

ATV212HU22N4

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



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
Network number of phases	3 phases
Motor power kW	2.2 kW
Motor power hp	3 hp
[Us] rated supply voltage	380...480 V (- 15...10 %)
Supply voltage limits	323...528 V
Supply frequency	50...60 Hz (- 5...5 %)
Network frequency	47.5...63 Hz
EMC filter	Class C2 EMC filter integrated
Line current	4.6 A for 380 V 3.6 A for 480 V

Complementary

Apparent power	3.9 kVA for 380 V
Prospective line Isc	5 kA
Continuous output current	5.1 A at 460 V 5.1 A at 380 V
Maximum transient current	5.6 A for 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
Speed range	1...10

Speed accuracy	+/- 10 % of nominal slip for 0.2 Tn to Tn torque variation
Torque accuracy	+/- 15 %
Transient overtorque	120 % of nominal motor torque, +/- 10 % for 60 s
Asynchronous motor control profile	Flux vector control without sensor, standard Voltage/Frequency ratio, 2 points Voltage/Frequency ratio - Energy Saving, quadratic U/f Voltage/Frequency ratio, 5 points Voltage/Frequency ratio, automatic IR compensation (U/f + automatic Uo)
Regulation loop	Adjustable PI regulator
Motor slip compensation	Not available in voltage/frequency ratio motor control Adjustable Automatic whatever the load
Local signalling	1 LED - red - DC bus energized
Output voltage	<= power supply voltage
Isolation	Electrical between power and control
Type of cable	IEC cable without mounting kit : 1 wire(s) - 45 °C, copper 90 °C / XLPE/EPR UL 508 cable with UL Type 1 kit : 3 wire(s) - 40 °C, copper 75 °C / PVC IEC cable without mounting kit : 1 wire(s) - 45 °C, copper 70 °C / PVC
Electrical connection	Terminal 2.5 mm ² / AWG 14 (VIA, VIB, FM, FLA, FLB, FLC, RY, RC, F, R, RES) Terminal 6 mm ² / AWG 10 (L1/R, L2/S, L3/T)
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 at 24 V DC (21...27 V) - <= 200 A with overload and short-circuit protection Internal supply for reference potentiometer (1 to 10 kOhm) at 10.5 V DC +/- 5 % - <= 10 A with overload and short-circuit protection
Analogue input number	2
Analogue input type	Configurable voltage : (VIB) 0...10 V DC - 24 V max - 30000 Ohm - resolution: 10 bits Switch-configurable current : (VIA) 0...20 mA - 250 Ohm - resolution: 10 bits Switch-configurable voltage : (VIA) 0...10 V DC - 24 V max - 30000 Ohm - resolution: 10 bits Configurable PTC probe : (VIB) 0...6 probes - 1500 Ohm
Sampling duration	3.5 ms +/- 0.5 ms (VIA) - analog input(s) 2 ms +/- 0.5 ms (RES) - discrete input(s) 22 ms +/- 0.5 ms (VIB) - analog input(s) 2 ms +/- 0.5 ms (R) - discrete input(s) 2 ms +/- 0.5 ms (F) - discrete input(s)
Response time	7 ms +/- 0.5 ms (FLA, FLC) - discrete output(s) 7 ms +/- 0.5 ms (RY, RC) - discrete output(s) 7 ms +/- 0.5 ms (FLB, FLC) - discrete output(s) 2 ms +/- 0.5 ms (FM) - analog output(s)
Accuracy	+/- 1 % (FM) for a temperature variation 60 °C +/- 0.6 % (VIA) for a temperature variation 60 °C +/- 0.6 % (VIB) for a temperature variation 60 °C
Linearity error	+/- 0.15 % of maximum value for input (VIB) +/- 0.2 % for output (FM) +/- 0.15 % of maximum value for input (VIA)
Analogue output number	1
Analogue output type	Switch-configurable voltage : (FM) 0...10 V DC - 7620 Ohm - resolution: 10 bits Switch-configurable current : (FM) 0...20 mA - 970 Ohm - resolution: 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 at 24 V DC (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 30 V DC on inductive load - cos phi = 0.4 - L/R = 7 ms (FL, R) 2 A at 250 V AC on inductive load - cos phi = 0.4 - L/R = 7 ms (FL, R)
Discrete input type	Programmable (F) 24 V DC, with level 1 PLC - 4700 Ohm Programmable (R) 24 V DC, with level 1 PLC - 4700 Ohm Programmable (RES) 24 V DC, with level 1 PLC - 4700 Ohm
Discrete input logic	Negative logic (sink) (F, R, RES), >= 16 V (state 0), <= 10 V (state 1) Positive logic (source) (F, R, RES), <= 5 V (state 0), >= 11 V (state 1)
Acceleration and deceleration ramps	Linear adjustable separately from 0.01 to 3200 s Automatic based on the load

