

# Product data sheet

## Characteristics

# ATV312HU40N4

variable speed drive ATV312 - 4kW - 9.2kVA -  
150 W - 380..500 V - 3-phase supply

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



Price\* : 791.00 USD



### 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
Motor power hp	5 hp
[Us] rated supply voltage	380...500 V (- 15...10 %)
Supply frequency	50...60 Hz (- 5...5 %)
Phase	3 phases
Line current	13.9 Afor 380 V, 5 kA 10.6 Afor 500 V
EMC filter	Integrated
Apparent power	9.2 kVA
Maximum transient current	14.3 Afor 60 s
Power dissipation in W	150 W at nominal load
Speed range	1...50
Asynchronous motor control profile	Factory set : constant torque Sensorless flux vector control with PWM type motor control signal
Electrical connection	L1, L2, L3, U, V, W, PA, PB, PA+, PC/- terminal 0.01 in <sup>2</sup> (5 mm <sup>2</sup> ) AWG 10 AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6 terminal 0 in <sup>2</sup> (2.5 mm <sup>2</sup> ) AWG 14
Supply	Internal supply for logic inputsat 19...30 V, <= 100 mAfor overload and short-circuit protection Internal supply for reference potentiometer (2.2 to 10 kOhm)at 10...10.8 V, <= 10 mAfor overload and short-circuit protection
Communication port protocol	CANopen Modbus
IP degree of protection	IP20 on upper part without cover plate

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  
 IP31 on upper part  
 IP41 on upper part

Option card	CANopen daisy chain communication card DeviceNet communication card Fipio communication card Modbus TCP communication card Profibus DP communication card
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## Complementary

Supply voltage limits	323...550 V
Network frequency	47.5...63 Hz
Prospective line I <sub>sc</sub>	5 kA
Continuous output current	9.5 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	100 % with braking resistor continuously 150 % without braking resistor 150 % with braking resistor for 60 s
Regulation loop	Frequency PI regulator
Motor slip compensation	Adjustable Automatic whatever the load Suppressable
Output voltage	<= power supply voltage
Tightening torque	10.62 lbf.in (1.2 N.m) L1, L2, L3, U, V, W, PA, PB, PA+, PC/- 5.31 lbf.in (0.6 N.m) AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6
Insulation	Electrical between power and control
Analogue input number	3
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 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, impedance 800 Ohm, resolution 8 bits AOV configurable voltage 0...10 V, impedance 470 Ohm, resolution 8 bits
Discrete input logic	(LI1...LI4) logic input not wired, < 13 V (state 1) (LI1...LI6) negative logic (source), > 19 V (state 0) (LI1...LI6) positive logic (source), < 5 V (state 0), > 11 V (state 1)
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	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 mOhmat 500 V DC for 1 minute
Local signalling	1 LED red drive voltage Four 7-segment display units 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 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	127 CANopen 31 Modbus
Marking	CE
Operating position	Vertical +/- 10 degree
Outer dimension	184 x 140 x 150 mm 215 x 185 x 158 mm 402 x 239 x 192 mm
Height	7.24 in (184 mm)
Width	5.59 in (142 mm)
Depth	5.98 in (152 mm)
Product weight	6.83 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	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 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
Standards	IEC 61800-3 IEC 61800-5-1
Product certifications	CSA C-Tick DNV GOST NOM UL
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 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	-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	22152 - ATV312 / ATV32 (.25 - 7.5 HP)
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Discount Schedule	CP4B
GTIN	00785901822998
Nbr. of units in pkg.	1
Package weight(Lbs)	6.9800000000000004
Returnability	N
Country of origin	ID

### Offer Sustainability

Sustainable offer status	Green Premium product
RoHS (date code: YYWW)	Compliant - since 0913 - Schneider Electric declaration of conformity <a href="#">Schneider Electric declaration of conformity</a>
REACH	Reference not containing SVHC above the threshold <a href="#">Reference not containing SVHC above the threshold</a>
Product environmental profile	Available <a href="#">Product Environmental Profile</a>
Product end of life instructions	Available

### Contractual warranty

Warranty period	18 months
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