Specifications



# variable speed drive ATV212 - 15kW - 20hp - 480V - 3ph - EMC - IP21

ATV212HD15N4

#### Main

Main	
Device short name	ATV212
Product destination	Asynchronous motors
Network number of phases	3 phases
Motor power kW	15 kW
Motor power hp	20 hp
Supply voltage limits	323528 V
Supply frequency	5060 Hz - 55 %
Line current	22.8 A at 480 V 28.5 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 Modbus METASYS N2 APOGEE FLN LonWorks
[Us] rated supply voltage	380480 V - 1510 %
EMC filter	Class C2 EMC filter integrated
IP degree of protection	IP21
Complementary	
Apparent power	23.2 kVA at 380 V
Continuous output current	30.5 A at 380 V 30.5 A at 460 V
Maximum transient current	33.6 A for 60 s
Speed drive output frequency	0.5200 Hz
Speed range	110

Speed range	110 +/- 10 % of nominal slip 0.2 Tn to Tn	
Speed accuracy		
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 25 mm² / AWG 3		
Tightening torque	0.6 N.m (VIA, VIB, FM, FLA, FLB, FLC, RY, RC, F, R, RES) 4.5 N.m, 40 lb.in (L1/R, L2/S, L3/T)		
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	Time out setting from 0.1 to 100 s Read device identification (43) Monitoring inhibitable Write single register (06) Write multiple registers (16) 2 words maximum Read holding registers (03) 2 words maximum		
Option card	Communication card for LonWorks		
Power dissipation in W	625 W		
Air flow	206 m3/h		
Functionality	Mid		
Specific application	HVAC		
Variable speed drive application selection	Compressor for scroll Building - HVAC Fan Building - HVAC Pump Building - HVAC		
Motor power range AC-3	1525 kW at 380440 V 3 phases 1525 kW at 480500 V 3 phases		
Motor starter type	Variable speed drive		
Discrete output number	2		
Analogue input number	2		