Braking to standstill	By DC injection
Protection type	Overvoltages on the DC bus for drive Motor phase break for motor Break on the control circuit for drive With PTC probes for motor Input phase breaks for drive Thermal protection for motor Short-circuit between motor phases for drive Line supply overvoltage and undervoltage for drive Against exceeding limit speed for drive Overheating protection for drive Against input phase loss for drive Line supply undervoltage for drive Overcurrent between output phases and earth for drive Thermal power stage for drive
Dielectric strength	3535 V DC between earth and power terminals 5092 V DC between control and power terminals
Insulation resistance	>= 1 MOhm at 500 V DC for 1 minute
Frequency resolution	0.024/50 Hz for analog input 0.1 Hz for display unit
Communication port protocol	BACnet METASYS N2 APOGEE FLN Modbus LonWorks
Connector type	1 RJ45 1 open style
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	Monitoring inhibitible Write multiple registers (16) 2 words maximum Time out setting from 0.1 to 100 s Write single register (06) Read device identification (43) Read holding registers (03) 2 words maximum
Option card	Communication card for LonWorks
Operating position	Vertical +/- 10 degree
Width	107 mm
Height	143 mm
Depth	150 mm
Product weight	2 kg
Power dissipation in W	103 W
Air flow	35 m3/h
Functionality	Mid
Specific application	Centrifugal pumps and fans

Environment

Electromagnetic compatibility	Radiated radio-frequency electromagnetic field immunity test level 3 conforming to IEC 61000-4-3 1.2/50 μ s - 8/20 μ s surge immunity test level 3 conforming to IEC 61000-4-5 Voltage dips and interruptions immunity test conforming to IEC 61000-4-11 Electrical fast transient/burst immunity test level 4 conforming to IEC 61000-4-4 Conducted radio-frequency immunity test level 3 conforming to IEC 61000-4-6 Electrostatic discharge immunity test level 3 conforming to IEC 61000-4-2
Pollution degree	IEC 61800-5-1
IP degree of protection	IP21 conforming to EN/IEC 60529 IP20 on upper part without blanking plate on cover conforming to EN/IEC 61800-5-1 IP41 on upper part conforming to EN/IEC 61800-5-1 IP41 on upper part conforming to EN/IEC 60529 IP21 conforming to EN/IEC 61800-5-1

	IP20 on upper part without blanking plate on cover conforming to EN/IEC 60529
Vibration resistance	1 gn (f = 13...200 Hz) conforming to EN/IEC 60068-2-8 1.5 mm (f = 3...13 Hz) conforming to EN/IEC 60068-2-6
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	51 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	> 40...50 °C with derating factor -10...40 °C without derating
Ambient air temperature for storage	-25...70 °C
Standards	IEC 61800-3 environments 1 category C1 IEC 61800-3 category C2 UL Type 1 EN 61800-5-1 IEC 61800-3 environments 2 category C1 EN 61800-3 environments 2 category C2 EN 61800-3 environments 1 category C3 IEC 61800-3 environments 1 category C2 IEC 61800-3 environments 1 category C3 IEC 61800-3 environments 2 category C3 EN 61800-3 environments 1 category C2 EN 61800-3 environments 2 category C3 EN 61800-3 category C3 EN 55011 class A group 1 EN 61800-3 environments 1 category C1 IEC 61800-3 category C3 IEC 61800-5-1 EN 61800-3 environments 2 category C1 EN 61800-3 IEC 61800-3 IEC 61800-3 environments 2 category C2 EN 61800-3 category C2
Product certifications	UL NOM 117 C-Tick CSA
Marking	CE

Offer Sustainability

Sustainable offer status	Green Premium product
RoHS (date code: YYWW)	Compliant - since 1051 - Schneider Electric declaration of conformity Schneider Electric declaration of conformity
REACH	Reference contains SVHC above the threshold - Go to CaP for more details Go to CaP for more details
Product environmental profile	Available Product environmental
Product end of life instructions	Available Product environmental

Contractual warranty

Warranty period	18 months
-----------------	-----------