Product datasheet
Characteristics

ATV312HU75N4
variable speed drive ATV312 - 7.5kW - 18kVA - 269W - 380..500 V- 3-phase supply

Main

Range of product	Altivar 312
Product or component type	Variable speed drive
Product destination	Asynchronous motors
Product specific application	Simple machine
Assembly style	With heat sink
Component name	ATV312
Motor power kW	7.5 kW
Motor power hp	10 hp
[Us] rated supply voltage	380...500 V (- 15...10 %)
Supply frequency	50...60 Hz (- 5...5 %)
Network number of phases	3 phases
Line current	21 A for 500 V 27.7 A for 380 V, 22 kA
EMC filter	Integrated
Apparent power	18 kVA
Maximum transient current	25.5 A for 60 s
Power dissipation in W	269 W at nominal load
Speed range	1...50
Asynchronous motor control profile	Sensorless flux vector control with PWM type motor control signal Factory set : constant torque
Electrical connection	AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6 terminal 2.5 mm² AWG 14 L1, L2, L3, U, V, W, PA, PB, PA/+, PC/- terminal 16 mm² AWG 6
Supply	Internal supply for reference potentiometer (2.2 to 10 kOhm) at 10...10.8 V, <= 10 mA for overload and short-circuit protection Internal supply for logic inputs at 19...30 V, <= 100 mA for overload and short-circuit protection
Communication port protocol	CANopen Modbus
IP degree of protection	IP31 on upper part IP20 on upper part without cover plate IP41 on upper part

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

	IP21 on connection terminals
Option card	Modbus TCP communication card Fipio communication card CANopen daisy chain communication card Profibus DP communication card DeviceNet communication card

Complementary

Supply voltage limits	323...550 V
Network frequency	47.5...63 Hz
Prospective line Isc	22 kA
Continuous output current	17 A at 4 kHz
Output frequency	0...500 kHz
Nominal switching frequency	4 kHz
Switching frequency	2...16 kHz adjustable
Transient overtorque	170...200 % of nominal motor torque
Braking torque	150 % with braking resistor for 60 s 150 % without braking resistor 100 % with braking resistor continuously
Regulation loop	Frequency PI regulator
Motor slip compensation	Suppressable Automatic whatever the load Adjustable
Output voltage	<= power supply voltage
Tightening torque	0.6 N.m AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6 2.5 N.m L1, L2, L3, U, V, W, PA, PB, PA/+, PC/-
Insulation	Electrical between power and control
Analogue input number	3
Analogue input type	AI2 configurable voltage +/- 10 V, input voltage 30 V max, impedance 30000 Ohm AI1 configurable voltage 0...10 V, input voltage 30 V max, impedance 30000 Ohm AI3 configurable current 0...20 mA, impedance 250 Ohm
Sampling duration	AI1, AI2, AI3 8 ms for analog LI1...LI6 4 ms for discrete
Response time	AOV, AOC 8 ms for analog R1A, R1B, R1C, R2A, R2B 8 ms for discrete
Linearity error	+/- 0.2 % for output
Analogue output number	1
Analogue output type	AOV configurable voltage 0...10 V, impedance 470 Ohm, resolution 8 bits AOC configurable current 0...20 mA, impedance 800 Ohm, resolution 8 bits
Discrete input logic	(LI1...LI4) logic input not wired, < 13 V (state 1) (LI1...LI6) positive logic (source), < 5 V (state 0), > 11 V (state 1) (LI1...LI6) negative logic (source), > 19 V (state 0)
Discrete output number	2
Discrete output type	(R1A, R1B, R1C) configurable relay logic 1 NO + 1 NC, electrical durability 100000 cycles (R2A, R2B) configurable relay logic NC, electrical durability 100000 cycles
Minimum switching current	R1-R2 10 mA at 5 V DC
Maximum switching current	R1-R2 on inductive load, 2 A at 250 V AC, (cos phi = 0.4, and L/R = 7 ms) R1-R2 on inductive load, 2 A at 30 V DC, (cos phi = 0.4, and L/R = 7 ms) R1-R2 on resistive load, 5 A at 250 V AC, (cos phi = 1, and L/R = 0 ms) R1-R2 on resistive load, 5 A at 30 V DC, (cos phi = 1, and L/R = 0 ms)
Discrete input number	6
Discrete input type	(LI1...LI6) programmable, 24 V 0...100 mA with PLC, impedance 3500 Ohm
Acceleration and deceleration ramps	Linear adjustable separately from 0.1 to 999.9 s S, U or customized
Braking to standstill	By DC injection
Protection type	Overcurrent between output phases and earth (on power up only) drive Motor phase breaks drive Short-circuit between motor phases drive Line supply phase loss safety function, for three phases supply drive Input phase breaks drive Overheating protection drive

	Thermal protection motor Line supply overvoltage and undervoltage safety circuits drive
Insulation resistance	>= 500 mOhm at 500 V DC for 1 minute
Local signalling	1 LED red for drive voltage Four 7-segment display units for CANopen bus status
Time constant	5 ms for reference change
Frequency resolution	Analog input 0.1...100 Hz Display unit 0.1 Hz
Type of connector	1 RJ45 Modbus/CANopen
Physical interface	RS485 multidrop serial link
Transmission frame	RTU
Transmission rate	10, 20, 50, 125, 250, 500 kbps or 1 Mbps CANopen 4800, 9600 or 19200 bps Modbus
Number of addresses	1...247 Modbus 1...127 CANopen
Number of drive	31 Modbus 127 CANopen
Marking	CE
Operating position	Vertical +/- 10 degree
Outer dimension	300 x 210 x 170 mm 232 x 180 x 170 mm 405 x 234 x 268 mm
Height	232 mm
Width	180 mm
Depth	172 mm
Product weight	6.5 kg

Environment

Dielectric strength	2410 V DC between earth and power terminals 3400 V AC between control and power terminals
Electromagnetic compatibility	Radiated radio-frequency electromagnetic field immunity test conforming to IEC 61000-4-3 level 3 1.2/50 µs - 8/20 µs surge immunity test conforming to IEC 61000-4-5 level 3 Electrical fast transient/burst immunity test conforming to IEC 61000-4-4 level 4 Electrostatic discharge immunity test conforming to IEC 61000-4-2 level 3
Standards	IEC 61800-3 IEC 61800-5-1
Product certifications	NOM C-Tick CSA UL DNV GOST
Pollution degree	2
Protective treatment	TC
Vibration resistance	1.5 mm (f = 3...13 Hz) conforming to EN/IEC 60068-2-6 1 gn (f = 13...150 Hz) conforming to EN/IEC 60068-2-6
Shock resistance	15 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 storage	-25...70 °C
Ambient air temperature for operation	-10...60 °C with derating factor without protective cover on top of the drive -10...50 °C without derating with protective cover on top of the drive
Operating altitude	1000...3000 m with current derating 1 % per 100 m <= 1000 m without derating

Offer Sustainability

Sustainable offer status	Green Premium product
RoHS (date code: YYWW)	Compliant - since 0913 - Schneider Electric declaration of conformity Schneider Electric declaration of conformity

REACh	Reference contains SVHC above the threshold - Go to CaP for more details Go to CaP for more details
Product environmental profile	Available Product environmental
Product end of life instructions	Available End of life manual

Contractual warranty

Warranty period	18 months