Product datasheet

Specifications



variable speed drive, Easy Altivar 310, heavy duty, 11kW, 15hp, normal duty, 15kW, 20hp, 380 to 460V, without EMC

ATV310HD11N4E

Main

Range of product	Easy Altivar 310
Product or component type	Variable speed drive
Product specific application	Simple machine
Assembly style	With heat sink
Device short name	ATV310
Network number of phases	Three phase
[Us] rated supply voltage	380460 V - 1510 %
Motor power kW	11 kW for heavy duty 15 kW for normal duty
Motor power hp	15 hp for heavy duty 20 hp for normal duty
Noise level	50 dB

Complementary

Quantity per set	Set of 1
EMC filter	Without EMC filter
type of cooling	Integrated fan
Communication port protocol	Modbus
Connector type	RJ45 (on front face) for Modbus
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	1247 for 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)
Line current	36.1 A at 380 V (heavy duty) 38.6 A at 380 V (normal duty) 30.4 A at 460 V (heavy duty) 32.5 A at 460 V (normal duty)
Apparent power	24.2 kVA at 460 V (heavy duty) 25.4 kVA at 460 V (normal duty)

Prospective line Isc	22 kA(heavy duty) 5 kA(normal duty)	
Continuous output current	24 A heavy duty 30 A normal duty	
Maximum transient current	36 A during 60 s (heavy duty) 33 A during 60 s (normal duty)	
Power dissipation in W	337.1 W, at In (heavy duty) 407.0 W, at In (normal duty)	
Speed drive output frequency	0.5400 Hz	
Nominal switching frequency	4 kHz	
Switching frequency	212 kHz adjustable	
Speed range	120 for asynchronous motor	
Transient overtorque	170200 % of nominal motor torque depending on drive rating and type of motor	
Braking torque	Up to 150 % of nominal motor torque with braking resistor Up to 70 % of nominal motor torque without braking resistor	
Asynchronous motor control profile	Voltage/frequency ratio (V/f) Voltage/frequency ratio - Energy Saving, quadratic U/f Sensorless vector control (SVC)	
Motor slip compensation	Adjustable	
Output voltage	380460 V three phase	
Electrical connection	Terminal, clamping capacity: 10 mm², AWG 10 (L1, L2, L3, PA/+, PB, U, V, W)	
Tightening torque	2.22.4 N.m	
Insulation	Electrical between power and control	
Supply	Internal supply for reference potentiometer: 5 V (4.755.25 V)DC, <10 mA with overload and short-circuit protection Internal supply for logic inputs: 24 V (20.428.8 V)DC, <100 mA with overload and short-circuit protection	
Analogue input number	1	
Analogue input type	Configurable current Al1 020 mA 250 Ohm Configurable voltage Al1 010 V 30 kOhm Configurable voltage Al1 05 V 30 kOhm	
Discrete input number	4	
Discrete input type	Programmable LI1LI4 24 V 1830 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	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: 010 V AC 010 V 00.02 A, impedance: 470 Ohm, resolution 8 bits AO1 software-configurable current: 020 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 DC for logic relay	
Maximum switching current	2 A at 250 V AC on inductive load cos phi = $0.4 \text{ L/R} = 7 \text{ ms}$ for logic relay 2 A at 30 V DC on inductive load cos phi = $0.4 \text{ L/R} = 7 \text{ ms}$ for logic relay 3 A at 250 V AC on resistive load cos phi = $1 \text{ L/R} = 0 \text{ ms}$ for logic relay 4 A at 30 V DC on resistive load cos phi = $1 \text{ L/R} = 0 \text{ ms}$ for logic relay	

Acceleration and deceleration ramps	Linear from 0999.9 s
	S U
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 I ² t
Frequency resolution	Analog input: converter A/D, 10 bits
	Display unit: 0.1 Hz
Time constant	20 ms +/- 1 ms for reference change
Operating position	Vertical +/- 10 degree
Height	232 mm
Width	150 mm
Depth	171 mm
Net weight	3.7 kg
Supply frequency	50/60 Hz +/- 5 %
Product destination	Asynchronous motors

