### Product data sheet

**ATV12HU30M3**

**variable speed drive ATV12 - 3kW - 200..240V - 3ph - with heat sink**

Product availability: Stock - Normally stocked in distribution facility

**Price**: 395.00 USD

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### Characteristics

#### Main

- **Range of product**: Altivar 12
- **Product or component type**: Variable speed drive
- **Product destination**: Asynchronous motors
- **Product specific application**: Simple machine
- **Assembly style**: With heat sink
- **Component name**: ATV12
- **Quantity per set**: Set of 1
- **EMC filter**: Without EMC filter
- **Built-in fan**: With
- **Phase**: 3 phase
- **[Us] rated supply voltage**: 200...240 V - 15...10 %
- **Motor power kW**: 3 kW
- **Maximum Horse Power Rating**: 4 hp
- **Communication port protocol**: Modbus
- **Line current**: 19 A 200 V  
  15.9 A 240 V
- **Speed range**: 1…20
- **Transient overtorque**: 150…170 % of nominal motor torque depending on drive rating and type of motor
- **Asynchronous motor control profile**: Sensorless flux vector control  
  Quadratic voltage/frequency ratio  
  Voltage/frequency ratio (V/f)
- **IP degree of protection**: IP20 without blanking plate on upper part
- **Noise level**: 50 dB

#### Complementary

- **Supply frequency**: 50/60 Hz +/- 5 %
- **Connector type**: 1 RJ45 on front face)Modbus
- **Physical interface**: 2-wire RS 485 Modbus
- **Transmission frame**: RTU Modbus
- **Transmission rate**: 4800 bit/s  
  9600 bit/s

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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

Jun 13, 2020
### Communication service
- Read holding registers (03) 29 words
- Write single register (06) 29 words
- Write multiple registers (16) 27 words
- Read/write multiple registers (23) 4/4 words
- Read device identification (43)

### Prospective line Isc
- 5 kA

### Continuous output current
- 12.2 A 4 kHz

### Maximum transient current
- 18.3 A 60 s

### Speed drive output frequency
- 0.5…400 Hz

### Nominal switching frequency
- 4 kHz

### Switching frequency
- 2…16 kHz adjustable
- 4…16 kHz with derating factor

### Braking torque
- Up to 70 % of nominal motor torque without braking resistor

### Motor slip compensation
- Adjustable
- Preset in factory

### Output voltage
- 200…240 V 3 phase

### Electrical connection
- Terminal 5.5 mm², AWG 10 L1, L2, L3, U, V, W, PA, PC)

### Tightening torque
- 10.62 lbf.in (1.2 N.m)

### Insulation
- Electrical between power and control

### Supply
- Internal supply for reference potentiometer 5 V DC 4.75…5.25 V), <10 mA overload and short-circuit protection
- Internal supply for logic inputs 24 V DC 20.4…28.8 V), <100 mA overload and short-circuit protection

### Analogue input number
- 1

##### Analogue input type
- Configurable current AI1 0...20 mA 250 Ohm
- Configurable voltage AI1 0...10 V 30 kOhm
- Configurable voltage AI1 0...5 V 30 kOhm

### Discrete input number
- 4

##### Discrete input type
- Programmable LI1...LI4 24 V 18...30 V

##### Discrete input logic
- Negative logic (sink), > 16 V, < 10 V 3.5 kOhm
- Positive logic (source), 0...< 5 V, > 11 V

### Sampling duration
- 20 ms +/- 1 ms logic input
- 10 ms analogue input

### Linearity error
- +/- 0.3 % of maximum value analogue input

### Analogue output number
- 1

##### Analogue output type
- AO1 software-configurable voltage 0...10 V 470 Ohm 8 bits
- AO1 software-configurable current 0...20 mA 800 Ohm 8 bits

### Discrete output number
- 2

##### Discrete output type
- Logic output LO+, LO-
- Protected relay output R1A, R1B, R1C 1 C/O

### Minimum switching current
- 5 mA 24 V DC logic relay

### Maximum switching current
- 2 A 250 V AC inductive cos phi = 0.4 L/R = 7 ms logic relay
- 2 A 30 V DC inductive cos phi = 0.4 L/R = 7 ms logic relay
- 3 A 250 V AC resistive cos phi = 0.4 L/R = 7 ms logic relay
- 4 A 30 V DC resistive cos phi = 1 L/R = 0 ms logic relay

### Acceleration and deceleration ramps
- Linear from 0 to 999.9 s
- S
- U

### Braking to standstill
- By DC injection, <30 s

### Protection type
- Line supply overvoltage
- Line supply undervoltage
- Overcurrent between output phases and earth
- Overheating protection
- Short-circuit between motor phases
- Against input phase loss in three-phase
- Thermal motor protection via the drive by continuous calculation of I^2t

