 (when top lid is closed)
	dimensions	96W × 96H × 58D mm / 0,3 kg	

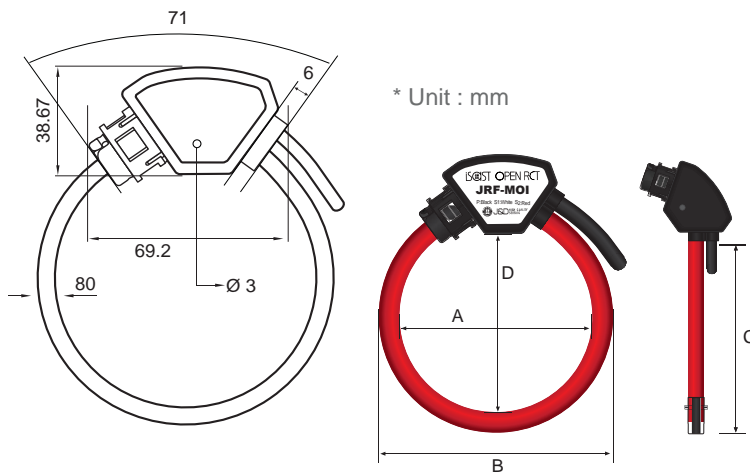
COMMUNICATION	Local USB 2.0 KMBLong, MODBUS RTU protocols Connector type Mini-B
	Ethernet KMBLong, MODBUS TCP protocols

ACCURACY (IEC 61557-12)	voltage	0.2
	current	0.2
	active power	0.5
	reactive power	1
	apparent power	0.5
	PF, cosφ	0.5
	frequency	0.02
	active energy	0.5
	reactive energy	2
	harm. and THD	2
unbalance	0.5	

## Current sensors

Instruments with this option features 333mV AC input for measuring current using special current transformers. This special input supports various flexible rogowski coil current transformers as well as other kind of transformers with 333mV AC output such as split-core CTs or clamps.

Rogowski Coil Model	Inom [A]	d [mm]	Connection	Aux. Supply	Overvoltage Category
JRF MOI 333M-40 Inom	100, 150, 200, 250	40	Wire	5VDC 15mA max	600V CAT IV
JRF MOI 333M-80 Inom	300, 400, 500, 600 800, 1000, 1200	80	Wire		600V CAT IV
JRF MOI 333M-115 Inom	1500, 2000, 2400	115	Wire		600V CAT IV



Model	A	B	C	D
JRF MOI 333M-40	58	66	185	40
JRF MOI 333M-80	80	96	285	80
JRF MOI 333M-115	115	141	385	115

## Optional firmware modules

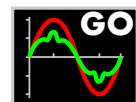
### PQ S module

Module for evaluation of power quality according to EN 50160 (class S). Enables measurement and recording of flicker indices, interharmonics and voltage events. Power quality is evaluated weekly and stored to special PQ Main archive for future processing.



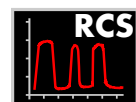
### GO module

Module for detection and precise recording of various waveform distortions. This module records the so called oscillograms of voltages and currents in extended detail, capacity and trigger options into the flash memory.



### RCS module

The RCS module (ripple control signal or mains voltage) activates an ability to detect, evaluate, decode and store RCS messages transmitted over the distribution network. It precisely measures voltage on the selected frequency and stores the extracted information.



Typical connection schema

