**Product data sheet**

**Specifications**

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variable speed drive, Altivar Process ATV600, ATV630, 90kW, 125hp, 500 to 690V, IP00

ATV630D90Y6

Product availability: Stock - Normally stocked in distribution facility

**Price**: $13,797.60 USD

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### Main

<table>
<thead>
<tr>
<th>Main</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Range of Product</td>
<td>Altivar Process ATV600</td>
</tr>
<tr>
<td>Product or Component Type</td>
<td>Variable speed drive</td>
</tr>
<tr>
<td>Product Specific Application</td>
<td>Process and utilities</td>
</tr>
<tr>
<td>Device short name</td>
<td>ATV630</td>
</tr>
<tr>
<td>Variant</td>
<td>Standard version</td>
</tr>
</tbody>
</table>
| Product destination | Asynchronous motors  
Synchronous motors |
| EMC filter | Integrated 82.02 ft (25 m) EN/IEC 61800-3 category C3 |
| IP degree of protection | IP00IEC 61800-5-1  
IP00IEC 60529  
IP20 with kit VW3A9706IEC 61800-5-1  
IP20 with kit VW3A9706IEC 60529 |
| [Us] rated supply voltage | 500...690 V |
| Type of cooling | Forced convection |
| Supply frequency | 50...60 Hz - 5...5 %  
500...690 V - 15...10 % |
| Motor power kW | 75 kW 500 V normal duty  
55 kW 500 V heavy duty  
90 kW 690 V normal duty  
75 kW 690 V heavy duty |
| Maximum Horse Power Rating | 100 hp 500 V normal duty  
75 hp 500 V heavy duty  
125 hp 690 V normal duty  
100 hp 690 V heavy duty |
| Line current | 108.3 A 500 V normal duty  
99.4 A 690 V normal duty  
82.7 A 500 V heavy duty  
87.7 A 690 V heavy duty |
| Prospective line Isc | 70 kA |
| Apparent power | 118.8 kVA 690 V normal duty  
104.8 kVA 690 V heavy duty |
| Continuous output current | 83 A 2.5 kHz heavy duty  
108 A 2.5 kHz normal duty |
| Asynchronous motor control profile | Variable torque standard  
Optimized torque mode  
Constant torque standard |
| Synchronous motor control profile | Permanent magnet motor  
Synchronous reluctance motor |

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*Price is “List Price” and may be subject to a trade discount – check with your local distributor or retailer for actual price.*
**Speed drive output frequency**
0.1…500 Hz

**Nominal switching frequency**
2.5 kHz

**Switching frequency**
1…4.9 kHz adjustable
2.5…4.9 kHz with derating factor

**Safety function**
STO (safe torque off) SIL 3

**Discrete input logic**
16 preset speeds

**Communication Port Protocol**
Modbus TCP
Modbus serial
Ethernet

**Option card**
Slot A communication module, Profibus DP V1
Slot A communication module, PROFINET
Slot A communication module, DeviceNet
Slot A communication module, Modbus TCP/EtherNet/IP
Slot A communication module, CANopen daisy chain RJ45
Slot A communication module, CANopen SUB-D 9
Slot A communication module, CANopen screw terminals
Slot A/slot B digital and analog I/O extension module
Slot A/slot B output relay extension module
Slot A communication module, Ethernet IP/Modbus TCP/MD-Link
communication module, BACnet MS/TP
communication module, Ethernet Powerlink

**Complementary**

**Mounting Mode**
Wall mount

**Maximum transient current**
124.5 A 60 s (heavy duty)
118.8 A 60 s (normal duty)

**Phase**
3 phase

**Discrete output number**
0

**Discrete output type**
Relay outputs R1A, R1B, R1C 250 V AC 3000 mA
Relay outputs R1A, R1B, R1C 30 V DC 3000 mA
Relay outputs R2A, R2C 250 V AC 5000 mA
Relay outputs R2A, R2C 30 V DC 5000 mA
Relay outputs R3A, R3C 250 V AC 5000 mA
Relay outputs R3A, R3C 30 V DC 5000 mA

**Output voltage**
<= power supply voltage

**Permissible temporary current boost**
1.1 x In 60 s (normal duty)
1.5 x In 60 s (heavy duty)

**Motor slip compensation**
Automatic whatever the load
Can be suppressed
Not available in permanent magnet motor law
Adjustable