Analogue input type V/4 setto-onfiguratie votage, 0.10 V DC 24 V max, impedance, 2000 Ohm, resolution 10 bits Viii configuratie integrings - 0.10 V DC 24 V max, impedance, 2000 Ohm, resolution 10 bits Viii configuratie integrings - 0.10 V DC 24 V max, impedance, 2000 Ohm, resolution 10 bits Viii configuratie integrings - 0.10 V DC 24 V max, impedance, 2000 Ohm, resolution 10 bits Viii configuratie integrings - 0.10 V DC 24 V max, impedance, 2000 Ohm, resolution 10 bits Viii configuratie curvet 2, 20 mA, impedance, 2000 Ohm, resolution 10 bits   Analogue output number 1   Physical interface 2-wire 88 485   Connector type 1.9247   Transmission frame RTU   Number of addresses 1.247   Data format B bits, 1 size, cost even or no configuratel party   Type of polarization No impedance   Anyochronous motor control Optime File viscobic orbits, audancial E Reumpenation (UF + automatic Ur) Voltagefrequency ratio, 2 paints Voltagefrequency ratis, paints Voltagefrequency ratio, 2 paints Voltagefrequency ratio			
Physical Interface     2-wire RS 465       Connector type     1 types to blo 1 RA55       Transmission rate     9000 bps of 19200 bps       Transmission frame     RTU       Number of addresses     1247       Data format     8 bbs, 1 stop, odd even or no configurable parity       Type of polarization     No impodence       Asynchronous motor control     Price wedst control without senser, standard Voltagefrequency rate, along Stoms, quadratic UM Voltagefrequency 12 V-15 %       Transient overtorque     216 VHz dtagefrequency rate motor control Advisatile standa Still       Switching frequency     12 - 16 MLz welf derailing factor       Nominal switching frequency     12 - 7.2.83 Hz       Prosection type     Con-transit drive Constraint between motor phases drive Distribut results of works, motor       Width     245 mm       Height     300 mm	Analogue input type	VIB configurable voltage: 010 V DC 24 V max, impedance: 30000 Ohm, resolution 10 bits VIB configurable PTC probe: 06 probes, impedance: 1500 Ohm	
Connector type 1 open style   1 RAS 9000 bps or 19200 bps   Transmission rate 9000 bps or 19200 bps   Transmission frame RTU   Number of addresses 1247   Data format 8 bis.1 stap. odd even or no configurable parily   Type of polarization No impediance   Asynchronous motor control profile Flux vector control without sensor, standard Voltagefrequency ratio. 2 points   Torque accuracy +.1 5 %   Transient overforque 120 % of nominal motor longue +/.10 % for 80 s   Acceleration and deceleration Linkar adjustable segarately for 0.01 to 3200 s   Automatic based on the load Automatic based on the load   Motor slip compensation Automatic based on the load   Not adjustable in voltagefrequency ratio motor control Adjustable 1.24 Hz   Braking to standstill By OC lejection   Network frequency 47.55. Hz   Protection type Overfraging protection: drive Thermal protectio	Analogue output number	1	
1 HA5   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 party   Type of polarization No impedance   Asynchronous motor control profile Flux vedar control without sensor, standard Voltage/Requency rate. Empsychol, quoting   Torque accuracy +1:15%   Transient overtorque 12:0 % of normal motor borque +/- 10 % for 0 s   Accoleration and deceleration ramps Automatic based on the load   Motor silp compensation Automatic based on the load   Noting frequency 516 Mir adjustable separately from 0.01 to 3200 s   Automatic based on the load Not available in voltage/Requency rate in compsy and the control Adjustable for voltage/Requency rate in comps and the control Adjustable for voltage/Requency rate in control Adjustable for voltage/Requency rate in motor control Adjustable for voltage/Requency   Protection type Overhealing protection: drive Thermal protection: drive Thermal protection: drive Thermal protection: drive Thermal protection: drive Against input place brack. drive Note and the place for the Control With PTC protee: motor   Width 245 rm   Height 330 rm   Depth 10	Physical interface	2-wire RS 485	
Transmission frame RTU   Number of addresses 1247   Data format 8 bits, 1 stop, odd even or no configurable parity   Type of polarization No inspearnce   Asynchronous motor control profile Fits vector control without sensor, standard Votage/frequency rato, 2 points   Torque accuracy #/- 15 %   Transient overtorque 120 % of nominal instor torque +/- 10 % for f00 s   Acceleration and deceleration Linear adjustable separately from 0.0 to 3200 s   Automatic based on the load Automatic based on the load   Motor silp componesation Automatic based on the load   Nominal switching frequency 1216 Mitz with derating factor   Nominal switching frequency 1216 Mitz with derating factor   Nominal switching frequency 47.563 Hz   Prospective line is c 22.KA   Protection type Overheating protection drive Thermal pr	Connector type		
