Specifications





variable speed drive, Altivar 212, 3kW, 480V, 3 phases, with EMC class C2, IP55

ATV212WU30N4

Main

Device Short Name	ATV212
Product Destination	Asynchronous motors
Network Number Of Phases	3 phases
Motor Power Kw	3 kW
Motor Power Hp	4 hp
Supply Voltage Limits	323528 V
Supply Frequency	5060 Hz - 55 %
Line Current	4.9 A at 480 V 6.2 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 APOGEE FLN METASYS N2 Modbus LonWorks
[Us] Rated Supply Voltage	380480 V - 1510 %
Emc Filter	Class C2 EMC filter integrated
Ip Degree Of Protection	IP55

Complementary

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Apparent Power	5.5 kVA at 380 V
Continuous Output Current	7.2 A at 380 V
	7.2 A at 460 V
Maximum Transient Current	7.9 A for 60 s
Speed Drive Output Frequency	0.5200 Hz
Speed Range	110
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 mm² / AWG 14 L1/R, L2/S, L3/T: terminal 6 mm² / 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 (2127 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 010 V DC, impedance: 7620 Ohm, resolution 10 bits FM switch-configurable current 020 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 device identification (43) Read holding registers (03) 2 words maximum Write single register (06) Write multiple registers (16) 2 words maximum Monitoring inhibitable Time out setting from 0.1 to 100 s				
Option Card	Communication card for LonWorks				
Functionality	Mid				
Specific Application	HVAC				
Discrete Output Number	2				
Analogue Input Number	2				

Analogue Input Type	VIA switch-configurable voltage: 010 V DC 24 V max, impedance: 30000 Ohm, resolution 10 bits VIB configurable voltage: 010 V DC 24 V max, impedance: 30000 Ohm, resolution 10 bits VIB configurable PTC probe: 06 probes, impedance: 1500 Ohm VIA switch-configurable current: 020 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	1247			
Data Format	8 bits, 1 stop, odd even or no configurable parity			
Type Of Polarization	No impedance			
Asynchronous Motor Control Profile	Voltage/frequency ratio, 5 points Voltage/frequency ratio - Energy Saving, quadratic U/f Voltage/frequency ratio, automatic IR compensation (U/f + automatic Uo) Voltage/frequency ratio, 2 points Flux vector control without sensor, standard			
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 Automatic whatever the load Adjustable			
Switching Frequency	616 kHz adjustable 1216 kHz with derating factor			
Nominal Switching Frequency	12 kHz			
Braking To Standstill	By DC injection			
Network Frequency	47.563 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			

Environment

Pollution Degree 3 conforming to IEC 61800-5-1

Ip Degree Of Protection	IP55 conforming to IEC 61800-5-1 IP55 conforming to IEC 60529				
Vibration Resistance	1.5 mm (f= 313 Hz) conforming to IEC 60068-2-6 1 gn (f= 13200 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	10003000 m limited to 2000 m for the Corner Grounded distribution network with current derating 1 % per 100 m <= 1000 m without derating				
Relative Humidity	595 % without condensation conforming to IEC 60068-2-3 595 % without dripping water conforming to IEC 60068-2-3				
Ambient Air Temperature For Operation	-1040 °C (without derating) 4050 °C (with derating factor)				
Operating Position	Vertical +/- 10 degree				
Product Certifications	UL C-Tick CSA NOM 117				
Marking	CE				
	IEC 61800-3 environments 1 category C3 EN 61800-3 category C3 IEC 61800-3 IEC 61800-3 environments 2 category C1 IEC 61800-5-1 EN 55011 class A group 1 IEC 61800-3 environments 2 category C3 IEC 61800-3 environments 2 category C3 IEC 61800-3 environments 2 category C2 IEC 61800-3 category C3 IEC 61800-3 category C2 IEC 61800-3 environments 1 category C2 IEC 61800-3 environments 1 category C1 IEC 61800-3 environments 2 category C2 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 Packing Units	-2570 °C				
Unit Type Of Package 1	PCE				
Number Of Units In Package 1	1				
Package 1 Height Package 1 Width	31.000 cm				
i donage i Widui	27.000 cm				

Package 1 Length	41.000 cm
Package 1 Weight	8.945 kg
Unit Type Of Package 2	P06
Number Of Units In Package 2	4
Package 2 Height	75.000 cm
Package 2 Width	60.000 cm
Package 2 Length	80.000 cm
Package 2 Weight	48.780 kg

Contractual warranty

Warranty 18 months

Sustainability Green Premium"

Green PremiumTM **label** is Schneider Electric's commitment to delivering products with best-inclass environmental performance. Green Premium promises compliance with the latest regulations, transparency on environmental impacts, as well as circular and low-CO₂ products.

Guide to assessing product sustainability is a white paper that clarifies global eco-label standards and how to interpret environmental declarations.