Environment

Electromagnetic compatibility	Electrical fast transient/burst immunity test - test level: level 4 conforming to IEC 61000-4-4
	Electrostatic discharge immunity test - test level: level 3 conforming to IEC 61000-4-2 Immunity to conducted disturbances - test level: level 3 conforming to IEC 61000-4-6 Radiated radio-frequency electromagnetic field immunity test - test level: level 3
	conforming to IEC 61000-4-3
	Voltage dips and interruptions immunity test conforming to IEC 61000-4-11
	Surge immunity test - test level: level 3 conforming to IEC 61000-4-5
Standards	IEC 61800-5-1
	IEC 61800-3
Product certifications	CE
	EAC
	KC
IP degree of protection	IP20 without blanking plate on upper part
	IP4X top
Pollution degree	2 conforming to IEC 61800-5-1
Environmental characteristic	Dust pollution resistance class 3S2 conforming to IEC 60721-3-3
	Chemical pollution resistance class 3C3 conforming to IEC 60721-3-3
Shock resistance	15 gn conforming to IEC 60068-2-27 for 11 ms
Relative humidity	595 % without condensation conforming to IEC 60068-2-3
	595 % without dripping water conforming to IEC 60068-2-3
Ambient air temperature for storage	-2570 °C
Ambient air temperature for	-1055 °C without derating
operation	5560 °C protective cover from the top of the drive removed with current derating
	2.2 % per °C

Packing Units

Unit Type of	Package 1	
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Number of Units in Package 1

PCE

1

Package 1 Height	23.200 cm
Package 1 Width	20.000 cm
Package 1 Length	26.800 cm
Package 1 Weight	4.195 kg
Unit Type of Package 2	\$06
Number of Units in Package 2	12
Package 2 Height	75.000 cm
Package 2 Width	60.000 cm
Package 2 Length	80.000 cm
Package 2 Weight	58.000 kg

Lenvironmental Data

Schneider Electric aims to achieve Net Zero status by 2050 through supply chain partnerships, lower impact materials, and circularity via our ongoing "Use Better, Use Longer, Use Again" campaign to extend product lifetimes and recyclability.

Environmental Data explained >

How we assess product sustainability \geq

$\ensuremath{ arphi }$ Environmental footprint	
Carbon footprint (kg.eq.CO2 per CR, Total Life cycle)	21540
Environmental Disclosure	Product Environmental Profile

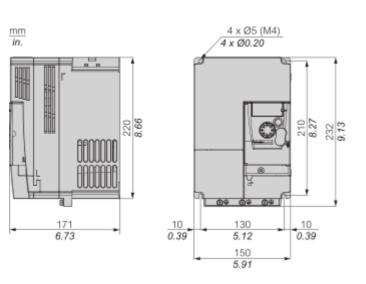
Use Better

Materials and Substances	
EU RoHS Directive	Compliant with Exemptions
REACh Regulation	REACh Declaration
China RoHS Regulation	China RoHS declaration
𝔅 Energy efficiency	
Product contributes to saved and avoided emissions	Yes
Use Again	
\heartsuit Repack and remanufacture	
Circularity Profile	End of Life Information
Take-back	Νο

Product datasheet

Dimensions Drawings

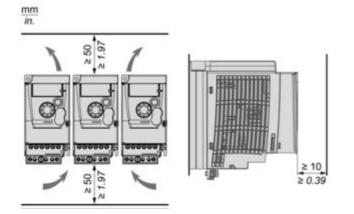
Dimensions



Mounting and Clearance

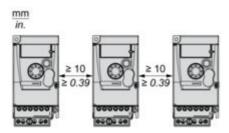
Mounting Recommendations

Clearance

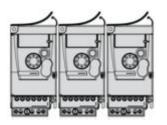


Mounting Types

Mounting Type A



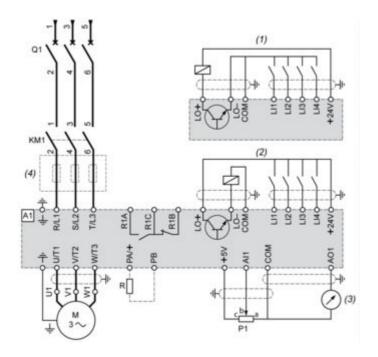
Mounting Type B



Remove the protective cover from the top of the drive.

Connections and Schema

Three-Phase Power Supply Wiring Diagram



A1 : Drive

- KM1 : Contactor (only if a control circuit is needed)
- P1: 2.2 k Ω reference potentiometer. This can be replaced by a 10 k Ω potentiometer (maximum).
- Q1 : Circuit breaker
- R : Braking resistor (optional)
- (1) Negative logic (Sink)
- (2) Positive logic (Source) (factory set configuration)
- (3) 0...10 V or 0...20 mA
- (4) Line choke three-phase (optional)