

ENERGY METERS



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M2DWIFI-2

Single-phase - With remote monitoring



General features

The **M2DWIFI-2** energy meter allows you to take measurements and control consumption through an APP available on IOS and Android.

Thanks to its WIFI connection, the electrical panel can be activated or deactivated via the built-in relay, avoiding unwanted consumption.

It has a remote cut-off capacity of up to 80 amps.

- **Rated voltage (Un):** 165-265 V AC
- **Rated current:** 5 (60) A
- **Auxiliary voltage:** Self-powered
- **Dimensions:** 2 modules (36mm)
- **Communication:** WIFI 802.11 b/g/n
- Programmable power limiter

General features		Model
Single-phase		M2DWIFI-2

Measuring parameters	Accuracy	Unit
Energy	Class 1	kWh
Voltage	0,5%	V
Current	0,5%	A
Active power (P)		kW
Power factor (Cos ϕ)		PF

Web and App

- APP monitoring
- Control of electrical consumption
- WIFI power cut
- 80A remote cut-off capacity
- Suitable for integration into third party platforms
- Setting consumption limits
- Alert programming
- Cloud storage
- Small size
- Manual or programmed activation of the device



Applications



Residential



Campings



Tourist Apartments



Industry



Hotels



Enterprises

TCIL2

Three-phase - Electronic - Indirect measurement



General features

The **TCIL2** unit acts as an energy meter and measures the parameters of a three-phase or single-phase low-voltage network. It has RS485 communication and the capacity to connect 32 devices on the same circuit or 128 via a gateway. **Up to 6 hourly tariffs can be configured.**

Control can be done via PC or network from the device. Also available with Ethernet port.

- **Rated voltage (Un):** 3x230/ 400 V AC
- **IB intensity (IMAX):** 1,5 (6) A
- **Indirect measurement:** x/5A or x/1A
- **Visualisation:** 8 digits
- **Impulse output:** 2
- **Auxiliary voltage:** Self-powered
- **Communication:** RS485 port and Ethernet Modbus RTU or BACNET
- **Dimensions:** 76 x 90mm
- Resetable active energy meter
- Bidirectional energy meter
- LED's indicators for verification

Model	TCIL2	TCIL2 TCP	TCIL2T	TCIL2T TCP	TCIL2T LP	TCIL2T LP TCP
Memorised parameters	-	-	17 variables in 15 min periods		Load curve in 5 min. periods	
Memory	-	-	3 years		1 year	
Tariffs	6	6	6	6	6	6
Ethernet port	-	Modbus Bacnet	-	Modbus Bacnet	-	Modbus Bacnet

Measuring parameters	Unit	Accuracy
3 voltage (line-line and line-neutral)	V	0,2 %
3 voltage phase-neutral	A	0,2 %
Total and partial active, reactive and apparent power	kW, kvar, kVA	0,5 %
Power factor (Cos φ)	PF	0,5 %
Frequency	Hz	0,01 %
Imported and exported active energy (EP+/EP-)	kWh	0,5s
Imported and exported reactive energy (EQ+/EQ-)	kvar	2 %
Reactive energy (Q1, Q2, Q3, Q4)	kWh	2 %
Maximum demand I, P, Q and S	A, kW, kvar, kVA	-
THD Current and voltage	A, V	-
RMS voltage and current harmonics (1 - 32)	A, V	-

TCIL1

Three-phase - Electronic - Indirect measurement



General features

The **TCIL1** three-phase unbalanced 3 or 4 wire energy meter. It has Class 1 accuracy (EN 62053) and is indirect measurement (x/5A) programmable.

It incorporates a power consumption LED indicator and 3 current check LEDs, as well as an 8 digit electronic display.

