



Energy Management Multitariff Energy Analyser Type EM341



- Three phase energy analyser
- Class 1 (kWh) according to EN62053-21
- Class B (kWh) according to EN50470-3
- Accuracy ±0.5% RDG (current/voltage)
- Direct current measurement up to 65 A ac

Backlit LCD display (3x 8-digit) with integrated touch key-pad

• Energy readout on display: 8-digit

Instantaneous variables readout on display: 4-digit
Energy measurement: kWh and kvarh

(imported/exported); kWh+ by up to 4 tariffs; kWh per phase

• System variables: kW, kvar, kVA, V L-L, V L-N, PF, Hz, kW dmd, kW dmd peak

- Phase variables: kW, kvar, kVA, V L-L, V L-N, A, PF
- Self power supply
- Dimensions: 3-DIN module
- Protection degree (front): IP51
- 2 pulse or alarm outputs (by PNP open collector)
- RS485 Modbus port
- Easy connection (measure of imported energy only) or bidirectional (imported and exported energy)
- Real time clock function with battery backup
- Tariff management by real-time clock
- •Data stamping of daily +kWh per tariff or daily total +kWh/-kWh (up to
 - 2-month FIFO data storage)
- Pulse output test function
- Freeware software (UCS) for parameter programming

Product Description

Three-phase multitariff energy analyser provided with both backlit LCD display and integrated touch keypad. Particularly indicated for active energy metering and for cost allocation in applications up to 65 A (direct connection), with up to 4 different tariffs managed by means of an internal clock, with battery backup. All the clock-related parameters (single tariffs starting/ending hours, working days/holidays selection, etc.) can be programmed by UCS software (not included in the package; downloadable from CG website). Automatic switching to daylight saving time.

An internal datalogger allows to store for each day (with total memory capacity of 2 months) the total imported and exported energy of the day, or in alternative the total consumption per each tariff of the day, linked to the relevant day information. It can measure imported and exported energy or be programmed to consider only the imported one. Housing for DIN-rail mounting, with IP51 front degree protection. The analyser is provided with an RS485 Modbus port and 2 digital outputs. Digital outputs can be used for energy retransmission (both total imported and exported energy or phase 1 and phase 2 imported energy) or for set-point alarm management.

UCS is a freeware meter configuration software that helps the user to set the meter, to download the datalogger in CSV or XLS files, or to upload predefined configurations (metering parameters, alarm setting, tariff and holiday calendar).





STANDARD	EM341- DIN	AV2	3	X	OS	X
Not certified according to MID directive. Cannot be used for fiscal (legal) metrology.	Model	Range code	System	Power supply	Output	Option
How to order						

Type Selection: EM341-DIN

Range code	System	Power Supply	Output	Option
AV2: 208 to 400 V	3:	X: self power	OS: RS485 Modbus	X: none
L-L ac - 5(65) A	3-phase 3 or 4 wire;	supply,	port and 2 digital	
(Direct connection)	2-phase 3-wire;	208(-20%) to	outputs	
	1-phase 2-wire	400(+20%) VL-L ac,		
		45 to 65Hz		

Input specifications

Rated inputs			
Current type	3-phase loads, direct connection		
Current range	5(65) A		
Nominal voltage	208 to 400 V L-L ac		
Accuracy			
(@25°C ±5°C, R.H. 60%, 45 to 65 Hz)	Imin=0.25A; Ib: 5 A, Imax: 65 A; Un: 113 to 265 V L-N (196 to 460 V L-L)		
Current			
	From 0.04lb to 0.2lb: ±(0.5%RDG+1DGT)		
Phase-neutral voltage	From 0.2lb to Imax: ±(0.5%RDG)		
Frequency	In the range Un: ±(0.5% RDG)		
Active power	Range: 45 to 65Hz.		
	From 0.05 In to Imax, within Un range, PF=1: ±(1% RDG)		
	From 0.1 In to Imax, within Un range, PF=0.5L or 0.8C:		
Power Factor	±(1% RDG)		
Reactive power	±[0.001+1%(1.000 - "PF RDG")]		
·	From 0.05 In to Imax, within Un range, sin φ =1: ±(2% RDG)		
	From 0.1 In to Imax, within Un range, sin g=0.5L or 0.8C:		
Energies	±(2% RDG)		
Active energy			
	Class 1 according to EN62053-21		
Reactive energy	Class B (kWh) according to EN50470-3		
Start-up current	Class 2 according to EN62053-23		
	20mA (- 20mA in case of negative current)		
Start-up voltage	Self-consumption is not measured		
Start-up voltage			
Posolution	Display/serial communication		
Resolution			
Current			
Voltage	0.1/0.1 V		
Power	0.1/0.1 V 0.1 kW or kV/ar/ 0.1 W or var		
Frequency	0.1 Hz/0 1Hz		
DE			
FF Energian (nacitiva)	0.01/0.001		
Energies (positive)	0.01 kV/H or kvarb / 0.1 kV/H or kvarb		





