Product datasheet

Specifications

variable speed drive, ATV312, 3kW, 7.1kVA, 323 to 550V, 3 phase supply, 7.1A, CANopen, Modbus

ATV312HU30N4

Discontinued on: Sep 4, 2024

Discontinued

Main

Product destination	Asynchronous motors
Component name	ATV312
Motor power kW	3 kW
Supply frequency	50...60 Hz - 5...5 %
Network number of phases	3 phases
Line current	10.9 A at 380 V, Isc = 5 kA 8.3 A at 500 V
Apparent power	7.1 kVA
Maximum transient current	10.7 A for 60 s
Power dissipation in W	125 W at nominal load
Speed range	1…50
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 5 mm² AWG 10
Supply	Internal supply for logic inputs: 19...30 V 100 mA, protection type: overload and short-circuit protection Internal supply for reference potentiometer (2.2 to 10 kOhm): 10...10.8 V 10 mA, protection type: overload and short-circuit protection
IP degree of protection	IP20 on upper part without cover plate IP21 on connection terminals IP31 on upper part IP41 on upper part
Option card	Communication card for CANopen daisy chain Communication card for DeviceNet Communication card for Fipio Communication card for Modbus TCP Communication card for Profibus DP
Range of product	Altivar 312
Product or component type	Variable speed drive
Product specific application	Simple machine
Communication port protocol	CANopen Modbus
[Us] rated supply voltage	380...500 V - 15...10 %
EMC filter	Integrated

Complementary

Supply voltage limits	323…550 V

Continuous output current	7.1 A at 4 kHz
Output frequency	0…500 Hz
Switching frequency	2...16 kHz adjustable
Braking torque	150 % during 60 s with braking resistor 100 % with braking resistor continuously 150 % without braking resistor
Output voltage	<= power supply voltage
Tightening torque	AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6: 0.6 N.m L1, L2, L3, U, V, W, PA, PB, PA/+, PC/-: 1.2 N.m
Insulation	Electrical between power and control
Analogue input type	AI1 configurable voltage 0...10 V, input voltage 30 V max, impedance: 30000 Ohm AI2 configurable voltage +/- 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 analog LI1...LI6: 4 ms 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 type	AOC configurable current: 0...20 mA, impedance: 800 Ohm, resolution: 8 bits AOV configurable voltage: 0...10 V, impedance: 470 Ohm, resolution: 8 bits
Discrete input logic	Logic input not wired (LI1...LI4), < 13 V (state 1) Negative logic (source) (LI1...LI6), > 19 V (state 0) Positive logic (source) (LI1...LI6), < 5 V (state 0), > 11 V (state 1)
Discrete output type	Configurable relay logic: (R1A, R1B, R1C) 1 NO + 1 NC - 100000 cycles Configurable relay logic: (R2A, R2B) NC - 100000 cycles
Minimum switching current	R1-R2 10 mA at 5 V DC
Maximum switching current	R1-R2: 2 A at 250 V AC inductive load, cos phi = 0.4 and L/R = 7 ms R1-R2: 2 A at 30 V DC inductive load, cos phi = 0.4 and L/R = 7 ms R1-R2: 5 A at 250 V AC resistive load, cos phi = 1 and L/R = 0 ms R1-R2: 5 A at 30 V DC resistive load, cos phi = 1 and L/R = 0 ms
Discrete input type	(LI1...LI6) programmable at 24 V, 0…100 mA for PLC, impedance: 3500 Ohm
Insulation resistance	>= 500 mOhm 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
Connector type	1 RJ45 for Modbus/CANopen
Transmission rate	10, 20, 50, 125, 250, 500 kbps or 1 Mbps for CANopen 4800, 9600 or 19200 bps for Modbus
Number of addresses	1…127 for CANopen 1…247 for Modbus
Number of drive	127 for CANopen 31 for Modbus
Outer dimension	402 x 239 x 192 mm 184 x 140 x 150 mm 215 x 185 x 158 mm
Discrete input number	6
Discrete output number	2
Analogue input number	3
Analogue output number	1

Physical interface	RS485 multidrop serial link
Transmission frame	RTU
Asynchronous motor control profile	Sensorless flux vector control with PWM type motor control signal Factory set : constant torque
Transient overtorque	170…200 % of nominal motor torque
Acceleration and deceleration ramps	Linear adjustable separately from 0.1 to 999.9 s S, U or customized
Motor slip compensation	Adjustable Automatic whatever the load Suppressable
Nominal switching frequency	4 kHz
Braking to standstill	By DC injection
Network frequency	47.5...63 Hz
Prospective line Isc	5 kA
Protection type	Input phase breaks: drive Line supply overvoltage and undervoltage safety circuits: drive Line supply phase loss safety function, for three phases supply: drive Motor phase breaks: drive Overcurrent between output phases and earth (on power up only): drive Overheating protection: drive Short-circuit between motor phases: drive Thermal protection: motor
Width	142 mm
Height	184 mm
Depth	152 mm
Net weight	3.1 kg

Environment

Dielectric strength	2410 V DC between earth and power terminals 3400 V AC between control and power terminals
Protective treatment	TC
Vibration resistance	1 gn (f= 13…150 Hz) conforming to EN/IEC 60068-2-6 1.5 mm (f= 3…13 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
Operating altitude	<= 1000 m without derating 1000...3000 m with current derating 1 % per 100 m
Operating position	Vertical +/- 10 degree
Product certifications	DNV UL C-Tick NOM CSA GOST
Marking	CE
Standards	IEC 61800-5-1 IEC 61800-3
Assembly style	With heat sink

Electromagnetic compatibility	1.2/50 µs - 8/20 µs surge immunity test level 3 conforming to IEC 61000-4-5 Electrical fast transient/burst immunity test level 4 conforming to IEC 61000-4-4 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
Regulation loop	Frequency PI regulator
Pollution degree	2
Ambient air temperature for operation	-10…50 °C without derating (with protective cover on top of the drive) -10…60 °C with derating factor (without protective cover on top of the drive)
Ambient air temperature for storage	-25…70 °C

Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	21.365 cm
Package 1 Width	21.544 cm
Package 1 Length	21.72 cm
Package 1 Weight	3.149 kg
Unit Type of Package 2	S06
Number of Units in Package 2	12
Package 2 Height	73.5 cm
Package 2 Width	60.0 cm
Package 2 Length	80.0 cm
Package 2 Weight	48.0 kg

Contractual warranty

Warranty (in months)	18

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 Better

Materials and Substances

EU RoHS Directive	**Pro-active compliance (Product out of EU RoHS legal scope)**

Use Longer

Lifetime extension

Repair	**No**

Use Again

Repack and remanufacture

WEEE Label	**The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins**