



Main

Range of product	Altivar 61
Product or component type	Variable speed drive
Product specific application	Pumping and ventilation machine
Component name	ATV61
Motor power kW	90 kW 3 phases at 380...480 V
Motor power hp	125 hp 3 phases at 380...480 V
[Us] rated supply voltage	380...480 V (- 15...10 %)
Network number of phases	3 phases
Line current	143 A for 480 V 3 phases 90 kW / 125 hp 166 A for 380 V 3 phases 90 kW / 125 hp
EMC filter	Level 3 EMC filter
Assembly style	With heat sink
Apparent power	109.3 kVA for 380 V 3 phases 90 kW / 125 hp
Prospective line I <sub>sc</sub>	35 kA 3 phases
Maximum transient current	214.8 A for 60 s 3 phases
Nominal switching frequency	4 kHz
Switching frequency	2...8 kHz adjustable 4...8 kHz with derating factor
Asynchronous motor control profile	Voltage/Frequency ratio, 2 points Voltage/Frequency ratio, 5 points Flux vector control without sensor, standard Voltage/Frequency ratio - Energy Saving, quadratic U/f
Synchronous motor control profile	Vector control without sensor, standard
Communication port protocol	CANopen Modbus
Type of polarization	No impedance for Modbus
Option card	APOGEE FLN communication card BACnet communication card CC-Link communication card Controller inside programmable card DeviceNet communication card Ethernet/IP communication card Fipio communication card

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

I/O extension card  
 Interbus-S communication card  
 LonWorks communication card  
 METASYS N2 communication card  
 Modbus Plus communication card  
 Modbus TCP communication card  
 Modbus/Uni-Telway communication card  
 Multi-pump card  
 Profibus DP communication card  
 Profibus DP V1 communication card

## Complementary

Product destination	Asynchronous motors Synchronous motors
Supply voltage limits	323...528 V
Supply frequency	50...60 Hz (- 5...5 %)
Network frequency	47.5...63 Hz
Continuous output current	179 A at 4 kHz, 380 V 3 phases 179 A at 4 kHz, 460 V 3 phases
Output frequency	0.1...500 Hz
Speed range	1...100 in open-loop mode, without speed feedback
Speed accuracy	+/- 10 % of nominal slip for 0.2 Tn to Tn torque variation without speed feedback
Torque accuracy	+/- 15 % in open-loop mode, without speed feedback
Transient overtorque	130 % of nominal motor torque, +/- 10 % for 60 s
Braking torque	30 % without braking resistor <= 125 % with braking resistor
Regulation loop	Frequency PI regulator
Motor slip compensation	Adjustable Automatic whatever the load Can be suppressed Not available in voltage/frequency ratio (2 or 5 points)
Local signalling	1 LED red presence of drive voltage
Output voltage	<= power supply voltage
Isolation	Between power and control terminals
Type of cable	With an IP21 or an IP31 kit : 3-strand IEC cable at 40 °C, copper 70 °C PVC Without mounting kit : 1-strand IEC cable at 45 °C, copper 70 °C PVC Without mounting kit : 1-strand IEC cable at 45 °C, copper 90 °C XLPE/EPR With UL Type 1 kit : 3-strand UL 508 cable at 40 °C, copper 75 °C PVC
Electrical connection	AI1-/AI1+, AI2, AO1, R1A, R1B, R1C, R2A, R2B, LI1...LI6, PWR terminal 2.5 mm <sup>2</sup> / AWG 14 L1/R, L2/S, L3/T, U/T1, V/T2, W/T3 terminal 2 x 100 mm <sup>2</sup> / 2 x 250 kcmil PA, PB terminal 60 mm <sup>2</sup> / 250 kcmil PC/-, PO, PA/+ terminal 2 x 100 mm <sup>2</sup> / 2 x 250 kcmil
Tightening torque	L1/R, L2/S, L3/T, U/T1, V/T2, W/T3 24 N.m / 212 lb.in PA, PB 12 N.m / 106 lb.in PC/-, PO, PA/+ 41 N.m / 360 lb.in AI1-/AI1+, AI2, AO1, R1A, R1B, R1C, R2A, R2B, LI1...LI6, PWR 0.6 N.m
Supply	Internal supply for reference potentiometer (1 to 10 kOhm) 10.5 V DC +/- 5 %, <= 10 mA for overload and short-circuit protection Internal supply 24 V DC (21...27 V), <= 200 mA for overload and short-circuit protection External supply 24 V DC (19...30 V)
Analogue input number	2
Analogue input type	AI1-/AI1+ bipolar differential voltage +/- 10 V DC, input voltage 24 V max, resolution 11 bits + sign AI2 software-configurable current 0...20 mA, impedance 242 Ohm, resolution 11 bits AI2 software-configurable voltage 0...10 V DC, input voltage 24 V max, impedance 30000 Ohm, resolution 11 bits
Sampling duration	Discrete input LI6 (if configured as logic input) 2 ms, +/- 0.5 ms Analog input AI1-/AI1+ 2 ms, +/- 0.5 ms Analog input AI2 2 ms, +/- 0.5 ms Analog output AO1 2 ms, +/- 0.5 ms Discrete input LI1...LI5 2 ms, +/- 0.5 ms
Accuracy	AI1-/AI1+ +/- 0.6 % for a temperature variation 60 °C AI2 +/- 0.6 % for a temperature variation 60 °C AO1 +/- 1 % for a temperature variation 60 °C
Linearity error	AI1-/AI1+ +/- 0.15 % of maximum value

