

# Product datasheet

Specifications



variable speed drive ATV610 - 11  
kW / 15HP - 380...415 V - IP20

ATV610D11N4

## Main

Product specific application

Device short name

Variant

Product destination

Mounting mode

EMC filter

IP degree of protection

Type of cooling

Supply frequency

Network number of phases

[Us] rated supply voltage

Motor power kW

Motor power hp

## Line current

Prospective  
line  $I_{sc}$

Apparent  
power

Continuous  
output  
current

Maximum  
transient  
current

Asynchronous  
motor control  
profile

Output  
frequency

Nominal  
switching  
frequency

Switching frequency 2...12 kHz adjustable

Number of preset speeds 16 preset speeds

Communication port protocol Modbus serial

Option card Slot A: communication card, Profibus DP V1  
Slot A: digital or analog I/O extension card  
Slot A: relay output card

## Complementary

Output voltage  $\leq$  power supply voltage

Motor slip compensation Automatic whatever the load  
Adjustable  
Not available in permanent magnet motor law  
Can be suppressed

Acceleration and deceleration ramps S, U or customized  
Linear adjustable separately from 0.01 to 9000 s

Braking to standstill By DC injection

Protection type Thermal protection: motor  
Motor phase break: motor  
Thermal protection: drive  
Overheating: drive  
Overcurrent between output phases and earth: drive  
Overload of output voltage: drive  
Short-circuit protection: drive  
Motor phase break: drive  
Overvoltages on the DC bus: drive  
Line supply overvoltage: drive  
Line supply undervoltage: drive  
Line supply phase loss: drive  
Overspeed: drive  
Break on the control circuit: drive

Frequency resolution Display unit: 0.1 Hz  
Analog input: 0.012/50 Hz

<b>Electrical connection</b>	Control, screw terminal: 0.5...1.5 mm <sup>2</sup> Line side, screw terminal: 4...16 mm <sup>2</sup> Motor, screw terminal: 4...16 mm <sup>2</sup>
<b>Connector type</b>	1 RJ45 (on the remote graphic terminal) for Modbus serial
<b>Physical interface</b>	2-wire RS 485 for Modbus serial
<b>Transmission frame</b>	RTU for Modbus serial
<b>Transmission rate</b>	4.8, 9.6, 19.2, 38.4 kbit/s for Modbus serial
<b>Type of polarization</b>	No impedance for Modbus serial
<b>Number of addresses</b>	1...247 for Modbus serial
<b>Method of access</b>	Slave
<b>Supply</b>	External supply for digital inputs: 24 V DC (19...30 V), <1.25 mA, protection type: overload and shortcircuit protection Internal supply for reference potentiometer (1 to 10 kOhm): 10.5 V DC +/- 5 %, <10 mA, protection type: overload and short-circuit protection
<b>Local signalling</b>	2 LEDs for local diagnostic 1 LED (yellow) for embedded communication status 2 LEDs (dual colour) for communication module status 1 LED (red) for presence of voltage
<b>Width</b>	171 mm
<b>Height</b>	360 mm 423 mm with EMC plate
<b>Depth</b>	233 mm
<b>Product weight</b>	7.730 kg
<b>Analogue input number</b>	3
<b>Analogue input type</b>	AI1, AI2, AI3 software-configurable voltage: 0...10 V DC, impedance: 30 kOhm, resolution 12 bits AI1, AI2, AI3 software-configurable current: 0...20 mA, impedance: 250 Ohm, resolution 12 bits AI2, AI3 software-configurable temperature probe or water level sensor
<b>Discrete input number</b>	6
<b>Discrete input type</b>	DI1...DI6 programmable as logic input, 24 V DC (<= 30 V), impedance: 3.5 kOhm DI5, DI6 programmable as pulse input: 0...30 kHz, 24 V DC (<= 30 V)
2	
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<b>Input compatibility</b>	DI1...DI6: logic input level 1 PLC conforming to EN/IEC 61131-2 DI5, DI6: pulse input level 1 PLC conforming to IEC 65A-68
<b>Discrete input logic</b>	Positive logic (source): DI1...DI6 configurable logic input, < 5 V (state 0), > 11 V (state 1) Negative logic (sink): DI1...DI6 configurable logic input, > 16 V (state 0), < 10 V (state 1) Positive logic (source): DI5, DI6 configurable pulse input, < 0.6 V (state 0), > 2.5 V (state 1)
<b>Analogue output number</b>	2
<b>Analogue output type</b>	Software-configurable current AQ1, AQ2: 0...20 mA, resolution 10 bits Software-configurable voltage AQ1, AQ2: 0...10 V DC impedance 470 Ohm, resolution 10 bits
<b>Sampling duration</b>	5 ms +/- 0.1 ms (AI1, AI2, AI3) - analog input 2 ms +/- 0.5 ms (DI1...DI6)configurable - discrete input 5 ms +/- 1 ms (DI5, DI6)configurable - pulse input 10 ms +/- 1 ms (AQ1, AQ2) - analog output

