Product data sheet

Specifications

variable speed drive, ATV312, 5 HP, 9.2 kVA, 150 W, 380 to 500 V 3 phase supply

ATV312HU40N4

Discontinued - Service only

Discontinued on: Feb 17, 2021

To be end-of-service on: Jan 1, 2026

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

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	4 kW
Maximum Horse Power Rating	5 hp
[Us] rated supply voltage	380...500 V - 15...10 %
Supply frequency	50...60 Hz - 5...5 %
Phase	3 phase
Line current	13.9 A 380 V, Isc = 5 kA 10.6 A 500 V
EMC filter	Integrated
Apparent power	9.2 kVA
Maximum transient current	14.3 A 60 s
Power dissipation in W	150 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 0.004 in² (2.5 mm²) AWG 14 L1, L2, L3, U, V, W, PA, PB, PA/+, PC/- terminal 0.008 in² (5 mm²) AWG 10
Supply	Internal supply for logic inputs 19...30 V 100 mA overload and short-circuit protection Internal supply for reference potentiometer (2.2 to 10 kOhm) 10...10.8 V 10 mA overload and short-circuit protection
Communication Port Protocol	Modbus CANopen
IP degree of protection	IP20 on upper part without cover plate IP21 on connection terminals IP31 on upper part IP41 on upper part

Price is “List Price” and may be subject to a trade discount – check with your local distributor or retailer for actual price.

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

Option card	Communication card CANopen daisy chain Communication card DeviceNet Communication card Fipio Communication card Modbus TCP Communication card Profibus DP

Complementary

Supply voltage limits	323…550 V
Prospective line Isc	5 kA
Continuous output current	9.5 A 4 kHz
Output frequency	0…500 Hz
Nominal switching frequency	4 kHz
Switching frequency	2...16 kHz adjustable
Transient overtorque	170…200 % of nominal motor torque
Braking torque	150 % 60 s with braking resistor 100 % with braking resistor continuously 150 % without braking resistor
Regulation loop	Frequency PI regulator
Motor slip compensation	Suppressable Automatic whatever the load Adjustable
Output voltage	<= power supply voltage
Tightening torque	AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6 5.3 lbf.in (0.6 N.m) L1, L2, L3, U, V, W, PA, PB, PA/+, PC/- 10.6 lbf.in (1.2 N.m)
Insulation	Electrical between power and control
Analogue input number	3
Analogue input type	AI1 configurable voltage 0...10 V 30 V max 30000 Ohm AI2 configurable voltage +/- 10 V 30 V max 30000 Ohm AI3 configurable current 0...20 mA 250 Ohm
Sampling duration	AI1, AI2, AI3 8 ms analog LI1...LI6 4 ms discrete
Response time	AOV, AOC 8 ms analog R1A, R1B, R1C, R2A, R2B 8 ms discrete
Linearity error	+/- 0.2 % output
Analogue output number	1
Analogue output type	AOC configurable current 0...20 mA 800 Ohm 8 bits AOV configurable voltage 0...10 V 470 Ohm 8 bits
Discrete input logic	Logic input not wired LI1...LI4), < 13 V Negative logic (source) LI1...LI6), > 19 V Positive logic (source) LI1...LI6), < 5 V, > 11 V
Discrete output number	2
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 5 V DC
Maximum switching current	R1-R2 2 A 250 V AC inductive, cos phi = 0.4 7 ms R1-R2 2 A 30 V DC inductive, cos phi = 0.4 7 ms R1-R2 5 A 250 V AC resistive, cos phi = 1 0 ms R1-R2 5 A 30 V DC resistive, cos phi = 1 0 ms
Discrete input number	6
Discrete input type	LI1...LI6) programmable 24 V, 0…100 mA PLC 3500 Ohm

Acceleration and deceleration ramps	S, U or customized Linear adjustable separately from 0.1 to 999.9 s
Braking to standstill	By DC injection
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
Insulation resistance	>= 500 mOhm 500 V DC for 1 minute
Local signalling	for drive voltage 1 LED (red) for CANopen bus status four 7-segment display units
Time constant	5 ms for reference change
Frequency resolution	Analog input 0.1...100 Hz Display unit 0.1 Hz
Connector type	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…127 CANopen 1…247 Modbus
Number of drive	127 CANopen 31 Modbus
Marking	CE
Operating position	Vertical +/- 10 degree
Outer dimension	215 x 185 x 158 mm 184 x 140 x 150 mm 402 x 239 x 192 mm
Height	7.2 in (184 mm)
Width	5.6 in (142 mm)
Depth	6.0 in (152 mm)
Net Weight	6.8 lb(US) (3.1 kg)

Environment

Dielectric strength	2410 V DC between earth and power terminals 3400 V AC between control and power terminals
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
Standards	IEC 61800-3 IEC 61800-5-1
Product Certifications	CSA C-tick DNV NOM GOST UL
pollution degree	2
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 11 ms EN/IEC 60068-2-27
Relative humidity	5…95 % without condensation IEC 60068-2-3 5…95 % without dripping water IEC 60068-2-3
Ambient Air Temperature for Storage	-13…158 °F (-25…70 °C)
Ambient air temperature for operation	14…122 °F (-10…50 °C) without derating with protective cover on top of the drive) 14…140 °F (-10…60 °C) with derating factor without protective cover on top of the drive)
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	US1CP4B22152
Discount Schedule	CP4B
GTIN	3606480077654
Returnability	No
Country of origin	ID

Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	8.19 in (20.791 cm)
Package 1 Width	8.55 in (21.71 cm)
Package 1 Length	8.59 in (21.828 cm)
Package 1 Weight	6.947 lb(US) (3.151 kg)
Unit Type of Package 2	S06
Number of Units in Package 2	12
Package 2 Height	28.94 in (73.5 cm)
Package 2 Width	23.62 in (60.0 cm)
Package 2 Length	31.50 in (80.0 cm)
Package 2 Weight	103.6 lb(US) (47.0 kg)

Contractual warranty

Warranty	18 months

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)
California proposition 65	WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

Use Again

Repack and remanufacture

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