Specifications





variable speed drive, Easy Altivar 610, 1.5kW, 2hp, 380 to 460V, IP20

ATV610U15N4

Main

Range Of Product	Easy Altivar 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
	Synchronous motors
Mounting Mode	Cabinet mount
Emc Filter	Integrated conforming to IEC 61800-3 category C3 with 50 m
Ip Degree Of Protection	IP20
Type Of Cooling	Forced convection
Supply Frequency	5060 Hz +/-5 %
Network Number Of Phases	3 phases
[Us] Rated Supply Voltage	380460 V - 1510 %
Motor Power Kw	1.5 kW for normal duty 0.75 kW for heavy duty
Motor Power Hp	2 hp for normal duty 1 hp for heavy duty
Line Current	5.7 A at 380 V (normal duty)4.8 A at 460 V (normal duty)3.1 A at 380 V (heavy duty)2.6 A at 460 V (heavy duty)
Prospective Line Isc	5 kA
Apparent Power	3.8 kVA at 460 V (normal duty) 2.1 kVA at 460 V (heavy duty)
Continuous Output Current	4 A at 4 kHz for normal duty 2.2 A at 4 kHz for heavy duty
Maximum Transient Current	4.4 A during 60 s (normal duty) 3.3 A during 60 s (heavy duty)
Asynchronous Motor Control Profile	Optimized torque mode Constant torque standard Variable torque standard
Output Frequency	0.1500 Hz
Nominal Switching Frequency	4 kHz
Switching Frequency	212 kHz adjustable
Number Of Preset Speeds	16 preset speeds

Communication Port Protocol	Modbus serial
Option Card	Slot A: communication card, Profibus DP V1 Slot A: digital or analog I/O extension card Slot A: relay output card

Complementary

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Output Voltage	<= power supply voltage
Motor Slip Compensation	Adjustable Automatic whatever the load
	Not available in permanent magnet motor law Can be suppressed
Acceleration And Deceleration	S, U or customized
Ramps	Linear adjustable separately from 0.01 to 9000 s
Braking To Standstill	By DC injection
Protection Type	Thermal protection: motor
	Motor phase break: motor
	Thermal protection: drive
	Overheating: drive
	Overcurrent between output phases and earth: drive
	Overload of output voltage: drive
	Short-circuit protection: drive
	Motor phase break: drive
	Overvoltages on the DC bus: drive
	Line supply overvoltage: drive
	Line supply undervoltage: drive
	Line supply phase loss: drive
	Overspeed: drive
	Break on the control circuit: drive
Frequency Resolution	Display unit: 0.1 Hz Analog input: 0.012/50 Hz
Electrical Connection	Control, screw terminal: 0.51.5 mm ²
	Line side, screw terminal: 2.516 mm ²
	Motor, screw terminal: 2.516 mm ²
Connector Type	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	1247 for Modbus serial
Method Of Access	Slave
Supply	External supply for digital inputs: 24 V DC (1930 V), <1.25 mA, protection type:
	overload and short-circuit protection
	Internal supply for reference potentiometer (1 to 10 kOhm): 10.5 V DC +/- 5 %, <10 mA, protection type: overload and short-circuit protection
Local Signalling	2 LEDs for local diagnostic
	1 LED (yellow) for embedded communication status
	2 LEDs (dual colour) for communication module status
	1 LED (red) for presence of voltage
Width	145 mm
Height	207 mm
Height	297 mm 350 mm with EMC plate
Depth	203 mm
Net Weight	3.135 kg
Analogue Input Number	3

