Product data sheet
Characteristics

ATV71HD22N4
variable speed drive ATV71 - 22kW 30HP - 480V - EMC filter

Product availability: Stock - Normally stocked in distribution facility
Price*: 3710.00 USD

Main

Commercial Status	Commercialised
Range of product	Altivar 71
Product or component type	Variable speed drive
Product specific application	Complex, high-power machines
Component name	ATV71
Motor power kW	22 kW at 380...480 V 3 phases
Motor power hp	30 hp at 380...480 V 3 phases
Motor cable length	<= 200 m unshielded cable <= 100 m shielded cable
[Us] rated supply voltage	380...480 V (- 15...10 %)
Network number of phases	3 phases
Line current	50 A for 380 V 3 phases 22 kW / 30 hp 42 A for 480 V 3 phases 22 kW / 30 hp
EMC filter	Integrated
Assembly style	With heat sink
Apparent power	32.9 kVA at 380 V 3 phases 22 kW / 30 hp
Prospective line Isc	<= 22 kA, 3 phases
Nominal output current	48 A at 4 kHz 380 V 3 phases 22 kW / 30 hp 40 A at 4 kHz 460 V 3 phases 22 kW / 30 hp
Maximum transient current	79.2 A for 2 s 3 phases 22 kW / 30 hp 72 A for 60 s 3 phases 22 kW / 30 hp
Speed drive output frequency	0.1...599 Hz
Nominal switching frequency	4 kHz
Switching frequency	4...16 kHz with derating factor 1...16 kHz adjustable
Asynchronous motor control profile	ENA (Energy adaptation) system for unbalanced loads Flux vector control (FVC) with sensor (current vector) Sensorless flux vector control (SFVC) (voltage or current vector) Voltage/Frequency ratio (2 or 5 points)
Type of polarization	No impedance for Modbus

Complementary

Product destination	Asynchronous motors Synchronous motors
Supply voltage limits	323...528 V
Supply frequency	50...60 Hz (- 5...5 %)
Network frequency limits	47.5...63 Hz
Speed range	1...50 for synchronous motor in open-loop mode, without speed feedback 1...1000 for asynchronous motor in closed-loop mode with encoder feedback 1...100 for asynchronous motor in open-loop mode, without speed feedback
Speed accuracy	+/- 10 % of nominal slip for 0.2 Tn to Tn torque variation without speed feedback +/- 0.01 % of nominal speed for 0.2 Tn to Tn torque variation in closed-loop mode with encoder feedback
Torque accuracy	+/- 5 % in closed-loop mode with encoder feedback +/- 15 % in open-loop mode, without speed feedback
Transient overtorque	220 % of nominal motor torque +/- 10 % for 2 s 170 % of nominal motor torque +/- 10 % for 60 s every 10 minutes
Braking torque	30 % without braking resistor < 150 % with braking or hoist resistor
Synchronous motor control profile	Vector control without speed feedback
Regulation loop	Adjustable PI regulator
Motor slip compensation	Adjustable Automatic whatever the load Not available in voltage/frequency ratio (2 or 5 points) Suppressable
Local signalling	1 LED red presence of drive voltage
Output voltage	<= power supply voltage
Insulation	Electrical between power and control
Type of cable	Without mounting kit: 1-strand IEC cable at 113 °F (45 °C), copper 90 °C XLPE/EPR Without mounting kit: 1-strand IEC cable at 113 °F (45 °C), copper 70 °C PVC With an IP21 or an IP31 kit: 3-strand IEC cable at 104 °F (40 °C), copper 70 °C PVC With a NEMA Type1 kit: 3-strand UL 508 cable at 104 °F (40 °C), copper 75 °C PVC
Electrical connection	L1/R, L2/S, L3/T, U/T1, V/T2, W/T3, PC/-, PO, PA/+, PA, PB terminal 50 mm² / AWG 1/0 AI1-/AI1+, AI2, AO1, R1A, R1B, R1C, R2A, R2B, LI1...LI6, PWR terminal 2.5 mm² / AWG 14
Tightening torque	L1/R, L2/S, L3/T, U/T1, V/T2, W/T3, PC/-, PO, PA/+, PA, PB 106.19 lbf.in (12 N.m) / 102.2 lb.in AI1-/AI1+, AI2, AO1, R1A, R1B, R1C, R2A, R2B, LI1...LI6, PWR 5.31 lbf.in (0.6 N.m)
Supply	Internal supply, 24 V DC, voltage limits 21...27 V, <= 200 mA for overload and short-circuit protection Internal supply for reference potentiometer (1 to 10 kOhm), 10.5 V DC +/- 5 %, <= 10 mA for overload and short-circuit protection
Analogue input number	2
Analogue input type	AI2 software-configurable voltage 0...10 V DC, input voltage 24 V max, impedance 30000 Ohm, resolution 11 bits AI2 software-configurable current 0...20 mA, impedance 242 Ohm, resolution 11 bits AI1-/AI1+ bipolar differential voltage +/- 10 V DC, input voltage 24 V max, resolution 11 bits + sign
Sampling duration	LI6 (if configured as logic input) 2 ms, +/- 0.5 ms for discrete input(s) LI1...LI5 2 ms, +/- 0.5 ms for discrete input(s) AI2 2 ms, +/- 0.5 ms for analog input(s) AI1-/AI1+ 2 ms, +/- 0.5 ms for analog input(s)
Response time	R2A, R2B 7 ms, tolerance +/- 0.5 ms for discrete output(s) R1A, R1B, R1C 7 ms, tolerance +/- 0.5 ms for discrete output(s) AO1 2 ms, tolerance +/- 0.5 ms for analog output(s) <= 100 ms in STO (Safe Torque Off)
Accuracy	AO1 +/- 1 % for a temperature variation 60 °C AI2 +/- 0.6 % for a temperature variation 60 °C AI1-/AI1+ +/- 0.6 % for a temperature variation 60 °C
Linearity error	AO1 +/- 0.2 % AI1-/AI1+, AI2 +/- 0.15 % of maximum value
Analogue output number	1

