

Product data sheet

Specifications



variable speed drive - ATV21 - 4kW 5HP - 480V - EMC filter class B - IP54

ATV21WU40N4C

⚠ Discontinued on: Dec 31, 2012

⚠ End-of-service on: Dec 31, 2020

⚠ Discontinued

Main

Range of Product	Altivar 21
Product or Component Type	Variable speed drive
Product destination	Asynchronous motors
Product Specific Application	Pumps and fans in HVAC
Assembly style	With heat sink
Component name	ATV21
EMC filter	Class B EMC filter integrated
power supply voltage	380...480 V - 15...10 %
Phase	3 phase
Motor power kW	4 kW
Maximum Horse Power Rating	5 hp
Line current	6.5 A 480 V 8.2 A 380 V
Speed range	1...10
Transient overtorque	120 % of nominal motor torque +/- 10 % 60 s
Asynchronous motor control profile	Quadratic voltage/frequency ratio Current flux vector control (FVC) without speed feedback Constant voltage/frequency ratio with automatic IR compensation Energy saving ratio Constant voltage/frequency ratio
Communication Port Protocol	Modbus
Type of polarization	No impedance
IP degree of protection	IP54 EN 60530 IP54 EN 61800-5-2 IP54 IEC 60529 IP54 IEC 61800-5-1
Option card	Communication card APOGEE FLN Communication card BACnet Communication card LonWorks Communication card METASYS N2

Complementary

power supply voltage limits	323...528 V
power supply frequency	50...60 Hz - 5...5 %
power supply frequency limits	47.5...63 Hz

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

Apparent power	6.9 kVA 380 V
maximum prospective line Isc	5 kA
maximum continuous output current	9.1 A 380 V 9.1 A 460 V
Maximum transient current	10 A 60 s
Speed drive output frequency	0.5...200 Hz
Nominal switching frequency	12 kHz
Switching frequency	12...16 kHz with derating factor 6...16 kHz adjustable
Speed accuracy	+/- 10 % of nominal slip 0.2 Tn to Tn
Torque accuracy	+/- 15 %
Regulation loop	Adjustable PI regulator
Motor slip compensation	Adjustable Not available in voltage/frequency ratio motor control Automatic whatever the load
diagnostic	1 LED (red) for DC bus energized
Output voltage	<= power supply voltage
Insulation	Electrical between power and control
recommended type of cable for mounting in an enclosure	With UL Type 1 kit 3 UL 508 cable 104 °F (40 °C), copper 75 °C / PVC Without mounting kit 1 IEC cable 113 °F (45 °C), copper 70 °C / PVC Without mounting kit 1 IEC cable 113 °F (45 °C), copper 90 °C / XLPE/EPR
Electrical connection	L1/R, L2/S, L3/T terminal 0.009 in² (6 mm²) / AWG 10 VIA, VIB, FM, FLA, FLB, FLC, RY, RC, F, R, RES terminal 0.004 in² (2.5 mm²) / AWG 14
Tightening torque	11.5 lbf.in (1.3 N.m), 11.5 lb.in L1/R, L2/S, L3/T 5.3 lbf.in (0.6 N.m) VIA, VIB, FM, FLA, FLB, FLC, RY, RC, F, R, RES)
Supply	Internal supply 24 V DC 21...27 V), <200 mA overload and short-circuit protection Internal supply for reference potentiometer (1 to 10 kOhm) 10.5 V DC +/- 5 %, <10 mA overload and short-circuit protection
Analogue input number	2
Analogue input type	VIA switch-configurable current 0...20 mA 242 Ohm 11 bits VIA switch-configurable voltage 0...10 V DC 24 V max 30000 Ohm 11 bits VIB configurable PTC probe 0...6 probes 1500 Ohm VIB configurable voltage 0...10 V DC 24 V max 30000 Ohm 11 bits
Sampling duration	F 2 ms +/- 0.5 ms discrete R 2 ms +/- 0.5 ms discrete RES 2 ms +/- 0.5 ms discrete VIA 2 ms +/- 0.5 ms analog VIB 2 ms +/- 0.5 ms analog
Response time	FLA, FLC 7 ms +/- 0.5 ms discrete FLB, FLC 7 ms +/- 0.5 ms discrete FM 2 ms +/- 0.5 ms analog RY, RC 7 ms +/- 0.5 ms discrete
Accuracy	+/- 1 % FM) for a temperature variation 60 °C +/- 0.6 % VIA) for a temperature variation 60 °C +/- 0.6 % VIB) for a temperature variation 60 °C
Linearity error	FM +/- 0.2 % output VIA +/- 0.15 % of maximum value input VIB +/- 0.15 % of maximum value input
Analogue output number	1
Analogue output type	FM switch-configurable current 0...20 mA 500 Ohm 10 bits FM switch-configurable voltage 0...10 V DC 470 Ohm 10 bits
Discrete output number	2

