

Product datasheet

Specifications



Standard ATV900 control unit, APM, single drive, 380...480V

APM9A0CTLN401

Main

Range of product	Altivar Process Modular
Product or component type	Control module
Device short name	APM
IP degree of protection	IP00 conforming to IEC 61800-5-1 IP00 conforming to IEC 60529
Kit composition	control unit graphical display terminal Digi-Link cable cable 24 V cable for voltage measurement
Supply frequency	50...60 Hz - 5...5 %
Safety function	STO (safe torque off) SIL 3
Discrete input logic	16 preset speeds
Communication port protocol	Modbus serial Ethernet Modbus TCP

Complementary

[Us] rated supply voltage	380...480 V
Frequency resolution	Display unit: 0.1 Hz Analog input: 0.012/50 Hz
Connector type	RJ45 (on the remote graphic terminal) for Ethernet/Modbus TCP RJ45 (on the remote graphic terminal) for Modbus serial
Physical interface	2-wire RS 485 for Modbus serial
Transmission frame	RTU for Modbus serial
Transmission rate	10/100 Mbit/s for Ethernet IP/Modbus TCP 4.8, 9.6, 19.2, 38.4 kbit/s for Modbus serial
Exchange mode	Half duplex, full duplex, autonegotiation Ethernet/Modbus TCP
Data format	8 bits, configurable odd, even or no parity for Modbus serial
Type of polarization	No impedance for Modbus serial
Number of addresses	1...247 for Modbus serial
Method of access	Slave Modbus TCP
Supply	External supply for digital inputs: 24 V DC (19...30 V), <1.25 mA, protection type: overload and short-circuit protection Internal supply for reference potentiometer (1 to 10 kOhm): 10.5 V DC +/- 5 %, <10 mA, protection type: overload and short-circuit protection Internal supply for digital inputs and STO: 24 V DC (21...27 V), <200 mA, protection type: overload and short-circuit protection

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

Local signalling	3 LEDs for local diagnostic 3 LEDs (dual colour) for embedded communication status 4 LEDs (dual colour) for communication module status
Width	230 mm
Height	678.3 mm
Depth	108 mm
Net weight	7.1 kg
Analogue input number	3
Analogue input type	AI1, AI2, AI3 software-configurable voltage: 0...10 V DC, impedance: 30 kOhm, resolution 12 bits AI1, AI2, AI3 software-configurable current: 0...20 mA/4...20 mA, impedance: 250 Ohm, resolution 12 bits
Discrete input number	10
Discrete input type	STOA, STOB safe torque off, 24 V DC (≤ 30 V), impedance: > 2.2 kOhm DI1...DI8 programmable, 24 V DC (≤ 30 V), impedance: 3.5 kOhm DI7, DI8 programmable as pulse input: 0...30 kHz, 24 V DC (≤ 30 V)
Input compatibility	STOA, STOB: discrete input level 1 PLC conforming to IEC 61131-2 DI1...DI8: discrete input level 1 PLC conforming to IEC 61131-2 DI7, DI8: pulse input level 1 PLC conforming to IEC 65A-68
Discrete input logic	Positive logic (source) (STOA, STOB), < 5 V (state 0), > 11 V (state 1) Positive logic (source) (DI1...DI8), < 5 V (state 0), > 11 V (state 1) Negative logic (sink) (DI1...DI8), > 16 V (state 0), < 10 V (state 1) Positive logic (source) (DI7, DI8), < 0.6 V (state 0), > 2.5 V (state 1)
Analogue output number	2
Analogue output type	Software-configurable voltage AQ1, AQ2: 0...10 V DC impedance 470 Ohm, resolution 10 bits Software-configurable current AQ1, AQ2: 0...20 mA impedance 500 Ohm, resolution 10 bits
Discrete output number	2
Discrete output type	Logic output DQ+ 0...1 kHz ≤ 30 V DC 100 mA Programmable as pulse output DQ+ 0...30 kHz ≤ 30 V DC 20 mA Logic output DQ- 0...1 kHz ≤ 30 V DC 100 mA
Sampling duration	2 ms $\pm$ 0.5 ms (DI1...DI8) - discrete input 5 ms $\pm$ 1 ms (DI7, DI8) - pulse input 1 ms $\pm$ 1 ms (AI1, AI2, AI3) - analog input 5 ms $\pm$ 1 ms (AQ1, AQ2) - analog output
Accuracy	$\pm$ 0.6 % AI1, AI2, AI3 for a temperature variation 60 °C analog input $\pm$ 1 % AQ1, AQ2 for a temperature variation 60 °C analog output
Linearity error	AI1, AI2, AI3: $\pm$ 0.15 % of maximum value for analog input AQ1, AQ2: $\pm$ 0.2 % for analog output
Relay output number	3
Relay output type	Configurable relay logic R1: fault relay NO/NC electrical durability 100000 cycles Configurable relay logic R2: sequence relay NO electrical durability 1000000 cycles Configurable relay logic R3: sequence relay NO electrical durability 1000000 cycles
Refresh time	Relay output (R1, R2, R3): 5 ms ($\pm$ 0.5 ms)
Minimum switching current	Relay output R1, R2, R3: 5 mA at 24 V DC
Maximum switching current	Relay output R1, R2, R3 on resistive load, $\cos \phi = 1$: 3 A at 250 V AC Relay output R1, R2, R3 on resistive load, $\cos \phi = 1$: 3 A at 30 V DC Relay output R1, R2, R3 on inductive load, $\cos \phi = 0.4$ and L/R = 7 ms: 2 A at 250 V AC Relay output R1, R2, R3 on inductive load, $\cos \phi = 0.4$ and L/R = 7 ms: 2 A at 30 V DC
Isolation	Between power and control terminals