Learn more about Green Premium >

Guide to assess a product's sustainability >





Transparency RoHS/REACh

Well-being performance



Mercury Free



Rohs Exemption Information

Yes

Certifications & Standards

Reach Regulation	REACh Declaration
Eu Rohs Directive	Pro-active compliance (Product out of EU RoHS legal scope)
China Rohs Regulation	China RoHS declaration
Environmental Disclosure	Product Environmental Profile
Weee	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins
Circularity Profile	End of Life Information

20 Jun 2024

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Dimensions Drawings

Dimensions



Dimensions in mm

	Difficusions in film						
	ATV212W	а	b	С	G	Н	
1	075N4U22N4 075N4CU22N4C	215	297	192	197	277	
1	U30N4U75N4 U30N4CU75N4C	230	340	208	212	318	

Dimensions in in.

ATV212W	а	b	С	G	Н
075N4U22N4 075N4CU22N4C	8.46	11.69	7.56	7.76	10.91
U30N4U75N4 U30N4CU75N4C	9.06	13.39	8.19	8.35	12.52

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Mounting and Clearance

Mounting Recommendations

Clearance

Depending on the conditions in which the drive is to be used, its installation will require certain precautions and the use of appropriate accessories.

Install the unit vertically:

- Do not place it close to heating elements.
- Leave sufficient free space to ensure that the air required for cooling purposes can circulate from bottom to the

Type A Mounting

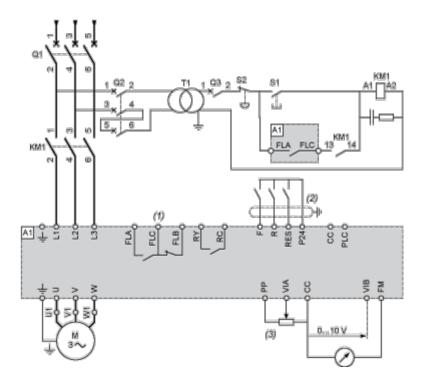




Connections and Schema

Recommended Wiring Diagram

3-Phase Power Supply



A1: ATV 212 drive

KM1: Contactor

Q1: Circuit breaker

Q2: GV2 L rated at twice the nominal primary current of T1

Q3: GB2CB05

S1, S2: XB4 B or XB5 A pushbuttons

T1: 100 VA transformer 220 V secondary

- (1) Fault relay contacts for remote signalling of the drive status
- (2) Connection of the common for the logic inputs depends on the positioning of the switch (Source, PLC, Sink)
- (3) Reference potentiometer SZ1RV1202

NOTE: All terminals are located at the bottom of the drive. Install interference suppressors on all inductive circuits near the drive or connected on the same circuit, such as relays, contactors, solenoid valves, fluorescent lighting, etc.

Switches (Factory Settings)

Voltage/current selection for analog I/O (VIA and VIB)



Voltage/current selection for analog I/O (FM)



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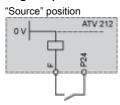
Selection of logic type PLC

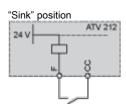
Sink Source (2)

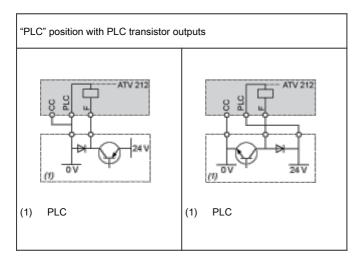
- (1) negative logic
- (2) positive logic

Other Possible Wiring Diagrams

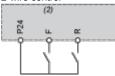
Logic Inputs According to the Position of the Logic Type Switch





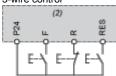


2-wire control



- F: Forward
- R: Preset speed
- (2) ATV 212 control terminals

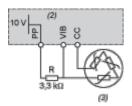
3-wire control



- F: Forward
- R: Stop
- RES: Reverse
- (2) ATV 212 control terminals

PTC probe

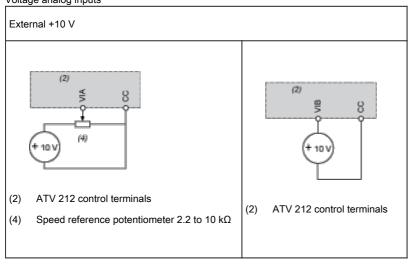
ATV212WU30N4



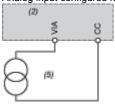
- (2) ATV 212 control terminals
- (3) Motor

Analog Inputs

Voltage analog inputs

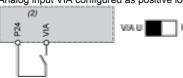


Analog input configured for current: 0-20 mA, 4-20 mA, X-Y mA



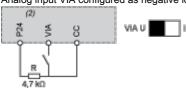
- (2) ATV 212 control terminals
- (5) Source 0-20 mA, 4-20 mA, X-Y mA

Analog input VIA configured as positive logic input ("Source" position)



(2) ATV 212 control terminals

Analog input VIA configured as negative logic input ("Sink" position)



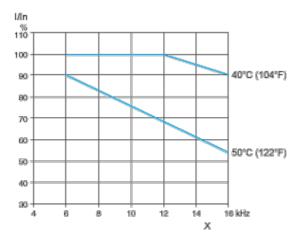
(2) ATV 212 control terminals

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Performance Curves

Derating Curves

The derating curves for the drive nominal current (In) depend on the temperature and the switching frequency. For intermediate temperatures (45°C for example), interpolate between 2 curves.



X Switching frequency