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Analogue Input Type	Al1, Al2, Al3 software-configurable voltage: 010 V DC, impedance: 30 kOhm, resolution 12 bits
	AI1, AI2, AI3 software-configurable current: 020 mA, impedance: 250 Ohm, resolution 12 bits
	Al2, Al3 software-configurable temperature probe or water level sensor
Discrete Input Number	6
Discrete Input Type	DI1DI6 programmable as logic input, 24 V DC (<= 30 V), impedance: 3.5 kOhm DI5, DI6 programmable as pulse input: 030 kHz, 24 V DC (<= 30 V)
nput Compatibility	DI1DI6: logic input level 1 PLC conforming to IEC 61131-2 DI5, DI6: pulse input level 1 PLC conforming to IEC 65A-68
Discrete Input Logic	Positive logic (source): DI1DI6 configurable logic input, < 5 V (state 0), > 11 V (state 1) Negative logic (sink): DI1DI6 configurable logic input, > 16 V (state 0), < 10 V (state 1) Positive logic (source): DI5, DI6 configurable pulse input, < 0.6 V (state 0), > 2.5 V (state 1)
Analogue Output Number	2
Analogue Output Type	Software-configurable current AQ1, AQ2: 020 mA, resolution 10 bits Software-configurable voltage AQ1, AQ2: 010 V DC impedance 470 Ohm, resolution 10 bits
Sampling Duration	5 ms +/- 0.1 ms (Al1, Al2, Al3) - analog input 2 ms +/- 0.5 ms (DI1DI6)configurable - discrete input 5 ms +/- 1 ms (DI5, DI6)configurable - pulse input 10 ms +/- 1 ms (AQ1, AQ2) - analog output
Accuracy	+/- 0.6 % AI1, AI2, AI3 for a temperature variation 60 °C analog input +/- 1 % AQ1, AQ2 for a temperature variation 60 °C analog output
Linearity Error	Al1, Al2, Al3: +/- 0.15 % of maximum value for analog input AQ1, AQ2: +/- 0.2 % for analog output
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 resistive load, cos phi = 1: 3 A at 250 V AC Relay output R1, R2, R3 on resistive load, cos phi = 1: 3 A at 30 V DC 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
Isolation	Between power and control terminals
Insulation Resistance	> 1 MOhm 500 V DC for 1 minute to earth

Environment

Noise Level	55 dB conforming to 86/188/EEC
Power Dissipation In W	40 W(forced convection) at 380 V, switching frequency 4 kHz 25 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 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 Conducted radio-frequency immunity test level 3 conforming to IEC 61000-4-6
Pollution Degree	2 conforming to IEC 61800-5-1
Vibration Resistance	1.5 mm peak to peak (f= 213 Hz) conforming to IEC 60068-2-6 1 gn (f= 13200 Hz) conforming to IEC 60068-2-6

Shock Resistance	15 gn for 11 ms conforming to IEC 60068-2-27
Relative Humidity	595 % without condensation conforming to IEC 60068-2-3
Ambient Air Temperature For Operation	-1545 °C (without derating) 4560 °C (with derating factor)
Operating Altitude	<= 1000 m without derating 10004800 m with current derating 1 % per 100 m
Environmental Characteristic	Chemical pollution resistance class 3C3 conforming to IEC 60721-3-3 Dust pollution resistance class 3S3 conforming to IEC 60721-3-3
Standards	IEC 61800-3 Environment 2 category C3 IEC 61800-3 IEC 61800-5-1 IEC 60721-3
Marking	CE

Packing Units

Unit Type Of Package 1	PCE
Number Of Units In Package 1	1
Package 1 Height	19.6 cm
Package 1 Width	12.8 cm
Package 1 Length	28.0 cm
Package 1 Weight	5.7 kg

Sustainability Screen Premium

Green PremiumTM label is Schneider Electric's commitment to delivering products with best-inclass environmental performance. Green Premium promises compliance with the latest regulations, transparency on environmental impacts, as well as circular and low-CO₂ products.

Guide to assessing product sustainability is a white paper that clarifies global eco-label standards and how to interpret environmental declarations.

Learn more about Green Premium >

Guide to assess a product's sustainability >



Transparency RoHS/REACh

Resource performance

Upgradeable Through Digital Modules And Upgraded Components

Well-being performance



Rohs Exemption Information Yes

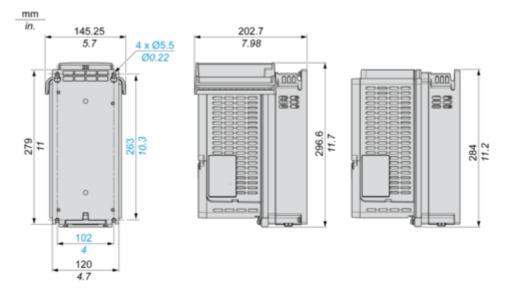
Certifications & Standards

Reach Regulation	REACh Declaration
Eu Rohs Directive	Pro-active compliance (Product out of EU RoHS legal scope)
China Rohs Regulation	China RoHS declaration
Environmental Disclosure	Product Environmental Profile
Weee	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins
Circularity Profile	End of Life Information

Dimensions Drawings

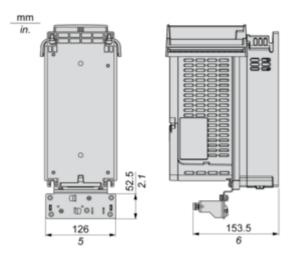
Dimensions

IP20 Drives



Drawings from left to right: rear view, right side view with top cover, right side view without top cover.

