

AD1-32MC

Energy Meter Single Phase

Application

The AD1-32MC is the latest in the new range of single phase, single module din rail meters which is MID approved with appendix "B" and "D" certification..

The new meter has the added features of displaying by pressing the scroll key kWh, Watts, Amps, volts, Power factor, and Frequency. A new feature for the single phase meter is the added facility of being able to add the ADM-F Modbus module giving the AD1-32MC full capabilities of transmitting the information to a BMS system.

The AD1-32MC meter is fitted with a clear LCD display to ensure ease of reading and a scroll key on the front of the meter to step through the various registers. The AD1-32MC is fitted with a clear seven digit LCD display with an arrow indicating Import or Export. On the front of the meter there is the identification plate, a scroll key, and a small red light for calibration testing.

The identification plate indicates the model number, current and voltage rating. Pressing the scroll key enables you to view the various registers and the red light flashes for calibration testing. On the side of the meter there is an IR port which enables transmission of data to the ADM-F Modbus module which is also available from Autometers.



Overview

The AD1-32MC is a 1 phase 2 wire multifunction meter indicating KWH import and export, Watts, Amps, Volts, Frequency, and Power Factor. The meter is designed for measuring circuits which are 230 volt, current rating not exceeding 32 Amp, on a 50 Hz supply. The meter has an IR port fitted on the left hand side of the case which matches the RS 485 Modbus module, Autometers protocol V.6.

The meter is also fitted with an SO pulse output. The ADM-F module makes the AD1-32MC a more suitable meter for BMS systems, this is an optional unit and must be purchased separately.

Function

Display	Unit	Indication
Active Energy	kWh	Energy Import and Export
Active Power	W	Instantaneous Watts
Watts	W	7-digits
Current	A	7-digits
Voltage	V	7-digits
Power factor	cos	7-digits
Frequency	Hz	7-digits

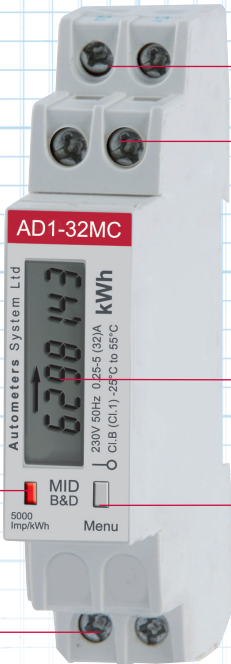
Communication Module



Picture showing the correct position of the ADM-F modbus

1 Standard Module Housing

Suitable for Din Rail mounting, 32 amp direct connected



IR optical external output for ADM-F

Precision control LED

Supply terminals 32A direct connection L - L

Neutral supply terminals

SO pulse output terminals

7-digit clear easy to read display

Scroll key to read various registers.

Technical Data

Data in compliance with EN 50470-1, EN 504470-3, and EN 62053-31

General characteristics			Direct connection 32A
• Housing	DIN 43880	DIN	1 module
• Mounting	EN 60715	-35mm	DIN rail
• Depth		mm	70
Operating features			
• Connectivity	1 phase 2 wire network	n° wires	2
• Storage of energy values and configuration	FRAM memory	-	yes
Supply			
• Rated control supply voltage Un		VAC	230
• Operating range voltage		VAC	184 ... 276
• Rated frequency fn		Hz	50 ±2%
• Rated power dissipation (max.) Pv		VA (W)	≤ 8 (0.6)
Overload capability			
• Voltage Un	continuous	VAC	276
	momentary (1 s)	VAC	300
• Current I_{max}	continuous	A	32
	momentary (10 ms)	A	960
Display readouts			
• Display type	LCD	n° digits	7 (2 decimals)
	digit dimensions	mm x mm	6.00 x 3
• Active energy: 1 display, 7-digit		kWh	0.00 ... 999999.9
• Instantaneous tariff measurement		-	1
• Display period refresh	1 display, 1 digit	s	T1 1
Measuring accuracy			
• Active energy and power	at 23± °C, referred to nominal values acc.to EN 50470-3	class	B
Measuring input			
• Type of connection	phase/N	-	direct
• Operating range voltage	phase/N	VAC	184 ... 276
• Current I_{ref}		A	5
• Current I_{min}		A	0.25
• Operating range current (I_{1st} ... I_{max})	direct connection	A	0.02 ... 32
• Frequency		Hz	50 ±2%
• Inout waveform		-	alternating
• Starting current for energy measurement (I_{1st})		mA	20
Pulse output SO			
• Pulse output	acc. to EN 62053-31 for active energy	-	yes
• Pulse quantity		imp/kWh	1000
• Pulse duration		ms	90 ms
• Required voltage	min. (max.)	VAC (DC)	5 ... 230±5% (5...300)
• Permissible current	pulse ON (max.230 V AC/DC)	m	90
• Permissible current	pulse OFF (leakage cur.max.230 V AC/DC)	µA	1
Optical interface			
• Front side (<i>accuracy control</i>)	LED	imp/kWh	5000
Safety acc. to EN 50470-1			
• Indoor meter		-	yes
• Degree of pollution		-	2
• Operational voltage		VAC	300
• AC voltage test (EN 50470-3, 7.2)		kV	4
• Impulse voltage test		1.2/50 µs-kV	6
• Protection class (EN 50470)		class	II
• Housing material flame resistance	UL 94	class	Vo