Energy additional errors			
Influence quantities	According to EN62053-21		
Temperature drift	≤ 200ppm/°C		
Sampling rate	4096 samples/s		
Display refresh rate	1 s		
Display and touch key-pad			
Туре	Backlit LCD, 3 rows of 8-digit each, h 6.2 mm		
Read-out	Energy: 8-digit. Variables: 4-digit		
Touch key	3 (DOWN, Enter and UP).		
Max. and Min. indication			
Energies	Max. 99 999 999		
	Min. 0.01		
Variables	Max. 9 999		
	Min. 0.01		
Memory energy storage			
Energy	10^12 cycles. Energy value is saved every time the less		
	significant digit increases.		
Programming parameters	10^12 cycles. When a parameter is modified, only the relevant		
	memory cell is overwritten		
LEDs	Flashing red light pulses according to EN50470-3, EN62052-11,		
	1000 pulse per kWh (min. period: 90ms)		
	Fix orange light: negative current direction(only with "B"		
	measurement selection, see "List of available menus")		
Current Overloads			
Continuous	65 A, @ 50Hz		
For 10ms	8450 A		
Voltage Overloads			
Continuous	1.2 Un		
For 500ms	2 Un		
Input impedance			
230VL-N	1.2 Mohm		
5(65) A	< 1.25 VA		
Wrong connection detection	Installation guide to indicate if connections are correctly carried		
	out. The function can be disabled.		
Phase sequence	Indicates if the phase sequence is not the correct one (L1-L2-L3)		
Correct current direction	Indicates if the current direction is not the right one (only type "B"		
	measurement selection).		
Load conditions	The wrong connection detection works in case of loads with:		
	- PF>0.766 (<40°) power factor if inductive or PF>0.996 (<5°) if		
	capacitive		
	- a current at least equal to 10% rated current (0.5 A)		





Tariff energy meters

Tariffs	
Number of tariffs	4 (t1 to t4)
Change of tariffs	By internal clock only
Periods	Up to 12 periods (4 different calendar seasons for the working days, semi-festive days, and festive days/holidays) plus up to 100 holidays in 10 years (max 10 holidays per year). Up to 6 time-slots per day for each period or holiday
Time-slots	Each time slot can be linked to any tariff (t1 to t4)
Working days	The days defined as working days are selectable
Semi-festive days	The day defined as semi-festive are selectable
Festive days	The day defined as festive are selectable.
Holidays	The holidays are selectable.
	The day before the first day of each holiday period can be set as normal or semi-festive.
	In case the day before holiday is already semi-festive or festive, it will keep its status.
Seasons	Up to 4. The start/end dates of each season period are selectable (e.g. winter period from December 1 st to March 31st, spring from April 1 st to June 30 th , etc.)
Programming	Tariff management is possible only via UCS programming software.

Setup of the tariff management parameters by UCS software

UCS programming software main features:

- selection of the working days, semi-festive days and festive days within the week;

- The year can be split in up to 4 seasons

- selection of up to 100 holidays periods or single days, within 10 years. For each holiday it is possible to decide whether the previous day is semi-festive or not;

- for each day type of each period (up to 12 in total), the day split (up to 6 time slots per day) can be set. One of the 4 tariffs can be associated to each time slot;

- A default tariff can be selected to be associated to any undefined periods.