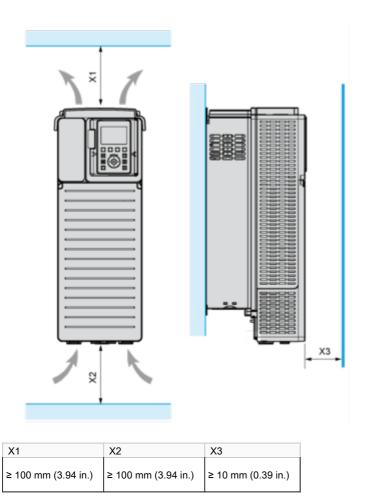
IP20 Drives With EMC Plate



Drawings from left to right: rear view, right side view with top cover.

Mounting and Clearance

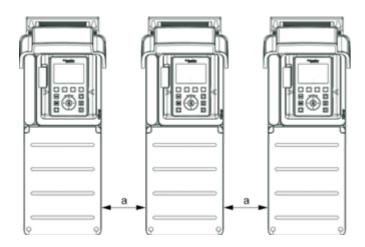
Clearances



- $_{\bullet}$ Mount the device in a vertical position (±10°). This is required for cooling the device.
- Do not mount the device close to heat sources.
- Leave sufficient free space so that the air required for cooling purposes can circulate from the bottom to the top of the drive.

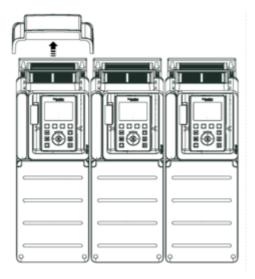
Mounting Types

Mounting Type A: Individual IP21



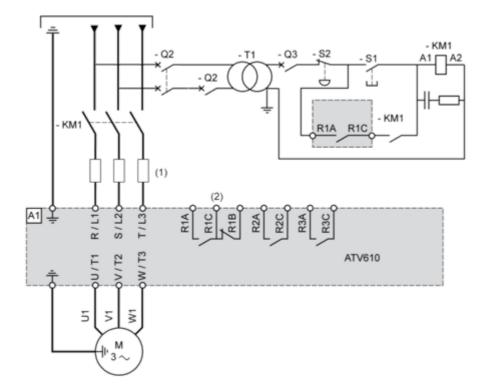
a ≥ = 100 mm (3.94 in.)

Mounting Type B: Side by Side IP20



Connections and Schema

Single or Three-phase Power Supply - Diagram With Line Contactor



(1) Line chokes

(2) See control block wiring diagram

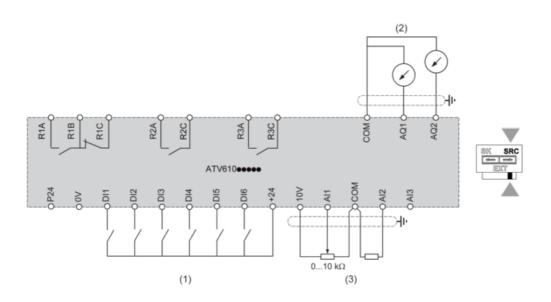
A1 : Drive

KM1 : Line Contactor

Q2, Q3 : Circuit breakers

S1, S2 : Pushbuttons **T1** : Transformer for control part

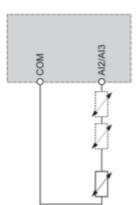
Control Block Wiring Diagram



(1) Digital Input
(2) Analog Output
(3) Analog Input
R1A, R1B, R1C : Fault relay output
R2A, R2C : Sequence relay output
R3A, R3C : Sequence relay output

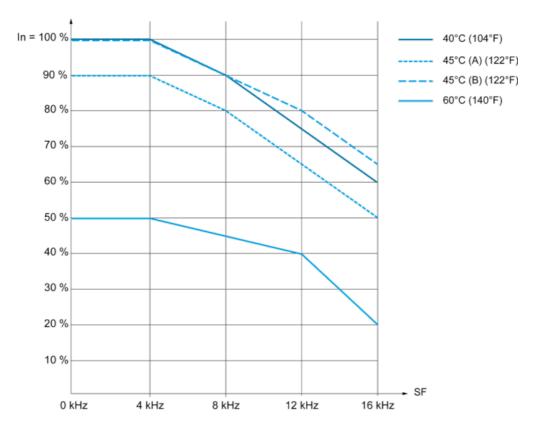
Sensor Connection

It is possible to connect either 1 or 3 sensors on terminals AI2 or AI3.



Performance Curves

Derating Curves



In : Nominal Drive Current

SF : Switching Frequency