

AD3-125MC

Energy Meters Three-Phase

Application

The energy-meters "with a green back-lighted LCD screen for perfect reading" are used to measure three-phase systems or single-phase like in Residential, Utility and Industrial applications.

Monitoring of the energy-consumption goes via a S0 pulse output. The products can be set up to communicate with the Modbus RS485 Autometers Protocol V6 interface, used to analyze the energy-consumption to reduce the running cost to a minimum for Industrial plants and buildings like Offices, Hospitals, Universities etc.



Overview

Active energy-meters for three-phase alternating current with either 2, 8 digits digital counters.

These meters have 2 - S0 output generating pulses for remote processing of the instantaneous energy active and reactive measurements for 2 tariff. Optional extra the RS485 ADM-F Modbus Communication Module.

Function

| Display | | Unit | ID |
|-------------------|----------|--------------|-------------------------------------|
| Active Energy | Tariff 1 | (M)-(k)-Wh | Energy import or export |
| | Tariff 2 | (M)-(k)-Wh | Energy import or export |
| Reactive Energy | Tariff 1 | (M)-(k)-varh | Energy import or export |
| | Tariff 2 | (M)-(k)-varh | Energy import or export |
| Active Power | | (M)-(k)-W | Utilisation and Instantaneous Value |
| Reactive Power | | (M)-(k)-W | Utilisation and Instantaneous Value |
| Connection Errors | | | Phase Err |

Communication Modules



Modbus RS485
Autometers Protocol V6

6 Standard Module Housing

Suitable for DIN Rail Mounting Direct Connection 125 A

Terminals S0 Pulse Outlet and Tariffs Charge Command

Backlighting makes display easy to read

Optic Control IR for external communication

Precision Control LED

Read Out Selection Push Button kWh and kW or kvarh and kvar

Space for the Certification Data can be provided on request MID

Supply Terminal 125 A Direction Connection

Technical Data

Data in compliance with EN 50470-3, EN 504470-3, EN 62053-23 and EN 62053-31

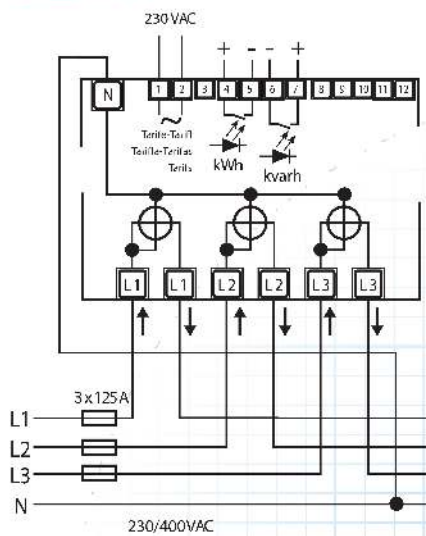
| General Characteristics | | | Direct Connection 125A | |
|--|--|-------------------|------------------------------|-----|
| • Housing | DIN 43880 | DIN | 6 Modules | |
| • Mounting | EN 60715 | 35mm | DIN Rail | |
| • Dearth | Active Energy | mm | 70 | |
| • Reference Standard | Reactive Energy - Pulse Output | - | EN 50470-3 EN 62053-23-31 | |
| Operating Features | | | | |
| • Connectivity | To Single/Three-phase Network | N° Wires | 2-4 | |
| • Storage of Energy Values and Configuration | Digital Display (EEPROM) | - | Yes | |
| • Display Tariffs Identifier | For Active & Reactive Energy | N° 2 | T ¹ and T2 | |
| Supply | | | | |
| • Rated Control Supply Voltage Un | | VAC | 230 | |
| • Operating Range Voltage | | V | 184 ... 276 | |
| • Rated Frequency fn | | Hz | 50 | |
| • Rated Power Dissipation (Max for Phase) Pv | | VA (W) | <9 (0,6) | |
| Overload Capacity | | | | |
| • Voltage Un | Continuous: Phase/Phase | V | 480 | |
| | 1 Second: Phase/Phase | V | 800 | |
| | Continuous: Phase/N | V | 276 | |
| | 1 Second: Phase/N | V | 300 | |
| | • Current Imax | Continuous | A | 125 |
| | | Momentary (0,5s) | A | - |
| Momentary (10ms) | | A | 3750 | |
| Display (Readouts) | | | | |
| • Connection Errors & Phase Out | Discriminable from Phase Sequence Ind.c. | - | Phase Err | |
| • Display Type | LCD | No Digits | 8 (2 decimal) | |
| | Digit Dimensions | mm x mm | 6,00 x 3 | |
| • Active Energy : 1 Display, 8 Digt | Lane 2 | Wh | 0.01 | |
| - Display Import or Export (Arrow) | Overflow | MWh | 999999,99 | |
| • Reactive Energy : 1 Display, 8 Digt | Tarif 2 | vArh | 0.01 | |
| - Display Import or Export (Arrow) | Overflow | Mvarh | 999999,99 | |
| • Instantaneous Active Power: 1 Display, 3 Digt | | W, kW or MW | 000 ... 999 | |
| • Instantaneous Reactive Power: 1 Display, 3 Digt | | vAr, kvar or Mvar | 000 ... 999 | |
| • Instantaneous Tariff Measurement | 1 Display, 1 Digit | - | T ¹ or T2 | |
| • Transformer Primary Current | | A | - | |
| • Display Period Refresh | | S | 1 | |
| Measuring Accuracy | | | | |
| • Active Energy and Power | Acc. to EN 50470-3 | Class 1 | B | |
| • Reactive Energy and Power | Acc. to EN 62053-23 | Class 2 | 2 | |
| Measuring Input | | | | |
| • Type of Connection | | | Direct | |
| • Voltage Un | Phase/Phase | V | 400 | |
| | Phase/N | V | 230 | |
| • Operating Range Voltage | Phase/Phase | V | 319 ... 480 | |
| | Phase/N | V | 184 ... 276 | |
| • Current Iref | | A | 5 | |
| • Current Imin | | A | 0,25 | |
| • Operating Range Current (Ist ... Imax) | Direct Connection | A | 0,020 ... 125 | |
| | Transformer Connection (CT) | A | - | |
| • Frequency | | Hz | 50 ± 2% | |
| • Input Waveform | | - | Sinusoidal | |
| • Starting Current for Energy Measurement (Ist) | | mA | 20 | |
| Pulse Output S0 | | | | |
| • Pulse Output | Acc. to EN 62053-31 for Act. and React. Energy I1 and I2 | - | Yes | |
| • Quantity Pulse Output | For Direct Connection 125A | Imp/kWh | 500 | |
| • Pulse Duration | | ms | 30 ± 2ms | |
| • Required Voltage | Min. (Max.) | VAC (DC) | 5 ... 230 ±5% (5...300) | |
| • Permissible Current | Pulse ON (Max 230V AC/DC) | mA | 90 | |
| • Permissible Current | Pulse OFF (Leak Cur. Max. 230V AC/DC) | µA | 1 | |