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     Fix vector control without summer, standard Voltage/frequency ratio, 2 points       Torque accuracy     +1-15 %       Transient overtorque     120 % of norminal motor torque +1-10 % for 60 a       Accoleration and doceleration     Linear adjutable separately from 0.01 to 3200 s       Automatic whatever the load     Automatic whatever the load       Motor slip compensation     Automatic whatever the load       Motor slip compensation     Automatic whatever the load       Motor slip compensation     Automatic whatever the load       Northring frequency     616 kHz adjutable       916 kHz with derating factor     Northring frequency       916 kHz with derating factor     Northring factor	Transmission rate	9600 bps or 19200 bps	
Data format     8 bits, 1 stop, odd even or no configurable parity       Type of polarization     No impediance       Asynchronous motor control profile     Flux vector control without sensor, standard Voltage/requency ratio. 5 perins       Torque accuracy     4/ 15 %       Transient overforque     120 % of nominal motor longue average aver	Transmission frame	RTU	
Type of polarization     No impedance       Asynchronous motor control profile     Flux vector control without sensor, standard Voltage/requency zato, automatic R compensation (UIF + automatic Uo) Woltage/requency zato zato zato zato zato zato zato zato	Number of addresses	1247	
Automatic molor control profile   Flux vector control without sensor, standard Voltagefrequency ratio, 2 points Voltagefrequency ratio, 5 points Voltagefrequency ratio, 7 points Voltagefrequency ratints Voltagefrequency ratio, 7 points Voltagefrequency	Data format	8 bits, 1 stop, odd even or no configurable parity	
profile   Voltage/frequency raid. 2 points     Voltage/frequency raid. 2 points   Voltage/frequency raid. 2 points     Torque accuracy   +/. 15 %     Transient overtorque   120 % of nominal motor torque +/. 10 % for 60 s     Acceleration and deceleration   Linear adjustable separately from 0.01 to 3200 s     Automatic whatever the load   Not available in voltage/frequency raid or motor control     Adjustable   Automatic whatever the load     Not available in voltage/frequency raid or motor control   Adjustable     Switching frequency   616 kHz adjustable availage/frequency raid or motor control     Adjustable   1216 kHz adjustable     Nominal switching frequency   1216 kHz adjustable     Prospective line lsc   22 kA     Prospective line lsc   24 kHz     Braking to standstill   By DC injection     Network frequency   47.563 Hz     Prospective line lsc   24 kHz     Braking to standstill   By DC injection: drive     Thermal power stage: drive   Short-Cricit texwer motor phases: drive     Input phase breaks: drive   Input phase breaks: drive     Input phase breaks: motor   Mutor blase drive     Against input phase loss: drive <td>Type of polarization</td> <td>No impedance</td>	Type of polarization	No impedance	
Transient overtorque   120 % of nominal motor torque +/- 10 % for 60 s     Acceleration and deceleration ramps   Linear adjustable separately from 0.01 to 3200 s     Motor silp compensation   Automatic whatever the load     Not available in voltage/frequency ratio motor control Adjustable   Adjustable     Switching frequency   616 kHz adjustable     Switching frequency   1216 kHz with derating factor     Nominal switching frequency   12.kHz     Braking to standstill   By DC injection     Network frequency   47.563 Hz     Prospective line Isc   22 kA     Protection type   Overheating protection: drive Thermal power stage: drive Input phase breaks: drive Develoament between culput phases and earth: drive Overculages on the DC bas: drive Input phase loss: drive Ine supply overvoltage and undervoltage: drive Line supply undervoltage: drive Against input phase loss: drive Thermal protection: motor     Width   245 mm     Height   330 mm     Depth   190 mm     Product weight   11.65 kg     Environment   120 on upper part without blanking plets on sover conforming to ENIEC 61800-5-1 IP21 conforming to ENIEC 61800-5-1 IP21 conforming to ENIEC 61800-5-1 IP21 conforming to ENIEC 60529     IP21 conforming to ENIEC 61800-5-1 IP41 on upper part without blanking plets on sover conforming to ENIEC 60529 <	-	Voltage/frequency ratio, 2 points Voltage/frequency ratio, automatic IR compensation (U/f + automatic Uo) Voltage/frequency ratio - Energy Saving, quadratic U/f	
Acceleration and deceleration ramps   Linear adjustable separately from 0.01 to 3200 s Automatic based on the load     Motor slip compensation   Automatic whatever the load Not available in voltage/frequency ratio motor control Adjustable     Switching frequency   616 kHz adjustable 1216 kHz with derating factor     Nominal switching frequency   12. kHz with derating factor     Nominal switching frequency   12. kHz with derating factor     Nominal switching frequency   12. kHz with derating factor     Network frequency   47.563 Hz     Prospective line Isc   22 kA     Protection type   Overheating protection: drive Thermal power stage: drive Input phase break: drive Overwoltages on the DC bus: drive Deravoltages on the Control Control Motor phase loss: drive Thereal protection: motor     Width   245 mm     Height   330 mm     Depth   190 mm     Product weight   11.65 kg     Environment   P20 on upper part without blanking plate on eover conforming to ENIEC 61800-5-1 IP21 conforming to ENIEC 61800-5-1 IP21 conforming to ENIEC 61800-5-1 IP21 confo	Torque accuracy	+/- 15 %	
ramps   Automatic based on the load     Motor slip compensation   Automatic based on the load     Switching frequency   616 kHz adjustable     Switching frequency   1216 kHz adjustable     Switching frequency   12 kHz     Braking to standstill   By DC injection     Network frequency   47.563 Hz     Prospective line lac   22 kA     Protection type   Overheating protection: drive Thermal power stage: drive Short-orcuut batween motor phases: drive Input phase breaks: drive Overcurrent between output phases and earth: drive Overcurrent between output phase break: motor     Width   245 mm     Height   330 mm     Depth   190 mm     Product weight   11.85 kg     Environment   P20 our upper part without blanking plate on cover conforming to EN/IEC 61800-5-1 IP20 our upper part without blanking plate on cover conforming to EN/IEC 61800-5-1 IP21 conforming to EN/IEC 61800-5-1 IP21 conforming to EN/IEC 61800-5-1 IP21 conforming to EN/IEC 61800-5-1 IP21 conforming to EN/IE	Transient overtorque	120 % of nominal motor torque +/- 10 % for 60 s	
Not available in voltage/frequency ratio motor control     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   22 kA     Protection type   Overheating protection: drive Thermal power stage: drive Short-focult between motor phases: drive Unput phase breaks: drive Overvortages on the DC bus: drive Break on the control incut: drive Against exceeding limit speed: drive Line supply undervoltage: drive Line supply undervoltage: drive Thermal protection: motor Motor phase breaks: motor     Width   245 mm     Height   330 mm     Depth   190 mm     Product weight   11.65 kg     Environment   2     Pollution degree   2 conforming to IEC 61800-5-1     IP degree of protection   IP20 on upper part without blanking plate on cover conforming to ENIEC 61800-5-1 IP21 conforming to ENIEC 61800-5-1 IP41 on upper part conforming to ENIEC 61800-5-1 IP41 on upper part conforming to ENIEC 60088-2-6     Vibration resistance   1.5 mm (F 313 Hz) conforming to ENIEC 60088-2-6			
1216 kHz with derating factor     Nominal switching frequency   12 kHz     Braking to standstill   By DC injection     Network frequency   47.563 Hz     Prospective line lsc   22 kA     Protection type   Overheating protection: drive Thermal power stage: drive Short-drivul between motor phases: drive Unput phase breaks: drive Overcurrent between motor phases: drive Dereurant between motor phases: drive Dereurant between motor phases: drive Dereurant between output phases and earth: drive Overvoitages on the OC bus: drive Against exceeding limit speed: drive Line supply overvoitage drive Line supply overvoitage: drive Line supply drive     Width   245 mm     Height   330 mm     Depth   190 mm     Product weight   11.65 kg     Environment   Pollution degree     Pollution degree   2 conforming to EN/EC 61800-5-1 IP21 contorming to EN/EC 61800-5-1 IP21 contorming to EN/EC 6180	Motor slip compensation	Not available in voltage/frequency ratio motor control	
Braking to standstill   By DC injection     Network frequency   47.563 Hz     Prospective line lsc   22 kA     Protection type   Overheating protection: drive Thermal power stage: drive Short-dicuit between motor phases: drive Input phase breaks: drive Overculages on the DC bus; drive Break on the control circuit: drive Against exceeding limit speed: drive Line supply undervoltage and undervoltage: drive Line supply undervoltage and undervoltage: drive Line supply undervoltage and undervoltage: drive Break on the control circuit: drive Against input phase loss: drive Thermal protection: motor     Width   245 mm     Height   330 mm     Depth   190 mm     Product weight   11.65 kg     Environment   11.65 kg     Plogree of protection   IP20 on upper part without blanking plate on cover conforming to EN/IEC 61800-5-1 IP21 conforming to EN/IEC 61800-5-1 IP41 on upper part conforming to EN/IEC 61800-5-1	Switching frequency		
Network frequency   47.563 Hz     Prospective line lsc   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 Against exceeding limit speed: drive Line supply overoltage and undervoltage: drive Line supply undervoltage: drive Thermal protection: motor Motor phase bes: motor     Width   245 mm     Height   330 mm     Depth   190 mm     Product weight   11.65 kg     Environment   2     Pollution degree   2 conforming to IEC 61800-5-1     IP2 do on upper part without blanking plate on cover conforming to EN/IEC 61800-5-1     IP2 on on upper part without blanking plate on cover conforming to EN/IEC 60529     IP31 conforming to EN/IEC 61800-5-1     IP32 conforming to EN/IEC 61800-5-1     IP32 on on upper part without blanking plate on cover conforming to EN/IEC 60529     IP31 conforming to EN/IEC 60529     IP31 conforming to EN/IEC 60529     IP31 on upper part conforming to EN/IEC 60529     IP31 on upper part conforming	Nominal switching frequency	12 kHz	
Prospective line lsc   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 Overcurrent between output phases and earth: drive Overcurrent between output phases and earth: drive Against input phase loss: drive Line supply overvoltage and undervoltage: drive Line supply overvoltage and undervoltage: drive Line supply overvoltage and undervoltage: drive Against input phase loss: drive Thermal protection: motor Motor phase break: motor     Width   245 mm     Height   330 mm     Depth   190 mm     Product weight   11.65 kg     Environment   2     Pollution degree   2 conforming to IEC 61800-5-1     IP degree of protection   IP20 on upper part without blanking plate on cover conforming to EN/IEC 61800-5-1 IP20 on upper part without blanking plate on cover conforming to EN/IEC 60529 IP41 on upper part conforming to EN/IEC 61800-5-1 IP21 conforming to EN/IEC 61800-5-1	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 Overcurrent between output phases and earth: drive Overcurrent between output phases and earth: drive Against exceeding limit speed: drive Line supply overvoltage and undervoltage: drive Line supply overvoltage and undervoltage: drive Against input phase loss: drive Thermal protection: motor With PTC probes: motor     Width   245 mm     Height   330 mm     Depth   190 mm     Product weight   11.65 kg     Environment   Pollution degree     Pollution degree   2 conforming to IEC 61800-5-1 IP20 on upper part without blanking plate on cover conforming to EN/IEC 61800-5-1 IP21 conforming to EN/IEC 61800-5-1 	Network frequency	47.563 Hz	
Thermal power stage: drive     Short-circuit between notor phases: drive     Input phase breaks: drive     Overcurrent between output phases and earth: drive     Against exceeding limit speed: drive     Line supply overvoltage and undervoltage: drive     Against inspect. drive     Motor phase break:     Width     245 mm     Height     330 mm     Depth     190 mm     Product weight     11.65 kg     Environment     Pollution degree   2 conforming to EC 61800-5-1     <	Prospective line Isc	22 kA	
Height   330 mm     Depth   190 mm     Product weight   11.65 kg     Environment   Pollution degree     2 conforming to IEC 61800-5-1     IP degree of protection   IP20 on upper part without blanking plate on cover conforming to EN/IEC 61800-5-1     IP20 on upper part without blanking plate on cover conforming to EN/IEC 60529     IP21 conforming to EN/IEC 61800-5-1     IP21 conforming to EN/IEC 61800-5-1     IP21 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     Vibration resistance   1.5 mm (f= 313 Hz) conforming to EN/IEC 60068-2-6	Protection type	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	
Depth   190 mm     Product weight   11.65 kg     Environment	Width	245 mm	
Product weight   11.65 kg     Environment	Height	330 mm	
Environment     Pollution degree   2 conforming to IEC 61800-5-1     IP degree of protection   IP20 on upper part without blanking plate on cover conforming to EN/IEC 61800-5-1     IP20 on upper part without blanking plate on cover conforming to EN/IEC 60529     IP21 conforming to EN/IEC 61800-5-1     IP21 conforming to EN/IEC 60529     IP41 on upper part conforming to EN/IEC 60529     IP41 on upper part conforming to EN/IEC 60529     Vibration resistance   1.5 mm (f= 313 Hz) conforming to EN/IEC 60068-2-6	Depth	190 mm	
Pollution degree   2 conforming to IEC 61800-5-1     IP degree of protection   IP20 on upper part without blanking plate on cover conforming to EN/IEC 61800-5-1     IP20 on upper part without blanking plate on cover conforming to EN/IEC 60529   IP21 conforming to EN/IEC 61800-5-1     IP21 conforming to EN/IEC 61800-5-1   IP21 conforming to EN/IEC 60529     IP41 on upper part conforming to EN/IEC 60529   IP41 on upper part conforming to EN/IEC 60529     Vibration resistance   1.5 mm (f= 313 Hz) conforming to EN/IEC 60068-2-6	Product weight	11.65 kg	
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IP degree of protection   IP20 on upper part without blanking plate on cover conforming to EN/IEC 61800-5-1     IP20 on upper part without blanking plate on cover conforming to EN/IEC 60529     IP21 conforming to EN/IEC 61800-5-1     IP21 conforming to EN/IEC 60529     IP41 on upper part conforming to EN/IEC 61800-5-1     IP41 on upper part conforming to EN/IEC 60529     Vibration resistance   1.5 mm (f= 313 Hz) conforming to EN/IEC 60068-2-6		2 conforming to IEC 61800-5-1	
		IP20 on upper part without blanking plate on cover conforming to EN/IEC 61800-5-1 IP20 on upper part without blanking plate on cover conforming to EN/IEC 60529 IP21 conforming to EN/IEC 61800-5-1 IP21 conforming to EN/IEC 60529 IP41 on upper part conforming to EN/IEC 61800-5-1	
	Vibration resistance		

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	54 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	-10…40 °C (without derating) 40…50 °C (with derating factor)		
Operating position	Vertical +/- 10 degree		
Product certifications	CSA UL C-Tick NOM 117		
Marking	CE		
Standards	IEC 61800-3 category C2 EN 61800-3 category C3 IEC 61800-3 category C3 IEC 61800-5-1 EN 61800-3 environments 2 category C1 EN 55011 class A group 1 IEC 61800-3 environments 2 category C2 EN 61800-3 environments 2 category C2 IEC 61800-3 environments 1 category C3 EN 61800-5-1 UL Type 1 IEC 61800-3 environments 2 category C3 EN 61800-3 environments 1 category C3 EN 61800-3 environments 1 category C3 IEC 61800-3 environments 1 category C1 EN 61800-3 environments 2 category C1 EN 61800-3 environments 1 category C1		
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	-2570 °C		
Packing Units			
Unit Type of Package 1	PCE		
Number of Units in Package 1	1		
Package 1 Weight	11.646 kg		
Package 1 Height	27.5 cm		
Package 1 width	39.5 cm		
Package 1 Length	30 cm		
Unit Type of Package 2	P06		
	· · ·		

Number of Units in Package 2

Package 2 Weight

Package 2 Height

Package 2 width

4

59.58 kg

73.5 cm

60 cm

80 cm

Sustainable offer status	Green Premium product	
REACh Regulation	REACh Declaration	
EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope) EU RoHS Declaration	
Mercury free	Yes	
RoHS exemption information	Yes	
China RoHS Regulation	China RoHS declaration	
Environmental Disclosure	Product Environmental Profile	
Circularity Profile	End of Life Information	
WEEE	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins	
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 www.P65Warnings.ca.gov	

