

Product data sheet

Characteristics

ATV930D30N4

variable speed drive - ATV930 - 30kW - 400/480V
- with braking unit - IP21

Product availability : Stock - Normally stocked in distribution facility



Price* : 4,811.00 USD



Main

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|---------------------------|---|
| Range of product | Altivar Process ATV900 |
| Product or component type | Variable speed drive |
| Device application | Industrial application |
| Device short name | ATV930 |
| Variant | Standard version With braking chopper |
| Product destination | Asynchronous motors Synchronous motors |
| Mounting mode | Wall mount |
| EMC filter | Integrated conforming to EN/IEC 61800-3 category C3 with <= 150 m motor cable maxi Integrated conforming to EN/IEC 61800-3 category C2 with <= 50 m motor cable maxi |
| IP degree of protection | IP21 conforming to IEC 61800-5-1 IP21 conforming to IEC 60529 |
| Degree of protection | UL type 1 conforming to UL 508C |
| Type of cooling | Forced convection |
| Supply frequency | 50...60 Hz (+/- 5 %) |
| Network number of phases | 3 phases |
| [Us] rated supply voltage | 380...480 V (- 15...10 %) |
| Motor power kW | 30 kW (normal duty) 22 kW (heavy duty) |
| Motor power hp | 40 hp (normal duty) 30 hp (heavy duty) |
| Line current | 53.3 A at 380 V (normal duty) 45.9 A at 480 V (normal duty) 40.5 A at 380 V (heavy duty) 35.8 A at 480 V (heavy duty) |
| Prospective line Isc | 50 kA |
| Apparent power | 29.8 kVA at 480 V (heavy duty) 38.1 kVA at 480 V (normal duty) |

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

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| Continuous output current | 61.5 A at 4 kHz (normal duty) 46.3 A at 4 kHz (heavy duty) |
| Maximum transient current | 69.5 A during 60 s (heavy duty) 73.8 A during 60 s (normal duty) |
| Asynchronous motor control profile | Optimized torque mode Constant torque standard Variable torque standard |
| Synchronous motor control profile | Permanent magnet motor Synchronous reluctance motor |
| Speed drive output frequency | 0.1...599 Hz |
| Nominal switching frequency | 4 kHz |
| Switching frequency | 2...16 kHz adjustable 4...16 kHz with derating factor |
| Safety function | STO (safe torque off) SIL 3 |
| Number of preset speeds | 16 preset speeds |
| Communication port protocol | Ethernet/IP Modbus serial Modbus TCP |
| Option module | Slot A: communication module Profibus DP V1 Slot A: communication module Profinet Slot A: communication module DeviceNet 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: communication module EtherCAT Slot A/slot B/slot C: digital and analog I/O extension module Slot A/slot B/slot C: output relay extension module Slot B: 5/12 V digital encoder interface module Slot B: analog encoder interface module Slot B: resolver encoder interface module Communication module for Ethernet Powerlink |

Complementary

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| Output voltage | <= power supply voltage |
| Motor slip compensation | Automatic whatever the load Adjustable Can be suppressed Not available in permanent magnet motor law |
| Acceleration and deceleration ramps | Linear adjustable separately from 0.01...9999 s |
| Braking to standstill | By DC injection |
| Protection type | Motor: thermal protection Motor: safe torque off Motor: motor phase break Drive: 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 |
| Frequency resolution | Display unit: 0.1 Hz Analog input: 0.012/50 Hz |
| Electrical connection | Line side, screw terminal: 25...50 mm ² (AWG 4...AWG 1) Motor, screw terminal: 25...50 mm ² (AWG 4...AWG 1) Control, screw terminal: 0.5...1.5 mm ² (AWG 20...AWG 16) DC bus, screw terminal: 25...50 mm ² (AWG 4...AWG 1) |
| Connector type | 2 RJ45 (on the control block) Ethernet IP/Modbus TCP 1 RJ45 (on the control block) Modbus serial |
| Physical interface | 2-wire RS 485 Modbus serial |

