Product data sheet
Characteristics

ATV71HD37N4
variable speed drive ATV71 - 37kW-50HP - 480V - EMC filter-graphic terminal

Product availability : Stock - Normally stocked in distribution facility

Green Premium™

Price* : 6,175.50 USD

Discontinued

Commercial status

Discontinued on: 02 December 2020

End-of-service on: 31 December 2020

Main

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	37 kW, 3 phase 380...480 V
Maximum Horse Power Rating	50 hp, 3 phase 380...480 V
Maximum motor cable length	328.08 ft (100 m) shielded cable 656.17 ft (200 m) unshielded cable
Power supply voltage	380...480 V - 15...10 %
Phase	3 phase
Line current	69 A 480 V 3 phase 37 kW / 50 hp 84 A 380 V 3 phase 37 kW / 50 hp
EMC filter	Integrated
Assembly style	With heat sink
Apparent power	55.3 kVA 380 V 3 phase 37 kW / 50 hp
Prospective line Isc	22 kA 3 phase
Nominal output current	65 A 2.5 kHz 460 V 3 phase 37 kW / 50 hp 79 A 2.5 kHz 380 V 3 phase 37 kW / 50 hp
Maximum transient current	130 A 2 s 3 phase 37 kW / 50 hp 118.5 A 60 s 3 phase 37 kW / 50 hp
Output frequency	0.1…599 Hz
Nominal switching frequency	2.5 kHz
Switching frequency	1...16 kHz adjustable 2.5...16 kHz with derating factor
Asynchronous motor control profile	ENA (Energy adaptation) system for unbalanced loads Voltage/frequency ratio (2 or 5 points) Flux vector control (FVC) with sensor (current vector) Sensorless flux vector control (SFVC) (voltage or current vector)

* Price is “List Price” and may be subject to a trade discount – check with your local distributor or retailer for actual price.

