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

Product availability: Stock - Normally stocked in distribution facility

Price**: 6,175.50 USD

Commercial status

Discontinued: 01 January 2018
End-of-service: 01 January 2026

ATV71HD37N4 has not been replaced. Please contact your customer care center for more information.

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)
**Type of polarization**

No impedance, Modbus

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### Complementary

<table>
<thead>
<tr>
<th>Product destination</th>
<th>Asynchronous motors</th>
<th>Synchronous motors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply voltage limits</td>
<td>323...528 V</td>
<td></td>
</tr>
<tr>
<td>Power supply frequency</td>
<td>50…60 Hz - 5…5 %</td>
<td></td>
</tr>
<tr>
<td>Power supply frequency limits</td>
<td>47.5...63 Hz</td>
<td></td>
</tr>
<tr>
<td>Speed range</td>
<td>1…100 asynchronous motor in open-loop mode, without speed feedback</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1…1000 asynchronous motor in closed-loop mode with encoder feedback</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1…50 synchronous motor in open-loop mode, without speed feedback</td>
<td></td>
</tr>
<tr>
<td>Speed accuracy</td>
<td>+/- 0.01 % of nominal speed in closed-loop mode with encoder feedback 0.2 Tn to Tn</td>
<td></td>
</tr>
<tr>
<td></td>
<td>+/- 10 % of nominal slip without speed feedback 0.2 Tn to Tn</td>
<td></td>
</tr>
<tr>
<td>Torque accuracy</td>
<td>+/- 15 % in open-loop mode, without speed feedback</td>
<td></td>
</tr>
<tr>
<td></td>
<td>+/- 5 % in closed-loop mode with encoder feedback</td>
<td></td>
</tr>
<tr>
<td>Transient overtorque</td>
<td>170 % +/- 10 % 60 s every 10 minutes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>220 % +/- 10 % 2 s</td>
<td></td>
</tr>
<tr>
<td>Braking torque</td>
<td>&lt;= 150 % with braking or hoist resistor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>30 % without braking resistor</td>
<td></td>
</tr>
<tr>
<td>Synchronous motor control profile</td>
<td>Vector control without speed feedback</td>
<td></td>
</tr>
<tr>
<td>Regulation loop</td>
<td>Adjustable PI regulator</td>
<td></td>
</tr>
<tr>
<td>Motor slip compensation</td>
<td>Automatic whatever the load</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Suppressable</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not available in voltage/frequency ratio (2 or 5 points)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adjustable</td>
<td></td>
</tr>
<tr>
<td>Diagnostic</td>
<td>Drive voltage 1 LED red</td>
<td></td>
</tr>
<tr>
<td>Output voltage</td>
<td>&lt;= power supply voltage</td>
<td></td>
</tr>
</tbody>
</table>

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### 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, L11...L16, 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, L11...L16, PWR)

106.21 lbf.in (12 N.m), 102.2 lbf.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

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### 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

### 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)

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### 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

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### Discrete output number

2

### Discrete output type

Configurable relay logic R1A, R1B, R1C) NO/NC - 100000 cycles
<table>
<thead>
<tr>
<th><strong>Configurable relay logic R2A, R2B)</strong></th>
<th>NO - 100000 cycles</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Minimum switching current</strong></td>
<td>3 mA 24 V DC configurable relay logic</td>
</tr>
</tbody>
</table>
| **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 |
## Environment

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Noise level</strong></td>
<td>64 dB 86/188/EEC</td>
</tr>
<tr>
<td><strong>Dielectric strength</strong></td>
<td>3535 V DC between earth and power terminals</td>
</tr>
<tr>
<td></td>
<td>5092 V DC between control and power terminals</td>
</tr>
<tr>
<td><strong>Electromagnetic compatibility</strong></td>
<td>1.2-50 µs - 8/20 µs surge immunity test level 3 IEC 61000-4-5</td>
</tr>
<tr>
<td></td>
<td>Conducted radio-frequency immunity test level 3 IEC 61000-4-6</td>
</tr>
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<td></td>
<td>Electrical fast transient/burst immunity test level 4 IEC 61000-4-4</td>
</tr>
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<td></td>
<td>Electrostatic discharge immunity test level 3 IEC 61000-4-2</td>
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<tr>
<td></td>
<td>Radiated radio-frequency electromagnetic field immunity test level 3 IEC 61000-4-3</td>
</tr>
<tr>
<td></td>
<td>Voltage dips and interruptions immunity test IEC 61000-4-11</td>
</tr>
<tr>
<td><strong>Standards</strong></td>
<td>EN/IEC 61800-5-1</td>
</tr>
<tr>
<td></td>
<td>EN/IEC 61800-3</td>
</tr>
<tr>
<td></td>
<td>EN 61800-3 environments 1 category C3</td>
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<td></td>
<td>EN 61800-3 environments 2 category C3</td>
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<tr>
<td></td>
<td>EN 55011 class A group 2</td>
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<td></td>
<td>IEC 60721-3-3 class 3S2</td>
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<td>IEC 60721-3-3 class 3C1</td>
</tr>
<tr>
<td></td>
<td>UL Type 1</td>
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</tbody>
</table>

### 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

### Ambient air temperature for storage

- -13…158 °F (-25…70 °C)

### Operating altitude

- <= 3280.84 ft (1000 m) without
- 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

### Package weight(Lbs)

- 33.93 kg (74.8 lb(US))

### Returnability

- Yes

### Country of origin

- IN

## 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 Carcinogen & 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
<table>
<thead>
<tr>
<th><strong>Mercury free</strong></th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RoHS exemption information</strong></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>China RoHS Regulation</strong></td>
<td>China RoHS declaration</td>
</tr>
<tr>
<td><strong>Environmental Disclosure</strong></td>
<td>Product Environmental Profile</td>
</tr>
<tr>
<td><strong>Circularity Profile</strong></td>
<td>End of Life Information</td>
</tr>
<tr>
<td><strong>WEEE</strong></td>
<td>The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins.</td>
</tr>
</tbody>
</table>

**Contractual warranty**

| **Warranty** | 18 months |