

# Product data sheet

Specifications



variable speed drive, Altivar Process  
ATV600, ATV630, cabinet  
Integration, IP20, 3kW, 380...480V,  
for US

ATV630U30N4ZU

**Product availability: Stock - Normally stocked in distribution facility**

## Main

Range of Product	Altivar Process ATV600
Product Specific Application	Process and utilities
Product or Component Type	Variable speed drive
Variant	Standard version
Device short name	ATV630
Mounting Mode	Cabinet mount
Communication Port Protocol	Ethernet Modbus TCP Modbus serial
[Us] rated supply voltage	380...480 V - 15...10 %
[Us] rated supply voltage	380...480 V
Relative symmetric mains voltage tolerance	10 %
Relative symmetric network frequency tolerance	5 %
nominal output current	7.2 A
IP degree of protection	IP21
Product destination	Asynchronous motors Synchronous motors
EMC filter	Integrated 32.8 ft (10 m) IEC 61800-3 category C2 Integrated 164.04 ft (50 m) IEC 61800-3 category C3 With EMC plate option
IP degree of protection	IP20IEC 61800-5-1 IP20IEC 60529
Type of cooling	Forced convection
Supply frequency	50...60 Hz - 5...5 %
Motor power kW	3 kW normal duty) 2.2 kW heavy duty)
Maximum Horse Power Rating	3 hp heavy duty
Line current	5.8 A 380 V normal duty) 5.1 A 480 V normal duty) 4.5 A 380 V heavy duty) 4 A 480 V heavy duty)
Continuous output current	7.2 A 4 kHz normal duty 5.6 A 4 kHz heavy duty
Speed drive output frequency	0.1...500 Hz
Safety function	STO (safe torque off) SIL 3

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

<b>Option card</b>	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
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## Complementary

<b>Discrete input number</b>	8
<b>Discrete input type</b>	DI7, DI8 programmable as pulse input 0...30 kHz, 24 V DC <= 30 V)
<b>Discrete input logic</b>	16 preset speeds
<b>Discrete output number</b>	0
<b>Discrete output type</b>	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
<b>Analogue input number</b>	3
<b>Analogue input type</b>	AI1, AI2, AI3 software-configurable voltage 0...10 V DC 31.5 kOhm 12 bits AI1, AI2, AI3 software-configurable current 0...20 mA 250 Ohm 12 bits AI2 voltage analog input - 10...10 V DC 31.5 kOhm 12 bits
<b>Analogue output number</b>	2
<b>Analogue output type</b>	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
<b>Relay output number</b>	3
<b>Relay output type</b>	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
<b>Maximum switching current</b>	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
<b>Minimum switching current</b>	Relay output R1, R2, R3 5 mA 24 V DC
<b>Phase</b>	3 phase
<b>Physical interface</b>	Ethernet 2-wire RS 485
<b>Method of access</b>	Slave Modbus TCP
<b>Transmission Rate</b>	10, 100 Mbits 4800 bps, 9600 bps, 19200 bps, 38.4 Kbps
<b>Transmission frame</b>	RTU
<b>Output voltage</b>	<= power supply voltage
<b>Permissible temporary current boost</b>	1.1 x In 60 s normal duty) 1.5 x In 60 s heavy duty)
<b>Data format</b>	8 bits, configurable odd, even or no parity
<b>Type of polarization</b>	No impedance
<b>Frequency resolution</b>	Display unit 0.1 Hz Analog input 0.012/50 Hz

