ATV31HD15N4
variable speed drive ATV31 - 15kW - 500V 3-phase supply - EMC filter - IP20

Discontinued

Main
Range of product
Altivar
Product or component type
Variable speed drive
Product specific application
Simple machine
Component name
ATV31
Assembly style
With heat sink
EMC filter
Integrated
[Us] rated supply voltage
380...500 V - 5...5 %
Supply frequency
50...60 Hz - 5...5 %
Network number of phases
3 phases
Motor power kW
15 kW 4 kHz
Motor power hp
20 hp 4 kHz
Line current
36.8 A at 500 V
48.2 A at 380 V, Isc = 1 kA
Apparent power
32 kVA
Prospective line Isc
1 kA
Nominal output current
33 A 4 kHz
Maximum transient current
49.5 A for 60 s
Power dissipation in W
492 W at nominal load
Asynchronous motor control profile
Sensorless flux vector control with PWM type motor control signal
Factory set : constant torque
Analogue input number
3

Complementary
Product destination
Asynchronous motors
Supply voltage limits
323…550 V
Network frequency
47.5...63 Hz
Output frequency
0.0005…0.5 kHz
Nominal switching frequency
4 kHz
Switching frequency
2…16 kHz adjustable
Speed range
1…50
Transient overtorque
150…170 % of nominal motor torque
Braking torque
<= 150 % during 60 s with braking resistor
100 % with braking resistor continuously

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications.

Dec 30, 2019
<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulation loop</td>
<td>Frequency PI regulator</td>
</tr>
<tr>
<td>Motor slip compensation</td>
<td>Suppressable Automatic whatever the load Adjustable</td>
</tr>
<tr>
<td>Output voltage</td>
<td>&lt;= power supply voltage</td>
</tr>
<tr>
<td>Electrical connection</td>
<td>AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, L1...L6 terminal 2.5 mm² AWG 14</td>
</tr>
<tr>
<td>Tightening torque</td>
<td>AI1, AI2, AI3, AOV, AOC, R1A, R1B, R1C, R2A, R2B, L1...L6: 0.6 N.m</td>
</tr>
<tr>
<td>Insulation</td>
<td>Electrical between power and control</td>
</tr>
<tr>
<td>Supply</td>
<td>Internal supply for logic inputs: 19...30 V 100 mA, protection type: overload and short-circuit protection</td>
</tr>
<tr>
<td>Analogue input type</td>
<td>AI3 configurable current 0...20 mA, impedance: 250 Ohm</td>
</tr>
<tr>
<td>Sampling duration</td>
<td>L1, L2, L3, U, V, W, PA, PB, PA/+, PC/- terminal 2.5 mm² AWG 14</td>
</tr>
<tr>
<td>Response time</td>
<td>AOV, AOC 8 ms for analog R1A, R1B, R1C, R2A, R2B 8 ms for discrete</td>
</tr>
<tr>
<td>Linearity error</td>
<td>+/- 0.2 % for output</td>
</tr>
<tr>
<td>Analogue output number</td>
<td>2</td>
</tr>
<tr>
<td>Analogue output type</td>
<td>AOC configurable current: 0...20 mA, impedance: 800 Ohm, resolution: 8 bits</td>
</tr>
<tr>
<td>Discrete input logic</td>
<td>Positive logic (source) (L1...L6), &lt; 5 V (state 0), &gt; 11 V (state 1)</td>
</tr>
<tr>
<td>Discrete output number</td>
<td>2</td>
</tr>
<tr>
<td>Discrete output type</td>
<td>Configurable relay logic: (R1A, R1B, R1C) 1 NO + 1 NC - 100000 cycles</td>
</tr>
<tr>
<td>Minimum switching current</td>
<td>R1-R2: 10 mA at 5 V DC</td>
</tr>
<tr>
<td>Maximum switching current</td>
<td>R1-R2: 2 A at 250 V AC inductive load, cos phi = 0.4 and L/R = 7 ms</td>
</tr>
<tr>
<td>Discrete input number</td>
<td>6</td>
</tr>
<tr>
<td>Discrete input type</td>
<td>(L1...L6) programmable at 24 V, 0...100 mA for PLC, impedance: 3500 Ohm</td>
</tr>
<tr>
<td>Acceleration and deceleration ramps</td>
<td>S, U or customized Linear adjustable separately from 0.1 to 999.9 s</td>
</tr>
<tr>
<td>Braking to standstill</td>
<td>By DC injection</td>
</tr>
<tr>
<td>Protection type</td>
<td>Input phase breaks: drive</td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>&gt;= 500 mOhm 500 V DC for 1 minute</td>
</tr>
<tr>
<td>Display type</td>
<td>1 LED (red) for drive voltage</td>
</tr>
<tr>
<td>Time constant</td>
<td>5 ms for reference change</td>
</tr>
<tr>
<td>Frequency resolution</td>
<td>Display unit: 0.1 Hz Analog input: 0.1...100 Hz</td>
</tr>
<tr>
<td>Connector type</td>
<td>1 RJ45 for CANopen via VW3 CANTAP2 adaptor 1 RJ45 for Modbus</td>
</tr>
<tr>
<td>Physical interface</td>
<td>RS485 multidrop serial link for CANopen via VW3 CANTAP2 adaptor</td>
</tr>
<tr>
<td>Transmission frame</td>
<td>RTU for CANopen via VW3 CANTAP2 adaptor RTU for Modbus</td>
</tr>
</tbody>
</table>
Transmission rate
10, 20, 50, 125, 250, 500 kbps or 1 Mbps for CANopen via VW3 CANTAP2 adaptor
4800, 9600 or 19200 bps for Modbus

Number of addresses
1…127 for CANopen via VW3 CANTAP2 adaptor
1…247 for Modbus

Number of drive
127 for CANopen via VW3 CANTAP2 adaptor
31 for Modbus

Marking
CE

Operating position
Vertical +/- 10 degree

Outer dimension
595 x 234 x 268 mm
330 x 245 x 190 mm
390 x 245 x 190 mm

Net weight
11 kg

Environment

Dielectric strength
2410 V DC between earth and power terminals
3400 V AC between control and power terminals

Electromagnetic compatibility
1.25/50 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
EN 50178

Product certifications
N998
C-Tick
UL
CSA

IP degree of protection
On upper part: IP20 (without cover plate)
On connection terminals: IP21
On upper part: IP31
On upper part: IP41

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…50 °C without (with protective cover on top of the drive)
-10…60 °C with derating factor (without protective cover on top of the drive)

Operating altitude
<= 1000 m without
>= 1000 m with current derating 1 % per 100 m

Contractual warranty

Warranty
18 months

ATV31HD15N4 is replaced by:

Variable speed drives ATV312HD15N4
variable speed drive ATV312 - 15kW - 32kVA - 492 W - 380..500 V - 3-phase supply
Qty 1
Reason for Substitution: End of life | Substitution date: 20 April 2009