- **Rated voltage (Un):** 3x230/ 400 V AC
- **IB intensity (IMAX):** 1,5 (6) A
- **Indirect measurement:** x/5A
- **Auxiliary voltage:** self-powered
- **Dimensions:** 76 x 90mm
- **Visualisation:** 8 digits
- **Impulse output:** 1
- Active energy measurement

General features	Model
Meter with active energy measurement	TCIL1

TCIDL3-MID

Three-phase - Electronic - Direct measurement



General features

The **TCIDL3-MID** counter is also an analyser, measuring the various parameters of a three-phase system. The measured values can be displayed or transmitted via the communication ports.

It has IR and RS485 communication with MODBUS protocol. It measures positive and negative active energy and reactive energy in 4 quadrants and has time discrimination for 4 tariff periods.

- **Rated voltage (Un):** 3x230/ 400 V AC
- **Rated current:** 0,25 - 5 (100)A
- **Frequency:** 50 Hz
- **Communication:** IR/RS485
- MID certificate
- **Dimensions:** 4 modules, 70x90mm
- **Visualisations:** 8 digits
- Measurement of active and reactive energy
- **Auxiliary voltage:** Self-powered

General features	TCIDL3-MID	TCIDL3i-MID
Positive and negative active energy	•	•
Reactive energy	Quadrants 4	
Tariffs	4	4
Digital inputs	-	1
Impulse outputs	2	1

Measuring parameters	Accuracy	Unit
Voltage (Line - Line and Line - neutral)	0,5%	V
Current	0,5%	A
Import and export active energy	Class B	kWh
Import and export reactive energy	2%	kvarh
Active/reactive energy resettable	0,5%	kWh - kvarh
Active/reactive max. power demand	-	kW - kvar
Active, reactive and apparent power	0,5%	kW - kvar - KVA
Frequency	0,01 Hz	Hz
Power factor	0,5%	-

TCIDL1

Three-phase - Electronic - Direct measure



General features

The **TCIDL1** energy meter is an unbalance three-phase meter with 3 or 4 wires. It is direct measurement up to 80 A. It has a power consumption LED indicator and three current check LED's. It also has an 8 digit electronic counter. The pulse output is SO (DIN 43864). It has a size of 4 modules on DIN rail.

TCIDL1-MID version

MID certification version specially designed for use in areas where a high level of safety and reliability of measurements is required.



TCIDL1



TCIDL1-MID

General features	TCIDL1	TCIDL1-MID
Direct rated current	10 (80) A	0,25-5 (80) A
Rated voltage	400 V	400 V
Auxiliary voltage	Self-powered	
Dimensions	76x100 mm	76x100 mm
Active energy measurement	•	•
Impulse output	1	1
MID certified		•

M1DL-MID

Single-phase - Electronic - Direct measurement



General features

The **M1DL-MID** single-phase direct meters are also analysers, measuring the parameters of a single-phase low voltage network. In addition, they are MID-certified for active energy, not bidirectional

The measurement values can be displayed on the built-in display.



M1DL1-MID



M1DL3-MID

General features	M1DL1-MID	M1DL3-MID	M1DL3T-MID
Direct rated current	0,25-5 (50) A	0,25-5 (100) A	0,25-5 (100) A
Rated voltage	230 V		
Auxiliary voltage	Self-powered		
Dimensions	18 x 116mm	18 x 90mm	18 x 90mm
Active energy measurement	•	•	•
Impulse output	1	-	-
Tariffs	-	-	4
RS 485 communication	-	•	•

M1DL1 - M2DL1

Single-phase - Electronic - Direct measurement



General features

The single-phase **M1DL1** and **M2DL1** energy meters have class 1 accuracy (EN 62053) and incorporate an internal shunt.

They have an LED power consumption indicator.



M1DL1



M2DL1

General features	M1DL1	M2DL1
Rated voltage (Un)	230 V AC	
Auxiliary voltage	Self-powered	
Rated direct current	5 (50) A	5 (80) A
Visualisation	7 digits	6 digits
Active energy (EP+ / EP-)	1 (total)	2 (total & partial)
Dimensions	17,5mm	35mm

M1DM1 - M2DM1

Single-phase - Electromechanic - Direct measurement



General features

The **M1DM1** and **M2DM1** single-phase electromechanical energy meters have class 1 accuracy (EN 62053) and incorporate an internal shunt.

They have a mechanical power consumption indicator.



M1DM1



M2DM1

General features	M1DM1	M2DM1
Rated voltage (Un)	230 V AC	
Auxiliary voltage	Self-powered	
Rated direct current	5 (50) A	5 (80) A
Visualisation (electromechanic)	6 digits	6 digits
Active energy (EP+ / EP-)	1 (total)	1 (total)
Dimensions	17,5mm	35mm

TTI - TTIM Totalizer terminals

Microprocessor and serial output



General features

TTI: Totalizer basic module with microprocessor and serial output.

TTIM: Totalizer module with microprocessor and serial output, with 128kb memory, LCD display and integrated keypad.

The TTI and TTIM totalizer modules are programmable, they can count closed contact time in seconds, time or pulses.

- **Auxiliary voltage:** 100, 110, 230 or 400 V AC
- **Communication:** RS485 port
Modbus
- **Dimensions:** 9 modules, 155x90mm
- Programmable counter reading
- Independent counter reset

General features	TTI	TTIM
Independent impulse meter	8 input	8 input
Max. no. of devices per line	32	32
No. of outputs	1	1
Load curve per meter		90 days
LCD display and 128 kb circular memory		•

IFR - IFRA

RS 232 / RS 485 Converters



General features

IFR devices convert the levels of the RS232 standard to the corresponding levels of the RS485 standard. DIN rail mounting.

They allow the connection of a PC equipped with RS232 to an RS485 bus.

General features	IFR1	IFRA3	IFRA	IFR4
Dimensions (mm)	52x90	52x90	105x90	155x90
No. of RS 232 serial outputs	1	1	1	1
No. of RS 485 serial outputs	1	1	1	4
Auxiliary voltage 110 or 220 V AC				
2 wire connection	•			
2 or 4 wire connection (insulated)		•	•	•
Auxiliary voltage 24, 48, 110 or 220V DC				
2 or 4 wire connection (insulated)		•	•	•

RT485

RS 485 repeaters



General features

The **RT485** repeater is a communications equipment that allows the extension of a RS485 modbus, in order to increase the communication distance or the maximum recommended number of terminals.

The communication is bidirectional and incorporates LED indicators to visualise the operation of the signals. DIN rail mounting.

- **Auxiliary voltage:** 110, 230 or 400 V AC
24 or 48V DC
110 or 220V DC
- **2 or 4 wire connection (insulated)**
- **Dimensions:** 6 modules, 105x90mm
- **No. of RS 485 serial outputs:** 1

General features	Model
RS485 communication repeaters	RT 485

ETHERGATE 2

Ethernet conversor



General features

The **etherGATE** converter is a communication gateway for the conversion of the physical medium (RS 485) to Ethernet and/or Wi-Fi .

- **Rated voltage:** 110 - 264 V AC
120 - 300 V DC
- **Dimensions:** 2 modules, 35x90mm
- **Protection degree:** IP30
- **Frequency:** 50-60Hz

RS-485 interface		Ethernet interface		Wi-Fi communications	
Field bus	RS-485	Connector	RJ45	Band	2.4 GHz
Speed	4800 - 9600 - 19200 - 38400 - 57600 - 115200 bps	Type	Ethernet 10BaseT - 100BaseTX autodetectable	Standards	IEEE 802.11 b / g , IEEE 802.11 n
Data bits	8	Protocol	TCP - UDP - Modbus TCP - HTTP (Web server) - REST	Max. output power	IEEE 802.11 b : 20 dBm IEEE 802.11 n : 14 dBm
Stop bits	1 - 2	Network connection mode	DHCP ON/OFF		
Parity	Without - even-odd				

Management software

The **SACIGEST** program is a system that allows the SACI terminals installed in an electrical network to be managed in a simple and graphic way. The installation is grouped by sections, each with a different display, in which the corresponding terminals are inserted. The system incorporates the creation of virtual terminals from real terminals.