Type of polarization	No impedance Modbus

Complementary

Product destination	Asynchronous motors Synchronous motors
Power supply voltage limits	323…528 V
Power supply frequency	50...60 Hz - 5...5 %
Power supply frequency limits	47.5...63 Hz
Speed range	1…100 asynchronous motor in open-loop mode, without speed feedback 1…1000 asynchronous motor in closed-loop mode with encoder feedback 1…50 synchronous motor in open-loop mode, without speed feedback
Speed accuracy	+/- 0.01 % of nominal speed in closed-loop mode with encoder feedback 0.2 Tn to Tn +/- 10 % of nominal slip without speed feedback 0.2 Tn to Tn
Torque accuracy	+/- 15 % in open-loop mode, without speed feedback +/- 5 % in closed-loop mode with encoder feedback
Transient overtorque	170 % +/- 10 % 60 s every 10 minutes 220 % +/- 10 % 2 s
Braking torque	<= 150 % with braking or hoist resistor 30 % without braking resistor
Synchronous motor control profile	Vector control without speed feedback
Regulation loop	Adjustable PI regulator
Motor slip compensation	Automatic whatever the load Suppressable Not available in voltage/frequency ratio (2 or 5 points) Adjustable
Diagnostic	Drive voltage 1 LED red)
Output voltage	<= power supply voltage
Insulation	Electrical between power and control
Type of cable for mounting in an enclosure	With a NEMA Type1 kit 3 UL 508 cable 104 °F (40 °C), copper 75 °C / PVC With an IP21 or an IP31 kit 3 IEC cable 104 °F (40 °C), copper 70 °C / PVC Without mounting kit 1 IEC cable 113 °F (45 °C), copper 70 °C / PVC Without mounting kit 1 IEC cable 113 °F (45 °C), copper 90 °C / XLPE/EPR
Electrical connection	Terminal 2.5 mm², AWG 14 AI1-/AI1+, AI2, AO1, R1A, R1B, R1C, R2A, R2B, LI1...LI6, PWR) Terminal 50 mm², AWG 1/0 L1/R, L2/S, L3/T, U/T1, V/T2, W/T3, PC/-, PO, PA/+, PA, PB)
Tightening torque	5.31 lbf.in (0.6 N.m) AI1-/AI1+, AI2, AO1, R1A, R1B, R1C, R2A, R2B, LI1...LI6, PWR) 106.21 lbf.in (12 N.m), 102.2 lb.in L1/R, L2/S, L3/T, U/T1, V/T2, W/T3, PC/-, PO, PA/+, PA, PB)
Supply	Internal supply for reference potentiometer (1 to 10 kOhm) 10.5 V DC +/- 5 %, <10 mA overload and short-circuit protection Internal supply 24 V DC 21…27 V), <200 mA overload and short-circuit protection
Analogue input number	2
Analogue input type	AI1-/AI1+ bipolar differential voltage +/- 10 V DC 24 V max 11 bits + sign AI2 software-configurable current 0...20 mA 242 Ohm 11 bits AI2 software-configurable voltage 0...10 V DC 24 V max 30000 Ohm 11 bits
Input sampling time	2 ms +/- 0.5 ms AI1-/AI1+) - analog 2 ms +/- 0.5 ms AI2) - analog 2 ms +/- 0.5 ms LI1...LI5) - discrete 2 ms +/- 0.5 ms LI6)if configured as logic input - discrete
Response time	<= 100 ms in STO (Safe Torque Off) AO1 2 ms +/- 0.5 ms analog R1A, R1B, R1C 7 ms +/- 0.5 ms discrete R2A, R2B 7 ms +/- 0.5 ms discrete
Absolute accuracy precision	+/- 0.6 % AI1-/AI1+) for a temperature variation 60 °C +/- 0.6 % AI2) for a temperature variation 60 °C +/- 1 % AO1) for a temperature variation 60 °C
Linearity error	+/- 0.15 % of maximum value AI1-/AI1+, AI2) +/- 0.2 % AO1)
Analogue output number	1
Analogue output type	AO1 software-configurable logic output 10 V 20 mA AO1 software-configurable current 0...20 mA 500 Ohm 10 bits AO1 software-configurable voltage 0...10 V DC 470 Ohm 10 bits
Discrete output number	2
Discrete output type	Configurable relay logic R1A, R1B, R1C) NO/NC - 100000 cycles

	Configurable relay logic R2A, R2B) NO - 100000 cycles
Minimum switching current	3 mA 24 V DC configurable relay logic
Maximum switching current	R1, R2 2 A 250 V AC inductive, cos phi = 0.4 R1, R2 2 A 30 V DC inductive, cos phi = 0.4 R1, R2 5 A 250 V AC resistive, cos phi = 1 R1, R2 5 A 30 V DC resistive, cos phi = 1
Discrete input number	7
Discrete input type	LI1...LI5 programmable 24 V DC level 1 PLC 3500 Ohm LI6 switch-configurable 24 V DC level 1 PLC 3500 Ohm LI6 switch-configurable PTC probe 0…6 1500 Ohm PWR safety input 24 V DC 1500 Ohm ISO 13849-1 level d
Discrete input logic	Negative logic (sink) LI1...LI5), > 16 V, < 10 V Positive logic (source) LI1...LI5), < 5 V, > 11 V Negative logic (sink) LI6)if configured as logic input, > 16 V, < 10 V Positive logic (source) LI6)if configured as logic input, < 5 V, > 11 V
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	Against exceeding limit speed drive Against input phase loss drive Break on the control circuit drive Input phase breaks drive Line supply overvoltage drive Line supply undervoltage drive Overcurrent between output phases and earth drive Overheating protection drive Overvoltages on the DC bus drive Short-circuit between motor phases drive Thermal protection drive Motor phase break motor Power removal motor Thermal protection motor
Insulation resistance	> 1 mOhm 500 V DC for 1 minute to earth
Frequency resolution	Analog input 0.024/50 Hz Display unit 0.1 Hz
Communication port protocol	Modbus CANopen
Connector type	1 RJ45 on front face)Modbus 1 RJ45 on terminal)Modbus Male SUB-D 9 on RJ45CANopen
Physical interface	2-wire RS 485 Modbus
Transmission frame	RTU Modbus
Transmission rate	4800 bps, 9600 bps, 19200 bps, 38.4 Kbps Modbus on terminal 9600 bps, 19200 bps Modbus on front face 20 kbps, 50 kbps, 125 kbps, 250 kbps, 500 kbps, 1 Mbps CANopen
Data format	8 bits, 1 stop, even parity Modbus on front face 8 bits, odd even or no configurable parity Modbus on terminal
Number of addresses	1…127 CANopen 1…247 Modbus
Method of access	Slave CANopen
Marking	CE
Operating position	Vertical +/- 10 degree
Height	21.65 in (550 mm)
Depth	10.47 in (266 mm)
Width	9.45 in (240 mm)
Net Weight	81.57 lb(US) (37 kg)
Functionality	Full
Specific application	Other applications
Option card	Communication card CC-Link Controller inside programmable card Communication card DeviceNet Communication card Ethernet/IP Communication card Fipio

