

Electronic polyphase meter *alpha AS1440*

Electronic three-phase meter for residential and light commercial 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 AS1440, the conditions to match these new requirements were created.

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



Features

- High accuracy and stability
- Efficient certification mode → reduction of the test and certification time
- 4-Quadrant measurement (+P,-P,+Q,-Q,Q1..Q4)
- 8 energy and 4 demand tariffs, independently controllable
- measurement of active, reactive and apparent demand
- integrated tariff clock
- RTC time back-up with supercap + internal battery + external battery (option)
- optical interface acc. to EN62056-21
- readout of meter data without mains power
- integrated connect / disconnect relay up to 100A (option)
- optical display stepping
- use of OBIS identifier system (EN62056-61)
- Anti-Tampering features, like
 - terminal and main cover removal detection
 - rotation field detection
 - magnetic field detection
 - absolute value measurement
- AMI prepared, comms modules built-in under the terminal cover of the meter (option)
 - AM100 – GSM/GPRS + wired/wireless M-Bus
 - AM200 – wireless M-Bus
 - AM500 – PLC using SFSK + wired M-Bus
- Load profile for billing data
 - up to 8 channels
 - different modes of storage
- log file for registration of all events with time and date stamps
- electrical interfaces: RS485 / CL0 / RS232
- meter protocols
 - EN62056-21
 - DLMS/COSEM (option)
- measuring of instantaneous values (U, I, f, ...)
- profile of instrumentation values (up to 8 channels)
- up to 3 electronic S0 outputs
- up to 2 control inputs (option)
- up to 4 electronic 230V, 100mA outputs (option) or 2 mechanical relay outputs 8A (option)
- user friendly reading, setting and programming tool *alphaSET*



Technical Data

Modifications or deviations are reserved R 1.5

Nominal voltage	4-wire, 3-systems	3x220/380V .. 3x240/415V, -20% .. 15%
	3-wire, 2-systems	3x58/100V ..3x63/110V, -20% .. 15% 3x100V. . 3x127V, 3x230V -20% .. 15%
Nominal frequency		50 / 60Hz, +/-5%
Nominal / maximum current	Continuous current	DC: 5(60)A, 5(80)A, 5(100)A, 5(120)A CT: 5//1, 1(2)A, 5(6)A, 5(15)A, ...
	Short duration	DC: 7000A for 2 cycles, CT: 300A for 0,5s
Starting current	DC / CT	20mA / 1mA
Accuracy	Class 2 or 1 (DC+CT), 0,5 (CT) Class A or B (DC+CT), C (CT)	acc. EN62053-21, EN62053-23, EN50470-3, MID-app. MI-003
Power supply	Nominal voltage	Still operates even with the failure of two phases or one phase and the neutral
2 control inputs (option)	Control voltage Threshold	Max. 265V AC „OFF“ at <40V, „ON“ at >60V
3 electronic outputs	S0 standard	Acc. IEC 62053-21 Class A (max.27V DC)
electronic outputs 230V (option)	Up to 4 electronic outputs or Up to 2 mechanical relay outputs	27-265V, 100mA 265V, 8A
Interfaces	Optical interface RS485 / CLO / RS232 Interface for comms module	Acc. IEC 62056-21, max 9'600 Baud max. 19'200 Baud
Internal tariff source	4 tariffs, 4 seasons weekday dependent tariff scheme	Acc. EN 62054-21
Real Time Clock - Time backup	Accuracy Supercap internal battery exchangeable battery (option)	< 5ppm or <0,5s/day 1 day without power > 5 years continuous operation without power shelf life of 10+ years
Time backup for readout without mains power supply	Supercap Exchangeable battery	4 to 5 hours (in the space of 2 days) 4 to 5 years
Integrated connect/disconnect relay (option)	Mechanical life Electrical endurance according IES 62055-31, Annex C	100.000 switching cycles 10.000 switching cycles with 100A
Temperature condition	Operating temperature	-40°...+70°
	Storage temperature	-40°...+80°
	Humidity	0 to 95% rel. humidity, non-condensing
	Temperature coefficient	<0,04% per °C (PF=1), <0,04% (PF=0,5)
EMC compatibility	Surge withstand (1,2/50µs)	6kV, R _{source} =2 Ohm; 12kV, R _{source} =40 Ohm *)
	Dielectric test	4kV, 1min, 50Hz
	EMC environmental conditions	MID E2
Power consumption	DC:	< 0,7W, <0,8VA per phase
	CT: Voltage circuit Current circuit	< 0,7W, <0,8VA per phase < 0,01W, <0,01VA per phase
Connections	CT connected meter	Terminals: 6 mm x 5 mm
	Direct connected meter	Terminals: 9,3 mm x 9,3 mm
	Auxiliary connections	Terminals: 2,5 mm ²
Housing	Dimensions	DIN 43857 part 2, DIN 43859
	Protection class	Housing: IP54, terminal block: IP31
	Material	Polycarbonate, non-inflammable, self-extinguishing synthetic material, recyclable
	Mechanical environmental conditions	MID M1
Weight	Without disconnect relay	< 1,5 kg
	Including disconnect relay	< 1,9 kg

*) only between main terminals

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