Technical Data

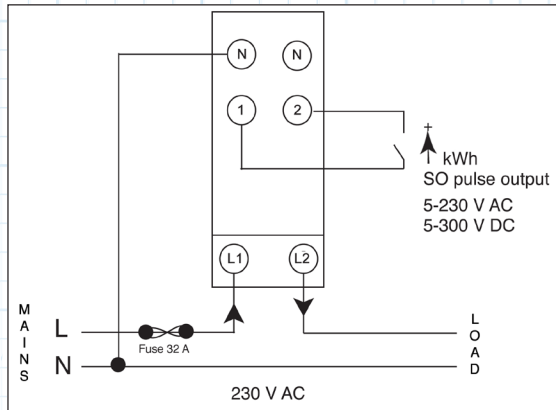
Data in compliance with EN 50470-1, EN 504470-3, and EN 62053-31

Lateral IR interfaces		Direct connection 32A
<ul style="list-style-type: none"> For communication modules connection (LAN - TCP/IP / M-Bus / Modbus RTU / KNX / SD-Card Datalogger) 	-	yes
Connection terminals		
<ul style="list-style-type: none"> Type cage main current paths Type cage pulse output Terminal capacity main current paths 	screw head Z +/- blade for slotted screw solid wire min. (max) stranded wire min. (max)	POZIDRIV mm ² mm ² mm ²
<ul style="list-style-type: none"> Terminal capacity pulse outlet 	solid wire min. (nmax) stranded wire with sleeve min. (max)	mm ² mm ²
Environmental conditions		
<ul style="list-style-type: none"> Mechanical environment Electromagnetic environment Operating temperature Limit temperature of transportation and storage Relative humidity (not condensation) Vibrations Degree protection 	- - °C °C % 50 Hz sinusoidal vibration amplitude housing when mounted in front (terminal)	- - °C °C % mm -
		M1 E2 -25 ... +55 -25 ... +70 ≤80 ±0.075 IP51(*)/IP20

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

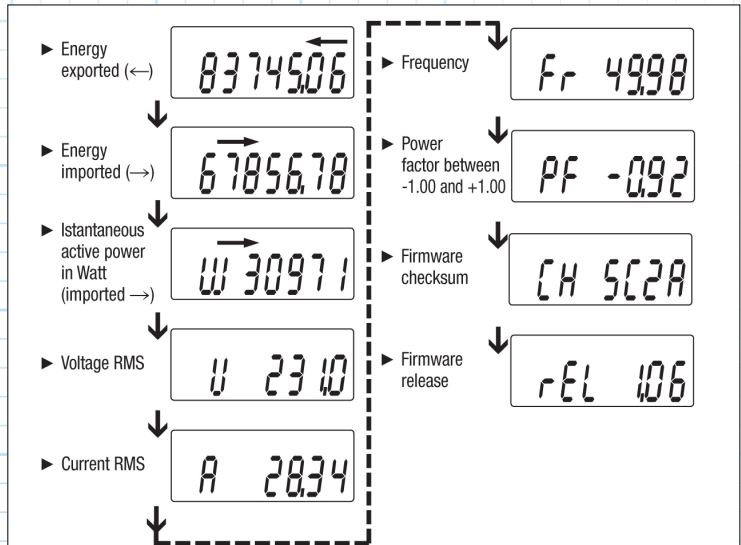
Circuit Diagram

A fuse of 32 A is recommended for the line protection.



Registers

Below are the registers available on meter



3) Display View

- Liquid crystal display

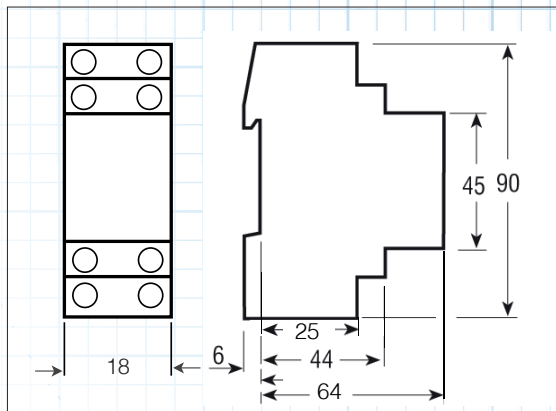
- kWh display and other parameters
- Power import/energy (→)
- Power export/energy (←)

Symbols

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

Dimensions

All dimensions are in mm



Autometers Systems Limited

4B Albany Road, Chorlton-cum-Hardy, Manchester, M21 0AW

Tel: +44 (0) 161 861 9056 Fax: +44 (0) 161 881 3745

www.autometers.co.uk Email: sales@autometers.co.uk

Product development is continuous and Autometers Systems Ltd reserves the right to make alterations and manufacture without notice. Products as delivered may therefore differ from the descriptions and illustrations in this publication.