	I/O extension card Communication card Interbus-S Interface card for encoder Communication card Modbus Plus Communication card Modbus TCP Communication card Modbus/Uni-Telway Overhead crane card Communication card Profibus DP Communication card Profibus DP V1

Environment

Noise level	64 dB 86/188/EEC
Dielectric strength	3535 V DC between earth and power terminals 5092 V DC between control and power terminals
Electromagnetic compatibility	1.2/50 µs - 8/20 µs surge immunity test level 3 IEC 61000-4-5 Conducted radio-frequency immunity test level 3 IEC 61000-4-6 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 Voltage dips and interruptions immunity test IEC 61000-4-11
Standards	EN/IEC 61800-5-1 EN/IEC 61800-3 EN 61800-3 environments 1 category C3 EN 61800-3 environments 2 category C3 EN 55011 class A group 2 IEC 60721-3-3 class 3S2 IEC 60721-3-3 class 3C1 UL Type 1
Product certifications	UL GOST CSA C-tick NOM 117
Pollution degree	2 EN/IEC 61800-5-1 3 UL 840
IP degree of protection	IP20
Vibration resistance	1 gn 13…200 Hz)EN/IEC 60068-2-6 1.5 mm peak to peak 3…13 Hz)EN/IEC 60068-2-6
Shock resistance	15 gn 11 ms EN/IEC 60068-2-27
Relative humidity	5…95 % without condensation IEC 60068-2-3 5…95 % without dripping water 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 ft (1000 m) without derating 3280.84...9842.52 ft (1000...3000 m) with current derating 1 % per 100 m

Ordering and shipping details

Category	22131 - ATV71 - 7.5 THRU 50HP
Discount Schedule	CP4C
GTIN	00785901805038
Nbr. of units in pkg.	1
Package weight(Lbs)	1 lb(US) (0.45 kg)
Returnability	No
Country of origin	IN

Packing Units

Package 1 Height	4.650 dm
Package 1 width	8.000 dm
Package 1 Length	6.000 dm

Offer Sustainability

Sustainable offer status	Green Premium product
California proposition 65	WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov
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
Environmental Disclosure	Product Environmental Profile
Circularity Profile	End of Life Information
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

ATV71HD37N4 may be replaced by any of the following products:

Drive Products ATV930D45N4

variable speed drive, ATV930, 45kW, 400/480V, with braking unit, IP21

Qty 1

Reason for Substitution: End of life | Substitution date: 01 April 2016

Drive Products ATV930D37N4

variable speed drive, ATV930, 37kW, 400/480V, with braking unit, IP21

Qty 1

Reason for Substitution: End of life | Substitution date: 01 April 2016

Variable speed drives ATV340D37N4E

variable speed drive - 37kW- 400V - 3 phases - ATV340 Ethernet

Qty 1

Reason for Substitution: End of life | Substitution date: 01 April 2016