	AI2 +/- 0.15 % of maximum value AO1 +/- 0.2 %
Analogue output number	1
Analogue output type	AO1 software-configurable current, analogue output range 0...20 mA, impedance 500 Ohm, resolution 10 bits AO1 software-configurable logic output 10 V, <= 20 mA AO1 software-configurable voltage, analogue output range 0...10 V DC, impedance 470 Ohm, resolution 10 bits
Discrete output number	2
Discrete output type	(R1A, R1B, R1C) configurable relay logic NO/NC, electrical durability 100000 cycles (R2A, R2B) configurable relay logic NO, electrical durability 100000 cycles
Response time	<= 100 ms in STO (Safe Torque Off) R1A, R1B, R1C <= 7 ms, tolerance +/- 0.5 ms R2A, R2B <= 7 ms, tolerance +/- 0.5 ms
Minimum switching current	Configurable relay logic 3 mA at 24 V DC
Maximum switching current	R1, R2 on resistive load, 5 A at 30 V DC, cos phi = 1, 0 ms R1, R2 on inductive load, 2 A at 30 V DC, cos phi = 0.4, 7 ms R1, R2 on resistive load, 5 A at 250 V AC, cos phi = 1, 0 ms R1, R2 on inductive load, 2 A at 250 V AC, cos phi = 0.4, 7 ms
Discrete input number	7
Discrete input type	(LI1...LI5) programmable, 24 V DC, voltage limits <= 30 V, with level 1 PLC, impedance 3500 Ohm (LI6) switch-configurable, 24 V DC, voltage limits <= 30 V, with level 1 PLC, impedance 3500 Ohm (LI6) switch-configurable PTC probe, 0...6, impedance 1500 Ohm (PWR) safety input, 24 V DC, voltage limits <= 30 V, impedance 1500 Ohm
Discrete input logic	LI1...LI5 positive logic (source), < 5 V (state 0), > 11 V (state 1) LI1...LI5 negative logic (sink), > 16 V (state 0), < 10 V (state 1) LI6 (if configured as logic input) negative logic (sink), > 16 V (state 0), < 10 V (state 1) LI6 (if configured as logic input) positive logic (source), < 5 V (state 0), > 11 V (state 1)
Acceleration and deceleration ramps	Automatic adaptation of ramp if braking capacity exceeded, by using resistor Linear adjustable separately from 0.01 to 9000 s S, U or customized
Braking to standstill	By DC injection
Protection type	Drive against exceeding limit speed Drive against input phase loss Drive break on the control circuit Drive input phase breaks Drive line supply overvoltage Drive line supply undervoltage Drive overcurrent between output phases and earth Drive overheating protection Drive overvoltages on the DC bus Drive power removal Drive short-circuit between motor phases Drive thermal protection Motor motor phase break Motor power removal Motor thermal protection
Insulation resistance	> 1 mOhm at 500 V DC for 1 minute to earth
Frequency resolution	Analog input 0.024/50 Hz Display unit 0.1 Hz
Connector type	1 RJ45 for Modbus on front face 1 RJ45 for Modbus on terminal Male SUB-D 9 on RJ45 for CANopen
Physical interface	2-wire RS 485 for Modbus
Transmission frame	RTU for Modbus
Transmission rate	20 kbps, 50 kbps, 125 kbps, 250 kbps, 500 kbps, 1 Mbps for CANopen 4800 bps, 9600 bps, 19200 bps, 38.4 Kbps for Modbus on terminal 9600 bps, 19200 bps for Modbus on front face
Data format	8 bits, 1 stop, even parity for Modbus on front face 8 bits, odd even or no configurable parity for Modbus on terminal
Number of addresses	1...247 for Modbus 1...127 for CANopen
Method of access	Slave for CANopen
Marking	CE
Operating position	Vertical +/- 10 degree

