

# Product datasheet

Specifications



## Variable speed drive, Altivar Process ATV600, Enclosure full ETO

ATV600SYSTEM

### Main

<b>Range of product</b>	Altivar Process ATV600
<b>Device short name</b>	ATV600
<b>Product or component type</b>	Variable speed drive
<b>Device application</b>	Industrial application
<b>Assembly style</b>	In floor-standing enclosure compact version
<b>Function available</b>	Customised enclosure colour Customised option card Customised cable entry Customised provided equipment
<b>Provided equipment</b>	Enclosure Spacial SF Graphical operating panel in the enclosure door Frequency inverter Main switch Line choke Terminal block main supply Terminal block motor Dv/dt filter choke
<b>cable entry</b>	Top Bottom
<b>Colour of enclosure</b>	Light grey (RAL 7035)
<b>IP degree of protection</b>	IP23 conforming to IEC 61800-5-1 IP54
<b>Type of cooling</b>	Forced convection
<b>[Us] rated supply voltage</b>	380...415 V - 10...6 % 440 V - 10...6 % 480 V - 10...6 % 500 V - 10...6 % 600 V - 10...6 % 690 V - 10...6 %
<b>Supply frequency</b>	50/60 Hz +/-5 %
<b>Network number of phases</b>	3 phases
<b>Overvoltage category</b>	III
<b>Asynchronous motor control profile</b>	Optimized torque mode Variable torque standard Constant torque standard
<b>Synchronous motor control profile</b>	Permanent magnet motor
<b>Output voltage</b>	<= power supply voltage
<b>Permissible temporary current boost</b>	1.1 x In during 60 s (normal duty) 1.5 x In during 60 s (heavy duty)
<b>Nominal switching frequency</b>	2.5 kHz
<b>Switching frequency</b>	2...8 kHz adjustable with derating factor

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

<b>Speed drive output frequency</b>	0.1...500 Hz
<b>Continuous output current</b>	173...1140 A at 2.5 kHz, heavy duty 211...1420 A at 2.5 kHz, normal duty
<b>Maximum THDI</b>	<36 % full load conforming to IEC 61000-3-12
<b>Prospective line I<sub>sc</sub></b>	50 kA for 100 ms
<b>Motor recommended cable cross section</b>	6 x (3 x 185 mm <sup>2</sup> ) (normal duty) 5 x (3 x 240 mm <sup>2</sup> ) (normal duty) 6 x (3 x 120 mm <sup>2</sup> ) (heavy duty) 5 x (3 x 185 mm <sup>2</sup> ) (heavy duty)
<b>Width</b>	400...1400 mm
<b>Height</b>	2150 mm
<b>Depth</b>	664 mm
<b>Net weight</b>	300...1200 kg
<b>number of preset speeds</b>	16 preset speeds
<b>Communication port protocol</b>	EtherNet/IP with Modbus serial with Modbus TCP with
<b>Safety function</b>	STO (safe torque off), level SIL 3 for <= 100 ms

## Complementary

<b>Product destination</b>	asynchronous motors synchronous motors
<b>Energy efficiency ratio</b>	0.98
<b>Electrical connection</b>	Control: removable screw terminals 0.5...1.5 mm <sup>2</sup> Main supply: M12 bar Motor: M12 bar
<b>Cable composition</b>	6 x (3 x 240 mm <sup>2</sup> ) (normal duty) 8 x (3 x 150 mm <sup>2</sup> ) (normal duty) 5 x (3 x 185 mm <sup>2</sup> ) (heavy duty) 6 x (3 x 150 mm <sup>2</sup> ) (heavy duty)
<b>Option card</b>	Slot A: communication module for Profibus DP V1 Slot A: communication module for PROFINET Slot A: communication module for DeviceNet Slot A: communication module for Modbus TCP/EtherNet/IP Slot A: communication module for CANopen daisy chain RJ45 Slot A: communication module for CANopen SUB-D 9 Slot A: communication module for CANopen screw terminals Slot A/slot B: digital and analog I/O extension module Slot A/slot B: output relay extension module
<b>Motor slip compensation</b>	Can be suppressed Automatic whatever the load Adjustable Not available in permanent magnet motor law
<b>Acceleration and deceleration ramps</b>	Linear adjustable separately from 0.01 to 9000 s S, U or customized
<b>Braking to standstill</b>	By DC injection