**Acceleration and deceleration ramps**
Linear adjustable separately from 0.01…9999 s
S, U or customized

**Physical interface**
Ethernet
2-wire RS 485

**Braking to standstill**
By DC injection

**Protection type**
Thermal protection motor
Safe torque off motor
Motor phase break motor
Thermal protection drive
Safe torque off drive
Overheating drive
Overcurrent between output phases and earth drive
Overload of output voltage drive
Short-circuit protection drive
Motor phase break drive
Overvoltages on the DC bus drive
Line supply overvoltage drive
Line supply undervoltage drive
Line supply phase loss drive
Overspeed drive
Break on the control circuit drive

**Transmission Rate**
10, 100 Mb/s
4800 bps, 9600 bps, 19200 bps, 38.4 Kbps

**Frequency resolution**
Display unit 0.1 Hz
Analog input 0.012/50 Hz
Transmission frame
RTU

Electrical connection
Control removable screw terminals 0.5...1.5 mm² AWG 20...AWG 16
Motor screw terminal 50 mm² AWG 1
Line side screw terminal 50 mm² AWG 1

Connector type
RJ45 on the remote graphic terminal|Ethernet|Modbus TCP
RJ45 on the remote graphic terminal|Modbus serial

Data format
8 bits, configurable odd, even or no parity

Type of polarization
No impedance

Exchange mode
Half duplex, full duplex, autonegotiation Ethernet|Modbus TCP

Number of addresses
1...247 Modbus serial

Method of access
Slave Modbus TCP

Supply
External supply for digital inputs 24 V DC 19...30 V), <1.25 mA overload and short-circuit protection
Internal supply for reference potentiometer (1 to 10 kOhm) 10.5 V DC +/- 5 %, <10 mA overload and short-circuit protection
Internal supply for digital inputs and STO 24 V DC 21...27 V), <200 mA overload and short-circuit protection

Local signalling
for local diagnostic 3 LEDs
for embedded communication status 3 LEDs (dual colour)
for communication module status 4 LEDs (dual colour)
for presence of voltage 1 LED (red)

Width
13.03 in (331 mm)

Height
24.80 in (630 mm)

Depth
11.69 in (297 mm)

Net Weight
116.85 lb (US) (53 kg)

Analogue input number
3

Analogue input type
A1, A2, A3 software-configurable voltage 0...10 V DC 31.5 kOhm 12 bits
A1, A2, A3 software-configurable current 0...20 mA 250 Ohm 12 bits
A2 voltage analog input - 10...10 V DC 31.5 kOhm 12 bits

Discrete input number
8

Discrete input type
DI7, DI8 programmable as pulse input 0...30 kHz, 24 V DC <= 30 V)

Input compatibility
Di1...Di6 discrete input level 1 PLC EN/IEC 61131-2
Di6 discrete input level 1 PLC IEC 65A-68
STOA, STOB discrete input level 1 PLC EN/IEC 61131-2
Positive logic (source) Di1...Di8), < 5 V, > 11 V
Negative logic (sink) Di1...Di8), > 16 V, < 10 V

Analogue output number
2

Analogue output type
Software-configurable voltage AQ1, AQ2 0...10 V DC 470 Ohm 10 bits
Software-configurable current AQ1, AQ2 0...20 mA 10 bits
Software-configurable current DQ-, DQ+ 30 V DC
Software-configurable current DQ-, DQ+ 100 mA

Sampling duration
2 ms +/- 0.5 ms Di1...Di4) - discrete input
5 ms +/- 1 ms Di5, Di6) - discrete input
5 ms +/- 0.1 ms A11, A12, A13) - analog input
10 ms +/- 1 ms AO1) - analog output

Accuracy
+/- 0.6 % A11, A12, A13 for a temperature variation 60 °C analog input
+/- 1 % AQ1, AO2 for a temperature variation 60 °C analog output

Linearity error
A1, A2, A3 +/- 0.15 % of maximum value analog input
AO1, AO2 +/- 0.2 % analog output

Relay output number
3

Relay output type
Configurable relay logic R1 fault relay NO/NC 100000 cycles
Configurable relay logic R2 sequence relay NO 100000 cycles
Configurable relay logic R3 sequence relay NO 100000 cycles

Refresh time
Relay output R1, R2, R3 (5 ms +/- 0.5 ms)

Minimum switching current
Relay output R1, R2, R3 5 mA 24 V DC

Maximum switching current
Relay output R1, R2, R3 resistive, cos phi = 1 3 A 250 V AC
Relay output R1, R2, R3 resistive, cos phi = 1 3 A 30 V DC
Relay output R1, R2, R3 inductive, cos phi = 0.4 7 ms 2 A 250 V AC
Relay output R1, R2, R3 inductive, cos phi = 0.4 7 ms 2 A 30 V DC

Nov 26, 2023
<table>
<thead>
<tr>
<th><strong>Isolation</strong></th>
<th>Between power and control terminals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maximum output frequency</strong></td>
<td>500 kHz</td>
</tr>
<tr>
<td><strong>Maximum Input Current per Phase</strong></td>
<td>108.3 A</td>
</tr>
<tr>
<td><strong>Quantity per Set</strong></td>
<td>1</td>
</tr>
<tr>
<td><strong>Enclosure mounting</strong></td>
<td>Wall mounted</td>
</tr>
</tbody>
</table>

**Environment**

| **Insulation resistance**                  | > 1 MOhm 500 V DC for 1 minute to earth |
| **Noise level**                            | 52 dB 86/168/EEC                        |
| **Power dissipation in W**                 | Natural convection 320 W 500 V 2.5 kHz |
|                                           | Forced convection 1433 W 500 V 2.5 kHz  |
| **Volume of cooling air**                  | 107255.77 Gal/hr(US) (406 m3/h)        |
| **Operating position**                     | Vertical +/- 10 degree                 |
| **Maximum THDI**                           | <48 % with external line choke IEC 61000-3-12 |
| **Electromagnetic compatibility**          | Electrostatic discharge immunity test level 3 IEC 61000-4-2 |
|                                           | Radiated radio-frequency electromagnetic field immunity test level 3 IEC 61000-4-3 |
|                                           | Electrical fast transient/burst immunity test level 4 IEC 61000-4-4 |
|                                           | 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 |
| **Pollution degree**                       | 2 EN/IEC 61800-5-1                     |
| **Vibration resistance**                   | 1.5 mm peak to peak 2…13 Hz]IEC 60068-2-6 |
|                                           | 1 gn 13…200 Hz]IEC 60068-2-6           |
| **Shock resistance**                       | 15 gn 11 ma IEC 60068-2-27            |
| **Relative humidity**                      | 5…95 % without condensation IEC 60068-2-3 |
| **Ambient air temperature for operation**  | 5…122 °F (-15…50 °C) without derating) |
|                                           | 122…140 °F (50…60 °C) with derating factor) |
| **Ambient Air Temperature for Storage**    | -40…158 °F (-40…70 °C)                |
| **Operating altitude**                     | <= 3280.84 ft (1000 m) without derating |
|                                           | 1000…4800 m with current derating 1 % per 100 m |
| **Product Certifications**                 | CSA                                    |
|                                           | TUV                                    |
|                                           | UL                                     |
| **Marking**                                | CE                                     |
| **Standards**                              | UL 508C                                |
|                                           | EN/IEC 61800-3                         |
|                                           | EN/IEC 61800-3 environment 2 category C3 |
|                                           | EN/IEC 61800-5-1                       |
|                                           | IEC 61000-3-12                        |
|                                           | IEC 60721-3                            |
|                                           | IEC 61508                              |
|                                           | IEC 13849-1                           |
| **Overvoltage category**                   | III                                    |
| **Regulation loop**                        | Adjustable PID regulator               |
|                                           | 56 dB                                  |
|                                           | 2                                      |

**Ordering and shipping details**

| **Category**                   | 22276-ATV930 FRAMES 1 & 2            |
| **Discount Schedule**          | CP4E                                  |
| **GTIN**                       | 3606481325235                         |
| **Returnability**              | Yes                                   |
| **Country of origin**          | IN                                    |
## Packing Units

