

ATV61HC31N4

frekvencijski pretvarač promjenjive brzine ATV61 –
500 ks – 460 V



Glavno

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	280 kW 3 phasesat 380...480 V 315 kW 3 phasesat 380...480 V
Motor power hp	450 hp 3 phasesat 380...480 V 500 hp 3 phasesat 380...480 V
[Us] rated supply voltage	380...480 V (- 15...10 %)
Network number of phases	3 phases
Line current	494 Afor 380 V 3 phases 280 kW / 450 hp 494 Afor 480 V 3 phases 280 kW / 450 hp 544 Afor 480 V 3 phases 315 kW / 500 hp 555 Afor 380 V 3 phases 315 kW / 500 hp
EMC filter	Level 3 EMC filter
Assembly style	With heat sink
Apparent power	325.1 kVAfor 380 V 3 phases 280 kW / 450 hp 365.3 kVAfor 380 V 3 phases 315 kW / 500 hp
Prospective line I _{sc}	50 kA 3 phases
Maximum transient current	739.2 Afor 60 s 3 phases
Nominal switching frequency	2.5 kHz
Switching frequency	2...8 kHz adjustable 2.5...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 impedancefor 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 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

Komplementarno

Product destination	Asynchronous motors Synchronous motors
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Informacije dane u ovoj dokumentaciji sadrže opće opise i/ili tehničke karakteristike o performansama ovdje sadržanih proizvoda. Ova dokumentacija nije namijenjena kao zamjena za niti bi se trebala koristiti za određivanje prikladnosti ili pouzdanosti predmetnih proizvoda za konkretne korisničke primjene. Svaki takav korisnik ili integrator dužan je provesti odgovarajuću i poplunu analizu rizika, procjenu i ispitivanje proizvoda u odnosu na odgovarajuću specifičnu primjenu ili uporabu istog. Niti društvo Schneider Electric Industries SAS niti bilo koje od njegovih povezanih poduzeća ili podružnica neće preuzeti obvezu ili snositi odgovornost za pogrešku upotrebu ovdje sadržanih informacija.

Supply voltage limits	323...528 V
Supply frequency	50...60 Hz (- 5...5 %)
Network frequency	47.5...63 Hz
Continuous output current	616 A at 2.5 kHz, 380 V 3 phases 616 A at 2.5 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 T _n to T _n 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 ² / AWG 14 L1/R, L2/S, L3/T, U/T1, V/T2, W/T3 terminal 4 x 185 mm ² / 3 x 350 kcmil PC-, PO, PA/+ terminal 4 x 185 mm ² / 3 x 350 kcmil
Tightening torque	L1/R, L2/S, L3/T, U/T1, V/T2, W/T3 41 N.m / 360 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	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 Discrete input LI6 (if configured as logic input) 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 RJ45for Modbus on front face 1 RJ45for Modbus on terminal Male SUB-D 9 on RJ45 for CANopen
Physical interface	2-wire RS 485 for Modbus
Transmission frame	RTUfor Modbus
Transmission rate	20 kbps, 50 kbps, 125 kbps, 250 kbps, 500 kbps, 1 Mbpsfor CANopen 4800 bps, 9600 bps, 19200 bps, 38.4 Kbpsfor Modbus on terminal 9600 bps, 19200 bpsfor Modbus on front face
Data format	8 bits, 1 stop, even parityfor Modbus on front face 8 bits, odd even or no configurable parityfor Modbus on terminal
Number of addresses	1...247for Modbus 1...127for CANopen
Method of access	Slavefor CANopen
Marking	CE
Operating position	Vertical +/- 10 degree
Product weight	207 kg
Width	595 mm
Height	1190 mm
Depth	377 mm

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noise level	68 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	4 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

Green Premium product	Green Premium product
Compliant - since 1002 - Schneider Electric declaration of conformity	Compliant - since 1002 - Schneider Electric declaration of conformity
Reference not containing SVHC above the threshold	Reference not containing SVHC above the threshold
Available	Available
Need no specific recycling operations	Need no specific recycling operations

Contractual warranty

Warranty period	18 months
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