Product data sheet
Characteristics

ATV31CU75N4
enclosed variable speed drive ATV31 - 7.5kW - 500V - IP56



Main

Range of product	Altivar 31
Product or component type	Variable speed drive
Product destination	Asynchronous motors
Product specific application	Simple machine
Assembly style	Enclosed
Component name	ATV31
EMC filter	Integrated
Power supply voltage	380...500 V - 15...10 %
Power supply frequency	50...60 Hz - 5...5 %
Phase	3 phase
[Us] rated supply voltage	21 A 500 V 1 kA 27.7 A 380 V 1 kA
Switching frequency	17 A 4 kHz
Duration	25.5 A 60 s
Condition of use	269 W at nominal load
Asynchronous motor control profile	Sensorless flux vector control with PWM type motor control signal Factory set : constant torque
IP degree of protection	IP55

Complementary

Nominal switching frequency	4 kHz
Switching frequency	2...16 kHz adjustable
Braking torque	<= 150 % 60 s with braking resistor 100 % with braking resistor continuously 30 % without braking resistor
Regulation loop	Frequency PI regulator
Motor slip compensation	Automatic whatever the load Suppressable Adjustable
Output voltage	<= power supply voltage
Electrical connection	AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6 terminal 0.00 in² (2.5 mm²) AWG 14 L1, L2, L3, U, V, W, PA, PB, PA/+, PC/- terminal 0.00 in² (2.5 mm²) AWG 14
Terminal identifier	AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, LI1...LI6 5.31 lbf.in (0.6 N.m) L1, L2, L3, U, V, W, PA, PB, PA/+, PC/- 7.08 lbf.in (0.8 N.m)
Insulation	Electrical between power and control
Supply	Internal supply for logic inputs 19…30 V, <100 mA overload protection Internal supply for logic inputs 19…30 V, <100 mA short-circuit protection Internal supply for reference potentiometer 10…10.8 V, <10 mA overload protection Internal supply for reference potentiometer 10…10.8 V, <10 mA short-circuit protection
Analogue input type	AI3 configurable current 0...20 mA 250 Ohm AI1 configurable voltage 0...10 V 30 V max 30000 Ohm AI2 configurable voltage +/- 10 V 30 V max 30000 Ohm
Output response time	AOV, AOC 8 ms analog R1A, R1B, R1C, R2A, R2B 8 ms discrete
Linearity error	+/- 0.2 % output

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Analogue output type	AOC configurable current 0...20 mA 800 Ohm 8 bits AOV configurable voltage 0...10 V 470 Ohm 8 bits
Discrete input logic	Positive logic (source) LI1...LI6), < 5 V, > 11 V Logic input not wired LI1...LI4), < 13 V Negative logic (source) LI1...LI6), > 19 V
Discrete output type	Configurable relay logic R1A, R1B, R1C) 1 NO + 1 NC - 100000 cycles Configurable relay logic R2A, R2B) NC - 100000 cycles
Output circuit type	10 mA 5 V DC R1-R2
Cos phi	2 A 250 V AC inductive - cos phi = 0.4 - L/R = 7 ms R1-R2) 2 A 30 V DC inductive - cos phi = 0.4 - L/R = 7 ms R1-R2) 5 A 250 V AC resistive - cos phi = 1 - L/R = 0 ms R1-R2) 5 A 30 V DC resistive - cos phi = 1 - L/R = 0 ms R1-R2)
Discrete input type	LI1...LI6) programmable 24 V, 0…100 mA PLC 3500 Ohm
Acceleration and deceleration ramps	Linear adjustable separately from 0.1 to 999.9 s S, U or customized
Braking to standstill	By DC injection
Protection type	Input phase breaks drive Line supply overvoltage and undervoltage safety circuits drive Line supply phase loss safety function, for three phases supply drive Motor phase breaks drive Overcurrent between output phases and earth (on power up only) drive Overheating protection drive Short-circuit between motor phases drive Thermal protection motor
Insulation resistance	>= 500 mOhm 500 V DC for 1 minute
Local signalling	Drive voltage 1 LED red) CANopen bus status four 7-segment display units
Condition of use	5 ms for reference change
Frequency resolution	Display unit 0.1 Hz Analog input 0.1...100 Hz
Communication port protocol	Modbus CANopen
Connector type	1 RJ45 CANopen via VW3 CANTAP2 adaptor 1 RJ45 Modbus
Physical interface	RS485 multidrop serial link Modbus
Transmission frame	RTU Modbus
Transmission rate	10, 20, 50, 125, 250, 500 kbps or 1 Mbps CANopen via VW3 CANTAP2 adaptor 4800, 9600 or 19200 bps Modbus
Marking	CE
Operating position	Vertical +/- 10 degree

Environment

Network type	2410 V DC between earth and power terminals 3400 V AC between control and power terminals
Condition of tests	5…95 % without condensation IEC 60068-2-3 5…95 % without dripping water IEC 60068-2-3
Electromagnetic compatibility	1.2/50 µs - 8/20 µs surge immunity test level 3 IEC 61000-4-5 Electrical fast transient/burst immunity test level 4 IEC 61000-4-4 Electrostatic discharge immunity test level 3 IEC 61000-4-2 Radiated radio-frequency electromagnetic field immunity test level 3 IEC 61000-4-3
Standards	EN 50178
Product certifications	C-tick
Pollution degree	2
Protective treatment	TC
Vibration resistance	1 gn 13…150 Hz)EN/IEC 60068-2-6 1.5 mm 3…13 Hz)EN/IEC 60068-2-6
Shock resistance	15 gn 11 ms EN/IEC 60068-2-27
Derating factor	14…122 °F (-10…50 °C) without derating with protective cover on top of the drive) 14…140 °F (-10…60 °C) with derating factor without protective cover on top of the drive)
Operating altitude	<= 3280.84 ft (1000 m) without derating >= 3280.84 ft (1000 m) with current derating 1 % per 100 m

Ordering and shipping details

Category	22153 - ATV320/ATV312/ATV32 (10 THRU 30HP)
Discount Schedule	CP4B
GTIN	00785901592556
Nbr. of units in pkg.	1
Package weight(Lbs)	40.7 lb(US) (18.46 kg)
Returnability	No
Country of origin	FR

Packing Units

Unit Type of Package 1	PCE
Package 1 Height	16.14 in (41 cm)
Package 1 width	16.93 in (43 cm)
Package 1 Length	23.62 in (60 cm)

Offer Sustainability

REACh Regulation	REACh Declaration
EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope) EU RoHS Declaration
Mercury free	Yes
RoHS exemption information	Yes
China RoHS Regulation	China RoHS Declaration
WEEE	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins.

Contractual warranty

Warranty	18 months