Product weight	84 kg
Width	320 mm
Height	920 mm
Depth	377 mm

## Environment

Noise level	60.5 dB conforming to 86/188/EEC
Dielectric strength	3535 V DC between earth and power terminals 5092 V DC between control and power terminals
Electromagnetic compatibility	Conforming to IEC 61000-4-2 level 3 Conforming to IEC 61000-4-11 Conforming to IEC 61000-4-6 level 3 Conforming to IEC 61000-4-3 level 3 Conforming to IEC 61000-4-4 level 4
Standards	EN 55011 class A group 2 EN 61800-3 environments 1 category C3 EN 61800-3 environments 2 category C3 EN/IEC 61800-3 EN/IEC 61800-5-1 IEC 60721-3-3 class 3C2 UL Type 1
Product certifications	CSA C-Tick DNV GOST NOM 117 UL
Pollution degree	3 conforming to EN/IEC 61800-5-1 3 conforming to UL 840
IP degree of protection	IP00 conforming to EN/IEC 60529 IP00 conforming to EN/IEC 61800-5-1 IP30 on side parts conforming to EN/IEC 60529 IP30 on side parts conforming to EN/IEC 61800-5-1 IP30 on the front panel conforming to EN/IEC 60529 IP30 on the front panel conforming to EN/IEC 61800-5-1 IP41 on upper part conforming to EN/IEC 60529 IP41 on upper part conforming to EN/IEC 61800-5-1 IP54 on lower part conforming to EN/IEC 60529 IP54 on lower part conforming to EN/IEC 61800-5-1
Vibration resistance	1.5 mm peak to peak (f = 3...10 Hz) conforming to EN/IEC 60068-2-6 0.6 gn (f = 10...200 Hz) conforming to EN/IEC 60068-2-6
Shock resistance	7 gn for 11 ms conforming to EN/IEC 60068-2-27
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	-10...45 °C without derating 45...60 °C with derating factor
Ambient air temperature for storage	-25...70 °C
Operating altitude	<= 1000 m without derating 1000...3000 m with current derating 1 % per 100 m

## Offer Sustainability

Sustainable offer status	Green Premium product
RoHS (date code: YYWW)	Compliant - since 1002 - Schneider Electric declaration of conformity <a href="#">Schneider Electric declaration of conformity</a>
REACH	Reference not containing SVHC above the threshold <a href="#">Reference not containing SVHC above the threshold</a>
Product environmental profile	Available <a href="#">Product environmental</a>
Product end of life instructions	Need no specific recycling operations <a href="#">End of life manual</a>

## Contractual warranty

Warranty period 18 months

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## ATV61HD90N4 may be replaced by any of the following products:

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### Drive Products ATV630D90N4

variable speed drive ATV630 - 90kW/125HP - 380...480V - IP21/UL type 1

Qty 1

Reason for Substitution: End of life | Substitution date: 03 February 2016

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### Drive Products ATV630D90N4

variable speed drive ATV630 - 90kW/125HP - 380...480V - IP21/UL type 1

Qty 1

Reason for Substitution: End of life | Substitution date: 03 February 2016

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### Drive Products ATV630C11N4

variable speed drive ATV630 - 110kW/150HP - 380...480V - IP00

Qty 1

Reason for Substitution: End of life | Substitution date: 01 April 2016

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### Drive Products ATV630C11N4

variable speed drive ATV630 - 110kW/150HP - 380...480V - IP00

Qty 1

Reason for Substitution: End of life | Substitution date: 01 April 2016

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