<b>Accuracy</b>	+/- 0.6 % AI1, AI2, AI3 for a temperature variation 60 °C analog input +/- 1 % AQ1, AQ2 for a temperature variation 60 °C analog output
<b>Linearity error</b>	AI1, AI2, AI3: +/- 0.15 % of maximum value for analog input AQ1, AQ2: +/- 0.2 % for analog output
<b>Relay output number</b>	3
<b>Relay output type</b>	Configurable relay logic R1: fault relay NO/NC electrical durability 100000 cycles Configurable relay logic R2: sequence relay NO electrical durability 100000 cycles Configurable relay logic R3: sequence relay NO electrical durability 100000 cycles
<b>Refresh time</b>	Relay output (R1, R2, R3): 5 ms (+/- 0.5 ms)
<b>Minimum switching current</b>	Relay output R1, R2, R3: 5 mA at 24 V DC
<b>Maximum switching current</b>	Relay output R1, R2, R3 on resistive load, cos phi = 1: 3 A at 250 V AC Relay output R1, R2, R3 on resistive load, cos phi = 1: 3 A at 30 V DC Relay output R1, R2, R3 on inductive load, cos phi = 0.4 and L/R = 7 ms: 2 A at 250 V AC Relay output R1, R2, R3 on inductive load, cos phi = 0.4 and L/R = 7 ms: 2 A at 30 V DC
<b>Isolation</b>	Between power and control terminals
<b>Insulation resistance</b>	> 1 MΩ 500 V DC for 1 minute to earth
<b>Environment</b>	
<b>Noise level</b>	56 dB conforming to 86/188/EEC
<b>Power dissipat</b> 423 mm with EMC plate ion in W	310 W(forced convection) at 380 V, switching frequency 4 kHz 54 W(natural convection) at 380 V, switching frequency 4 kHz
<b>Operating position</b>	Vertical +/- 10 degree
<b>Electromagnetic compatibility</b>	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
<b>Pollution degree</b>	2 conforming to EN/IEC 61800-5-1
<b>Vibration resistance</b>	1.5 mm peak to peak (f= 2...13 Hz) conforming to IEC 60068-2-6 1 gn (f= 13...200 Hz) conforming to IEC 60068-2-6
<b>Shock resistance</b>	15 gn for 11 ms conforming to IEC 60068-2-27
<b>Relative humidity</b>	5...95 % without condensation conforming to IEC 60068-2-3
<b>Ambient air temperature for operation</b>	-15...45 °C (without derating) 45...60 °C (with derating factor)
<b>Operating altitude</b>	<= 1000 m without derating 1000...4800 m with current derating 1 % per 100 m
<b>Environmental characteristic</b>	Chemical pollution resistance class 3C3 conforming to EN/IEC 60721-3-3 Dust pollution resistance class 3S3 conforming to EN/IEC 60721-3-3
<b>Standards</b>	EN/IEC 61800-3 Environment 2 category C3 EN/IEC 61800-3 EN/IEC 61800-5-1 IEC 60721-3
<b>Marking</b>	CE

## Packing Units

**Unit Type of Package 1**

PCE

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**3**

**Number of Units in Package 1**

1

**Package 1 Height**

21.5 cm

**Package 1 Width**

34.0 cm

**Package 1 Length**

58.0 cm

**Package 1 Weight**

9.48 kg

**Unit Type of Package 2**

S06

**Number of Units in Package 2**

3

**Package 2 Height**

73.0 cm

**Package 2 Width**

80.0 cm

**Package 2 Length**

60.0 cm

**Package 2 Weight**

36.44 kg

## **Offer Sustainability**

**REACh Regulation**

[REACh Declaration](#)

**EU RoHS Directive**

Pro-active compliance (Product out of EU RoHS legal scope)

[EU RoHS Declaration](#)

**Mercury free**

Yes

**China RoHS Regulation**

[China RoHS declaration](#)

**RoHS exemption information**

Yes

**WEEE**

The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins

**Upgradeability**

Upgradeable through digital modules and upgraded components

## **Recommended rep**