

Product datasheet

Specifications



variable speed drive ATV212 - IP54 - 4 kW 3x380 480 V

Local distributor code:

400939221

ATV212WU40N4CZH28

 **Discontinued on:** 11 Nov 2022

 **Discontinued**

Main

Device Short Name	ATV212
Product Destination	Asynchronous motors
Network Number Of Phases	3 phases
Motor Power Kw	4 kW
Motor Power Hp	5 hp
Supply Voltage Limits	323...528 V
Supply Frequency	50...60 Hz - 5...5 %
Line Current	6.5 A at 480 V 8.2 A at 380 V
Range Of Product	Altivar 212
Product Or Component Type	Variable speed drive
Product Specific Application	Pumps and fans in HVAC
Communication Port Protocol	BACnet METASYS N2 APOGEE FLN Modbus LonWorks
[Us] Rated Supply Voltage	380...480 V - 15...10 %
Emc Filter	Class C1 EMC filter integrated

Complementary

Apparent Power	6.9 kVA at 380 V
Continuous Output Current	9.1 A at 380 V 9.1 A at 460 V
Maximum Transient Current	10 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

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

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 6 mm ² / AWG 10
Tightening Torque	1.3 N.m, 11.5 lb.in (L1/R, L2/S, L3/T) 0.6 N.m (VIA, VIB, FM, FLA, FLB, FLC, RY, RC, F, R, RES)
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 Monitoring inhibitabile Read device identification (43) Time out setting from 0.1 to 100 s Write multiple registers (16) 2 words maximum Write single register (06)
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	Voltage/frequency ratio, automatic IR compensation (U/f + automatic Uo) Voltage/frequency ratio, 5 points Flux vector control without sensor, standard 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	Automatic based on the load Linear adjustable separately from 0.01 to 3200 s
Motor Slip Compensation	Not available in voltage/frequency ratio motor control Adjustable Automatic whatever the load
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 Isc	5 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	230 mm
Height	340 mm
Depth	208 mm
Net Weight	10.55 kg

Environment

Pollution Degree	3 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	55 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	UL CSA NOM 117 C-Tick
Marking	CE
Standards	IEC 61800-3 environments 1 category C3 IEC 61800-3 IEC 61800-3 environments 1 category C1 IEC 61800-5-1 IEC 61800-3 category C1 EN 61800-3 environments 1 category C2 EN 61800-3 environments 1 category C1 EN 61800-3 EN 61800-3 environments 1 category C3 EN 61800-3 category C1 IEC 61800-3 environments 2 category C2 EN 61800-3 environments 2 category C2 IEC 61800-3 environments 1 category C2 EN 61800-3 environments 2 category C3 EN 61800-3 environments 2 category C1 EN 61800-5-1 EN 55011 group 1 class B IEC 61800-3 environments 2 category C1 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

Contractual warranty

Warranty	18 months
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