Environment

Insulation resistance	> 1 MOhm 500 V DC for 1 minute to earth
Noise level	69 dB conforming to 86/188/EEC
Power dissipation in W	Forced convection: 2980 W, switching frequency 2.5 kHz
Maximum THDI	<48 % full load conforming to IEC 61000-3-12
Electromagnetic compatibility	Electrostatic discharge immunity test level 3 conforming to IEC 61000-4-2 Radiated radio-frequency electromagnetic field immunity test level 3 conforming to IEC 61000-4-3 Electrical fast transient/burst immunity test level 4 conforming to IEC 61000-4-4 1.2/50 µs - 8/20 µs surge immunity test level 3 conforming to IEC 61000-4-5 Conducted radio-frequency immunity test level 3 conforming to IEC 61000-4-6
Pollution degree	2 conforming to IEC 61800-5-1
Vibration resistance	1.5 mm peak to peak (f= 2...13 Hz) conforming to IEC 60068-2-6 0.5 gn (f= 13...200 Hz) conforming to IEC 60068-2-6
Shock resistance	7 gn for 11 ms conforming to IEC 60068-2-27
Relative humidity	5...95 % without condensation conforming to IEC 60068-2-3
Ambient air temperature for operation	-10...40 °C (without derating) 40...50 °C (with derating factor)
Ambient air temperature for storage	-40...70 °C
Operating altitude	<= 1000 m without derating 1000...4800 m with current derating 1 % per 100 m
Environmental characteristic	Chemical pollution resistance class 3C3 conforming to IEC 60721-3-3 Dust pollution resistance class 3S3 conforming to IEC 60721-3-3
Standards	IEC 61800-3 IEC 61800-5-1 IEC 61000-3-12 IEC 60721-3 IEC 61508 IEC 13849-1
Product certifications	TÜV
Marking	CE

Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	18.0 cm
Package 1 Width	29.0 cm
Package 1 Length	73.0 cm
Package 1 Weight	7.787 kg
Unit Type of Package 2	S06
Number of Units in Package 2	6
Package 2 Height	75.0 cm
Package 2 Width	60.0 cm
Package 2 Length	80.0 cm
Package 2 Weight	61.9 kg

Environmental Data

Schneider Electric aims to achieve Net Zero status by 2050 through supply chain partnerships, lower impact materials, and circularity via our ongoing “Use Better, Use Longer, Use Again” campaign to extend product lifetimes and recyclability.

[Environmental Data explained >](#)

[How we assess product sustainability >](#)

 Environmental footprint	
Carbon footprint (kg.eq.CO2 per CR, Total Life cycle)	2408
Environmental Disclosure	Product Environmental Profile

Use Better

 Materials and Packaging	
Packaging made with recycled cardboard	No
Packaging without single use plastic	No
SCIP Number	5b418692-6578-4a36-aac4-0bf9526de237

Use Again

 Repack and remanufacture	
Circularity Profile	End of Life Information
Take-back	No
WEEE	 The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins