Product data sheet
Characteristics

ATV212W075N4
variable speed drive, Altivar 212, 0.75kW, 1hp, 480V, 3 phases, with EMC class C2, IP55

Galvenā

Ierīces īsais nosaukums	ATV212
Produkta mērķa pielietojums	Asynchronous motors
Tīkla fāžu skaits	3 fāzes
Motor power kW	0,75 kW
Motor power hp	1 hp
Supply voltage limits	323…528 V
Supply frequency	50...60 Hz - 5...5 %
Line current	1,4 A 480 V 1,7 A 380 V
Produkta sērija	Altivar 212
Produkta vai sastāvdaļas veids	Variable speed drive
Produkta specifiskais pielietojums	Pumps and fans in HVAC
Komunikācijas porta protokols	Modbus BACnet METASYS N2 LonWorks APOGEE FLN
[Us] rated supply voltage	380...480 V - 15...10 %
EMC filter	Class C2 EMC filter integrated
IP degree of protection	IP55

Papildinošs

Apparent power	1,6 kVA 380 V
Continuous output current	2,2 A 380 V 2,2 A 460 V
Maximum transient current	2,4 A 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
Lokālā signalizēšana	Priekš DC bus energized 1 LED (sarkans)
Izvada spriegums	<= power supply voltage
Izolācija	Electrical between power and control
Type of cable	Without mounting kit 1 IEC cable 45 °C, copper 90 °C / XLPE/EPR Without mounting kit 1 IEC cable 45 °C, copper 70 °C / PVC With UL Type 1 kit 3 UL 508 cable 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 pārslodzes un īssavienojuma aizsardzība Internal supply 24 V DC 21…27 V), <200 A pārslodzes un īssavienojuma aizsardzība
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 ievade VIB +/- 0.15 % of maximum value ievade FM +/- 0.2 % izvade
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 type	Configurable relay logic FLA, FLC) NĒ - 100000 cikli Configurable relay logic FLB, FLC) NC - 100000 cikli Configurable relay logic RY, RC) NĒ - 100000 cikli
Minimum switching current	3 mA 24 V DC configurable relay logic
Maximum switching current	5 A 250 V AC pretestības cos phi = 1 L/R = 0 ms FL, R) 5 A 30 V DC pretestības cos phi = 1 L/R = 0 ms FL, R) 2 A 250 V AC induktīvs cos phi = 0.4 L/R = 7 ms FL, R) 2 A 30 V DC induktīvs 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
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
Komunkācijas pakalpojums	Monitoring inhibitable Time out setting from 0.1 to 100 s Read device identification (43) Read holding registers (03) 2 words maximum Write multiple registers (16) 2 words maximum Write single register (06)
Option card	Communication card LonWorks
Functionality	Mid
Specific application	HVAC
Discrete output number	2
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
Analogue output number	1
Fiziskais "interfeiss"	2-wire RS 485
Konektora tips	1 open style 1 RJ45
Pārraides ātrums	9600 bps or 19200 bps
Transmission frame	RTU
Adrešu skaits	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, 2 points Voltage/Frequency ratio, automatic IR compensation (U/f + automatic Uo) Voltage/Frequency ratio - Energy Saving, quadratic U/f Flux vector control without sensor, standard Voltage/frequency ratio, 5 points
Torque accuracy	+/- 15 %
Transient overtorque	120 % of nominal motor torque +/- 10 % 60 s
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	6...16 kHz adjustable 12...16 kHz with derating factor
Nominal switching frequency	12 kHz
Braking to standstill	By DC injection
Tīkla frekvence	47.5...63 Hz
Prospective line Isc	5 kA
Protection type	Aizsardzība pret pārkaršanu 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 Termiskā aizsardzība motor Motor phase break motor With PTC probes motor
Platums	215 mm
Augstums	297 mm
Dziļums	192 mm
Neto svars	7 kg

Vide

Pollution degree	2 IEC 61800-5-1
IP degree of protection	IP55 IEC 61800-5-1 IP55 IEC 60529
Vibration resistance	1.5 mm 3…13 Hz)IEC 60068-2-6 1 gn 13…200 Hz)EN/IEC 60068-2-8
Shock resistance	15 gn 11 ms IEC 60068-2-27
Environmental characteristic	Classes 3C1 IEC 60721-3-3 Classes 3S2 IEC 60721-3-3
Noise level	48 dB 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 IEC 60068-2-3 5…95 % without dripping water 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
Produkta sertifikācija	CSA[RETURN]UL[RETURN]C-Tick[RETURN]NOM 117
Marķējums	CE
Standarti	IEC 61800-3 environments 2 category C1 IEC 61800-5-1 IEC 61800-3 environments 1 category C2 IEC 61800-3 category C2 IEC 61800-3 environments 2 category C2 IEC 61800-3 environments 1 category C1 IEC 61800-3 environments 1 category C3 IEC 61800-3 environments 1 category C3 IEC 61800-3 environments 2 category C1 IEC 61800-3 IEC 61800-3 IEC 61800-3 environments 1 category C1 IEC 61800-3 environments 2 category C3 IEC 61800-5-1 EN 61800-3 category C3 IEC 61800-3 environments 2 category C3 IEC 61800-3 environments 1 category C2 EN 55011 class A group 1 IEC 61800-3 category C3 IEC 61800-3 category C2 IEC 61800-3 environments 2 category C2
Assembly style	With heat sink

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 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
Regulation loop	Adjustable PI regulator
Apkārtējā gaisa temperatūra uzglabāšanai	-25…70 °C

Iepakošanas vienības

Pirmā iepakojuma vienības tips	PCE
Vienību skaits 1. iepakojumā	1
1. iepakojuma augstums	28,000 cm
1. iepakojuma platums	26,000 cm
1. iepakojuma garums	37,000 cm
1. iepakojuma svars	6,706 kg
Otrā iepakojuma vienības tips	P06
Vienību skaits 2. iepakojumā	5
2. iepakojuma augstums	75,000 cm
2. iepakojuma platums	60,000 cm
2. iepakojuma garums	80,000 cm
2. iepakojuma svars	46,530 kg

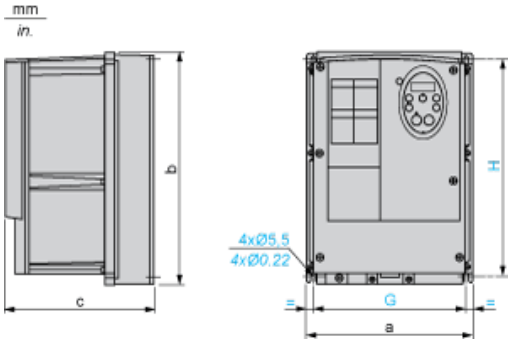
Piedāvājiet ilgtspēju

Ilgtspējīgs piedāvājuma statuss	Green Premium izstrādājums
REACh regula	REACh Deklarācija
ES RoHS direktīva	Proaktīva atbilstība (uz izstrādājumu neattiecas ES RoHS juridiskās saistības)
Nesatur dzīvsudrabu	Jā
Ķīnas RoHS regula	Ķīnas RoHS Deklarācija
Informācija par RoHS izņēmumiem	Jā
Vides informācijas publiskošana	Produkta Ietekme Uz Vidi
Cirkularitātes profils	Informācija Par Ekspluatācijas Izbeigšanu
WEEE	Eiropas Savienības tirgū no šī produkta ir jāatbrīvojas, ievērojot noteiktu atkritumu savākšanas kārtību, un produkts nedrīkst nonākt sadzīves atkritumu tvertnēs.

Līguma garantija

Garantija	18 months

Dimensions



Dimensions in mm

ATV212W	a	b	c	G	H
075N4...U22N4 075N4C...U22N4C	215	297	192	197	277
U30N4...U75N4 U30N4C...U75N4C	230	340	208	212	318

Dimensions in in.

ATV212W	a	b	c	G	H
075N4...U22N4 075N4C...U22N4C	8.46	11.69	7.56	7.76	10.91
U30N4...U75N4 U30N4C...U75N4C	9.06	13.39	8.19	8.35	12.52

Mounting Recommendations

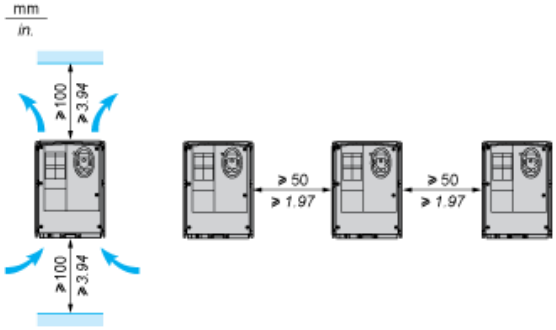
Clearance

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:

