Product data sheet
Characteristics

ATV610D15N4
variable speed drive ATV610 - 15 kW / 20HP - 380...415 V - IP20

Green Premium

Main

Range of product	Altivar Easy 610
Product or component type	Variable speed drive
Product specific application	Fan, pump, compressor, conveyor
Device short name	ATV610
Variant	Standard version
Product destination	Asynchronous motors
Mounting mode	Cabinet mount
EMC filter	Integrated conforming to EN/IEC 61800-3 category C3 with 50 m maximum
IP degree of protection	IP20
Type of cooling	Forced convection
Supply frequency	50...60 Hz (+/-5 %)
Network number of phases	3 phases
[Us] rated supply voltage	380...415 V (- 15...10 %)
Motor power kW	15 kW normal duty 11 kW heavy duty
Motor power hp	20 hp normal duty 15 hp heavy duty
Line current	21.9 A at 415 V heavy duty 29.4 A at 380 V normal duty 23 A at 380 V heavy duty 27.7 A at 415 V normal duty
Prospective line Isc	22 kA
Apparent power	19.9 kVA at 415 V normal duty 15.7 kVA at 415 V heavy duty
Continuous output current	31.7 A at 4 kHz normal duty 23.5 A at 4 kHz heavy duty
Maximum transient current	35.3 A during 60 s heavy duty 34.9 A during 60 s normal duty
Asynchronous motor control profile	Constant torque standard Variable torque standard Optimized torque mode

Output frequency	0.0001...0.5 kHz
Nominal switching frequency	4 kHz
Switching frequency	2...12 kHz adjustable
Number of preset speeds	16 preset speeds
Communication port protocol	Modbus serial
Option card	Slot A : relay output card Slot A : communication card Profibus DP V1 Slot A : digital or analog I/O extension card

Complementary

Output voltage	<= power supply voltage
Motor slip compensation	Adjustable Automatic whatever the load Can be suppressed Not available in permanent magnet motor law
Acceleration and deceleration ramps	Linear adjustable separately from 0.01 to 9000 s S, U or customized
Braking to standstill	By DC injection
Protection type	Drive : thermal protection Drive : overvoltages on the DC bus Drive : line supply phase loss Drive : break on the control circuit Motor : thermal protection Drive : line supply overvoltage Drive : line supply undervoltage Motor : motor phase break Drive : overheating Drive : overcurrent between output phases and earth Drive : overload of output voltage Drive : short-circuit protection Drive : motor phase break Drive : overspeed
Frequency resolution	Analog input : 0.012/50 Hz Display unit : 0.1 Hz
Electrical connection	Line side, screw terminal : 6...16 mm² Motor, screw terminal : 6...16 mm² Control, screw terminal : 0.5...1.5 mm²
Type of connector	1 RJ45 (on the remote graphic terminal) for Modbus serial
Physical interface	2-wire RS 485 for Modbus serial
Transmission frame	RTU for Modbus serial
Transmission rate	4.8, 9.6, 19.2, 38.4 kbit/s for Modbus serial
Type of polarization	No impedance for Modbus serial
Number of addresses	1...247 for Modbus serial
Method of access	Slave
Supply	Internal supply for reference potentiometer (1 to 10 kOhm) : 10.5 V DC +/- 5 %, <= 10 mA (overload and short-circuit protection) External supply for digital inputs : 24 V DC (limits : 19...30 V), <= 1.25 mA (overload and short-circuit protection)
Local signalling	1 LED red for presence of voltage 2 LEDs dual colour for communication module status 2 LEDs for local diagnostic 1 LED yellow for embedded communication status
Width	171 mm
Height	360 mm 423 mm with EMC plate
Depth	233 mm
Product weight	7.2 kg
Analogue input number	3
Analogue input type	Software-configurable voltage AI1, AI2, AI3 : 0...10 V DC, impedance 30 kOhm, resolution 12 bits Software-configurable current AI1, AI2, AI3 : 0...20 mA, impedance 250 Ohm, resolution 12 bits Software-configurable temperature probe or water level sensor AI2, AI3
Discrete input number	6