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| Transmission frame | RTU Modbus serial |
| Transmission rate | 10/100 Mbit/s Ethernet IP/Modbus TCP 4.8, 9.6, 19.2, 38.4 kbit/s for Modbus serial |
| Exchange mode | Half duplex, full duplex, autonegotiation Ethernet IP/Modbus TCP |
| Data format | 8 bits, configurable odd, even or no parity Modbus serial |
| Type of polarization | No impedance Modbus serial |
| 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) current \leq 1.25 mA (overload and short-circuit protection) Internal supply for reference potentiometer (1 to 10 kOhm): 10.5 V DC \pm 5 % current \leq 10 mA (overload and short-circuit protection) Internal supply for digital inputs and STO: 24 V DC (21...27 V) current \leq 200 mA (overload and short-circuit protection) |
| Local signalling | 3 mono/dual colour LED for local diagnostic 5 dual colour LED for embedded communication status 2 dual colour LED for communication module status 1 red LED for presence of voltage |
| Width | 8.9 in (226 mm) |
| Height | 26.5 in (673 mm) |
| Depth | 10.79 in (274 mm) |
| Product weight | 61.73 lb(US) (28 kg) |
| Analogue input number | 3 |
| Analogue input type | Software-configurable voltage AI1, AI2, AI3: 0...10 V DC impedance 30 kOhm, resolution 12 bits Software-configurable current AI1, AI2, AI3 : 0...20 mA/4...20 mA impedance 250 Ohm, resolution 12 bits |
| Discrete input number | 10 |
| Discrete input type | Programmable DI1...DI8: 24 V DC (\leq 30 V) impedance 3.5 kOhm Programmable as pulse input DI7, DI8 0...30 kHz: 24 V DC (\leq 30 V) Safe torque off STO, STOB: 24 V DC (\leq 30 V) impedance $>$ 2.2 kOhm |
| Input compatibility | Discrete input STOA, STOB: level 1 PLC conforming to EN/IEC 61131-2 Discrete input DI1...DI8: level 1 PLC conforming to EN/IEC 61131-2 Pulse input DI7, DI8: level 1 PLC conforming to IEC 65A-68 |
| Analogue output number | 2 |
| Discrete output number | 2 |
| Discrete output type | Logic output DQ+ : 0...1 kHz (\leq 30 V) DC, 100 mA Programmable as pulse output DQ+ : 0...30 kHz (\leq 30 V) DC, 20 mA Logic output DQ- : 0...1 kHz (\leq 30 V) DC, 100 mA |
| Sampling duration | Discrete input DI1...DI8: 2 ms (\pm 0.5 ms) Pulse input DI7, DI8: 5 ms (\pm 1 ms) Analog input AI1, AI2, AI3: 1 ms (\pm 1 ms) Analog output AQ1, AQ2: 5 ms (\pm 1 ms) |
| Accuracy | Analog input AI1, AI2, AI3: \pm 0.6 % for a temperature variation 60 °C Analog output AQ1, AQ2: \pm 1 % for a temperature variation 60 °C |
| Linearity error | Analog input AI1, AI2, AI3: \pm 0.15 % of maximum value Analog output AQ1, AQ2: \pm 0.2 % |
| Maximum switching current | Relay output R1 on inductive load ($\cos \phi = 0.4$ and $L/R = 7$ ms) : 2 A at 250 V AC Relay output R1 on inductive load ($\cos \phi = 0.4$ and $L/R = 7$ ms) : 2 A at 30 V DC Relay output R2, R3 on inductive load ($\cos \phi = 0.4$ and $L/R = 7$ ms) : 2 A at 250 V AC Relay output R2, R3 on inductive load ($\cos \phi = 0.4$ and $L/R = 7$ ms) : 2 A at 30 V DC Relay output R1 on resistive load ($\cos \phi = 1$) : 3 A at 250 V AC Relay output R1 on resistive load ($\cos \phi = 1$) : 3 A at 30 V DC Relay output R2, R3 on resistive load ($\cos \phi = 1$) : 5 A at 250 V AC Relay output R2, R3 on resistive load ($\cos \phi = 1$) : 5 A at 30 V DC |
| Relay output number | 3 |
| Relay output type | Configurable relay logic R1: fault relay NO/NC electrical durability 100000 cycles Configurable relay logic R2: sequence relay NO electrical durability 1000000 cycles Configurable relay logic R3: sequence relay NO electrical durability 1000000 cycles |
| Refresh time | Relay output R1, R2, R3: 5 ms (\pm 0.5 ms) |
| Minimum switching current | Relay output R1, R2, R3: 5 mA at 24 V DC |
| Isolation | Between power and control terminals |
| Specific application | Process |

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| IP degree of protection | IP21 |
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Environment