Technical Data (Cont'd)

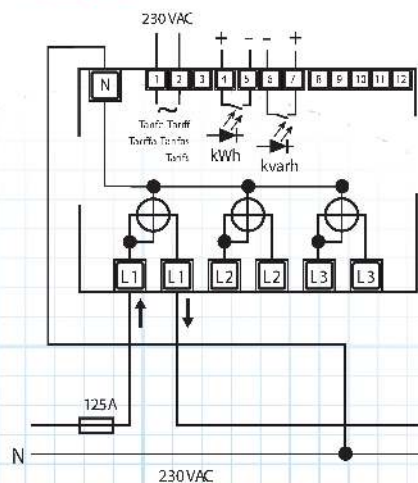
| | | | |
|--|---------------------------------------|-------------------|------------------|
| Optical Interfaces | | | |
| • Front Side (Accuracy Control) | LED | mp/kWh | 1000 |
| Safety Acc. to EN50470-1 | | | |
| • Indoor Meter | | - | Yes |
| • Degree of Pollution | | - | 2 |
| • Operational Voltage | | V | 300 |
| • AC Voltage Test (EN 50470-3, 7.2) | | <V | 4 |
| • Impulse Voltage Test | | 1,2/50 μ s kV | 6 |
| • Protection Class (EN 50470) | | Class | i |
| • Housing Material Flame Resistance | UL 94 | Class | V0 |
| • Safety-sealing between upper and lower housing part (Mod. 282331-282111) | | - | Yes |
| Adaptor for Communication | | | |
| • Plug and Play Technology | Ethernet 802.3 | - | - |
| • LAN (TCP/IP) Interface | RS-485 - 3 Wires | - | 10/100 Mbps |
| • Modbus RTU, ASCII Interface | 2 Wires | - | up to 19,200 bps |
| • M-Bus Interface | EIB Standard | - | up to 9,600 bps |
| • EIB-KNX Interface | | - | up to 9,600 bps |
| • SD-Card Datalogger | | - | 1 to 8 Gigabytes |
| Connection Terminals | | | |
| • Type Cage Main Current Paths | Screw Head Z / A | POZIDRIV | PZ2 |
| • Type Cage Pulse Output | Blade for Slotted Screw | mm | 0.8 x 3.5 |
| • Terminal Capacity Main Current Paths | Solid Wire Min. (Max.) | mm ² | 1.5 (35) |
| • Terminal Capacity Pulse Output | Stranded Wire with Sleeve Min. (Max.) | mm ² | 1.5 (35) |
| | Solid Wire Min. (Max.) | mm ² | 1 (4) |
| | Stranded Wire with Sleeve Min. (Max.) | mm ² | 1 (2,5) |
| Environmental Conditions | | | |
| • Mechanical Environment | | - | M1 |
| • Electromagnetic Environment | | - | E2 |
| • Operating Temperature | | °C | -10 ... +55 |
| • Limit Temperature of Transportation/Storage | | °C | -25 ... +70 |
| • Relative Humidity (Not Condensation) | | % | 90 |
| • Vibrations | 50Hz Sinusoidal Vibration Amplitude | mm | ±0.075 |
| • Degree Protection | Housing when mounted in front (term.) | - | IP51(*) / IP20 |

Circuit Diagrams

3 Phase 4 Wire



1 Phase 2 Wire



Dimensions