<b>Electrical connection</b>	Control removable screw terminals 0.5...1.5 mm <sup>2</sup> AWG 20...AWG 16 Motor screw terminal 2.5...6 mm <sup>2</sup> AWG 14...AWG 10 Line side screw terminal 2.5...6 mm <sup>2</sup> AWG 14...AWG 10
<b>Connector type</b>	RJ45 on the remote graphic terminal)Ethernet/Modbus TCP RJ45 on the remote graphic terminal)Modbus serial
<b>Exchange mode</b>	Half duplex, full duplex, autonegotiation Ethernet/Modbus TCP
<b>Number of addresses</b>	1...247 Modbus serial
<b>Supply</b>	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
<b>Local signalling</b>	3 LEDs for local diagnostic 3 LEDs (dual colour) for embedded communication status 4 LEDs (dual colour) for communication module status 1 LED (red) for presence of voltage
<b>Input compatibility</b>	DI1...DI6 discrete input level 1 PLC IEC 61131-2 DI5, DI6 discrete input level 1 PLC IEC 65A-68 STOA, STOB discrete input level 1 PLC IEC 61131-2
<b>Discrete input logic</b>	Positive logic (source) DI1...DI8), < 5 V, > 11 V Negative logic (sink) DI1...DI8), > 16 V, < 10 V
<b>Sampling duration</b>	2 ms +/- 0.5 ms DI1...DI4) - discrete input 5 ms +/- 1 ms DI5, DI6) - discrete input 5 ms +/- 0.1 ms AI1, AI2, AI3) - analog input 10 ms +/- 1 ms AO1) - analog output
<b>Accuracy</b>	+/- 0.6 % AI1, AI2, AI3 for a temperature variation 60 °C analog input +/- 1 % AO1, AO2 for a temperature variation 60 °C analog output
<b>Linearity error</b>	AI1, AI2, AI3 +/- 0.15 % of maximum value analog input AO1, AO2 +/- 0.2 % analog output
<b>Refresh time</b>	Relay output R1, R2, R3)5 ms +/- 0.5 ms)
<b>Isolation</b>	Between power and control terminals
<b>Discrete and process manufacturing</b>	Building - HVAC compressor centrifugal Food and beverage processing other application Mining mineral and metal fan Mining mineral and metal pump Oil and gas fan Water and waste water other application Building - HVAC screw compressor Food and beverage processing pump Food and beverage processing fan Food and beverage processing atomization Oil and gas electro submersible pump (ESP) Oil and gas water injection pump Oil and gas jet fuel pump Oil and gas compressor for refinery Water and waste water centrifuge pump Water and waste water positive displacement pump Water and waste water electro submersible pump (ESP) Water and waste water screw pump Water and waste water lobe compressor Water and waste water screw compressor Water and waste water compressor centrifugal Water and waste water fan Water and waste water conveyor Water and waste water mixer
<b>Power range</b>	2.2...3 kW 380...440 V 3 phase 2.2...3 kW 480...500 V 3 phase
<b>Enclosure mounting</b>	With heat sink
<b>4 quadrant operation possible</b>	False
<b>Asynchronous motor control profile</b>	Constant torque standard Optimized torque mode Variable torque standard

<b>Synchronous motor control profile</b>	Permanent magnet motor Synchronous reluctance motor
<b>Maximum output frequency</b>	500 kHz
<b>Acceleration and deceleration ramps</b>	Linear adjustable separately from 0.01...9999 s
<b>Motor slip compensation</b>	Adjustable Can be suppressed Not available in permanent magnet motor law Automatic whatever the load
<b>Switching frequency</b>	2...12 kHz adjustable 4...12 kHz with derating factor
<b>Nominal switching frequency</b>	4 kHz
<b>Braking to standstill</b>	By DC injection
<b>Brake chopper integrated</b>	False
<b>Maximum Input Current per Phase</b>	5.8 A
<b>Maximum output voltage</b>	480.0 V
<b>Apparent power</b>	4.2 kVA 480 V normal duty) 3.3 kVA 480 V heavy duty)
<b>Maximum transient current</b>	8.4 A 60 s heavy duty) 7.9 A 60 s normal duty)
<b>Network Frequency</b>	50-60 Hz
<b>Prospective line I<sub>sc</sub></b>	50 kA
<b>Base load current at high overload</b>	5.6 A
<b>Base load current at low overload</b>	7.2 A
<b>Power dissipation in W</b>	Natural convection 31 W 380 V 4 kHz Forced convection 78 W 380 V 4 kHz
<b>With safety function Safely Limited Speed (SLS)</b>	False
<b>With safety function Safe brake management (SBC/SBT)</b>	False
<b>With safety function Safe Operating Stop (SOS)</b>	False
<b>With safety function Safe Position (SP)</b>	False
<b>With safety function Safe programmable logic</b>	False
<b>With safety function Safe Speed Monitor (SSM)</b>	False
<b>With safety function Safe Stop 1 (SS1)</b>	False
<b>With sft fct Safe Stop 2 (SS2)</b>	False
<b>With safety function Safe torque off (STO)</b>	True
<b>With safety function Safely Limited Position (SLP)</b>	False
<b>With safety function Safe Direction (SDI)</b>	False

<b>Protection type</b>	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
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<b>Quantity per Set</b>	1
<b>Width</b>	5.1 in (130 mm)
<b>Height</b>	11.2 in (285 mm)
<b>Depth</b>	7.7 in (196 mm)
<b>Net Weight</b>	8.4 lb(US) (3.8 kg)