CARLO GAVAZZI Automation Components



Example of tariff energy meters overall working scheme Periods management







Output specifications

RS485 serial port	RS485 by screw connection.
Function	For communication of measured data, programming parameters
Protocol	ModBus RTU (slave function)
Baud rate	9.6, 19.2, 38.4, 57.6, 115.2 kbaud, even or no parity
Address	1 to 247 (default: 1)
Driver input capability	1/8 unit load. Maximum 247 transceivers on the
Data rafrach time	same bus.
Data refresh time Road command	1 Sec
Ry/Ty indication	Ry segment on display is shown when a valid Modbus command is
	sent to that specific meter
	Tx segment on display is shown when a valid Modbus reply is sent
	back from the meter to the master
Digital outputs	2
Purpose	For pulse output proportional to the active energy or for alarm (set-
	point) management
Output type	PNP open collector
Load	V ON: 1 V dc; max. 100 mA
	V OFF: 80 V dc max
Pulse output	Un to 2 independent
Pulse energy for output 1	Connectable to kWh+ kWh- or kWhI 1
Pulse energy for output 2	Connectable to kWh+, kWh- or kWhL2
Pulse rate	Selectable in multiple of 10 (up to 100) and multiple of 100 (up to
	max. value).
	Min. 10, Max. 500 or 2000 pulses/kWh according to pulse ON
	duration
Pulse ON duration	Selectable: 30 ms or 100 ms according to EN62052-31
Pulse output test	Eurotion to test pulse output (simulating power consumption from 1
	kW up to 40 kW)
Alarm management	
Number of outputs/variables	Up to 2, independent, connectable to any of the measured
·	variables (insantaneous and demand)
Alarm modes	Up alarm, down alarm
Activation set-point adjustment	From 0 to full scale
Deactivation set-point adjustment	From 0 to full scale
On-time delay	1 to 255 s
Output status	Selectable; normally de-energized or normally energized
Note	The 2 digital outputs can work as a dual pulse output, dual alarm
	output, one pulse output and one alarm output.
Clock	
Functions	Universal clock and calendar.
lime format	Hour minutes seconds with selectable 24 hours or AM/PM format.
Date format	Day-month-year with selectable DD-MM-YY or MM-DD-YY format.
Battery me	To years
Accuracy	15 sec/month
Daylight saving time automatic setting	Can be enabled/disabled.
	If enabled different schedule can be selected:
	Israel: Automatic adjustment of legal time will take place at 2 am of
	the Friday before the last Sunday of March (1 hour forwards) and
	l at 2 am of last Sunday of October (1 hour backwards).





Energy analyser additional specifications

Internal memory	For data-logging of the daily consumption (total kWh+ per day and
	total kWh- per day, or in alternative the kWh+ per each tariff per
	each day, with relevant day information)
Memory capacity	to store in FIFO mode the tariff consumption profile of up to 60
	days

Em341Soft Software specifications

Available functions	Meter parameters configuration (also possible on the meter via
	touch keys)
	Clock parameters configuration (also possible on the meter via
	touch keys)
	Tariff parameters configuration (not possible on the meter)
	Time periods, day type and holidays configuration (not possible
	on the meter)
	Configuration import/export in CSV format
	Data-logger export in CSV or XLS format.

General specifications

Operating temperature	-25 to +65 °C, indoor, (R.H. from 0 to 90% non-condensing @
	40°C)
Storage temperature	-30°C to +80°C (R.H. < 90% noncondensing @ 40°C)
Overvoltage category	Cat. III (IEC 60664, EN60664)
Insulation (for 1 minute)	4000 VAC RMS between measuring inputs and digital/serial
	output (see table)
Dielectric strength	4000 VAC RMS for 1 minute
EMC	According to EN62052-11
Electrostatic discharges	15kV air discharge;
Immunity to irradiated electromagnetic	Test with current: 10V/m from 80 to 2000MHz;
fields	Test without any current: 30V/m from 80 to 2000MHz;
Burst	On current and voltage measuring inputs circuit: 4kV
Immunity to conducted disturbances	10V/m from 150KHz to 80MHz
Surge	On current and voltage measuring inputs circuit: 4kV;
Radio frequency suppression	According to CISPR 22
Standard compliance	
Safety	EN62052-11
Metrology	EN62053-21, EN50470-3
Approvals	CE
Connections	
Cable cross-section area	Measuring inputs: max. 16 mm ² , min. 2.5 mm ² with/without
	metallic cable ferrule; Max. screw tightening torque: 2.8 Nm
Other terminals	1.5 mm ² , Min./Max. screws tightening torque: 0.4 Nm
Housing	
Dimensions (WxHxD)	53 x 63 x 90 mm
Material	Noryl, self-extinguishing: UL 94 V-0
Sealing covers	Included
Mounting	DIN-rail
Protection degree	
Front	IP51
Screw terminals	IP20
Weight	Approx. 240 g (packing included)





