



Engineering & Construction

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GRE CODE

GRE.EEC.R.27.IT.P.13131.00.082.01

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TITLE: Sistemi di misura – Impianto FV

AVAILABLE LANGUAGE: IT

SISTEMI DI MISURA – IMPIANTO FV

“Spinetta Marengo FV”

Alessandria (AL)



File: GRE.EEC.R.27.IT.P.13131.00.082.01_Sistemi di misura - Impianto FV

REV.	DATE	DESCRIPTION	PREPARED	VERIFIED	APPROVED
01	13/04/2022	Rev.01	D.Sacchi	A.Fata M. Gallina	V.Bretti
00	15/07/2021	Emissione Definitiva	C.Parrello	A. Fata	V. Bretti

GRE VALIDATION

Name (EGP)	Discipline EGP	PE EGP
COLLABORATORS	VERIFIED BY	VALIDATE BY

PROJECT / PLANT Spinetta Marengo FV (13131)	EGP CODE																		
	GROUP	FUNCION	TYPE	ISSUER	COUNTRY	TEC	PLANT	SYSTEM	PROGRESSIVE	REVISION									
	GRE	EEC	R	2	7	I	T	P	1	3	1	3	1	0	0	0	8	2	0

CLASSIFICATION	For Information or For Validation	UTILIZATION SCOPE	Basic Design, Detailed Design, Issue for Construction, etc.
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ISKRAEMECO
 Metering is our Business

ICG

MT860

High precision modular meter



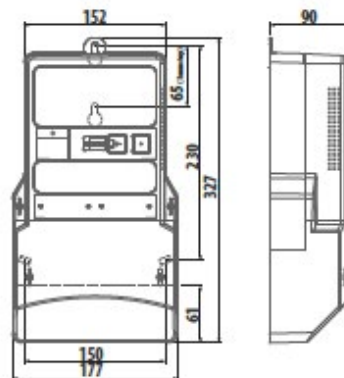
- kWh kvarh kVAh Active, Reactive and Apparent Energy
- 4 Quadrant measurement
- Accuracy class
- Multiple connection types
- Transformer connection
- Power quality according to EN 50160
- Maximum demand
- Load profile
- Load control
- Event log
- Real-time clock
- Multi-rate registration
- IEC 62056 - 21 compliance
- SCADA ready Modbus Real time SCADA, Modbus communications protocol
- PSTN 2G GPRS Communication
- RS232 RS485 RS232 interface, RS485 interface
- CS CS (20 mA current loop) interface, IR (optical port) interface
- Photovoltaic ready

Proven technology, highest precision and communication modularity make the MT860 the best solution for production and transmission applications. This multi-functional device meets modern market demands with extended functionalities:

- «No power reading» option via optical port
- Anti-tampering features
- Voltage cut, sag and swell detection
- Power quality monitoring
- Photovoltaic friendly design
- Recyclable casing material
- Exchangeable communication modules
- Exchangeable Input/output modules



Meter dimensions



ICG MT860 High precision modular meter

		MT860S-T1 CT connected	MT860S-T1 CT & VT connected
Type overview			
Network	High voltage		•
	Medium voltage	•	•
	Low voltage	•	•
Connection type	3P4W	•	•
	3P3W	•	•
Communication type	on board	Optical probe + no power reading, RS-485	
	modules	CS – RS485, RS485-RS485, RS232-RS485, MODBUS TCP/IP & RTU, Ethernet – RS485, GSM/GPRS-RS485	
Outputs – on board	External power supply, Two impulse outputs, RS485		
Input – output options	4 OPTOMOS outputs + 5A bistable relay + 1 Input, 5 OPTOMOS outputs + 1 Input, 8 OPTOMOS outputs + 4 Inputs		
Technical specifications			
Nominal voltage Un	3 x 57.7/100 V ... 3 x 240/415 V		3 x 57.7/100 V ... 3 x 240/415 V
Voltage range	0.8 – 1.15 Un		
Reference frequency	50 Hz ±2 % or 60 Hz ±2 %		
Current	Nominal current In	1 A, 2 A, 5 A, 5/1 A	
	Base current Ib	–	
	Maximal current Imax	6 A, 10 A	
Accuracy class	Active energy	Class 0.2S (IEC 62053 - 22)	
	Reactive energy	Class 2, 3 (IEC 62053-23), calibrated up to 0.5%	
	Apparent energy	According to the IEC 62053 - 22 standard	
Real-time clock	Accuracy	Crystal: < 5 ppm = ± 3 min./year (T = +25 °C)	
	Back-up power supply	Li battery : 10 years	
External power supply	Value	100 – 240 V AC/DC	
	Tolerance	0.8 – 1.15 Un	
	Frequency (only for AC)	50 Hz or 60 Hz	
Temperature ranges (IEC 62052 - 11)	Operation	-40 °C ... +70 °C	
	Storage	-40 °C ... +80 °C	
Ingress protection IEC 60529	IP 53		
Liquid Crystal Display			
Basic functionality			
Measurement	Active (Import/export) and Reactive energy (Import/export), 4Q Reactive, Apparent energy & demand, Phase and three phase energy/demand measurements, Current average, maximum and cumulative demand measurement, Maximum demand can be calculated for all energies measured as tariff rated or cumulative		
Tariff functions	Complex time-of-use (TOU), Tariff control via RTC or external inputs		
Load profiles	Two independent Load profiles, Programmable and Independent Load profiles period, Event log		
Communication	Independent communication channels, MODBUS RTU and MODBUS TCP/IP		
Power quality	Measurement of RMS phase current, RMS phase voltage, Power factor, Network frequency, Phase angles, Voltage interruptions, Short power outages		
Specific			
Backlit LCD display, Detection of opening main and terminal cover, Secured communication channels, Network anomalies detection, Communication modules, Input/output modules			
Specific			
Enhanced Power quality measurement features (Harmonic components, Total harmonic distortion factor, Voltage sags and swells), Load control, RTC (Li battery)			



Iskraemeco, Energy Measurement and Management
 4000 Kranj, Savska loka 4, Slovenia
 Telephone: +386 4 206 40 00
<http://www.iskraemeco.com>, e-mail: info@iskraemeco.com

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