The analysers it handles are: AHM3, ANG96, M2DL2, M2DL2, MAR-, TMC-, MDA-, LC, LD-, TCEM-, MFR-, CP3000, CP4000, TMCQ, TMCC, likewise, it can handle the counters M1DL-MID, M1DL1, M2DL2, M1DM1, M2DM1, TCIDL1, TCIL1; through the TTI terminals. The software is capable of handling up to four communication ports, as well as the use of MODEM to communicate with the different terminals installed in the network, and can opt for the client-server mode of operation via an Ethernet network.

The system is available in different versions depending on your applications:

- **SACIGEST 01:** Version including terminal monitoring and configuration options.
- **SACIGEST 02:** Version that adds the ENERGIES option to SACIGEST01. The energy consumptions of the installation can be displayed by means of terminals or sections, as well as their graphic representation. Up to six types of tariffs can be configured, as well as the sampling interval.
- **SACIGEST 03:** SACIGEST03 has been added to the version of SACIGEST02 with a version of historical currents, voltages and powers, with the possibility of setting the sampling interval.
- **SACIGEST 04:** The SACIGEST04 version adds the option of alarms. Different alarms can be defined in the system for each terminal, allowing action to be taken on the digital outputs of the same or any other terminal. Pending alarms and alarms already registered are displayed.



Within each SACIGEST version, there are different sub-versions: Normal, Server and Client.

- **SOFTWARE TTIGEST:** Programmes dedicated to optimising and controlling water, gas, electricity, etc. consumption. Aimed at managing meter consumption and issuing the corresponding invoices.

The TTIM totalisers allow load curves to be generated and the data can be examined numerically or graphically, printed and exported.

The version incorporates the history of all the meters, the uncontrolled consumption and the assigned and unassigned controlled consumption. It manages the control with PREPAYMENT, allowing to control the balance of each meter and to make collective or individual contributions.

General features	Model
Network analyzers / Programmable converters	
Monitoring (Configuration, grouping and visualisation)	SACIGEST 01
Energy + SACIGEST 01	SACIGEST 02
Historical + SACIGEST 02	SACIGEST 03
Alarms + SACIGEST 03	SACIGEST 04
Energy meters	
Monitoring (Configuration, grouping, visualisation and invoicing)	TTIGEST



Network analyzers and programmable converters versions (SACIGEST)

- Standard version
- Reduced version (6 units)
- Server version. Up to 10 additional pcs
- Reduced server version (6u). Up to 10 additional pcs

Energy meters version (TTIGEST)

- Standar version. Specific for billing, only allowed to analise in header.




