

Product datasheet

Specifications



variable speed drive ATV212 - IP54 - 11 kW 3x380 480 V

TSI Code: 400938989 ATV212WD11N4CZH28

! To be discontinued on: 31 March 2022

! To be end-of-service on: 31 March 2022

! To be discontinued

Main

Device short name	ATV212
Product destination	Asynchronous motors
Network number of phases	3 phases
Motor power kW	11 kW
Motor power hp	15 hp
Supply voltage limits	323...528 V
Supply frequency	50...60 Hz - 5...5 %
Line current	21.1 A at 380 V 16.7 A at 480 V
Range of product	Altivar 212
Product or component type	Variable speed drive
Product specific application	Pumps and fans in HVAC
Communication port protocol	METASYS N2 Modbus APOGEE FLN LonWorks BACnet
[Us] rated supply voltage	380...480 V - 15...10 %
EMC filter	Class C1 EMC filter integrated

Complementary

Apparent power	17.1 kVA at 380 V
Continuous output current	22.5 A at 380 V 22.5 A at 460 V
Maximum transient current	24.8 A for 60 s
Speed drive output frequency	0.5...200 Hz
Speed range	1...10
Speed accuracy	+/- 10 % of nominal slip 0.2 Tn to Tn
Local signalling	1 LED (red) for DC bus energized
Output voltage	<= power supply voltage
Isolation	Electrical between power and control

Type of cable	Without mounting kit: 1 wire(s)IEC cable at 45 °C, copper 90 °C / XLPE/EPR Without mounting kit: 1 wire(s)IEC cable at 45 °C, copper 70 °C / PVC With UL Type 1 kit: 3 wire(s)UL 508 cable at 40 °C, copper 75 °C / PVC
Electrical connection	VIA, VIB, FM, FLA, FLB, FLC, RY, RC, F, R, RES: terminal 2.5 mm ² / AWG 14 L1/R, L2/S, L3/T: terminal 10 mm ² / AWG 6 U/T1, V/T2, W/T3: terminal 16 mm ² / AWG 4
Tightening torque	0.6 N.m (VIA, VIB, FM, FLA, FLB, FLC, RY, RC, F, R, RES) 1.7 N.m, 15 lb.in (L1/R, L2/S, L3/T) 3 N.m, 26.5 lb.in (U/T1, V/T2, W/T3)
Supply	Internal supply for reference potentiometer (1 to 10 kOhm): 10.5 V DC +/- 5 %, <10 A, protection type: overload and short-circuit protection Internal supply: 24 V DC (21...27 V), <200 A, protection type: overload and short-circuit protection
Sampling duration	2 ms +/- 0.5 ms F discrete 2 ms +/- 0.5 ms R discrete 2 ms +/- 0.5 ms RES discrete 3.5 ms +/- 0.5 ms VIA analog 22 ms +/- 0.5 ms VIB analog
Response time	FM 2 ms, tolerance +/- 0.5 ms for analog output(s) FLA, FLC 7 ms, tolerance +/- 0.5 ms for discrete output(s) FLB, FLC 7 ms, tolerance +/- 0.5 ms for discrete output(s) RY, RC 7 ms, tolerance +/- 0.5 ms for discrete output(s)
Accuracy	+/- 0.6 % (VIA) for a temperature variation 60 °C +/- 0.6 % (VIB) for a temperature variation 60 °C +/- 1 % (FM) for a temperature variation 60 °C
Linearity error	VIA: +/- 0.15 % of maximum value for input VIB: +/- 0.15 % of maximum value for input FM: +/- 0.2 % for output
Analogue output type	FM switch-configurable voltage 0...10 V DC, impedance: 7620 Ohm, resolution 10 bits FM switch-configurable current 0...20 mA, impedance: 970 Ohm, resolution 10 bits
Discrete output type	Configurable relay logic: (FLA, FLC) NO - 100000 cycles Configurable relay logic: (FLB, FLC) NC - 100000 cycles Configurable relay logic: (RY, RC) NO - 100000 cycles
Minimum switching current	3 mA at 24 V DC for configurable relay logic
Maximum switching current	5 A at 250 V AC on resistive load - cos phi = 1 - L/R = 0 ms (FL, R) 5 A at 30 V DC on resistive load - cos phi = 1 - L/R = 0 ms (FL, R) 2 A at 250 V AC on inductive load - cos phi = 0.4 - L/R = 7 ms (FL, R) 2 A at 30 V DC on inductive load - cos phi = 0.4 - L/R = 7 ms (FL, R)
Discrete input type	F programmable 24 V DC, with level 1 PLC, impedance: 4700 Ohm R programmable 24 V DC, with level 1 PLC, impedance: 4700 Ohm RES programmable 24 V DC, with level 1 PLC, impedance: 4700 Ohm
Discrete input logic	Positive logic (source) (F, R, RES), <= 5 V (state 0), >= 11 V (state 1) Negative logic (sink) (F, R, RES), >= 16 V (state 0), <= 10 V (state 1)
Dielectric strength	3535 V DC between earth and power terminals 5092 V DC between control and power terminals
Insulation resistance	>= 1 mOhm 500 V DC for 1 minute
Frequency resolution	Display unit: 0.1 Hz Analog input: 0.024/50 Hz
Communication service	Read holding registers (03) 2 words maximum Write single register (06) Write multiple registers (16) 2 words maximum Monitoring inhibitible Time out setting from 0.1 to 100 s Read device identification (43)
Option card	Communication card for LonWorks
Discrete output number	2
Analogue input number	2
Analogue input type	VIA switch-configurable voltage: 0...10 V DC 24 V max, impedance: 30000 Ohm, resolution 10 bits VIB configurable voltage: 0...10 V DC 24 V max, impedance: 30000 Ohm, resolution 10 bits VIB configurable PTC probe: 0...6 probes, impedance: 1500 Ohm VIA switch-configurable current: 0...20 mA, impedance: 250 Ohm, resolution 10 bits
Analogue output number	1
Physical interface	2-wire RS 485
Connector type	1 open style 1 RJ45