<table>
<thead>
<tr>
<th>Unit Type of Package 1</th>
<th>PCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Units in Package 1</td>
<td>1</td>
</tr>
<tr>
<td>Package 1 Height</td>
<td>22.83 in (58.0 cm)</td>
</tr>
<tr>
<td>Package 1 Width</td>
<td>17.13 in (43.5 cm)</td>
</tr>
<tr>
<td>Package 1 Length</td>
<td>43.31 in (110.0 cm)</td>
</tr>
<tr>
<td>Package 1 Weight</td>
<td>149.91 lb (US) (68.0 kg)</td>
</tr>
</tbody>
</table>

## Offer Sustainability

<table>
<thead>
<tr>
<th>Sustainable offer status</th>
<th>Green Premium product</th>
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<tbody>
<tr>
<td>California proposition 65</td>
<td>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 <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a></td>
</tr>
<tr>
<td>REACh Regulation</td>
<td>REACh Declaration</td>
</tr>
<tr>
<td>EU RoHS Directive</td>
<td>Pro-active compliance (Product out of EU RoHS legal scope)</td>
</tr>
<tr>
<td>Mercury free</td>
<td>Yes</td>
</tr>
<tr>
<td>China RoHS Regulation</td>
<td>China RoHS declaration</td>
</tr>
<tr>
<td>RoHS exemption information</td>
<td>Yes</td>
</tr>
<tr>
<td>Environmental Disclosure</td>
<td>Product Environmental Profile</td>
</tr>
<tr>
<td>Circularity Profile</td>
<td>End of Life Information</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>
<tr>
<td>Upgradeability</td>
<td>Upgraded components available</td>
</tr>
</tbody>
</table>
Dimensions

Drives without Top Cover

Front View with EMC Plate, Front, Left and Rear Views without EMC Plate

<table>
<thead>
<tr>
<th>Dimension</th>
<th>mm</th>
<th>in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>326</td>
<td>12.83</td>
</tr>
<tr>
<td>Height</td>
<td>740</td>
<td>29.05</td>
</tr>
<tr>
<td>Depth</td>
<td>297</td>
<td>11.69</td>
</tr>
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</table>
## Mounting and Clearance

### Clearances

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>X1</td>
<td>X2</td>
<td>X3</td>
</tr>
<tr>
<td>≥ 100 mm (3.94 in.)</td>
<td>≥ 100 mm (3.94 in.)</td>
<td>≥ 10 mm (0.39 in.)</td>
</tr>
</tbody>
</table>
### Mounting Types

**Mounting Type A: Individual IP21**

![Diagram of Mounting Type A]

Mounting Type B: Side by Side IP20

![Diagram of Mounting Type B]

**Mounting Type C: Individual IP20**

![Diagram of Mounting Type C]

\[ a \geq 0 \]

\[ a \geq 0 \]
Three-Phase Power Supply with Upstream Breaking via Line Contactor

Connection diagrams conforming to standards EN 954-1 category 1 and IEC/EN 61508 capacity SIL1, stopping category 0 in accordance with standard IEC/EN 60204-1

(1) Line choke if used
(2) Use relay R1 set to operating state Fault to switch Off the product once an error is detected.

A1 : Drive
KM1 : Line Contactor
Q2, Q3 : Circuit breakers
S1, S2 : Pushbuttons
T1 : Transformer for control part
Three-Phase Power Supply with Downstream Breaking via Contactor

Connection diagrams conforming to standards EN 954-1 category 1 and IEC/EN 61508 capacity SIL1, stopping category 0 in accordance with standard IEC/EN 60204-1

(1) Line choke if used
(2) Use relay R1 set to operating state Fault to switch Off the product once an error is detected.

A1 : Drive
KM1 : Contactor
Sensor Connection

It is possible to connect either 1 or 3 sensors on terminals AI2 or AI3.
Sink / Source Switch Configuration

The switch is used to adapt the operation of the logic inputs to the technology of the programmable controller outputs.

- Set the switch to Source (factory setting) if using PLC outputs with PNP transistors.
- Set the switch to Ext if using PLC outputs with NPN transistors.

Switch Set to SRC (Source) Position Using the Output Power Supply for the Digital Inputs

Switch Set to SRC (Source) Position and Use of an External Power Supply for the DIs

Switch Set to SK (Sink) Position Using the Output Power Supply for the Digital Inputs

Switch Set to EXT Position Using an External Power Supply for the DIs
Derating Curves

In : Nominal Drive Current
SF : Switching Frequency

Recommended replacement(s)