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| Insulation resistance | > 1 mOhm at 500 V DC for 1 minute to earth |
| Noise level | 71.5 dB conforming to 86/188/EEC |
| Power dissipation in W | 93 W (natural convection) at 380 V switching frequency 4 kHz 640 W (forced convection) at 380 V switching frequency 4 kHz |
| Vibration resistance | 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 |
| Shock resistance | 15 gn during 11 ms conforming to IEC 60068-2-27 |
| Volume of cooling air | 63402.43 Gal/hr(US) (240 m3/h) |
| Operating position | Vertical +/- 10 degree |
| THDI | <= 48 % from 80...100 % of load conforming to IEC 61000-3-12 |
| Electromagnetic compatibility | 1.2/50 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 Conducted radio-frequency immunity test level 3 conforming to IEC 61000-4-6 |
| Pollution degree | 2 EN/IEC 61800-5-1 |
| Environmental characteristic | Chemical pollution resistance class 3C3 conforming to EN/IEC 60721-3-3 Dust pollution resistance class 3S3 conforming to EN/IEC 60721-3-3 |
| Relative humidity | 5...95 % without condensation conforming to 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 | 1000...4800 m with current derating 1 % per 100 m <= 3280.84 ft (1000 m) without derating |
| Standards | EN/IEC 61800-3 UL 508C EN/IEC 61800-5-1 IEC 61000-3-12 IEC 60721-3 IEC 61508 IEC 13849-1 EN/IEC 61800-3 (environment 1 category C2) EN/IEC 61800-3 (environment 2 category C3) |
| Product certifications | UL CSA REACH TÜV |
| Marking | CE |


Ordering and shipping details

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|-----------------------|-----------------------------|
| Category | 22277 - ATV930 FRAMES 3 & 4 |
| Discount Schedule | CP4E |
| GTIN | 00785901605065 |
| Nbr. of units in pkg. | 1 |
| Package weight(Lbs) | 77 |
| Returnability | Y |
| Country of origin | IN |

Offer Sustainability

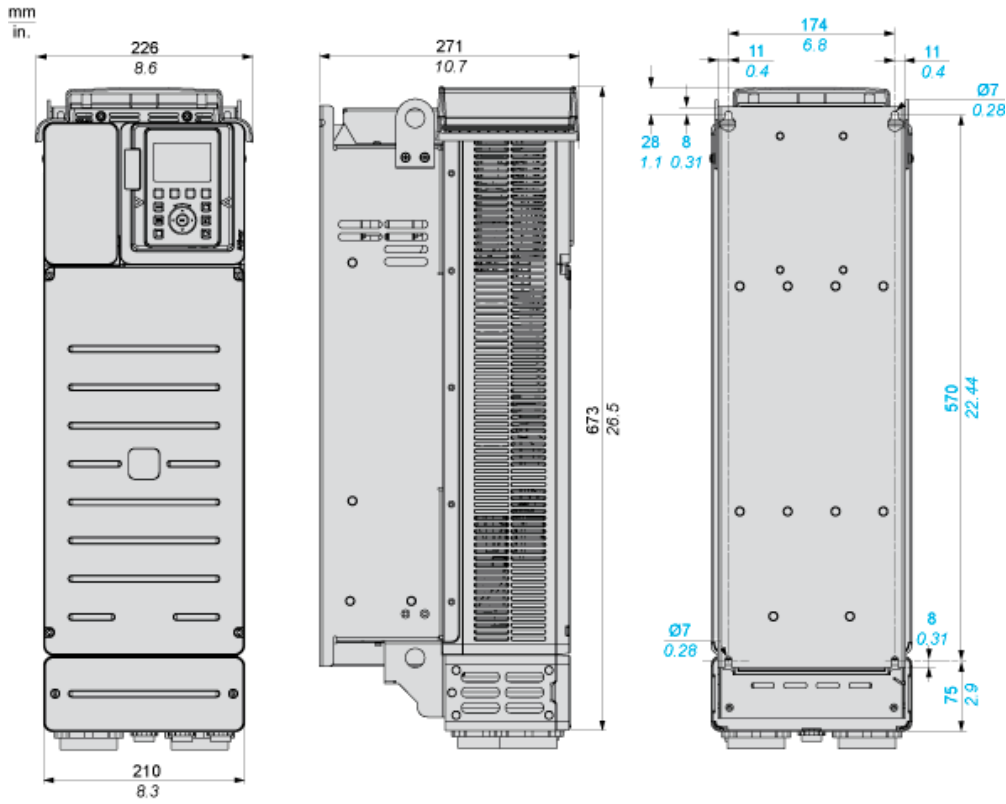
| | |
|-------------------------------|---|
| Sustainable offer status | Green Premium product |
| RoHS (date code: YYWW) | Compliant - since 1526 - Schneider Electric declaration of conformity Schneider Electric declaration of conformity |
| REACH | Reference not containing SVHC above the threshold Reference not containing SVHC above the threshold |
| Product environmental profile | Available |