Transmission rate	9600 bps or 19200 bps
Transmission frame	RTU
Number of addresses	1...247
Data format	8 bits, 1 stop, odd even or no configurable parity
Type of polarization	No impedance
Asynchronous motor control profile	Flux vector control without sensor, standard Voltage/frequency ratio, 5 points Voltage/frequency ratio, automatic IR compensation (U/f + automatic U ₀) Voltage/frequency ratio - Energy Saving, quadratic U/f Voltage/frequency ratio, 2 points
Torque accuracy	+/- 15 %
Transient overtorque	120 % of nominal motor torque +/- 10 % for 60 s
Acceleration and deceleration ramps	Linear adjustable separately from 0.01 to 3200 s Automatic based on the load
Motor slip compensation	Not available in voltage/frequency ratio motor control Automatic whatever the load Adjustable
Switching frequency	6...16 kHz adjustable 12...16 kHz with derating factor
Nominal switching frequency	12 kHz
Braking to standstill	By DC injection
Network frequency	47.5...63 Hz
Prospective line I_{sc}	22 kA
Protection type	Overheating protection: drive Thermal power stage: drive Short-circuit between motor phases: drive Input phase breaks: drive Overcurrent between output phases and earth: drive Overvoltages on the DC bus: drive Break on the control circuit: drive Against exceeding limit speed: drive Line supply overvoltage and undervoltage: drive Line supply undervoltage: drive Against input phase loss: drive Thermal protection: motor Motor phase break: motor With PTC probes: motor
Width	290 mm
Height	560 mm
Depth	315 mm
Product weight	36.5 kg
Environment	
Pollution degree	2 conforming to IEC 61800-5-1
IP degree of protection	IP54 conforming to EN/IEC 61800-5-1 IP54 conforming to EN/IEC 60529
Vibration resistance	1.5 mm (f= 3...13 Hz) conforming to EN/IEC 60068-2-6 1 gn (f= 13...200 Hz) conforming to EN/IEC 60068-2-8
Shock resistance	15 gn for 11 ms conforming to IEC 60068-2-27
Environmental characteristic	Classes 3C1 conforming to IEC 60721-3-3 Classes 3S2 conforming to IEC 60721-3-3
Noise level	57.4 dB conforming to 86/188/EEC
Operating altitude	1000...3000 m limited to 2000 m for the Corner Grounded distribution network with current derating 1 % per 100 m <= 1000 m without derating
Relative humidity	5...95 % without condensation conforming to IEC 60068-2-3 5...95 % without dripping water conforming to IEC 60068-2-3

Ambient air temperature for operation	-10...40 °C (without derating) 40...50 °C (with derating factor)
Operating position	Vertical +/- 10 degree
Product certifications	NOM 117 UL C-Tick CSA
Marking	CE
Standards	EN 61800-3 environments 1 category C1 IEC 61800-3 category C1 EN 61800-5-1 IEC 61800-5-1 EN 61800-3 environments 2 category C1 IEC 61800-3 EN 61800-3 environments 1 category C2 IEC 61800-3 environments 1 category C1 IEC 61800-3 environments 1 category C2 IEC 61800-3 environments 2 category C1 IEC 61800-3 environments 1 category C3 EN 61800-3 category C1 IEC 61800-3 environments 2 category C2 EN 55011 group 1 class B EN 61800-3 EN 61800-3 environments 2 category C3 EN 61800-3 environments 2 category C2 EN 61800-3 environments 1 category C3 IEC 61800-3 environments 2 category C3
Assembly style	With heat sink
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 Voltage dips and interruptions immunity test conforming to IEC 61000-4-11
Regulation loop	Adjustable PI regulator
Ambient air temperature for storage	-25...70 °C

Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Weight	36.5 kg
Package 1 Height	56 cm
Package 1 width	29 cm
Package 1 Length	31.5 cm

Contractual warranty

Warranty	18 months
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