Electronic polyphase meter AS3000V

Electronic three-phase meter for residential and light commercial applications

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. The direct connected AS3000 offers these advanced features required along with an optional disconnect Block.

The AS3000V is approved according MID and PTB (Germany). A variety of communications modules can be added to ensure that it can be adapted to meet the market requirements for Smart meter applications

Features

- High accuracy and stability
- Comprehensive large figure display
- 4-Quadrant measurement
- 8 energy tariffs
- active, reactive and apparent energy measurement
- integrated tariff clock
- RTC time back-up with supercap + internal battery + external battery (option)
- supported meter protocol
    o EN62056-21 or
    o DLMS/COSEM
- Integrated disconnect relay up to 100A (option)
    o Remote disconnect/reconnect
    o Load limitation
- Advanced Anti-Tampering features, like
    o terminal and main cover removal detection
    o rotation field detection
    o magnetic field detection
    o phase failure detection
    o power failure detection
    o hardware lock against reprogramming
    o no voltage links
- Readout without power

- AMI prepared, hot swop communication modules
    o AM100 – GSM/GPRS + wired/wireless M-Bus
    o AM200 – wireless M-Bus (slave)
    o AM300 – Ethernet
    o AM500 – PLC / IDIS + wired M-Bus
    o AM530 – PLC / OFDM
- Optical interface acc. EN 62056-21
- Electrical interface (CL0, RS485)
- OBIS identifier system (EN62056-61)
- log file for event registration with time and date stamps
- load profile for billing data
- measuring of instantaneous values
- profile of instrumentation values
- up to 3 electronic S0 outputs
- up to 2 control inputs
- up to 4 electronic 230V, 100mA outputs or 2 mechanical relay outputs (8A)

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Nominal voltage	4-wire, 3-systems	3x220/380V .. 3x240/415V, -20% ... 15%
	3-wire, 2-systems	3x230 … 3x240V, -20% … 15%
Nominal frequency		50 / 60Hz, +/-5%
Nominal / maximum current	Continuous current	5(60)A, 5(80)A, 5(100)A, 5(120)A
	Short duration	7000A for 2 cycles, CT: 300A for 0,5s
Starting current		20mA
Accuracy	Class 2 or 1	acc. EN62053-21, EN62053-23,
	Class A or B or C (MID)	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	Control voltage	Max. 265V AC
	Threshold	„OFF" at <40V, „ON" at >60V
3 electronic outputs	S0 standard	Acc. IEC 62053-31
		Class A (max.27V DC)
electronic / mechanical outputs (optional)	Up to 4 electronic outputs or	27-265V, 100mA
	Up to 2 mechanical relay outputs	230V, 8A
Interfaces	Optical interface	EN 62056-21, max 9600 Baud
	CLO or RS232 or RS485 interface or	max. 19200 Baud
	Interface for comms module	
Internal tariff source	4 tariffs, 4 seasons	EN 62052-54
	weekday dependent tariff scheme	
Integrated connect/disconnect relay (optional)	Mechanical life	100.000 switching cycles
	Electrical endurance according,	10.000 switching cycles with 100A
	IES 62055-31, Annex C	
Time backup for RTC	Supercap	1 day without power
	internal battery	> 5 years continuous operation without power
	exchangeable battery (optional)	shelf life of 10+ years/
	Accuracy	< 5ppm or <0,5s/day
Time backup for readout without main power	Exchangeable battery	4 years
Temperature condition	Operating temperature	$-40^{o}...+70^{o}$
	Storage temperature	$-40^{o}...+80^{o}$
	Humidity	0 to 95% rel. humidity, non-condensing
	Temperature coefficient	<0,04% per ^{o}C (PF=1), <0,04% (PF=0,5)
EMC compatibility	Surge withstand (1,2/50µs)	6kV, R_{source} =2Ohm, 12kV, R_{source} =40Ohm *)
	Dielectric test	4kV, 1min, 50Hz
	EMC environmental conditions	MID E2
Power consumption		< 0,7W, <0,8VA per phase
Connections	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