Analogue output type	AO1 software-configurable voltage 0...10 V DC, impedance 470 Ohm, resolution 10 bits AO1 software-configurable current 0...20 mA, impedance 500 Ohm, resolution 10 bits AO1 software-configurable logic output 10 V <= 20 mA
Discrete output number	2
Discrete output type	R2A, R2B configurable relay logic NO, electrical durability 100000 cycles R1A, R1B, R1C configurable relay logic NO/NC, electrical durability 100000 cycles
Minimum switching current	Configurable relay logic 3 mA at 24 V DC
Maximum switching current	R1, R2 on resistive load, 5 A at 30 V DC, cos phi = 1, R1, R2 on resistive load, 5 A at 250 V AC, cos phi = 1, R1, R2 on inductive load, 2 A at 30 V DC, cos phi = 0.4, R1, R2 on inductive load, 2 A at 250 V AC, cos phi = 0.4,
Discrete input number	7
Discrete input type	PWR: safety input 24 V DC, impedance: 1500 Ohm conforming to ISO 13849-1 level d LI6: switch-configurable PTC probe 0...6, impedance: 1500 Ohm LI6: switch-configurable 24 V DC with level 1 PLC, impedance: 3500 Ohm LI1...LI5: programmable 24 V DC with level 1 PLC, impedance: 3500 Ohm
Discrete input logic	LI6 (if configured as logic input) positive logic (source), < 5 V (state 0), > 11 V (state 0) LI6 (if configured as logic input) negative logic (sink), > 16 V (state 0), < 10 V (state 0) LI1...LI5 positive logic (source), < 5 V (state 0), > 11 V (state 0) LI1...LI5 negative logic (sink), > 16 V (state 0), < 10 V (state 0)
Acceleration and deceleration ramps	Automatic adaptation of ramp if braking capacity exceeded, by using resistor Linear adjustable separately from 0.01 to 9000 s S, U or customized
Braking to standstill	By DC injection
Protection type	Motor thermal protection Motor power removal Motor motor phase break Drive thermal protection Drive short-circuit between motor phases Drive overvoltages on the DC bus Drive overheating protection Drive overcurrent between output phases and earth Drive line supply undervoltage Drive line supply overvoltage Drive input phase breaks Drive break on the control circuit Drive against input phase loss Drive against exceeding limit speed
Insulation resistance	> 1 mOhm at 500 V DC for 1 minute to earth
Frequency resolution	Display unit 0.1 Hz Analog input 0.024/50 Hz
Communication port protocol	CANopen Modbus
Type of connector	Male SUB-D 9 on RJ45 for CANopen 1 RJ45 for Modbus on terminal 1 RJ45 for Modbus on front face
Physical interface	2-wire RS 485 for Modbus
Transmission frame	RTU for Modbus
Transmission rate	9600 bps, 19200 bps for Modbus on front face 4800 bps, 9600 bps, 19200 bps, 38.4 Kbps for Modbus on terminal 20 kbps, 50 kbps, 125 kbps, 250 kbps, 500 kbps, 1 Mbps for CANopen
Data format	8 bits, odd even or no configurable parity for Modbus on terminal 8 bits, 1 stop, even parity for Modbus on front face
Number of addresses	1...247 for Modbus 1...127 for CANopen
Method of access	Slave for CANopen
Marking	CE
Operating position	Vertical +/- 10 degree
Height	16.54 in (420 mm)
Depth	9.29 in (236 mm)
Width	9.06 in (230 mm)

