Electronic three-phase meter for commercial and industrial customers

With the deregulation of the energy market, in combination with a changing cost situation, new flexible tariff structures and a modern energy management are required. Remote metering and the standardization process become more and more important. With the adaptation of the alpha meter A1500, the conditions to match these new requirements were created.

The alpha meter is available either for direct or CT connection and CT/VT connection. The meter is in accordance with the relevant EN, IEC and MID standards.

Features

- high accuracy and stability
- wide voltage range power supply \(\Rightarrow\) same meter can be used at all voltage levels
- Efficient certification mode \(\Rightarrow\) reduction of the test and certification time
- meter available for 3-wire and 4-wire applications
- 4-quadrant measurement \((+P, -P, +Q, -Q, Q1..Q4)\)
- 4 energy and 4 demand tariffs, independently controllable
- measurement of active, reactive and apparent demand
- display according to the VDEW-specification
- integrated tariff clock (option)
- time back-up with internal supercap or battery
- time synchronization by connection of a DCF77 antenna
- integrated ripple control receiver (option)
- log file for registration of all events with time stamp
- load profile storage
  - selectable up to 8 channels
  - different storage modes
    - (demand, energy/interval, register data)
    - load profile for pulse inputs
- readout of load profile data according to VDEW specification by use the EN62056-21 protocol
- electrical interfaces CL0 / RS485 / RS232
- registration of instrumentation values \((U, I, f, \ldots)\)
- profile of instrumentation values (up to 8 channels)
- settable service list
- 4 electronic control inputs
- 6 electronic pulse/control outputs
- 1 mechanical relay output (option)
- auxiliary power supply (option)
- up to 4 pulse inputs (option)
- user friendly reading, setting and programming tool alphaSET
## Technical Data

<table>
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<tr>
<th>Feature</th>
<th>Description</th>
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| **Nominal voltage**                          | 4-wire meter: 3x58/100V...3x240/415V  
3-wire meter: 3x100V...3x240V  
2-wire meter: 1x100V...1x240V  
Wide range power supply (-20%..+15% Un) |
| **Nominal frequency**                        | 50 / 60Hz or 16.7Hz                                                        |
| **Nominal (max) current**                    | 5(60)A, 5(80)A, 5(100)A  
5/1, 1(2)A, 5(6)A, 5(15)A                                                     |
| **Starting current**                         | < 1mA                                                                      |
| **Accuracy**                                 | Class 2, 1, 0.5S, 0.2S, Class A or B or C (MID)  
acc. EN62053-21, EN62053-22, EN50470-3, MID-app. MI-003                      |
| **4 control inputs**                         | Control voltage  
Threshold  
Max. 276V AC  
„OFF“ at <=47V/AC; <=66V/DC  
„ON“ at <=65V/AC; <=91V/DC                                                   |
| **6 electronic outputs**                     | AC and DC voltage  
Voltage range  
Maximum current  
5V to < 276V AC/DC  
< 100mA AC/DC                                                              |
| **4 pulse inputs (option)**                  | Pulse input or synchronisation input  
S0-standard, according to DIN 43864 or connection to ext. DCF77-aerial      |
| **1 mech. relay output (option)**            | Life expectancy  
Max. switching voltage  
Max. current  
10^7 operations  
265V AC/DC  
1Amp                                                        |
| **Interfaces**                               | Optical interface  
CL0 / RS485 / RS232  
acc. IEC 62056-21, max 9’600 Baud  
acc. IEC 62056-21, max. 19’200 Baud                                        |
| **Real Time Clock**                          | Accuracy  
Supercap  
Battery  
< 5ppm or <0,5s/day  
> 10 days  
> 10 years                                                               |
| **Auxiliary power supply (option)**          | Wide range power supply  
42V...265V AC/DC                                                            |
| **Integrated ripple receiver (option)**       | All ripple systems including VERSACOM and frequencies from 150Hz to 1350Hz |
| **Temperature condition**                   | Operating temperature  
-30°...+60°C  
Storage temperature  
-40°...+70°C  
Humidity  
acc. EN62052-11                                                             |
| **EMC-compatibility**                        | Surge (1,2/50μs)  
EMC environmental conditions  
6kV, Rsourc= 2 Ohm,  
12kV, Rsourc=40 Ohm *)  
4kV AC, 1min, 50Hz  
MID E2                                                                     |
| **Power consumption**                        | Voltage circuit  
< 0,8W, <1,2VA per phase  
Current circuit  
<0,01W, <0,01VA per phase  
Auxiliary power supply  
< 2,3W, < 5,3VA                                                             |
| **Connections**                              | CT connected meter  
Terminals = 5mm  
Direct connected meter  
Terminals = 8,5mm  
Auxiliary connections  
Terminals = 3mm                                                             |
| **Housing**                                  | Dimensions  
DIN 43857 part 2, DIN 43859  
Housing: IP51, terminal block: IP31  
Material  
Polycarbonate, non-inflammable, self-extinguishing synthetic material, recyclable  
Mechanical environmental conditions  
MID M1                                                                       |
| **Weight**                                   | Approx. 1.5 kg  
*) only between main terminals                                               |