### Frequency resolution
- Analog input converter A/D, 10 bits
- Display unit 0.1 Hz

### Time constant
- 20 ms +/- 1 ms for reference change
<table>
<thead>
<tr>
<th>Marking</th>
<th>CE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating position</td>
<td>Vertical +/- 10 degree</td>
</tr>
<tr>
<td>Height</td>
<td>7.24 in (184 mm)</td>
</tr>
<tr>
<td>Width</td>
<td>5.51 in (140 mm)</td>
</tr>
<tr>
<td>Depth</td>
<td>5.56 in (141.2 mm)</td>
</tr>
<tr>
<td>Net weight</td>
<td>4.41 lb(US) (2 kg)</td>
</tr>
<tr>
<td>Specific application</td>
<td>Commercial equipment</td>
</tr>
<tr>
<td>Variable speed drive application selection</td>
<td>Mixer Commercial equipment</td>
</tr>
<tr>
<td></td>
<td>Other application Commercial equipment</td>
</tr>
<tr>
<td></td>
<td>Ironing Textile</td>
</tr>
<tr>
<td>Motor starter type</td>
<td>Variable speed drive</td>
</tr>
</tbody>
</table>

### Environment

<table>
<thead>
<tr>
<th>Electromagnetic compatibility</th>
<th>Electrical fast transient/burst immunity test level 4 EN/IEC 61000-4-4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Electrostatic discharge immunity test level 3 EN/IEC 61000-4-2</td>
</tr>
<tr>
<td></td>
<td>Immunity to conducted disturbances level 3 EN/IEC 61000-4-6</td>
</tr>
<tr>
<td></td>
<td>Radiated radio-frequency electromagnetic field immunity test level 3 EN/IEC 61000-4-3</td>
</tr>
<tr>
<td></td>
<td>Surge immunity test level 3 EN/IEC 61000-4-5</td>
</tr>
<tr>
<td></td>
<td>Voltage dips and interruptions immunity test EN/IEC 61000-4-11</td>
</tr>
<tr>
<td>Electromagnetic emission</td>
<td>Radiated emissions environment 1 category C2 EN/IEC 61800-3 2...16 kHz shielded motor cable</td>
</tr>
<tr>
<td></td>
<td>Conducted emissions EN/IEC 61800-3</td>
</tr>
<tr>
<td>Product certifications</td>
<td>NOM</td>
</tr>
<tr>
<td></td>
<td>UL</td>
</tr>
<tr>
<td></td>
<td>CSA</td>
</tr>
<tr>
<td></td>
<td>GOST</td>
</tr>
<tr>
<td></td>
<td>C-tick</td>
</tr>
<tr>
<td>Vibration resistance</td>
<td>1 gn 13…200 Hz)EN/IEC 60068-2-6</td>
</tr>
<tr>
<td></td>
<td>1.5 mm peak to peak 3…13 Hz) - drive unmounted on symmetrical DIN rail - EN/IEC 60068-2-6</td>
</tr>
<tr>
<td>Shock resistance</td>
<td>15 gn 11 ms EN/IEC 60068-2-27</td>
</tr>
<tr>
<td>Relative humidity</td>
<td>5…95 % without condensation IEC 60068-2-3</td>
</tr>
<tr>
<td></td>
<td>5…95 % without dripping water IEC 60068-2-3</td>
</tr>
<tr>
<td>Ambient air temperature for storage</td>
<td>-13…158 °F (-25…70 °C)</td>
</tr>
<tr>
<td>Ambient air temperature for operation</td>
<td>14…122 °F (-10…50 °C) protective cover from the top of the drive removed</td>
</tr>
<tr>
<td></td>
<td>122…140 °F (50…60 °C) with current derating 2.2 % per °C</td>
</tr>
<tr>
<td>Operating altitude</td>
<td>&lt;= 3280.84 ft (1000 m) without derating</td>
</tr>
<tr>
<td></td>
<td>&gt; 3280.84…9842.52 ft (&gt; 1000…3000 m) with current derating 1 % per 100 m</td>
</tr>
</tbody>
</table>

### Ordering and shipping details

<table>
<thead>
<tr>
<th>Category</th>
<th>22000 - Temporary Category for ITS Price Promotion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discount Schedule</td>
<td>I</td>
</tr>
<tr>
<td>GTIN</td>
<td>00785901824886</td>
</tr>
<tr>
<td>Package weight(Lbs)</td>
<td>1 lb(US) (0.45 kg)</td>
</tr>
<tr>
<td>Returnability</td>
<td>No</td>
</tr>
<tr>
<td>Country of origin</td>
<td>ID</td>
</tr>
</tbody>
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### Offer Sustainability

<table>
<thead>
<tr>
<th>REACh Regulation</th>
<th>REACh Declaration</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU RoHS Directive</td>
<td>Pro-active compliance (Product out of EU RoHS legal scope) EU RoHS Declaration</td>
</tr>
<tr>
<td>Mercury free</td>
<td>Yes</td>
</tr>
<tr>
<td>RoHS exemption information</td>
<td>Yes</td>
</tr>
<tr>
<td>China RoHS Regulation</td>
<td>China RoHS declaration</td>
</tr>
<tr>
<td>WEEE</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                                         |