



Main

Range of product	Altivar 12
Product or component type	Variable speed drive
Product destination	Asynchronous motors
Product specific application	Simple machine
Assembly style	On base plate
Component name	ATV12
Quantity per set	Set of 1
EMC filter	Integrated
Built-in fan	Without
Network number of phases	1 phase
[Us] rated supply voltage	200...240 V - 15...10 %
Motor power kW	0.75 kW
Motor power hp	1 hp
Communication port protocol	Modbus
Line current	10.2 A at 200 V 8.5 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	Sensorless flux vector control Voltage/frequency ratio (V/f) Quadratic voltage/frequency ratio
IP degree of protection	IP20 without blanking plate on upper part
Noise level	0 dB

Complementary

Supply frequency	50/60 Hz +/- 5 %
Connector type	1 RJ45 (on front face)for Modbus

Physical interface	2-wire RS 485for Modbus
Transmission frame	RTUfor Modbus
Transmission rate	4800 bit/s 9600 bit/s 19200 bit/s 38400 bit/s
Number of addresses	1...247for Modbus
Communication service	Read holding registers (03) 29 words Write single register (06) 29 words Write multiple registers (16) 27 words Read/write multiple registers (23) 4/4 words Read device identification (43)
Prospective line I _{sc}	1 kA
Continuous output current	4.2 A at 4 kHz
Maximum transient current	6.3 Afor 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 70 % of nominal motor torque without braking resistor
Motor slip compensation	Preset in factory Adjustable
Output voltage	200...240 V 3 phases
Electrical connection	Terminal, clamping capacity: 3.5 mm ² , AWG 12 (L1, L2, L3, U, V, W, PA, PC)
Tightening torque	0.8 N.m
Insulation	Electrical between power and control
Supply	Internal supply for reference potentiometer: 5 V DC (4.75...5.25 V), <10 mA, protection type: overload and short-circuit protection Internal supply for logic inputs: 24 V DC (20.4...28.8 V), <100 mA, protection type: overload and short-circuit protection
Analogue input number	1
Analogue input type	Configurable current AI1 0...20 mA 250 Ohm Configurable voltage AI1 0...10 V 30 kOhm Configurable voltage AI1 0...5 V 30 kOhm
Discrete input number	4
Discrete input type	Programmable LI1...LI4 24 V 18...30 V
Discrete input logic	Negative logic (sink), > 16 V (state 0), < 10 V (state 1), input impedance 3.5 kOhm Positive logic (source), 0...< 5 V (state 0), > 11 V (state 1)
Sampling duration	20 ms, tolerance +/- 1 msfor logic input 10 msfor analogue input
Linearity error	+/- 0.3 % of maximum valuefor analogue input
Analogue output number	1
Analogue output type	AO1 software-configurable voltage: 0...10 V, impedance: 470 Ohm, resolution 8 bits AO1 software-configurable current: 0...20 mA, impedance: 800 Ohm, resolution 8 bits
Discrete output number	2
Discrete output type	Logic output LO+, LO- Protected relay output R1A, R1B, R1C 1 C/O
Minimum switching current	5 mA at 24 V DCfor logic relay
Maximum switching current	2 A 250 V AC inductive cos phi = 0.4 L/R = 7 ms logic relay 2 A 30 V DC inductive cos phi = 0.4 L/R = 7 ms logic relay 3 A 250 V AC resistive cos phi = 1 L/R = 0 ms logic relay 4 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay
Acceleration and deceleration ramps	S U Linear from 0 to 999.9 s
Braking to standstill	By DC injection, <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 I²t

Frequency resolution	Analog input: converter A/D, 10 bits Display unit: 0.1 Hz
Time constant	20 ms +/- 1 ms for reference change
Marking	CE
Operating position	Vertical +/- 10 degree
Height	143 mm
Width	72 mm
Depth	102.2 mm
Product weight	0.7 kg
Motor starter type	Variable speed drive

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 Surge immunity test level 3 conforming to EN/IEC 61000-4-5 Voltage dips and interruptions immunity test conforming to EN/IEC 61000-4-11
Electromagnetic emission	Radiated emissions environment 1 category C2 conforming to EN/IEC 61800-3 2...16 kHz shielded motor cable Conducted emissions with integrated EMC filter environment 1 category C1 conforming to EN/IEC 61800-3 2, 4, 8, 12 and 16 kHz shielded motor cable <5 m Conducted emissions with integrated EMC filter environment 1 category C2 conforming to EN/IEC 61800-3 2...12 kHz shielded motor cable <5 m Conducted emissions with integrated EMC filter environment 1 category C2 conforming to EN/IEC 61800-3 2, 4 and 16 kHz shielded motor cable <10 m Conducted emissions with additional EMC filter environment 1 category C1 conforming to EN/IEC 61800-3 4...12 kHz shielded motor cable <20 m Conducted emissions with additional EMC filter environment 1 category C2 conforming to EN/IEC 61800-3 4...12 kHz shielded motor cable <50 m Conducted emissions with additional EMC filter environment 2 category C3 conforming to EN/IEC 61800-3 4...12 kHz shielded motor cable <50 m
Product certifications	C-Tick CSA NOM GOST 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...40 °C protective cover from the top of the drive removed 40...60 °C with current derating 2.2 % per °C
Operating altitude	> 1000...2000 m with current derating 1 % per 100 m <= 1000 m without derating

Offer Sustainability

Sustainable offer status	Green Premium product
REACH Regulation	 REACH Declaration
EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope)  EU RoHS Declaration
Environmental Disclosure	 Product Environmental Profile
Circularity Profile	 End of Life Information

Contractual warranty

Warranty	18 months
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