Discrete output type	Configurable relay logic FLA, FLC) NO - 100000 cycles Configurable relay logic FLB, FLC) NC - 100000 cycles Configurable relay logic RY, RC) NO - 100000 cycles
Minimum switching current	3 mA 24 V DC configurable relay logic
Maximum switching current	2 A 250 V AC inductive cos phi = 0.4 L/R = 7 ms FL, R) 2 A 30 V DC inductive cos phi = 0.4 L/R = 7 ms FL, R) 5 A 250 V AC resistive cos phi = 1 L/R = 0 ms FL, R) 5 A 30 V DC resistive cos phi = 1 L/R = 0 ms FL, R)
Discrete input type	F programmable 24 V DC level 1 PLC 3500 Ohm R programmable 24 V DC level 1 PLC 3500 Ohm RES programmable 24 V DC level 1 PLC 3500 Ohm
Discrete input logic	Negative logic (sink) F, R, RES), >= 16 V, <= 10 V Positive logic (source) F, R, RES), <= 5 V, >= 11 V
Acceleration and deceleration ramps	Automatic based on the load Linear adjustable separately from 0.01 to 3200 s
Braking to standstill	By DC injection
Protection type	Against input phase loss drive Break on the control circuit drive Input phase breaks drive Line supply overvoltage and undervoltage drive Line supply undervoltage drive Overcurrent between output phases and earth drive Overheating protection drive Overvoltages on the DC bus drive Short-circuit between motor phases drive Thermal power stage drive Motor phase break motor Thermal protection motor With PTC probes motor Against exceeding limit speed drive
Insulation resistance	>= 1 mOhm 500 V DC for 1 minute
Frequency resolution	Analog input 0.024/50 Hz Display unit 0.1 Hz
Connector Type	1 RJ45
Physical interface	2-wire RS 485
Transmission frame	RTU
Transmission Rate	9600 bps or 19200 bps
Data format	8 bits, 1 stop, odd even or no configurable parity
Number of addresses	1...247
Communication Service	Read holding registers (03) 2 words maximum Read device identification (43) Write multiple registers (16) 2 words maximum Time out setting from 0.1 to 100 s Write single register (06) Monitoring inhibitible
Marking	CE
Operating position	Vertical +/- 10 degree
Height	13.4 in (340 mm)
Width	9.06 in (230 mm)
Depth	8.2 in (208 mm)
Net Weight	23.26 lb(US) (10.55 kg)

Environment

Noise level	55 dB 86/188/EEC
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Dielectric strength	3535 V DC between earth and power terminals 5092 V DC 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 Conducted radio-frequency immunity test level 3 conforming to IEC 61000-4-6 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 Voltage dips and interruptions immunity test conforming to IEC 61000-4-11
Standards	EN 61800-3 environments 1 category C1 EN 61800-3 category C1 IEC 61800-3 environments 1 category C1 IEC 61800-3 environments 2 category C2 EN 61800-5-1 IEC 61800-3 environments 1 category C3 IEC 61800-5-1 IEC 61800-3 IEC 61800-3 environments 2 category C3 EN 61800-3 environments 2 category C3 EN 61800-3 environments 2 category C2 IEC 61800-3 environments 1 category C2 IEC 61800-3 environments 2 category C1 IEC 61800-3 category C1 EN 61800-3 environments 1 category C2 EN 61800-3 EN 55011 group 1 class B EN 61800-3 environments 2 category C1 EN 61800-3 environments 1 category C3
Product Certifications	UL CSA NOM 117 C-tick
Vibration resistance	1 gn (f= 13...200 Hz) conforming to EN/IEC 60068-2-8 1.5 mm (f= 3...13 Hz) conforming to EN/IEC 60068-2-6
Shock resistance	15 gn 11 ms IEC 60068-2-27
Pollution degree	3 IEC 61800-5-1
Environmental characteristic	Classes 3C1 conforming to IEC 60721-3-3 Classes 3S2 conforming to IEC 60721-3-3
Relative humidity	5...95 % without condensation IEC 60068-2-3 5...95 % without dripping water IEC 60068-2-3
Ambient air temperature for operation	14...104 °F (-10...40 °C) (without derating) 104...122 °F (40...50 °C) (with derating factor)
Ambient Air Temperature for Storage	-13...158 °F (-25...70 °C)
Operating altitude	<= 6561.68 ft (2000 m) 3280.84...9842.52 ft (1000...3000 m) limited to 2000 m for the Corner Grounded distribution network

Ordering and shipping details

Category	22157-ATV212 1 - 25 HP 460 VOLT
Discount Schedule	CP4D
GTIN	00785901875697
Returnability	No
Country of origin	ID

Contractual warranty

Warranty (in months)	18
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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 Longer

Lifetime extension	
Repair	No