### **Contractual warranty**

Warranty

18 months

**Dimensions Drawings** 

#### Dimensions

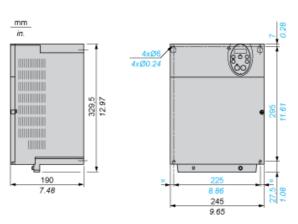
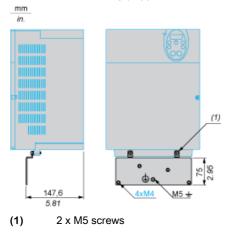


Plate for EMC mounting (supplied with the drive)



# ATV212HD15N4

Mounting and Clearance

#### Mounting Recommendations

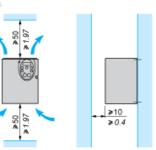
#### Clearance

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:

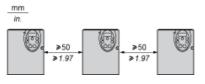
- Do not place it close to heating elements.
- Leave sufficient free space to ensure that the air required for cooling purposes can circulate from bottom to the top of the unit.

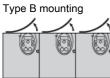




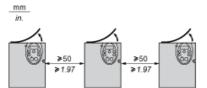
#### Mounting Types

Type A mounting





Type C mounting



By removing the protective blanking cover from the top of the drive, the degree of protection for the drive becomes IP21. The protective blanking cover may vary according to the drive model, see opposite.

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Mounting and Clearance

#### Specific Recommendations for Mounting in an Enclosure

To help ensure proper air circulation in the drive:

- Fit ventilation grilles.
- Check that there is sufficient ventilation. If there is not, install a forced ventilation unit with a filter. The openings and/or fans must provide a flow rate a
- Use special filters with UL Type 12/IP54 protection.
- Remove the blanking cover from the top of the drive.

#### Sealed Metal Enclosure (IP54 Degree of Protection)

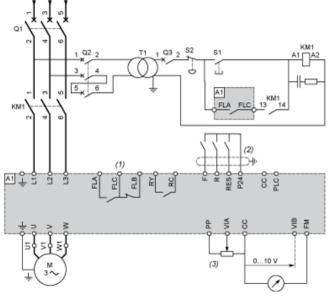
The drive must be mounted in a dust and damp proof enclosure in certain environmental conditions, such as dust, corrosive gases, high humidity with risk of condensation and dripping water, splashing liquid, etc. This enables the drive to be used in an enclosure where the maximum internal temperature reaches 50°C.

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**Connections and Schema** 

#### **Recommended Wiring Diagram**

#### **3-Phase Power Supply**



A1: KM1: ATV 212 drive

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)

VIA U I VIB U PTC

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

υ

Selection of logic type

	PLC
Sink [	Source
(1)	(2)
(1)	negative logic
(2)	positive logic

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**Connections and Schema** 

#### **Other Possible Wiring Diagrams**

#### Logic Inputs According to the Position of the Logic Type Switch

"Source" position



#### "Sink" position



"PLC" position with PLC transistor outputs

(1)	(1)	
(1) PLC	(1) PLC	

#### 2-wire control



F: Forward R: Preset speed

(2) ATV 212 control terminals

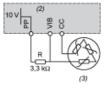
3-wire control

(2) P24 E-E

F: Forward R: Stop

RES: Reverse ATV 212 control terminals (2)

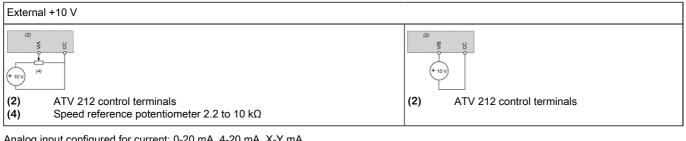
PTC probe



(2) (3) ATV 212 control terminals Motor

#### **Analog Inputs**

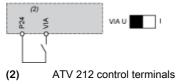
#### Voltage analog inputs



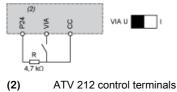
Analog input configured for current: 0-20 mA, 4-20 mA, X-Y mA



(2) (5) ATV 212 control terminals Source 0-20 mA, 4-20 mA, X-Y mA Analog input VIA configured as positive logic input ("Source" position)



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



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Performance Curves

#### **Derating Curves**

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