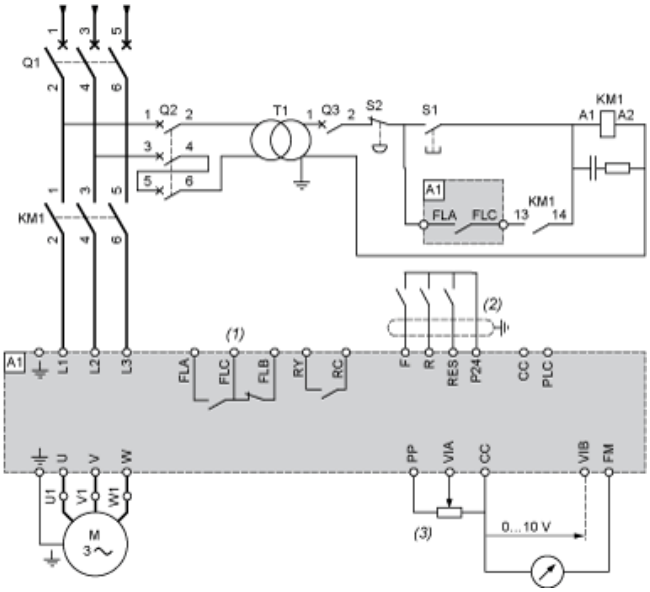
- Do not place it close to heating elements.
- Leave sufficient free space to ensure that the air required for cooling purposes can circulate from bottom to the top of the unit.

Type A Mounting



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, XB4 B or XB5 A pushbuttons
S2:
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

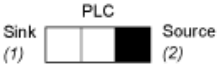
NOTE: All terminals are located at the bottom of the drive. Install interference suppressors on all inductive circuits near the drive or connected on the same circuit, such as relays, contactors, solenoid valves, fluorescent lighting, etc.

Switches (Factory Settings)

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

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

Selection of logic type

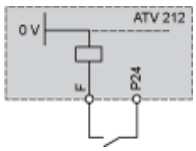


(1) negative logic
(2) positive logic

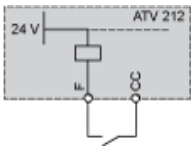
Other Possible Wiring Diagrams

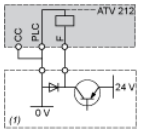
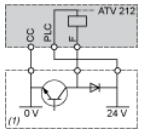
Logic Inputs According to the Position of the Logic Type Switch

“Source” position

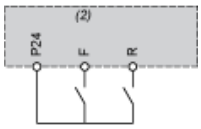


“Sink” position



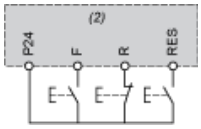
“PLC” position with PLC transistor outputs	
 (1) PLC	 (1) PLC

2-wire control



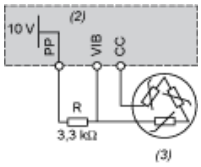
F: Forward
R: Preset speed
(2) ATV 212 control terminals

3-wire control



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

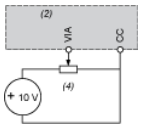
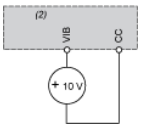
PTC probe



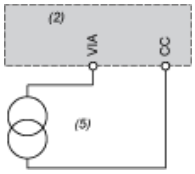
(2) ATV 212 control terminals
(3) Motor

Analog Inputs

Voltage analog inputs

External +10 V	
 (2) ATV 212 control terminals (4) Speed reference potentiometer 2.2 to 10 kΩ	 (2) ATV 212 control terminals

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

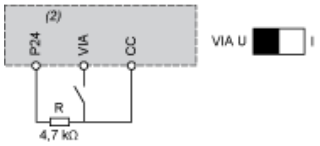


(2) ATV 212 control terminals
(5) Source 0-20 mA, 4-20 mA, X-Y mA

Analog input VIA configured as positive logic input (“Source” position)

(2) ATV 212 control terminals

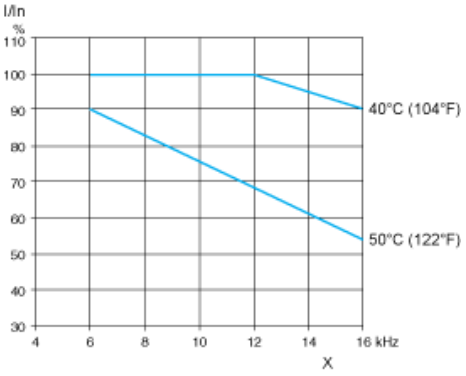
Analog input VIA configured as negative logic input (“Sink” position)



(2) ATV 212 control terminals

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