

AQ-ONE

ORDER CODE: AQ-ONE-S4PH8AAAA-AAAAAA+ALM



AQ-ONE is a flexibly packaged and optimized for power systems up to 150 kV, while also offering a powerful and reliable solution for higher voltage grids depending on the application. Every AQ-ONE operates on the same firmware and follows the same operating principles. The device is available in three mechanical sizes: you choose the size that fits your space and I/O needs, and only pay for what you use. AQ-ONE has multiple function packages for a wide range of protection applications. This allows you to tailor each device with the exact functionalities your application requires.

Highlights

- one software: select the exact functionalities your application needs among a wide range of function packages
- one hardware: tailor the relay exactly according to your space and I/O requirements
- unlimited applications: as your needs evolve, so does AQ-ONE with easy upgrades and replacements of both software and hardware

Application Function Package	Alarm annunciator
Casing	S - Small (6 slots)
Auxiliary Power Supply	80...265 V AC/DC
Terminals	Standard current terminals
Digital Inputs	3 x Digital inputs, 24V nominal threshold
Digital Outputs	5 x Digital outputs (4 x NO contact, 1 x changeover contact)
Standard Communication Ports	RJ-45 Ethernet port (front) and RJ-45 Ethernet port + RS-485 serial port (rear)
Slot A	None
Slot B	None
Slot C	None
Slot D	None
Slot E	None
Slot F	None
Current Inputs	0
Voltage Inputs	0

PROTECTION

- Resistance temperature detectors (RTD)
- Arc fault protection ($I_{arc} > I_{0Arc}$; 50Arc/50NArc)

CONTROL

- Object control and monitoring
- Indicator object and monitoring

MONITORING

- Disturbance recorder
- Measurement recorder
- Event recorder

TABLES OF TECHNICAL DATA

NOTE! Some values in the tables below include an asterisk (*). In such cases, please refer to the device manual's technical data chapter for further information.

VOLTAGE MEASUREMENT

Connection	
- Measurement channels/VT inputs	4 independent VT inputs (U1, U2, U3 and U4)
Measurement	
- Sample rate	64 samples per cycle in frequency range 6...75 Hz
- Voltage measuring range	0.50...480.00 V (RMS)
- Frequency measurement range	6...75 Hz
- Voltage measurement inaccuracy	1...2 V ± 1.5 % 2...10 V ± 0.5 % 10...480 V ± 0.35 %
- Angle measurement inaccuracy	± 0.2 degrees (15...300 V) ± 1.5 degrees (1...15 V)
- Voltage measurement bandwidth (freq.)	7...75 Hz fundamental, up to the 31st harmonic voltage
Terminal block connection	
- Screw connection terminal block (standard)	Phoenix Contact PC 5/ 8-STCL1-7,62
- Spring cage terminal block (optional)	Phoenix Contact SPC 5/ 8-STCL-7,82
- Nominal cross section (solid or stranded wire)	6 mm ²
- Input impedance	~ 24.5 M Ω
- Burden (50/60 Hz)	<0.02 VA
- Thermal withstand	630 VRMS (continuous)

CPU AND POWER SUPPLY

Terminal block connection	
- Screw connection terminal block (standard)	Phoenix Contact MSTB 2,5/5-ST-5,08
- Spring cage terminal block (option)	Phoenix Contact FKC 2,5/20-STF-5,08
- Solid or stranded wire Nominal cross section	2.5 mm ²
RS-485 serial terminal block connection	
- Screw connection terminal block (standard)	Phoenix Contact MC 1,5/5-ST-3,81

- Spring cage terminal block (option)	Phoenix Contact FK-MCP 1,5/5-ST-3,81
- Maximum cross section (solid or stranded wire)	1.5 mm ²

AUXILIARY VOLTAGE

Rated values	
- Rated auxiliary voltage	80...265 V (AC/DC)

CPU DIGITAL INPUTS

Rated values	
- Rated auxiliary voltage	265 V (AC/DC)
- Nominal voltage	24 V (AC/DC)
- Pick-up threshold	19 V
- Release threshold	14 V
- Scanning rate	5 ms
Settings	
- Pick-up delay	0...1800 s
- Polarity	Normally On or Normally Off
- Current drain	2 mA

CPU DIGITAL OUTPUTS

CPU digital outputs, Normally Open type	
- Rated auxiliary voltage	265 V (AC/DC)
- Continuous carry	5 A
- Make and carry 0.5 s	30 A
- Make and carry 3 s	15 A
- Breaking capacity, DC (L/R = 40 ms) at 48 VDC	1 A
- Breaking capacity, DC (L/R = 40 ms) at 110 VDC	0.4 A
- Breaking capacity, DC (L/R = 40 ms) at 220 VDC	0.2 A
- Control rate	5 ms
- Polarity	Normally Open or Normally Closed
CPU digital outputs, Change-Over type	
- Rated auxiliary voltage	265 V (AC/DC)
- Continuous carry	2.5 A

- Make and carry 0.5 s	30 A
- Make and carry 3 s	15 A
- Breaking capacity, DC (L/R = 40 ms) at 48 VDC	1 A
- Breaking capacity, DC (L/R = 40 ms) at 110 VDC	0.3 A
- Breaking capacity, DC (L/R = 40 ms) at 220 VDC	0.15 A
- Control rate	5 ms
- Polarity	Normally Open or Normally Closed