

# Product data sheet

## Characteristics

# ATV212HU22N4

variable speed drive ATV212 - 2.2kW - 3hp -  
480V - 3ph - EMC - IP21

Product availability : Stock - Normally stocked in distribution facility



Price\* : 605.00 USD



### Main

Range of product	Altivar 212
Product or component type	Variable speed drive
Device short name	ATV212
Product destination	Asynchronous motors
Product specific application	Pumps and fans in HVAC
Assembly style	With heat sink
Phase	3 phase
Motor power kW	2.2 kW
Maximum Horse Power Rating	3 hp
[Us] rated supply voltage	380...480 V - 15...10 %
Supply voltage limits	323...528 V
Supply frequency	50...60 Hz - 5...5 %
EMC filter	Class C2 EMC filter integrated
Line current	3.6 A 480 V 4.6 A 380 V

### Complementary

Apparent power	3.9 kVA 380 V
Prospective line I <sub>sc</sub>	5 kA
Continuous output current	5.1 A 380 V 5.1 A 460 V
Maximum transient current	5.6 A 60 s
Speed drive output frequency	0.5...200 Hz
Nominal switching frequency	12 kHz
Switching frequency	6...16 kHz adjustable 12...16 kHz with derating factor

\* Price is "List Price" and may be subject to a trade discount – check with your local distributor or retailer for actual price.

Speed range	1...10
Speed accuracy	+/- 10 % of nominal slip 0.2 Tn to Tn
Torque accuracy	+/- 15 %
Transient overtorque	120 % of nominal motor torque +/- 10 % 60 s
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
Regulation loop	Adjustable PI regulator
Motor slip compensation	Not available in voltage/frequency ratio motor control Adjustable Automatic whatever the load
Local signalling	DC bus energized 1 LED red)
Output voltage	<= power supply voltage
Isolation	Electrical between power and control
Type of cable	Without mounting kit 1 IEC cable 113 °F (45 °C), copper 90 °C / XLPE/EPR Without mounting kit 1 IEC cable 113 °F (45 °C), copper 70 °C / PVC With UL Type 1 kit 3 UL 508 cable 104 °F (40 °C), copper 75 °C / PVC
Electrical connection	VIA, VIB, FM, FLA, FLB, FLC, RY, RC, F, R, RES terminal 0.00 in <sup>2</sup> (2.5 mm <sup>2</sup> ) / AWG 14 L1/R, L2/S, L3/T terminal 0.01 in <sup>2</sup> (6 mm <sup>2</sup> ) / AWG 10
Tightening torque	11.51 lbf.in (1.3 N.m), 11.5 lb.in L1/R, L2/S, L3/T) 5.31 lbf.in (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 overload and short-circuit protection Internal supply 24 V DC 21...27 V), <200 A overload and short-circuit protection
Analogue input number	2
Analogue input type	VIA switch-configurable voltage 0...10 V DC 24 V max 30000 Ohm 10 bits VIB configurable voltage 0...10 V DC 24 V max 30000 Ohm 10 bits VIB configurable PTC probe 0...6 probes 1500 Ohm VIA switch-configurable current 0...20 mA 250 Ohm 10 bits
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 +/- 0.5 ms analog FLA, FLC 7 ms +/- 0.5 ms discrete FLB, FLC 7 ms +/- 0.5 ms discrete RY, RC 7 ms +/- 0.5 ms discrete
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 input VIB +/- 0.15 % of maximum value input FM +/- 0.2 % output
Analogue output number	1
Analogue output type	FM switch-configurable voltage 0...10 V DC 7620 Ohm 10 bits FM switch-configurable current 0...20 mA 970 Ohm 10 bits
Discrete output number	2
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 24 V DC configurable relay logic
Maximum switching current	5 A 250 V AC resistive cos phi = 1 L/R = 0 ms FL, R) 5 A 30 V DC resistive cos phi = 1 L/R = 0 ms FL, R) 2 A 250 V AC inductive cos phi = 0.4 L/R = 7 ms FL, R) 2 A 30 V DC inductive cos phi = 0.4 L/R = 7 ms FL, R)
Discrete input type	F programmable 24 V DC level 1 PLC 4700 Ohm R programmable 24 V DC level 1 PLC 4700 Ohm RES programmable 24 V DC level 1 PLC 4700 Ohm
Discrete input logic	Positive logic (source) F, R, RES), <= 5 V, >= 11 V Negative logic (sink) F, R, RES), >= 16 V, <= 10 V