Power supply specifications

Self power supply	208 (-20%) to 400 (+20%) V L-L ac, 50/60Hz
Power consumption	≤ 1 W, ≤10 VA

Insulation (for 1 minute) between inputs and outputs

	Measuring input	Power supply	Digital output	Serial output
Measuring input	-	0 kV	4	kV
Power supply	0 kV	-	4	kV
Digital output	4	kV	-	0 kV
Serial output	4 kV 0 kV			-

Accuracy (According to EN50470-3 and EN62053-23)







Display pages

No	1 st row	2 nd row	3 ^{ra} row	"Full" mode	"Easy" mode	Note
0	kWh+		kW system	Х	Х	With Measurement menu set to "A", this is considering the
	(imported)					total energy without considering the current direction.
1	kWh-		kW system	Х	Х	Only with Measurement menu set to "B"
_	(exported)					
2	kWh+		V L-L	Х	Х	
	(imported)		system			
3	kWh+		V L-N	Х	Х	
	(imported)		system			
4	kWh+		PF system	Х		
_	(imported)			Ň		
5	KVVh+		Hz	Х		
0	(imported)		14 years	V		
6	Kvarn+		Kvar	X		with measurement menu set to "A", this is considering the
	(imported)		system			direction
7	kuorb		Kuor	v		Only with Magaurament many act to "P"
'	(oxported)		rvai	^		Only with measurement menu set to B
	(exported)		System			
8	kWh+		kVA	Х		
	(imported)		system			
9	kWh+	kWdmd	kWdmd	Х		
	(imported)	peak				
10	kWh (t1)	"t1"	kW system	Х	Х	Only relevant to kWh+, with Tariff menu set to ON.
11	kWh (t2)	"t2"	kW system	Х	Х	Only relevant to kWh+, with Tariff menu set to ON.
12	kWh (t3)	"t3"	kW system	Х	Х	Only relevant to kWh+, with Tariff menu set to ON.
13	kWh (t4)	"t4"	kW system	Х	Х	Only relevant to kWh+, with Tariff menu set to ON.
14	kWh L1	kWh L2	kWh L3	Х		With Measurement menu set to "A", this is considering the
						total energy without considering the current direction. With
						Measurement menu set to "B", this is considering only the
						imported energy.
15	kVA L1	kVA L2	kVA L3	Х		
16	kvar L1	kvar L2	kvar L3	Х		
17	PF L1	PF L2	PF L3	Х		
18	VL-NL1	VL-NL2	VL-NL3	Х		
19	VL-LL1	VL-LL2	VL-LL3	Х		
20	A L1	A L2	A L3	Х	Х	
21	kW L1	kW L2	kW L3	Х		

X= available

Note: Measurement "A":easy connection, the direction of the current is considered always positive (power is always imported)

Measurement "B": bidirectional, the direction of the current is considered (power can be both imported and exported)





