Product datasheet

Specifications

Variable Speed drive ATV303 3Ph 400V 5,5 kw

ATV303HU55N4E

Discontinued on: 01 November 2020

Discontinued

Main

Range of product	Altivar 303
Product or component type	Variable speed drive
Product destination	Asynchronous motors
Product specific application	Simple machine
Assembly style	With heat sink Enclosed
Component name	ATV303
Motor power kW	5.5 kW
[Us] rated supply voltage	380...460 V - 15...10 %
Supply frequency	50...60 Hz - 5...5 %
Network number of phases	3 phases
Line current	21.3 A at 380 V, Isc = 22 kA 14.3 A at 460 V
Apparent power	11.4 kVA
Maximum transient current	18.9 A for 60 s 25.2 A for 2 s
Power dissipation in W	141.5 W at nominal load
Speed range	1…20
Asynchronous motor control profile	Quadratic voltage/frequency ratio Vector control with/without speed feedback Constant voltage/frequency ratio
Electrical connection	LI1...LI4 terminal 4 mm² L1, L2, L3, PA/+, PB, U, V, W terminal 4 mm² LO+, LO- terminal 4 mm² R1A, R1B, R1C terminal 4 mm² AO1 terminal 4 mm²
Supply	Internal supply for logic inputs: 19...30 V 100 mA, protection type: overload and short-circuit protection Internal supply for reference potentiometer (2.2 to 10 kOhm): 10...10.8 V 10 mA, protection type: overload and short-circuit protection
Communication port protocol	Modbus
IP degree of protection	IPx2 body
Option card	Communication card for Modbus TCP

Complementary

Variant	Reinforced version
Supply voltage limits	323…506 V
Network frequency	47.5...63 Hz
Prospective line Isc	22 kA
Continuous output current	12.6 A at 4 kHz
Output frequency	0.5…400 kHz
Nominal switching frequency	4 kHz
Switching frequency	2...12 kHz adjustable
Transient overtorque	170…200 % of nominal motor torque
Regulation loop	Frequency PI regulator
Motor slip compensation	Adjustable Suppressable Automatic whatever the load
Output voltage	<= power supply voltage
Tightening torque	LI1...LI4: 1.4 N.m L1, L2, L3, PA/+, PB, U, V, W: 1.4 N.m LO+, LO-: 1.4 N.m R1A, R1B, R1C: 1.4 N.m AO1: 1.4 N.m
Insulation	Electrical between power and control
Analogue input number	1
Analogue input type	AI1 configurable voltage or current 0...10 V, input voltage 30 V max, impedance: 30000 Ohm 20 ms 10 bits
Sampling duration	AI1: 20 ms analog LI1...LI4: 20 ms discrete
Analogue output number	1
Analogue output type	AO1 voltage/current: 0...20 mA, impedance: 800 Ohm, resolution: 8 bits
Discrete input logic	Positive logic (LI1...LI4), < 13 V (state 1)
Discrete output number	2
Discrete output type	Relay: (R1A, R1B, R1C) 1 NO + 1 NC - 100000 cycles
Minimum switching current	R1A, R1B, R1C 5 mA at 24 V DC
Maximum switching current	R/L1, S/L2, T/L3: 2 A at 250 V AC inductive load, cos phi = 0.4 and L/R = 7 ms R/L1, S/L2, T/L3: 2 A at 30 V DC inductive load, cos phi = 0.4 and L/R = 7 ms R/L1, S/L2, T/L3: 5 A at 250 V AC resistive load, cos phi = 1 and L/R = 0 ms R/L1, S/L2, T/L3: 5 A at 30 V DC resistive load, cos phi = 1 and L/R = 0 ms
Discrete input number	4
Discrete input type	(LI1...LI4) programmable as logic input at 24 V, 0…100 mA for PLC, impedance: 3500 Ohm
Acceleration and deceleration ramps	Linear adjustable separately from 0.1 to 999.9 s
Braking to standstill	By DC injection
Protection type	Short-circuit between motor phases: drive Overload protection (thermal): drive Overvoltage protection: drive Undervoltage protection: drive Earth fault: drive
Insulation resistance	>= 500 mOhm 500 V DC for 1 minute
Local signalling	1 LED (red) for drive voltage Four 7-segment display units for Modbus plus status
Time constant	5 ms for reference change
Frequency resolution	Analog input: 0.1...100 Hz Display unit: 0.1 Hz

Connector type	1 RJ45 for Modbus
Physical interface	RS485 multidrop serial link
Transmission frame	RTU
Transmission rate	4800, 9600 or 19200 bps for Modbus
Number of addresses	1…247 for Modbus
Number of drive	31 for Modbus
Marking	CE
Operating position	Vertical +/- 10 degree
Height	184 mm
Width	140 mm
Depth	151 mm
Net weight	1.8 kg

Environment

Dielectric strength	2410 V DC between earth and power terminals 3400 V AC between control and power terminals
Electromagnetic compatibility	1.2/50 µs - 8/20 µs surge immunity test level 3 conforming to IEC 61000-4-5 Electrical fast transient/burst immunity test level 4 conforming to IEC 61000-4-4 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
Standards	IEC 61800-5-1 IEC 61800-3
Product certifications	NOM CSA C-Tick GOST UL DNV
Pollution degree	2
Protective treatment	TC
Vibration resistance	1 gn (f= 13…150 Hz) conforming to EN/IEC 60068-2-6 1.5 mm (f= 3…13 Hz) 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…55 °C without derating (with protective cover on top of the drive) -10…65 °C with current derating 1.5 % per °C (without protective cover on top of the drive)
Operating altitude	<= 1000 m without derating 1000...3000 m with current derating 1 % per 100 m

Recommended replacement(s)

ATV303HU55N4E is replaced by:

1x 

variable speed drive ATV310, 5.5 kW, 7.5 hp, 380...460 V, 3 phase, without filter

ATV310HU55N4E