Acceleration and deceleration ramps	Automatic based on the load Linear adjustable separately from 0.01 to 3200 s
Braking to standstill	By DC injection
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
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 port protocol	BACnet LonWorks Modbus METASYS N2 APOGEE FLN
Connector type	1 open style 1 RJ45
Physical interface	2-wire RS 485
Transmission frame	RTU
Transmission rate	9600 bps or 19200 bps
Data format	8 bits, 1 stop, odd even or no configurable parity
Type of polarization	No impedance
Number of addresses	1...247
Communication service	Write single register (06) Read device identification (43) Time out setting from 0.1 to 100 s Read holding registers (03) 2 words maximum Write multiple registers (16) 2 words maximum Monitoring inhibitible
Option card	Communication card LonWorks
Operating position	Vertical +/- 10 degree
Width	4.21 in (107 mm)
Height	5.63 in (143 mm)
Depth	5.91 in (150 mm)
Net Weight	4.41 lb(US) (2 kg)
Power dissipation in W	103 W
Air flow	9246.19 Gal/hr(US) (35 m3/h)
Functionality	Mid
Specific application	HVAC
IP degree of protection	IP21
Variable speed drive application selection	Building - HVAC Compressor for scroll Building - HVAC Fan Building - HVAC Pump
Motor power range AC-3	2.2...3 kW at 380...440 V 3 phases 2.2...3 kW at 480...500 V 3 phases
Motor starter type	Variable speed drive

## Environment

Electromagnetic compatibility	Electrostatic discharge immunity test level 3 IEC 61000-4-2 Radiated radio-frequency electromagnetic field immunity test level 3 IEC 61000-4-3
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Electrical fast transient/burst immunity test level 4 IEC 61000-4-4  
 1.2/50 µs - 8/20 µs surge immunity test level 3 IEC 61000-4-5  
 Conducted radio-frequency immunity test level 3 IEC 61000-4-6  
 Voltage dips and interruptions immunity test IEC 61000-4-11

Pollution degree	3 IEC 61800-5-1
IP degree of protection	IP20 on upper part without blanking plate on cover EN/IEC 61800-5-1 IP20 on upper part without blanking plate on cover EN/IEC 60529 IP21 EN/IEC 61800-5-1 IP21 EN/IEC 60529 IP41 on upper part EN/IEC 61800-5-1 IP41 on upper part EN/IEC 60529
Vibration resistance	1.5 mm 3...13 Hz)EN/IEC 60068-2-6 1 gn 13...200 Hz)EN/IEC 60068-2-8
Shock resistance	15 gn for 11 ms conforming to IEC 60068-2-27
Environmental characteristic	Classes 3C1 IEC 60721-3-3 Classes 3S2 IEC 60721-3-3
Noise level	51 dB 86/188/EEC
Operating altitude	3280.84...9842.52 ft (1000...3000 m) limited to 2000 m for the Corner Grounded distribution network with current derating 1 % per 100 m <= 3280.84 ft (1000 m) without derating
Relative humidity	5...95 % without condensation IEC 60068-2-3 5...95 % without dripping water IEC 60068-2-3
Ambient air temperature for operation	14...104 °F (-10...40 °C) without derating) 40...50 °C (with derating factor)
Ambient air temperature for storage	-13...158 °F (-25...70 °C)
Standards	IEC 61800-3 EN 61800-5-1 IEC 61800-3 environments 1 category C2 EN 61800-3 environments 1 category C2 EN 61800-3 EN 61800-3 environments 2 category C3 EN 61800-3 environments 1 category C1 IEC 61800-3 environments 1 category C3 IEC 61800-3 category C3 IEC 61800-3 environments 2 category C1 UL Type 1 EN 61800-3 category C3 EN 61800-3 environments 1 category C3 EN 61800-3 category C2 EN 61800-3 environments 2 category C2 IEC 61800-3 environments 2 category C3 EN 55011 class A group 1 IEC 61800-3 environments 2 category C2 EN 61800-3 environments 2 category C1 IEC 61800-5-1 IEC 61800-3 category C2 IEC 61800-3 environments 1 category C1
Product certifications	CSA NOM 117 UL C-tick
Marking	CE

### Ordering and shipping details

Category	22157 - ATV212 1 - 25 HP 460 VOLT
Discount Schedule	CP4D
GTIN	00785901915942
Nbr. of units in pkg.	1
Package weight(Lbs)	4.47 lb(US) (2.03 kg)
Returnability	Yes
Country of origin	ID

### Packing Units

Unit Type of Package 1	PCE
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Package 1 Height	7.09 in (18 cm)
Package 1 width	7.28 in (18.5 cm)
Package 1 Length	8.35 in (21.2 cm)
Unit Type of Package 2	P06
Number of Units in Package 2	27
Package 2 Weight	145.57 lb(US) (66.03 kg)
Package 2 Height	31.50 in (80 cm)
Package 2 width	31.50 in (80 cm)
Package 2 Length	23.62 in (60 cm)

### Offer Sustainability

Sustainable offer status	Green Premium product
California proposition 65	WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a>
RECh Regulation	<a href="#">REACH Declaration</a>
EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope) <a href="#">EU RoHS Declaration</a>
Mercury free	Yes
RoHS exemption information	<a href="#">Yes</a>
China RoHS Regulation	<a href="#">China RoHS declaration</a>
Environmental Disclosure	<a href="#">Product Environmental Profile</a>
Circularity Profile	<a href="#">End of Life Information</a>
WEEE	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins.

### Contractual warranty

Warranty	18 months
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