 Product Environmental Profile

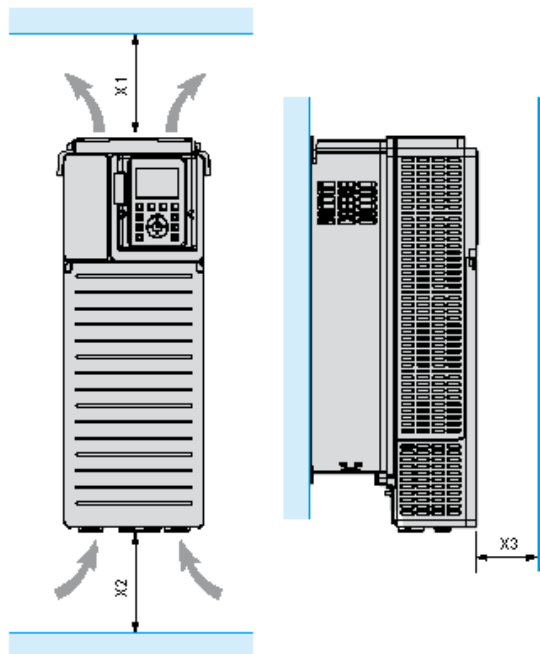
| | |
|----------------------------------|--|
| Product end of life instructions | Available |
| |  End of Life Information |
| California proposition 65 | WARNING: This product can expose you to chemicals including: |
| ----- Substance 1 | Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. |
| ----- Substance 2 | Bisphenol A (BPA), which is known to the State of California to cause birth defects or other reproductive harm. |
| ----- More information | For more information go to www.p65warnings.ca.gov |

Dimensions

IP21 / UL Type 1 Drives - Front, Left Side and Rear View



Clearances

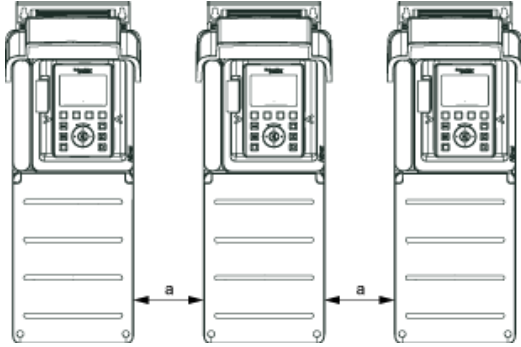


| X1 | X2 | X3 |
|---------------------|---------------------|--------------------|
| ≥ 100 mm (3.94 in.) | ≥ 100 mm (3.94 in.) | ≥ 10 mm (0.39 in.) |

- Mount the device in a vertical position ($\pm 10^\circ$). This is required for cooling the device.
- Do not mount the device close to heat sources.
- Leave sufficient free space so that the air required for cooling purposes can circulate from the bottom to the top of the drive.

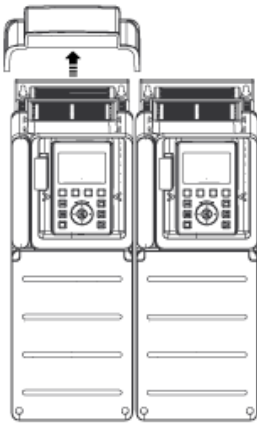
Mounting Types

Mounting Type A: Individual IP21

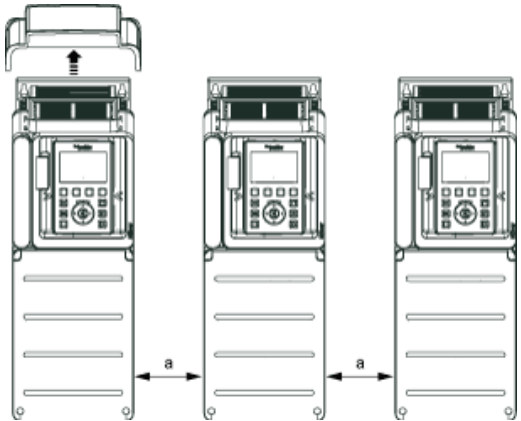


$a \geq 110 \text{ mm (4.33 in.)}$

Mounting Type B: Side by Side IP20 (Possible, 2 Drives Only)



Mounting Type C: Individual IP20



$a \geq 110 \text{ mm (4.33 in.)}$