List of available menus

Menu	Default setting			
P1	PASS	Password request	From 0000 to 9999	0000
P2	n PASS	New password From 0000 to 9999		0000
P3	SYStEM	System type (3Pn=3-phase 4-wire, 3P=3-phase 3- 3Pn, 3P, 2P, 1P wire 2P=2-phase 3-wire 1P=1-phase 2-wire)		3Pn
P6	MEASurE	Measurement type (A=easy connection; A; b B=bidirectional imported and exported energy)		А
P7	InStALL	Wrong connection detection function	Yes/No	Yes
P8	P Int	Integration time for Wdmd calculation	1 to 30 min	15
P9	ModE	Selection of complete or simplified set of variables on display	Full or Easy	Full
P10	tArIFF	Tariff enabling **	Yes/No	Yes
P11	HoME	Home page selection (default page at power-on and after 120 s time-out from other pages)	0 to 25	0
P12	out			
P12-1	out 1	Output 1 function: kWh+ or kWhL1 pulse or Alarm 1	kWh+ or kWhL1 or Alarm 1	kWh+
P12-2	out 2	Output 2 function: kWh- or kWhL2 pulse or Alarm 2	kWh- or kWhL2 or Alarm 2	kWh+
P13	PuLSE 1			
P13-1	PuLSE 1	Selection of pulse ON duration of output 1 if selected as pulse output	30 or 100 ms	100
P13-2	PuLrAtE1	Selection of the pulse rate of output 1 if selected as pulse output 1 if selected as is 10 to 500 (if duration is 100 ms) or to 2000 (if 30 ms)		10
P13-3	tESt P 1	Simulated power consumption	0 to 40 kW	0
P13-4	tESt 1	Activation of the test	Yes/No	
P14	ALArM 1			
P14-1	ALArM 1	Selection of the variable of output 1 if selected as alarm	All possible variables	kW sys
P14-2	SEt 1	Selection of the activation setpoint of output 1 if selected as alarm	All possible variables values	0
P14-3	SEt 2	Selection of the deactivation setpoint of output 1 if selected as alarm	All possible variables values	Set 1 (P14-2)
P14-4	dELAY	Selection of the on-time delay (delay of activation) of output 1 if selected as alarm	1-255	1
P14-5	StAtuS	Selection of the status of output 1 (if selected as alarm) when no alarm condition	nE or nd *	nd
P15	PuLSE 2			
P15-1	PuLSE 2	Selection of pulse ON duration of output 2 if selected as pulse output	30 or 100 ms	100
P15-2	PuLrAtE2	Selection of the pulse rate of output 2 if selected as pulse output	Ilse rate of output 2 if selected as is 10 to 500 (if duration is 100ms) or to 2000 (if 30 ms)	
P15-3	tESt P 2	Simulated power consumption	0 to 40 kW	0
P15-4	tESt 2	Activation of the test Yes/No		
P16	ALArM 2			
P16-1	ALArM 2	Selection of the variable of output 2 if selected as alarm	All possible variables	kW sys
P16-2	SEt 1	Selection of the activation setpoint of output 2 if selected as alarm	All possible variables values	0
P16-3	SEt 2	Selection of the deactivation setpoint of output 2 if selected as alarm	All possible variables values	Set 1 (P16-2)
P16-4	dELAY	Selection of the on-time delay (delay of activation) of output 2 if selected as alarm	1-255	1





P16-5	StAtuS	Selection of the status of output 2 (if selected as	nE or nd *	nd
		alarm) when no alarm condition		
P18	AddrESS	Modbus serial address	1 to 247	1
	(OS option)			
P20	P20 bAud (S1) Modbus baud rate 9		9.6; 19.2; 38.4; 57.6,	9.6
			115.2 kbps	
P21	PArltY	(S1 model only)		
P21-1	PArltY	Modbus parity	No/even	No
P21-2	StoP blt	Stop bit (in case of No parity only)	1 to 2	1
P22	P22 rESEt Allow the reset of tariff meters and W dmd peak and		Yes/No	No
		of the kWh/kvarh partial meter available only via		
		serial communication		
P23	tIME	Time/date format	EUR/US	EUR
P24	P24 tIME Programming of time: hours then seconds		0.00 to 23.59	Actual time UTC+2
				in winter time, or
				UTC+3 in summer
				time
P25	dAtE	Programming of date: date, months and year	1-1-00 to 31-12-99	Actual date
P26	LEGAL	Automatic legal/solar time setting	No/ISr	ISr
P27	dAtALoG	Daily Total kWh+ and - OR Daily Tariff kWh	Total/Tariff	Tariff
P28	End	Exit to measuring mode		

Note: after the confirmation of a new parameter value, the value is stored in the memory without the need to exit the programming mode.

Note *: nE= normally energised (status=ON when no alarm); nd= normally de-energised (status=OFF when no alarm)

Note **: if tariff is enabled, the relevant parameters shall be programmed via serial port.





Additional available information on the display

Info 1 YEAr (2015) Year of production Info 2 SFIAL n (ddmnA) Serial number: (dd= day of the year; nnn=progressive number; A= production line, internal use only) Info 3 rEVISIon (A.01) Firmware revision d.xx Info 4 PubL SLEd Pube rate of front LED pulse/kWh) P3 SYStEM System type P6 MEASure Measurement type P7 InSTALL Wrong connection detection function P8 P Int Integration time for Wdmd calculation P9 ModE Set of variables on display P10 IArIFF Tariff enabling (and current tariff if enabled) P11 HoME Selected home page P12-1 out 1 Output 1 function: kWh- or kWhL1 pulse or Alarm 2 P13-1 PuLS1 Selection of the pulse rate of output 1 if selected as pulse output P14-2 SEt 1 Selection of the variable of output 1 if selected as alarm P14-2 SEt 2 Selection of the activation setpoint of output 1 if selected as alarm P14-3 SEt 2 Selection of the selary of activation) of output 1 if selected as alarm <td< th=""><th>Page name</th><th>Description</th><th>Note</th></td<>	Page name	Description	Note
Info 2 SEriAL n (dddnnnA) Serial number (ddd= day of the year; nn=progressive number; A= production line, internal use only) Info 4 PuLS LEd Pulse rate of front LED pulse/kWh) P3 SYStEM System type P6 MEASurE Measurement type P7 InSTALL Wrong connection detection function P8 P Int Integration time for Wdm calculation P9 ModE Set of variables on display P10 IArIFF Tariff enabling (and current tariff if enabled) P11 HoME Selected home page P12-1 out 1 Output 2 function: kWh+ or kWhL1 pulse or Alarm 1 P12-2 out 2 Output 2 function: kWh+ or kWhL1 pulse or Alarm 2 P13-1 PuLSE 1 Selection of the pulse rate of output 1 if selected as pulse output P14-2 out 2 Output 2 function: kWh+ or kWhL1 pulse on alarm 2 P14-1 ALArM 1 Selection of the output a of output 1 if selected as alarm P14-2 SEI 1 Selection of the on-time delay (delay of activation) of output 1 if selected as alarm P14-3 SET 2 Selection of the on-time delay (delay of activ	Info 1	YEAr (2015)	Year of production
number; A= production line, internal use only) Info 3 rEVISIon (A.01) Firmware revision d.xx Info 4 PubL Ed Pulse rate of front LED pulse/RWh) P3 SYStEM System type P6 MEASurE Measurement type P7 InSTALL Wrong connection detection function P8 P Int Integration time for Wdmd catculation P9 ModE Set of variables on display P10 tArIFF Tariff enabling (and current tariff if enabled) P11 HoME Selection of Whith or kWhL1 pulse or Alarm 1 P12-1 out 1 Output 1 function: kWh+ or kWhL1 pulse or Alarm 2 P13-1 PuLSE 1 Selection of the pulse rate of output 1 if selected as pulse output P13-2 PuLrAtE1 Selection of the variable of output 1 if selected as alarm P14-2 SEt 1 Selection of the activation setpoint of output 1 if selected as alarm P14-2 SEt 2 Selection of the deactivation of output 1 if selected as alarm P14-3 SEt 2 Selection of the activation of output 2 if selected as alarm P14-3 SEt 2 Selecti	Info 2	SErIAL n (dddnnnA)	Serial number (ddd= day of the year: nnn=progressive