## Environment

<b>Insulation resistance</b>	> 1 MOhm 500 V DC for 1 minute to earth
<b>Noise level</b>	54.5 dB 86/188/EEC
<b>Pollution degree</b>	2 IEC 61800-5-1
<b>Vibration resistance</b>	1.5 mm peak to peak (f= 2...13 Hz) conforming to IEC 60068-2-6 1 gn (f= 13...200 Hz) conforming to IEC 60068-2-6
<b>Shock resistance</b>	15 gn 11 ms IEC 60068-2-27
<b>Relative humidity</b>	5...95 % without condensation IEC 60068-2-3
<b>Ambient air temperature for operation</b>	5...122 °F (-15...50 °C) (without derating) 122...140 °F (50...60 °C) (with derating factor)
<b>Operating altitude</b>	<= 3280.84 ft (1000 m) without derating 1000...4800 m with current derating 1 % per 100 m
<b>Operating position</b>	Vertical +/- 10 degree
<b>Product Certifications</b>	UL DNV-GL ATEX INERIS TÜV ATEX zone 2/22 CSA
<b>Marking</b>	CE
<b>Standards</b>	UL 508C IEC 61800-3 IEC 61800-3 environment 1 category C2 EN/IEC 61800-3 environment 2 category C3 IEC 61800-5-1 IEC 61000-3-12 IEC 60721-3 IEC 61508 IEC 13849-1
<b>Maximum THDI</b>	<48 % full load IEC 61000-3-12
<b>Assembly style</b>	With heat sink
<b>Electromagnetic compatibility</b>	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 Electrical fast transient/burst immunity test level 4 conforming to IEC 61000-4-4 1.2/50 µs - 8/20 µs surge immunity test level 3 conforming to IEC 61000-4-5 Conducted radio-frequency immunity test level 3 conforming to IEC 61000-4-6

Environmental class (during operation)	Class 3C3 according to IEC 60721-3-3 Class 3S3 according to IEC 60721-3-3
Maximum acceleration under shock impact (during operation)	150 m/s <sup>2</sup> at 11 ms
Maximum acceleration under vibrational stress (during operation)	10 m/s <sup>2</sup> at 13...200 Hz
Maximum deflection under vibratory load (during operation)	1.5 mm at 2...13 Hz
Permitted relative humidity (during operation)	Class 3K5 according to EN 60721-3
Volume of cooling air	10038.7 Gal/hr(US) (38 m <sup>3</sup> /h)
Overvoltage category	III
Regulation loop	Adjustable PID regulator
Noise level	54.5 dB
Pollution degree	2
Ambient air transport temperature	-40...158 °F (-40...70 °C)
Ambient Air Temperature for Storage	-40...158 °F (-40...70 °C)

## Ordering and shipping details

Category	US1CP4E22205
Discount Schedule	CP4E
GTIN	3606489739874
Returnability	Yes
Country of origin	ID

## Packing Units

Unit Type of Package 1	PCE
Nbr. of units in pkg.	1
Package 1 Height	7.100 in (18.034 cm)
Package 1 Width	10.400 in (26.416 cm)
Package 1 Length	13.600 in (34.544 cm)
Package weight(Lbs)	10.829 lb(US) (4.912 kg)

## Contractual warranty

Warranty (in months)	18
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## Environmental Data

Schneider Electric aims to achieve Net Zero status by 2050 through supply chain partnerships, lower impact materials, and circularity via our ongoing “Use Better, Use Longer, Use Again” campaign to extend product lifetimes and recyclability.

[Environmental Data explained >](#)

[How we assess product sustainability >](#)



### Environmental footprint

Total lifecycle Carbon footprint	1 615 kg CO2 eq.
Environmental Disclosure	<a href="#">Product Environmental Profile</a>
Carbon footprint of the manufacturing phase [A1 to A3]	70 kg CO2 eq.
Carbon footprint of the distribution phase [A4]	0.9 kg CO2 eq.
Carbon footprint of the installation phase [A5]	2 kg CO2 eq.
Carbon footprint of the use phase [B2, B3, B4, B6]	1 537 kg CO2 eq.
Carbon footprint of the end-of-life phase [C1 to C4]	5 kg CO2 eq.

## Use Better



### Materials and Substances

Packaging made with recycled cardboard	Yes
Packaging without single use plastic	Yes
<a href="#">EU RoHS Directive</a>	Pro-active compliance (Product out of EU RoHS legal scope)
SCIP Number	D9267909-b64a-464f-8f55-d6fd46285d0f
REACH Regulation	<a href="#">REACH Declaration</a>
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 <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a>

## Use Longer



### Lifetime extension

Repair	No
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## Use Again



### Repack and remanufacture

Recyclability potential, in %	74
Circularity Profile	<a href="#">End of Life Information</a>
Take-back	No