Product data sheet
Characteristics

ATV61HD45N4S337
variable speed drive ATV61 - 45kW 60HP - 380...480V - IP20 - reinforced .

Product availability: Non-Stock - Not normally stocked in distribution facility



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	45 kW 3 phasesat 380...480 V
Motor power hp	60 hp 3 phasesat 380...480 V
Power supply voltage	380...480 V (- 15...10 %)
Phase	3 phases
Line current	104 Afor 380 V 3 phases 45 kW / 60 hp 85 Afor 480 V 3 phases 45 kW / 60 hp
EMC filter	Level 3 EMC filter
Variant	Reinforced version
Assembly style	With heat sink
Apparent power	68.5 kVAfor 380 V 3 phases 45 kW / 60 hp
Maximum prospective line Isc	22 kA 3 phases
Maximum transient current	112.8 Afor 60 s 3 phases
Nominal switching frequency	12 kHz
Switching frequency	1...16 kHz adjustable 12...16 kHz with derating factor
Asynchronous motor control	Flux vector control without sensor, standard Voltage/Frequency ratio, 5 points Voltage/Frequency ratio, 2 points 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 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

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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.
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Complementary

Product destination	Synchronous motors Asynchronous motors
Power supply voltage limits	323...528 V
Power supply frequency	50...60 Hz (- 5...5 %)
Power supply frequency limits	47.5...63 Hz
Continuous output current	77 Aat 12 kHz, 460 V 3 phases 94 Aat 12 kHz, 380 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 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	Can be suppressed Automatic whatever the load Not available in voltage/frequency ratio (2 or 5 points) Adjustable
Diagnostic	1 LED red presence of drive voltage
Output voltage	<= power supply voltage
Electrical isolation	Between power and control terminals
Type of cable for mounting in an enclosure	With an IP21 or an IP31 kit: 3-strand IEC cableat 104 °F (40 °C), copper 70 °C PVC Without mounting kit: 1-strand IEC cableat 113 °F (45 °C), copper 70 °C PVC Without mounting kit: 1-strand IEC cableat 113 °F (45 °C), copper 90 °C XLPE/EPR With UL Type 1 kit: 3-strand UL 508 cableat 104 °F (40 °C), copper 75 °C PVC
Electrical connection	AI1-/AI1+, AI2, AO1, R1A, R1B, R1C, R2A, R2B, LI1...LI6, PWR terminal 2.5 mm² / AWG 14 L1/R, L2/S, L3/T, U/T1, V/T2, W/T3, PC/-, PO, PA/+, PA, PB terminal 150 mm² / 300 kcmil
Tightening torque	L1/R, L2/S, L3/T, U/T1, V/T2, W/T3, PC/-, PO, PA/+, PA, PB 362.83 lbf.in (41 N.m) / 360 lb.in AI1-/AI1+, AI2, AO1, R1A, R1B, R1C, R2A, R2B, LI1...LI6, PWR 5.31 lbf.in (0.6 N.m)
Supply	Internal supply for reference potentiometer (1 to 10 kOhm) 10.5 V DC +/- 5 %, <= 10 mAfor overload and short-circuit protection Internal supply 24 V DC (21...27 V), <= 200 mAfor 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 time	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
Absolute accuracy precision	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
Maximum 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 mAat 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	S, U or customized Linear adjustable separately from 0.01 to 9000 s Automatic adaptation of ramp if braking capacity exceeded, by using resistor
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 Modbus on front face 1 RJ45 Modbus on terminal Male SUB-D 9 on RJ45 CANopen
Physical interface	2-wire RS 485 Modbus
Transmission frame	RTU Modbus
Transmission rate	20 kbps, 50 kbps, 125 kbps, 250 kbps, 500 kbps, 1 Mbps CANopen 4800 bps, 9600 bps, 19200 bps, 38.4 Kbps Modbus on terminal 9600 bps, 19200 bps Modbus on front face
Data format	8 bits, 1 stop, even parity Modbus on front face 8 bits, odd even or no configurable parity Modbus on terminal
Number of addresses	1...247 Modbus 1...127 CANopen
Method of access	Slave CANopen
Marking	CE
Operating position	Vertical +/- 10 degree
Product weight	97 lb(US) (44 kg)
Width	12.6 in (320 mm)
Height	24.8 in (630 mm)
Depth	11.42 in (290 mm)

Environment

Noise level	63.7 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	UL Type 1 EN/IEC 61800-3 EN 61800-3 environments 1 category C3 IEC 60721-3-3 class 3C2 EN 61800-3 environments 2 category C3 EN/IEC 61800-5-1 EN 55011 class A group 2
Product certifications	C-Tick CSA UL DNV GOST NOM 117
Pollution degree	3 conforming to EN/IEC 61800-5-1 3 conforming to UL 840
Degree of proctection	IP20 on upper part without blanking plate on cover conforming to EN/IEC 60529 IP20 on upper part without blanking plate on cover conforming to EN/IEC 61800-5-1 IP21 conforming to EN/IEC 60529 IP21 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...13 Hz) conforming to EN/IEC 60068-2-6 1 gn (f = 13...200 Hz) conforming to EN/IEC 60068-2-6
Shock resistance	15 gn 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	14...122 °F (-10...50 °C) without derating 122...140 °F (50...60 °C) with derating factor
Ambient air temperature for storage	-13...158 °F (-25...70 °C)
Operating altitude	<= 3280.84 ft (1000 m) without derating 3280.84...9842.52 ft (1000...3000 m) with current derating 1 % per 100 m

Ordering and shipping details

Category	22138 - ATV61 60 THRU 150 HP DRIVES
Discount Schedule	CP4C
GTIN	00785901966586
Nbr. of units in pkg.	1
Package weight(Lbs)	103.52
Returnability	N
Country of origin	FR

Offer Sustainability

California proposition 65	WARNING: This product can expose you to chemicals including:
- - - - - - - Substance 1	Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm.
- - - - - - - Substance 2	Bisphenol A (BPA), which is known to the State of California to cause birth defects or other reproductive harm.
- - - - - - - More information	For more information go to www.p65warnings.ca.gov

Contractual warranty

Warranty period	18 months