ENERGY METERS

			M2DWIFI-2	TCIDL1	
					
GENERAL FEATURES					
Rated voltage			165-265 V AC	3 x 230/ 400 V AC	
Rated current			5 (60) A	10 (80) A	
Dimensions			2 DIN	76x100mm	
Protection degree IP			IP 51	IP51	
MID certified					
COMMUNICATIONS					
RS485 (Modbus)					
Ethernet TCP/IP - BacNet TCP/IP					
Wi-Fi			•		
Memory					
OTHER FEATURES					
Contacts output				1 CO	
ELECTRICAL QUANTITIES		Unidad			
Electrical parameters			13	1	
Phase voltage	V, kV	L1, L2, L3			
Phase voltage	V, kV	Max/Min			
Phase voltage	V, kV	Total	•		
Line voltage	V, kV	L1, L2, L3			
Line voltage	V, kV	Max/Min			
Current	A, kA	L1, L2, L3			
Current	A, kA	Max/Min			
Current	A, kA	Max. Demand			
Current	A, kA	Total	•		
Active power (P)	kW, MW, GW	L1, L2, L3			
Active power (P)	kW, MW, GW	Total	•		
Active power (P)	kW, MW, GW	Max/Min			
Active power (P)	kW, MW, GW	Max. Demand			
Reactive power (Q)	kvar, Mvar, Gvar	L1, L2, L3			
Reactive power (Q)	kvar, Mvar, Gvar	Total	•		
Reactive power (Q)	kvar, Mvar, Gvar	Max/Min			
Reactive power (Q)	kvar, Mvar, Gvar	Max. Demand			
Apparent power (S)	kVA	L1, L2, L3			
Apparent power (S)	kVA	Total	•		
Apparent power (S)	kVA	Max/Min			
Apparent power (S)	kVA	Max. Demand			
Power factor (Cos)	PF	L1, L2, L3			
Power factor (Cos)	PF	Total	•		
Power factor (Cos)	PF	Max/Min			
Frequency	Hz	Total	•		
Import active energy (EP+)	kWh, MWh, GWh	Total	•	•	
Import active energy (EP+)	kWh, MWh, GWh	Parcial			
Export active energy (EP-)	kWh, MWh, Gwh	Total	•		
Export active energy (EP-)	kWh, MWh, GWh	Parcial			
Export reactive energy (EQ+)	kvarh, Mvarh,Gvarh	Total			
Export reactive energy (EQ-)	kvarh, Mvarh,Gvarh	Total			
Export reactive energy (EQ-)	kWh, MWh, GWh	Parcial			
Energy load curve	kWh, MWh, GWh	Curve			
Reactive power	kvarh, Mvarh,Gvarh	Q1, Q2, Q3, Q4			
Tariffs			4		
THD voltage and current	V, A	L1, L2, L3			
RMS-U and RMS-I harmonics	%	L1, L2, L3			
Remote cut-off switch	-	ON / OFF	•		
Programmable power limiter	-	-	•		
Remote cut-off	-	-	•		

ENERGY METERS

			M1DL3 - MID M1DL3T - MID	M1DL2T - MID	
					
GENERAL FEATURES					
Rated voltage			230 V AC	230 V AC	
Rated current			0,25-5(100) A	0.25 - 5 (100) A	
Dimensions			1 DIN	1 DIN	
Protection degree IP			IP51	IP 51	
MID certified			0120/SGS05731	•	
COMMUNICATIONS					
RS485 (Modbus)			•	•	
OTHER FEATURES					
Contact output					
ELECTRICAL MAGNITUDES					
	Unidad				
Electrical parameters			10	10	
Voltage (Line - Neutral)	V, kV	L1			
Voltage (Line - Neutral)	V, kV	Total	•	•	
Current	A, kA	L1			
Current	A, kA	Total	•	•	
Active power (P)	kW, MW, GW	Total	•	•	
Reactive power (Q)	kvar, Mvar, Gvar	Total	•	•	
Apparent power (S)	kVA	Total	•	•	
Power factor (Cos)	PF	Total	•	•	
Frequency	Hz	Total	•	•	
Imported active energy (EP+)	kWh, MWh, GWh	Total			
Imported active energy (EP+)	kWh, MWh, GWh	Parcial			
Exported active energy (EP-)	kWh, MWh, Gwh	Total	•	•	
Imported reactive energy (EQ+)	kvarh, Mvarh, Gvarh	Total			
Imported reactive energy (EQ-)	kvarh, Mvarh, Gvarh	Total	•	•	
Tariffs			4 (M1DL3T-MID)	4	

ENERGY METERS

	M1DL1 - MID	M1DL1	M2DL1	M1DM1	M2DM1
					
	230 V AC	230 V AC	230 V AC	230 V AC	230 V AC
	0,25-5(50) A	5 (50) A	5 (80) A	5 (50) A	5 (80) A
	1 DIN	1 DIN	2 DIN	1 DIN	2 DIN
	IP51				
	0120/SGS0575				
	1 pulse output (optocoupler)	1 CO	1 CO	1 CO	1 CO
	6	1	2	1	1
	•				
	•				
	•				
	•				
	•				
	•				
	•				
	•	•	•	•	•
			•		