Product weight	66.14 lb(US) (30 kg)
Option card	Profibus DP V1 communication card Profibus DP communication card Overhead crane card Modbus/Uni-Telway communication card Modbus TCP communication card Modbus Plus communication card Interface card for encoder Interbus-S communication card I/O extension card Fipio communication card Ethernet/IP communication card DeviceNet communication card Controller inside programmable card CC-Link communication card

Environment

Noise level	59.9 dB conforming to 86/188/EEC
Dielectric strength	5092 V DC between control and power terminals 3535 V DC between earth and power terminals
Electromagnetic compatibility	Voltage dips and interruptions immunity test conforming to IEC 61000-4-11 Radiated radio-frequency electromagnetic field immunity test conforming to IEC 61000-4-3 level 3 Electrostatic discharge immunity test conforming to IEC 61000-4-2 level 3 Electrical fast transient/burst immunity test conforming to IEC 61000-4-4 level 4 Conducted radio-frequency immunity test conforming to IEC 61000-4-6 level 3 1.2/50 µs - 8/20 µs surge immunity test conforming to IEC 61000-4-5 level 3
Standards	EN 55011 class A group 2 EN 61800-3 environments 1 category C3 EN 61800-3 environments 2 category C3 EN/IEC 61800-3 EN/IEC 61800-5-1 IEC 60721-3-3 class 3C1 IEC 60721-3-3 class 3S2 UL Type 1
Product certifications	CSA C-Tick GOST NOM 117 UL
Pollution degree	3 conforming to UL 840 2 conforming to EN/IEC 61800-5-1
IP degree of protection	IP54 on lower part conforming to EN/IEC 61800-5-1 IP54 on lower part conforming to EN/IEC 60529 IP41 on upper part conforming to EN/IEC 61800-5-1 IP41 on upper part conforming to EN/IEC 60529 IP21 conforming to EN/IEC 61800-5-1 IP21 conforming to EN/IEC 60529 IP20 on upper part without blanking plate on cover conforming to EN/IEC 61800-5-1 IP20 on upper part without blanking plate on cover conforming to EN/IEC 60529
Vibration resistance	1.5 mm peak to peak (f = 3...13 Hz) conforming to EN/IEC 60068-2-6 1 gn (f = 13...200 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 dripping water conforming to IEC 60068-2-3 5...95 % without condensation conforming to IEC 60068-2-3
Ambient air temperature for operation	14...122 °F (-10...50 °C) without derating
Ambient air temperature for storage	-13...158 °F (-25...70 °C)
Operating altitude	3280.84...9842.52 ft (1000...3000 m) with current derating 1 % per 100 m <= 3280.84 ft (1000 m) without derating

Ordering and shipping details

Category	22131 - ATV71 460V 7.5 THRU 20HP DRIVES
Discount Schedule	CP4C
GTIN	00785901605256
Nbr. of units in pkg.	1
Package weight(Lbs)	63.98
Product availability	Stock - Normally stocked in distribution facility
Returnability	Y
Country of origin	CN

Offer Sustainability

Sustainable offer status	Green Premium product
RoHS	Compliant - since 0946 - Schneider Electric declaration of conformity
REACh	Reference contains SVHC above the threshold - go to CaP for more details
Product environmental profile	Available Download Product Environmental
Product end of life instructions	Available Download End Of Life Manual

Contractual warranty

Period	18 months

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