<b>Protection type</b>	<p>Motor: thermal protection  Motor: safe torque off  Motor: motor phase break  Drive: thermal protection  Drive: safe torque off  Drive: overheating  Drive: overcurrent (between output phases and earth)  Drive: overload (output)  Drive: short-circuit protection  Drive: motor phase break  Drive: overvoltage (DC bus)  Drive: line supply overvoltage  Drive: line supply undervoltage  Drive: line supply phase loss  Drive: overspeed  Drive: break on the control circuit  Drive: short-circuit protection with semi-conductor fuse (main supply)  Drive: fan monitoring</p>
<b>Frequency resolution</b>	<p>Display unit: 0.1 Hz  Analog input: 0.012/50 Hz</p>
<b>Connector type</b>	<p>RJ45 for Modbus serial on the control block  RJ45 for Ethernet IP/Modbus TCP on the control block</p>
<b>Physical interface</b>	2-wire RS 485 for Modbus serial
<b>Transmission frame</b>	RTU for Modbus serial
<b>Transmission rate</b>	<p>10/100 Mbit/s for Ethernet IP/Modbus TCP  4.8, 9.6, 19.2, 38.4 kbit/s for Modbus serial</p>
<b>Exchange mode</b>	Half duplex, full duplex, autonegotiation Ethernet IP/Modbus TCP
<b>Data format</b>	8 bits, configurable odd, even or no parity 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 Modbus TCP
<b>Supply</b>	<p>External supply for digital inputs: 24 V DC (19...30 V), &lt;1.25 mA, protection type: overload and short-circuit protection  Internal supply for reference potentiometer (1 to 10 kOhm): 10.5 V DC +/- 5 %, &lt;10 mA, protection type: overload and short-circuit protection  Internal supply for digital inputs and STO: 24 V DC (21...27 V), &lt;200 mA, protection type: overload and short-circuit protection</p>
<b>Local signalling</b>	LCD display unit front door operation function, status and configuration
<b>Analogue input number</b>	3
<b>Analogue input type</b>	<p>A11, A12, A13 software-configurable voltage: 0...10 V DC, impedance: 30 kOhm, resolution 12 bits  A11, A12, A13 software-configurable current: 0...20 mA, impedance: 250 Ohm, resolution 12 bits</p>
<b>Discrete input number</b>	8
<b>Discrete input type</b>	<p>DI1...DI6 programmable, 24 V DC (&lt;= 30 V), impedance: 3.5 kOhm  DI5, DI6 programmable as pulse input: 0...30 kHz, 24 V DC (&lt;= 30 V)  STOA, STOB safe torque off, 24 V DC (&lt;= 30 V), impedance: &gt; 2.2 kOhm</p>
<b>Input compatibility</b>	<p>DI1...DI6: discrete input level 1 PLC conforming to IEC 61131-2  DI5, DI6: discrete input level 1 PLC conforming to IEC 65A-68  STOA, STOB: discrete input level 1 PLC conforming to IEC 61131-2</p>
<b>Discrete input logic</b>	<p>Positive logic (source) (DI1...DI6), &lt; 5 V (state 0), &gt; 11 V (state 1)  Negative logic (sink) (DI1...DI6), &gt; 16 V (state 0), &lt; 10 V (state 1)  Positive logic (source) (DI5, DI6), &lt; 0.6 V (state 0), &gt; 2.5 V (state 1)  Positive logic (source) (STOA, STOB), &lt; 5 V (state 0), &gt; 11 V (state 1)</p>
<b>Analogue output number</b>	2
<b>Analogue output type</b>	<p>Software-configurable voltage AQ1, AQ2: 0...10 V DC impedance 470 Ohm, resolution 10 bits  Software-configurable current AQ1, AQ2: 0...20 mA, resolution 10 bits</p>

<b>Sampling duration</b>	2 ms +/- 0.5 ms (DI1...DI4) - discrete input 5 ms +/- 1 ms (DI5, DI6) - discrete input 5 ms +/- 1 ms (AI1, AI2, AI3) - analog 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 MOhm 500 V DC for 1 minute to earth
<b>Operating position</b>	Vertical +/- 10 degree
<b>Ambient air temperature for storage</b>	-25...70 °C
<b>Standards</b>	IEC 61800-5-1 IEC 61800-3 IEC 60204-1 IEC 61800-2
<b>Marking</b>	CE

## Environment

<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 IEC 61800-5-1
<b>Vibration resistance</b>	1.5 mm peak to peak (f= 3...10 Hz) conforming to IEC 60068-2-6 0.6 gn (f= 10...200 Hz) conforming to IEC 60068-2-6 3M3 conforming to IEC 60721-3-3
<b>Shock resistance</b>	4 gn for 11 ms conforming to IEC 60068-2-27 3M2 conforming to IEC 60721-3-3
<b>Relative humidity</b>	5...95 % without condensation conforming to IEC 60068-2-3
<b>Ambient air temperature for operation</b>	-10...0 °C without derating (with option enclosure heating) 0...40 °C without derating 40...50 °C with derating factor
<b>Operating altitude</b>	<= 1000 m without derating 1000...2000 m with current derating 1 % per 100 m 2000...3800 m with current derating 1 % per 100 m for TT earthing system 2000...3800 m with current derating 1 % per 100 m for TN earthing system 2000...3800 m with current derating 1 % per 100 m for IT earthing system 3800...4800 m with current derating 1 % per 100 m for TT earthing system 3800...4800 m with current derating 1 % per 100 m for TN earthing system
<b>Environmental characteristic</b>	Chemical pollution resistance class 3C3 conforming to IEC 60721-3-3 Dust pollution resistance class 3S3 conforming to IEC 60721-3-3 Humidity resistant class 3K3 conforming to IEC 60721-3-3

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**Product certifications**

ATEX  
C-Tick  
EAC



## Environmental Data

Schneider Electric aims to achieve Net Zero status by 2050 through supply chain partnerships, lower impact materials, and circularity via our ongoing “Use Better, Use Longer, Use Again” campaign to extend product lifetimes and recyclability.

[Environmental Data explained >](#)

[How we assess product sustainability >](#)

### Use Longer



#### Lifetime extension

Repair

No