



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
EMC filter	Integrated
Built-in fan	Without
Network number of phases	Single 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
Speed range	1...20
Transient overtorque	150...170 % of nominal motor torque
Asynchronous motor control profile	Sensorless flux vector control with PWM type motor control signal
IP degree of protection	IP20 without blanking plate on upper part

Complementary

Supply frequency	50/60 Hz +/- 5 %
Line current	8,5 A 0...1 kA
Continuous output current	4,2 A 4 kHz
Maximum transient current	6,3 A 60 s
Speed drive output frequency	0...400 Hz
Nominal switching frequency	4 kHz
Switching frequency	2...16 kHz adjustable 4...16 kHz with derating factor
Braking torque	Upto 150 % of nominal motor torque with braking resistor at high inertia Upto 70 % of nominal motor torque without braking resistor
Regulation loop	Adjustable Factory-set with the speed loop stability and gain
Motor slip compensation	Adjustable Preset in factory
Prospective line I _{sc}	≤ 1 kA
Output voltage	200...240 V triphase
Electrical connection	Terminal 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 logic inputs 24 V DC 20,4...27,6 V 100 mA overload and short-circuit protection Internal supply for reference potentiometer 5 V DC 4,75...5,25 V 10 mA overload and short-circuit protection
Analogue input number	1
Analogue input type	Configurable current AI1 0...20 mA 250 Ohm Configurable voltage AI1 0...5 V 30 kOhm Configurable voltage AI1 0...10 V 30 kOhm

Sampling duration	20 ms +/- 1 ms logic input < 10 ms analogue input
Linearity error	+/- 0.3 ms analogue input
Discrete input number	4
Discrete input type	Programmable LI1...LI4 24 V 18...30 V
Discrete input logic	Negative by program $\geq 16 \text{ V} < 10 \text{ V}$ Positive $0... < 5 \text{ V} \geq 11 \text{ V}$
Discrete output number	3
Discrete output type	Logic relay R1A, R1B, R1C 1 C/O Open collector LO1 Transmitter CLO
Minimum switching current	5 mA 24 V DC 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 0,1...30 s
Protection type	Modbus serial link failure Line supply overvoltage Line supply undervoltage Overcurrent between output phases and earth Overheating protection Safety for no network three-phase Short-circuit between motor phases Thermal protection
Insulation resistance	$\geq 500 \text{ MOhm}$
Frequency resolution	0.1 Hz display unit Converter A/D, 10 bits analog input
Time constant	20 ms +/- 1 ms for reference change
Marking	CE
Operating position	Vertical +/- 10 degree
Product weight	0,8 kg

Environment

Electromagnetic compatibility	1.2/50 μs - 8/20 μs surge immunity test level 3 EN/IEC 61000-4-5 Electrical fast transient/burst immunity test level 4 EN/IEC 61000-4-4 Electrostatic discharge immunity test level 3 EN/IEC 61000-4-2 Immunity to conducted disturbances level 3 EN/IEC 61000-4-6 Radiated radio-frequency electromagnetic field immunity test level 3 EN/IEC 61000-4-3
Standards	EN/IEC 61800-3
Product certifications	C-Tick CSA GOST NOM UL
Vibration resistance	1.5 mm peak to peak EN/IEC 60068-2-6 3...13 Hz drive unmounted on symmetrical DIN rail 1 gn EN/IEC 60068-2-6 13...200 Hz
Shock resistance	15 gn EN/IEC 60068-2-27 11 ms
Relative humidity	5...95 % without dripping water IEC 60068-2-3 5...95 % without condensation 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 m without derating > 1000...2000 m with derating 1 % per 100 m
RoHS EUR conformity date	0915
RoHS EUR status	Compliant