Info 3 rEVISIon (A.01) Firmware revision d.xx Info 4 Pubs tate of front LED pulse/kWh) P3 SYSEM System type P6 MEASurE Measurement type P7 InSTALL Wrong connection detection function P8 P Int Integration time for Wdmd calculation P9 ModE Set of variables on display P10 LAHFF Tariff enabling (and current tariff if enabled) P11 HoME Selected home page P12-1 out 1 Output 1 function: kWh- or kWhL1 pulse or Alarm 1 P12-2 out 1 Output 1 function: kWh- or kWhL2 pulse or Alarm 2 P13-1 PuLSE 1 Selection of the pulse Nd uration of output 1 if selected as pulse output P13-2 PuLrAtE1 Selection of the variable of output 1 if selected as pulse output P14-1 ALArM 1 Selection of the variable of output 1 if selected as alarm P14-2 SEt 1 Selection of the cactivation setpoint of output 1 if selected as alarm P14-3 SEt 2 Selection of the satus of output 1 if selected as alarm P14-4 dELAY Selection of the satus of output 2 if selected as alarm P15-1			number; A= production line, internal use only)
Info 4 PuLs LEd Pulse rate of front LED pulse/kWh) P3 SYStEM System type P6 MEASurE Measurement type P7 InSTALL Wrong connection detection function P8 P Int Integration time for Ward calculation P9 ModE Set of variables on display P10 IArIFF Tariff enabling (and current tariff if enabled) P11 HoME Selected home page P12-1 out 1 Output 1 function: kWh-or kWhL1 pulse or Alarm 1 P12-2 out 2 Output 2 function: kWh-or kWhL2 pulse or Alarm 2 P13-1 PulsE 1 Selection of pulse ON duration of output 1 if selected as pulse output P13-2 PuLATE1 Selection of the variable of output 1 if selected as alarm P14-1 ALArM 1 Selection of the activation setpoint of output 1 if selected as alarm P14-2 SEt 1 Selection of the on-time delay (delay of activation) of output 1 if selected as alarm P14-3 SEt 2 Selection of the status of output 1 if selected as alarm P14-4 dELAY Selection of the status of output 2 if selected as alarm <t< td=""><td>Info 3</td><td>rEVISIon (A.01)</td><td>Firmware revision d.xx</td></t<>	Info 3	rEVISIon (A.01)	Firmware revision d.xx
P3 SYSEM System type P6 MEASurE Measurement type P7 InSTALL Wrong connection detection function P8 P Int Integration time for Wdmd calculation P9 ModE Set of variables on display P10 tAnFF Tariff enabling (and current tariff if enabled) P11 HoME Selected home page P12-1 out 1 Output 1 function: kWh- or kWhL1 pulse or Alarm 1 P12-2 out 1 Output 1 function: kWh- or kWhL2 pulse or Alarm 2 P13-1 PuLSE 1 Selection of pulse ON duration of output 1 if selected as pulse output P13-2 PuLRE1 Selection of the pulse rate of output 1 if selected as pulse output P14-1 ALArM 1 Selection of the variable of output 1 if selected as alarm P14-2 Set 1 Selection of the activation setpoint of output 1 if selected as alarm P14-2 Set 1 Selection of the activation setpoint of output 1 if selected as alarm P14-3 Set 2 Selection of the output 1 (if selected as alarm) P14-4 dELAY Selection of the pulse rate of output 2 if selected as pulse output P14-5 StAtuS Selection of the pulse rate of output 2 if selected as pulse output P14-5 StAtuS Selection of the pulse rate of output 2 if selected as pul	Info 4	PuLS LEd	Pulse rate of front LED pulse/kWh)
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P24 tIME Current time P25 dAtE Current date P26 LEGAL Automatic daylight saving time (No/ ISr) P27 dAtAL oC Selected datalogger variables	P23	tIME	Date/time format (EUR/US)
P25 dAtE Current date P26 LEGAL Automatic daylight saving time (No/ ISr) P27 dAtAL oC Selected datalogger variables	P24	tIME	Current time
P26 LEGAL Automatic daylight saving time (No/ ISr)	P25	dAtE	Current date
	P26	LEGAL	Automatic daylight saving time (No/ ISr)
	P27	dAtALoG	Selected datalogger variables





Alarm parameters and logic







Wiring diagrams







I/O screw terminal (S1)

Number	Description	Note
7	Т	Serial termination
8	B+	Serial B (+)
9	A-	Serial A (-)
10	GND	Ground (common to serial port and digital outputs)
11	OUT1	Digital output 1
12	OUT2	Digital output 2

Front Panel Description







Dimensions