Discrete input type	Programmable as pulse input DI5, DI6 0...30 kHz : 24 V DC (limits : <= 30 V) Programmable as logic input DI1...DI6 : 24 V DC (limits : <= 30 V), impedance 3.5 kOhm
Input compatibility	Level 1 PLC conforming to IEC 65A-68, pulse input DI5, DI6 Level 1 PLC conforming to EN/IEC 61131-2, logic input DI1...DI6
Discrete input logic	Positive logic (source) : DI5, DI6 configurable pulse input, < 0.6 V (state 0), > 2.5 V (state 1) Positive logic (source) : DI1...DI6 configurable logic input, < 5 V (state 0), > 11 V (state 1) Negative logic (sink) : DI1...DI6 configurable logic input, > 16 V (state 0), < 10 V (state 1)
Analogue output number	2
Analogue output type	Software-configurable voltage AQ1, AQ2 : 0...10 V DC,impedance > 470 Ohm, resolution 10 bits Software-configurable current AQ1, AQ2 : 0...20 mA,impedance < 500 Ohm, resolution 10 bits
Sampling duration	Analog input AI1, AI2, AI3 : 5 ms (+/- 0.1 ms) Analog output AQ1, AQ2 : 10 ms (+/- 1 ms) Discrete input DI1...DI6 : 2 ms (+/- 0.5 ms) configurable Pulse input DI5, DI6 : 5 ms (+/- 1 ms) configurable
Accuracy	Analog input AI1, AI2, AI3 : +/- 0.6 % for a temperature variation 60 °C Analog output AQ1, AQ2 : +/- 1 % for a temperature variation 60 °C
Linearity error	Analog input AI1, AI2, AI3 : +/- 0.15 % of maximum value Analog output AQ1, AQ2 : +/- 0.2 %
Relay output number	3
Relay output type	Configurable relay logic R1 : fault relay NO/NC, electrical durability 100000 cycles Configurable relay logic R2 : sequence relay NO, electrical durability 100000 cycles Configurable relay logic R3 : sequence relay NO, electrical durability 100000 cycles
Refresh time	Relay output R1, R2, R3 : 5 ms (+/- 0.5 ms)
Minimum switching current	Relay output R1, R2, R3 : 5 mA at 24 V DC
Maximum switching current	Relay output R1, R2, R3 on inductive load (cos phi = 0.4 and L/R = 7 ms) : 2 A at 250 V AC Relay output R1, R2, R3 on inductive load (cos phi = 0.4 and L/R = 7 ms) : 2 A at 30 V DC Relay output R1, R2, R3 on resistive load (cos phi = 1 : 3 A at 30 V DC Relay output R1, R2, R3 on resistive load (cos phi = 1 : 3 A at 250 V AC
Isolation	Between power and control terminals
Insulation resistance	> 1 mOhm at 500 V DC for 1 minute to earth

Environment

Noise level	65 dB conforming to 86/188/EEC
Power dissipation in W	408 W (forced convection) at 380 V, switching frequency 4 kHz 62 W (natural convection) at 380 V, switching frequency 4 kHz
Operating position	Vertical +/- 10 degree
Electromagnetic compatibility	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 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 1.2/50 µs - 8/20 µs surge immunity test level 3 conforming to IEC 61000-4-5
Pollution degree	2 conforming to EN/IEC 61800-5-1
Vibration resistance	1.5 mm peak to peak (f= 2...13 Hz) conforming to IEC 60068-2-6 1 gn (f= 13...200 Hz) conforming to IEC 60068-2-6
Shock resistance	15 gn during 11 ms conforming to IEC 60068-2-27
Relative humidity	5...95 % without condensation conforming to IEC 60068-2-3
Ambient air temperature for operation	-15...45 °C without derating 45...60 °C with derating factor
Operating altitude	<= 1000 m without derating 1000...4800 m with current derating 1 % per 100 m
Environmental characteristic	Dust pollution resistance class 3S3 conforming to EN/IEC 60721-3-3 Chemical pollution resistance class 3C3 conforming to EN/IEC 60721-3-3
Standards	EN/IEC 61800-3 environment 2 category C3 EN/IEC 61800-3 EN/IEC 61800-5-1 IEC 60721-3
Product certifications	REACH
Marking	CE

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Offer Sustainability

Sustainable offer status	Green Premium product
RoHS (date code: YYWW)	Compliant - since 1511 - Schneider Electric declaration of conformity
	Schneider Electric declaration of conformity
REACh	Reference not containing SVHC above the threshold
	Reference not containing SVHC above the threshold
Product environmental profile	Available
	Product environmental
Product end of life instructions	Available
	End of life manual

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