

ATV12HU40M3

variable speed drive ATV12 - 4kW - 5hp - 200..240V
- 3ph - with heat sink



Main

Range of product	Altivar 12
Product or component type	Variable speed drive
Product destination	Asynchronous motors
Product specific application	Simple machine
Assembly style	With heat sink
Component name	ATV12
Quantity per set	Set of 1
EMC filter	Without EMC filter
Built-in fan	With
Network number of phases	Three phase
[Us] rated supply voltage	200...240 V (- 15...10 %)
Motor power kW	4 kW
Motor power hp	5 hp
Communication port protocol	Modbus
Line current	23.8 A at 200 V 19.9 A at 240 V
Speed range	1...20
Transient overtorque	150...170 % of nominal motor torque depending on drive rating and type of motor
Asynchronous motor control profile	Quadratic voltage/frequency ratio Sensorless flux vector control Voltage/frequency ratio (V/f)
IP degree of protection	IP20 without blanking plate on upper part
Noise level	50 dB

Complementary

Supply frequency	50/60 Hz (+/- 5 %)
Type of connector	1 RJ45 for Modbus on front face
Physical interface	2-wire RS 485 for Modbus
Transmission frame	RTU for Modbus
Transmission rate	4800 bit/s 9600 bit/s 19200 bit/s 38400 bit/s
Number of addresses	1...247 for Modbus
Communication service	Read device identification (43) Read holding registers (03), messaging: 29 words maximum Write single register (06), messaging: 29 words maximum Write multiple registers (16), messaging: 27 words maximum Read/write multiple registers (23), messaging: 4/4 words maximum
Prospective line Isc	<= 5 kA
Continuous output current	16.7 A at 4 kHz
Maximum transient current	25 A for 60 s
Speed drive output frequency	0.5...400 Hz
Nominal switching frequency	4 kHz
Switching frequency	2...16 kHz adjustable 4...16 kHz with derating factor
Braking torque	Up to 150 % of nominal motor torque with braking resistor at high inertia Up to 70 % of nominal motor torque without braking resistor
Motor slip compensation	Adjustable Preset in factory

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Output voltage	200...240 V three phase
Electrical connection	L1, L2, L3, U, V, W, PA, PC terminal 5.5 mm ² (AWG 10)
Tightening torque	1.2 N.m
Insulation	Electrical between power and control
Supply	Internal supply for reference potentiometer 5 V DC, voltage limits 4.75...5.25 V, 10 mA for overload and short-circuit protection Internal supply for logic inputs 24 V DC, voltage limits 20.4...28.8 V, 100 mA for overload and short-circuit protection
Analogue input number	1
Analogue input type	AI1 configurable current 0...20 mA, impedance 250 Ohm AI1 configurable voltage 0...10 V, impedance 30 kOhm AI1 configurable voltage 0...5 V, impedance 30 kOhm
Discrete input number	4
Discrete input type	(LI1...LI4) programmable, 24 V, voltage limits 18...30 V
Discrete input logic	Positive logic (source), 0...< 5 V (state 0), > 11 V (state 1) Negative logic (sink), > 16 V (state 0), < 10 V (state 1), input impedance 3.5 kOhm
Sampling duration	< 10 ms for analogue input < 20 ms, tolerance +/- 1 ms for logic input
Linearity error	+/- 0.3 % of maximum value for analogue input
Analogue output number	1
Analogue output type	(AO1) software-configurable voltage, analogue output range 0...10 V, output impedance 470 Ohm, analogue output resolution 8 bits (AO1) software-configurable current, analogue output range 0...20 mA, output impedance 800 Ohm, analogue output resolution 8 bits
Discrete output number	2
Discrete output type	(LO+, LO-) logic output (R1A, R1B, R1C) protected relay output 1 C/O
Minimum switching current	5 mA at 24 V DC for logic relay
Maximum switching current	2 A at 250 V AC inductive load cos phi = 0.4 L/R = 7 ms for logic relay 2 A at 30 V DC inductive load cos phi = 0.4 L/R = 7 ms for logic relay 3 A at 250 V AC resistive load cos phi = 1 L/R = 0 ms for logic relay 4 A at 30 V DC resistive load cos phi = 1 L/R = 0 ms for logic relay
Acceleration and deceleration ramps	Linear from 0 to 999.9 s S U
Braking to standstill	By DC injection, 0.1...30 s
Protection type	Line supply overvoltage Line supply undervoltage Overcurrent between output phases and earth Overheating protection Short-circuit between motor phases Against input phase loss in three-phase Thermal motor protection via the drive by continuous calculation of I ² t
Frequency resolution	Analog input converter A/D, 10 bits Display unit 0.1 Hz
Time constant	20 ms, tolerance +/- 1 ms for reference change
Marking	CE
Operating position	Vertical +/- 10 degree
Height	184 mm
Width	140 mm
Depth	141.2 mm
Product weight	2 kg

Environment

Electromagnetic compatibility	Electrical fast transient/burst immunity test (level 4) conforming to EN/IEC 61000-4-4 Electrostatic discharge immunity test (level 3) conforming to EN/IEC 61000-4-2 Immunity to conducted disturbances (level 3) conforming to EN/IEC 61000-4-6 Radiated radio-frequency electromagnetic field immunity test (level 3) conforming to EN/IEC 61000-4-3 Voltage dips and interruptions immunity test conforming to EN/IEC 61000-4-11 Surge immunity test (level 3) conforming to EN/IEC 61000-4-5
Electromagnetic emission	Radiated emissions, class: environment 1 category C2 conforming to EN/IEC 61800-3 - test level: 2...16 kHz shielded motor cable Conducted emissions conforming to EN/IEC 61800-3

Product certifications	CSA C-Tick GOST NOM UL
Vibration resistance	1 gn (f = 13...200 Hz) conforming to EN/IEC 60068-2-6 1.5 mm peak to peak (f = 3...13 Hz) drive unmounted on symmetrical DIN rail 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...50 °C with protective cover from the top of the drive removed 50...60 °C with current derating 2.2 % per °C
Operating altitude	<= 1000 m without derating > 1000...3000 m with current derating 1 % per 100 m

Offer Sustainability

Sustainable offer status	Not Green Premium product
RoHS (date code: YYWW)	Compliant - since 0901 - Schneider Electric declaration of conformity