Installation and Operating Instructions

Single-phase Digital digital active energy meter with measurement I - U - P - Hz - PF imported and exported energies and by IR side set up communication - Direct connection 32 A and 40 A

IIST105-01 Stand 10-07-2012

Code	Description
DRM-32-1P	single-phase active energy-meter with direct connection 0.020 to 32 A - **1 tariff** - 1 S0 **(MID calibrated)**
DRM-40-1P	single-phase active energy-meter with direct connection 0.020 to 32 A - **1 tariff** - 1 S0 **(MID calibrated)**

⚠ WARNING
Installation must be carried out and inspected by a specialist or under his supervision.
When working on the instrument, switch off the mains voltage!

1) Quantities displayed

• Depending on the model, by pushing the command button it is possible to show:

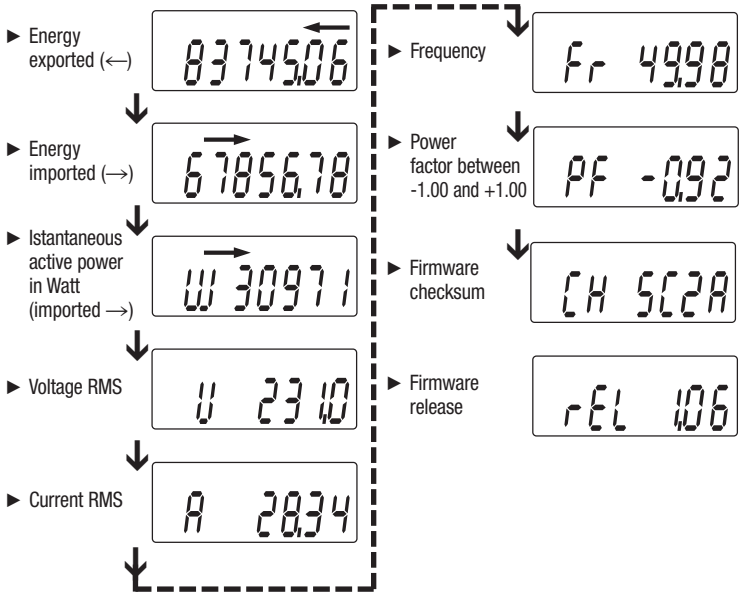
Ref.	Quantities	Unit	Symbol	DRM-32-1P	DRM-40-1P
E1	Active Energy Imported	kWh	→	**x**	**x**
E2	Active Energy Exported	kWh	←	**x**	**x**
P	Active Power Imported	W	W →	**-**	**x**
P	Active Power Exported	W	W ←	**-**	**x**
U	Voltage	V	U	**-**	**x**
I	Current	A	A	**-**	**x**
F	Frequency	Hz	Fr	**-**	**x**
PF	Power factor		PF	**-**	**x**

2) LCD display pages

• The main page is shown at the meter power on, and whenever command button is not pushed for 20 seconds. This page automatically displays the energy counter (**E1** or **E2**) which is increasing at that moment; on the top line is displayed the direction of the energy imported (→) or exported (←).

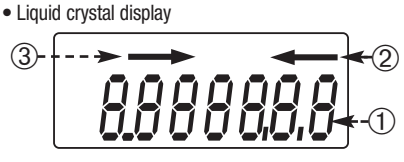
• Depending on the model, by pushing the command button is possible to show:

DRM-32-1P	DRM-40-1P
- Active energy imported (→)	- Active energy imported (→)
- Active energy exported (←)	- Active energy exported (←)
	- The Instantaneous Power active imported (→)
	- The Instantaneous Power active exported (←)
	- The Voltage
	- The Current
	- The Frequency
	- The Power factor
- The Firmware release	- The Firmware release
- The Firmware checksum	- The Firmware checksum
- The display test page	- The display test page



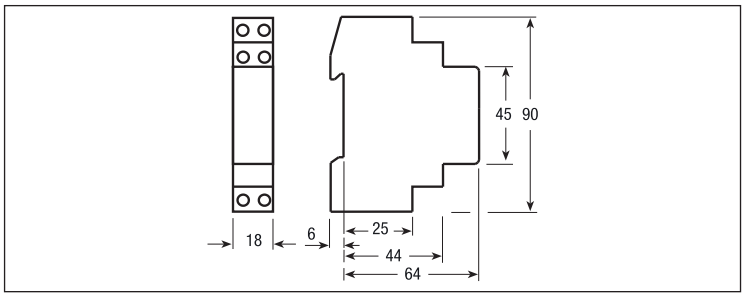
3) Display View

• Liquid crystal display

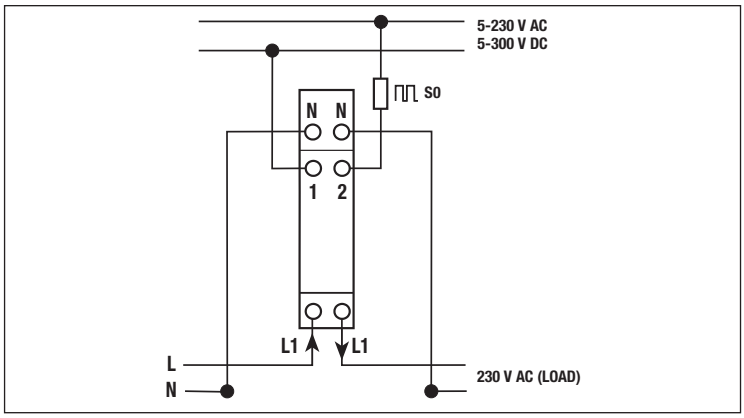


1) kWh display and other parameters
2) Power import/energy (→)
3) Power export/energy (←)

Dimension



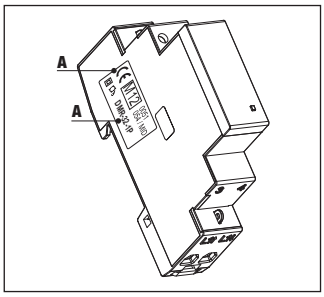
Wiring diagram



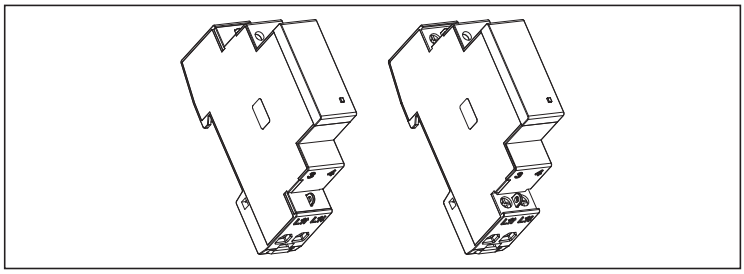
MID calibrated

DRM-32-1P / DRM-40-1P

A) Device code and certification data indications

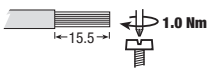


Sealable terminal covers

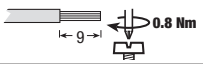


Cable stripping length and max. terminal screw torque

32 - 40 A direct connection main terminals
Screw driver PZ1



Tariff and communication terminals
Screw driver blade 0.8x3.5 mm



Symbols

- Measuring elements
- Reversal preventing device
- Protected by double insulation

Technical data

Data in compliance with EN 50470-1, EN 50470-3 and EN 62053-31			**DRM-32-1P direct connection 32 A**	**DRM-40-1P direct connection 40 A**
General characteristics				
• Housing	DIN 43880	DIN	1 modules	1 modules
• Mounting	EN 60715	35 mm	DIN rail	DIN rail
• Depth		mm	70	70
Operating features				
• Connectivity	to single-phase network	n° wires	2	2
• Storage of energy values and configuration	FRAM memory	-	yes	yes
Supply				
• Rated control supply voltage ***Un***		VAC	230	230
• Operating range voltage		VAC	184 ... 276	184 ... 276
• Rated frequency ***fn***		Hz	50 ±2%	50 ±2%
• Rated power dissipation (max.) ***Pv***		VA (W)	≤8 (0.6)	≤8 (0.6)
Overload capability				
• Voltage ***Un***	continuous	VAC	276	276
	momentary (1 s)	VAC	300	300
• Current ***Imax***	continuous	A	32	40
	momentary (10 ms)	A	960	
Display (readouts)				
• Display type	LCD	n° digits	7 (2 decimals)	7 (2 decimals)
	digit dimensions	mm x mm	6.00 x 3	6.00 x 3
• Active energy: 1 display, 7-digit		kWh	0.00 ... 999999.9	0.00 ... 999999.9
• Instantaneous tariff measurement		-	1	1
	1 display, 1-digit	-	T1	T1
• Display period refresh		s	1	1
Measuring accuracy	at 23 ±1°C, referred to nominal values			
• Active energy and power	acc.to EN 50470-3	class	B	B
Measuring input				
• Type of connection	phase/N	-	direct	direct
• Operating range voltage	phase/N	VAC	184 ... 276	184 ... 276
• Current ***Iref***		A	5	5
• Current ***Imin***		A	0.25	0.25
• Operating range current ***(Ist ... Imax)***	direct connection	A	0.02 ... 32	0.02 ... 40
• Frequency		Hz	50 ±2%	50 ±2%
• Input waveform		-	alternating	alternating
• Starting current for energy measurement ***(Ist)***		mA	20	20
Pulse output S0	acc.to EN 62053-31			
• Pulse output	for active energy	-	yes	yes
• Pulse quantity		imp/kWh	1000	1000
• Pulse duration		ms	90 ms	90 ms
• Required voltage	min. (max.)	VAC (DC)	5 ... 230 ±5% (5 ... 300)	5 ... 230 ±5% (5 ... 300)
• Permissible current	pulse ON (max. 230 V AC/DC)	mA	90	90
• Permissible current	Impuls OFF (leakage cur. max. 230 V AC/DC)	µA	1	1
Optical interface				
• Front side ***(accuracy control)***	LED	imp/kWh	5000	5000
Safety acc. to EN 50470-1				
• Indoor meter		-	yes	yes
• Degree of pollution		-	2	2
• Operational voltage		VAC	300	300
• AC voltage test (EN 50470-3, 7.2)		kV	4	4
• Impulse voltage test		1.2/50 µs-kV	6	6
• Protection class (EN 50470)		class	II	II
• Housing material flame resistance	UL 94	class	V0	V0
Lateral IR interfaces				
• For communication moduls connection **(DRM-M / DRM-MOD / DRM-KNX / DRM-LOG)**		-	yes	yes
Connection terminals				
• Type cage main current paths	screw head Z +/-	POZIDRIV	PZ1	PZ1
• Type cage pulse output	blade for slotted screw	mm	PZ0	PZ0
• Terminal capacity main current paths	solid wire min. (max.)	mm^2	16	16
	stranded wire with sleeve min. (max.)	mm^2	16	16
• Terminal capacity pulse outlet	solid wire min. (max.)	mm^2	0.15 (4)	0.15 (4)
	stranded wire with sleeve min. (max.)	mm^2	0.15 (2.5)	0.15 (2.5)
Environmental conditions				
• Mechanical environment		-	M1	M1
• Electromagnetic environment		-	E2	E2
• Operating temperature		°C	-25 ... +55	-25 ... +55
• Limit temperature of transportation and storage		°C	-25 ... +70	-25 ... +70
• Relative humidity (not condensation)		%	≤80	≤80
• Vibrations	50 Hz sinusoidal vibration amplitude	mm	±0.075	±0.075
• Degree protection	housing when mounted in front (terminal)	-	±0.075	IP51(*)/IP20

(*) **For the installation in a cabinet at least with IP51 protection.**

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