

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
- 8 energy and 4 demand tariffs, independently controllable
- measurement of active, reactive and apparent demand
- integrated tariff clock
- time back-up with supercap + internal battery + external battery (option)
- meter protocol
 - EN62056-21
 - DLMS/COSEM (option)
- readout of meter data without main power
- Integrated connect / disconnect relay up to 100A (option)
- Anti-Tampering features, like
 - terminal and main cover removal detection
 - rotation field detection
 - magnetic field detection
 - hardware lock against reprogramming, ...
- AMI prepared, comms modules fit under the terminal cover of the meter
 - o AM100 – GSM/GPRS + wired/wireless M-Bus
 - o AM200 – wireless M-Bus
 - o AM500 – PLC using SFSK + wired M-Bus
- Optical interface acc. EN 62056-21
- Electrical interface (CL0, RS232, RS485)
- Use of OBIS identifier system (EN62056-61)
- log file for registration of all events with time and date stamps
- load profile for billing data
- measuring of instantaneous values
- profile of instrumentation values
- optical display stepping
- up to 3 electronic S0 outputs
- up to 2 control inputs
- up to 4 electronic 230V, 100mA outputs or 2 mechanical relay outputs (8A)
- user friendly reading, setting and programming tool *alphaSET*



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 or 0,5 Class A or B or C (MID)	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 input	Control voltage Threshold	Max. 265V AC „OFF“ at <40V, „ON“ at >60V
3 electronic outputs	S0 standard	Acc. IEC 62053-31 Class A (max.27V DC)
electronic outputs, 230V	Up to 4 electronic outputs or Up to 2 mechanical relay outputs	27-265V, 100mA Up to 8A
Interfaces	Optical interface CLO or RS232 or RS485 interface or Interface for comms module	Acc. IEC 62056-21, max 9600 Baud max. 19200 Baud
Internal tariff source	4 tariffs, 4 seasons weekday dependent tariff scheme	Acc. EN 62052-21
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
Time backup for RTC	Supercap internal battery exchangeable battery (optional) Accuracy	1 day without power > 5 years continuous operation without power shelf life of 10+ years < 5ppm or <0,5s/day
Time backup for readout without main power	Exchangeable battery	4 years
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} = 20Ohm 12kV, R _{source} = 40Ohm *)
	Dielectric test	4kV, 1min, 50Hz
	EMC environmental conditions	MID E2
Power consumption	DC:	< 0,7W, <0,8VA per phase
	CT: Voltage circuit	< 0,7W, <0,8VA per phase
	Current circuit	< 0,01W, <0,01VA per phase
Connections	CT connected meter	Terminals: 6mm x 5mm
	Direct connected meter	Terminals: 9,3mm x 9,3mm
	Auxiliary connections	Terminals: 2,5mm 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	< 1,5 kg
	Including disconnect	< 1,9 kg

*) only between main terminals