Product data sheet

Specifications

Electronic control unit Braking, APM, modular drive, 380…480V

APMBC0CTLN4

Main

Range of product	Altivar Process Modular
Product or component type	Control module
Device short name	APM
IP degree of protection	IP00IEC 61800-5-1 IP00IEC 60529
Kit composition	control unit graphical display terminal Digi-Link cable cable 24 V cable 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)Ethernet/Modbus TCP RJ45 on the remote graphic terminal)Modbus serial
Physical interface	2-wire RS 485 Modbus serial
Transmission frame	RTU Modbus serial
Transmission rate	10/100 Mbit/s Ethernet IP/Modbus TCP 4.8, 9.6, 19.2, 38.4 kbit/s Modbus serial
Exchange mode	Half duplex, full duplex, autonegotiation Ethernet/Modbus TCP
Data format	8 bits, configurable odd, even or no parity Modbus serial
Type of polarization	No impedance Modbus serial
Number of addresses	1…247 Modbus serial
Method of access	Slave Modbus TCP
Supply	External supply for digital inputs 24 V DC 19…30 V), <1.25 mA overload and short-circuit protection Internal supply for reference potentiometer (1 to 10 kOhm) 10.5 V DC +/- 5 %, <10 mA overload and short-circuit protection Internal supply for digital inputs and STO 24 V DC 21…27 V), <200 mA overload and short-circuit protection

Local signalling	3 LEDs for local diagnostic 3 LEDs (dual colour) for embedded communication status 4 LEDs (dual colour) for communication module status
Width	11.3 in (287 mm)
Height	7.008 in (178 mm)
Depth	28.9 in (735 mm)
Net weight	14.88 lb(US) (6.75 kg)
Analogue input number	3
Analogue input type	AI1, AI2, AI3 software-configurable voltage 0...10 V DC 30 kOhm 12 bits AI1, AI2, AI3 software-configurable current 0...20 mA/4...20 mA 250 Ohm 12 bits
Discrete input number	10
Discrete input type	STOA, STOB safe torque off, 24 V DC <= 30 V)> 2.2 kOhm DI1...DI8 programmable, 24 V DC <= 30 V)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 IEC 61131-2 DI1...DI8 discrete input level 1 PLC IEC 61131-2 DI7, DI8 pulse input level 1 PLC IEC 65A-68
Discrete input logic	Positive logic (source) STOA, STOB), < 5 V, > 11 V Positive logic (source) DI1...DI8), < 5 V, > 11 V Negative logic (sink) DI1...DI8), > 16 V, < 10 V Positive logic (source) DI7, DI8), < 0.6 V, > 2.5 V
Analogue output number	2
Analogue output type	Software-configurable voltage AQ1, AQ2 0...10 V DC 470 Ohm 10 bits Software-configurable current AQ1, AQ2 0...20 mA 500 Ohm 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 +/- 0.5 ms DI1...DI8) - discrete input 5 ms +/- 1 ms DI7, DI8) - pulse input 1 ms +/- 1 ms AI1, AI2, AI3) - analog input 5 ms +/- 1 ms AQ1, AQ2) - analog output
Accuracy	+/- 0.6 % AI1, AI2, AI3 for a temperature variation 60 °C analog input +/- 1 % AQ1, AQ2 for a temperature variation 60 °C analog output
Linearity error	AI1, AI2, AI3 +/- 0.15 % of maximum value analog input AQ1, AQ2 +/- 0.2 % analog output
Relay output number	3
Relay output type	Configurable relay logic R1 fault relay NO/NC 100000 cycles Configurable relay logic R2 sequence relay NO 1000000 cycles Configurable relay logic R3 sequence relay NO 1000000 cycles
Refresh time	Relay output R1, R2, R3)5 ms +/- 0.5 ms)
Minimum switching current	Relay output R1, R2, R3 5 mA 24 V DC
Maximum switching current	Relay output R1, R2, R3 resistive, cos phi = 1 3 A 250 V AC Relay output R1, R2, R3 resistive, cos phi = 1 3 A 30 V DC Relay output R1, R2, R3 inductive, cos phi = 0.4 7 ms 2 A 250 V AC Relay output R1, R2, R3 inductive, cos phi = 0.4 7 ms 2 A 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 86/188/EEC
Power dissipation in W	Forced convection 2980 W 2.5 kHz

Maximum THDI	<48 % full load 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 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 11 ms IEC 60068-2-27
Relative humidity	5…95 % without condensation IEC 60068-2-3
Ambient air temperature for operation	14…104 °F (-10…40 °C) 104…122 °F (40…50 °C) (with derating factor)
Ambient air temperature for storage	-40…158 °F (-40…70 °C)
Operating altitude	<= 1000 m 1000...4800 m with current derating 1 % per 100 m
Environmental characteristic	Chemical pollution resistance class 3C3 IEC 60721-3-3 Dust pollution resistance class 3S3 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	7.09 in (18.0 cm)
Package 1 Width	11.4 in (29.0 cm)
Package 1 Length	28.7 in (73.0 cm)
Package 1 Weight	17.6 lb(US) (8.0 kg)
Unit Type of Package 2	S06
Number of Units in Package 2	6
Package 2 Height	29.5 in (75.0 cm)
Package 2 Width	23.6 in (60.0 cm)
Package 2 Length	31.5 in (80.0 cm)
Package 2 Weight	136.5 lb(US) (61.9 kg)

Contractual warranty

Warranty (in months)	18

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

Total lifecycle Carbon footprint	**2 411 kg CO2 eq.**
Carbon footprint of the manufacturing phase [A1 to A3]	**103 kg CO2 eq.**
Carbon footprint of the distribution phase [A4]	**1 kg CO2 eq.**
Carbon footprint of the installation phase [A5]	**1 kg CO2 eq.**
Carbon footprint of the use phase [B2, B3, B4, B6]	**2 286 kg CO2 eq.**
Carbon footprint of the end-of-life phase [C1 to C4]	**20 kg CO2 eq.**
Environmental Disclosure	**Product Environmental Profile**

Use Better

Materials and Substances

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

Use Longer

Lifetime extension

Repair	**No**

Use Again

Repack and remanufacture

Recyclability potential, in %	**76**
Circularity Profile	**End of Life Information**
Take-back	**No**