

# ATV930D55N4

variable speed drive - ATV930 - 55kW - 400/480V  
- with braking unit - IP21

Product availability : Non-Stock - Not normally stocked in distribution facility



Price\* : 7,973.00 USD



## Main

|                           |  |
|---------------------------|--|
| Range of product          | Altivar Process ATV900   |
| Product or component type | Variable speed drive   |
| Device application        | Industrial application   |
| Device short name         | ATV930   |
| Variant                   | With braking chopper<br>Standard version   |
| Product destination       | Synchronous motors<br>Asynchronous motors  |
| Mounting mode             | Wall mount   |
| EMC filter                | Integrated conforming to EN/IEC 61800-3 category C3 with <= 150 m motor cable maxi   |
| IP degree of protection   | IP21 conforming to IEC 61800-5-1<br>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            | 55 kW (normal duty)<br>45 kW (heavy duty)  |
| Motor power hp            | 75 hp (normal duty)<br>60 hp (heavy duty)  |
| Line current              | 97.2 A at 380 V (normal duty)<br>84.2 A at 480 V (normal duty)<br>81.4 A at 380 V (heavy duty)<br>71.8 A at 480 V (heavy duty) |
| Prospective line Isc      | 50 kA  |
| Apparent power            | 70 kVA at 480 V (normal duty)<br>59.7 kVA at 480 V (heavy duty)  |
| Continuous output current | 106 A at 2.5 kHz (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

|                                    |  |
|------------------------------------|--|
|                                    | 88 A at 2.5 kHz (heavy duty)   |
| Maximum transient current          | 132 A during 60 s (heavy duty)<br>127.2 A during 60 s (normal duty)  |
| Asynchronous motor control profile | Variable torque standard<br>Constant torque standard<br>Optimized torque mode  |
| Synchronous motor control profile  | Synchronous reluctance motor<br>Permanent magnet motor   |
| Speed drive output frequency       | 0.1...599 Hz   |
| Nominal switching frequency        | 2.5 kHz  |
| Switching frequency                | 1...8 kHz adjustable<br>2.5...8 kHz with derating factor   |
| Safety function                    | STO (safe torque off) SIL 3  |
| Number of preset speeds            | 16 preset speeds   |
| Communication port protocol        | Modbus serial<br>Modbus TCP<br>Ethernet/IP   |
| Option module                      | Slot A: communication module Profibus DP V1<br>Slot A: communication module Profinet<br>Slot A: communication module DeviceNet<br>Slot A: communication module CANopen daisy chain RJ45<br>Slot A: communication module CANopen SUB-D 9<br>Slot A: communication module CANopen screw terminals<br>Slot A: communication module EtherCAT<br>Slot A/slot B/slot C: digital and analog I/O extension module<br>Slot A/slot B/slot C: output relay extension module<br>Slot B: 5/12 V digital encoder interface module<br>Slot B: analog encoder interface module<br>Slot B: resolver encoder interface module<br>Communication module for Ethernet Powerlink |

## Complementary

|                                     |  |
|-------------------------------------|--|
| Output voltage                      | <= power supply voltage  |
| Motor slip compensation             | Automatic whatever the load<br>Not available in permanent magnet motor law<br>Adjustable<br>Can be suppressed  |
| Acceleration and deceleration ramps | Linear adjustable separately from 0.01...9999 s  |
| Braking to standstill               | By DC injection  |
| Protection type                     | Motor: thermal protection<br>Motor: safe torque off<br>Motor: motor phase break<br>Drive: thermal protection<br>Drive: safe torque off<br>Drive: overheating<br>Drive: overcurrent between output phases and earth<br>Drive: overload of output voltage<br>Drive: short-circuit protection<br>Drive: motor phase break<br>Drive: overvoltages on the DC bus<br>Drive: line supply overvoltage<br>Drive: line supply undervoltage<br>Drive: line supply phase loss<br>Drive: overspeed<br>Drive: break on the control circuit |
| Frequency resolution                | Display unit: 0.1 Hz<br>Analog input: 0.012/50 Hz  |
| Electrical connection               | Control, screw terminal: 0.5...1.5 mm <sup>2</sup> (AWG 20...AWG 16)<br>Line side, screw terminal: 70...120 mm <sup>2</sup> (AWG 1/0...250 kcmil)<br>Motor, screw terminal: 70...120 mm <sup>2</sup> (AWG 1/0...250 kcmil)<br>DC bus, screw terminal: 70...120 mm <sup>2</sup> (AWG 1/0...250 kcmil)   |
| Connector type                      | 2 RJ45 (on the control block) Ethernet IP/Modbus TCP<br>1 RJ45 (on the control block) Modbus serial  |
| Physical interface                  | 2-wire RS 485 Modbus serial  |
| Transmission frame                  | RTU Modbus serial  |

|                           |  |
|---------------------------|--|
| Transmission rate         | 10/100 Mbit/s Ethernet IP/Modbus TCP<br>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)<br>Internal supply for reference potentiometer (1 to 10 kOhm): 10.5 V DC +/- 5 % current $\leq$ 10 mA (overload and short-circuit protection)<br>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<br>5 dual colour LED for embedded communication status<br>2 dual colour LED for communication module status<br>1 red LED for presence of voltage   |
| Width                     | 11.42 in (290 mm)  |
| Height                    | 36.3 in (922 mm)   |
| Depth                     | 12.81 in (325.5 mm)  |
| Product weight            | 126.77 lb(US) (57.5 kg)  |
| Analogue input number     | 3  |
| Analogue input type       | Software-configurable voltage AI1, AI2, AI3: 0...10 V DC impedance 30 kOhm, resolution 12 bits<br>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<br>Programmable as pulse input DI7, DI8 0...30 kHz: 24 V DC ( $\leq$ 30 V)<br>Safe torque off STOA, 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<br>Discrete input DI1...DI8: level 1 PLC conforming to EN/IEC 61131-2<br>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<br>Programmable as pulse output DQ+ : 0...30 kHz ( $\leq$ 30 V) DC, 20 mA<br>Logic output DQ- : 0...1 kHz ( $\leq$ 30 V) DC, 100 mA   |
| Sampling duration         | Discrete input DI1...DI8: 2 ms (+/- 0.5 ms)<br>Pulse input DI7, DI8: 5 ms (+/- 1 ms)<br>Analog input AI1, AI2, AI3: 1 ms (+/- 1 ms)<br>Analog output AQ1, AQ2: 5 ms (+/- 1 ms)   |
| Accuracy                  | Analog input AI1, AI2, AI3: +/- 0.6 % for a temperature variation 60 °C<br>Analog output AQ1, AQ2: +/- 1 % for a temperature variation 60 °C   |
| Linearity error           | Analog input AI1, AI2, AI3: +/- 0.15 % of maximum value<br>Analog output AQ1, AQ2: +/- 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<br>Relay output R1 on inductive load ( $\cos \phi = 0.4$ and $L/R = 7$ ms) : 2 A at 30 V DC<br>Relay output R2, R3 on inductive load ( $\cos \phi = 0.4$ and $L/R = 7$ ms) : 2 A at 250 V AC<br>Relay output R2, R3 on inductive load ( $\cos \phi = 0.4$ and $L/R = 7$ ms) : 2 A at 30 V DC<br>Relay output R1 on resistive load ( $\cos \phi = 1$ ) : 3 A at 250 V AC<br>Relay output R1 on resistive load ( $\cos \phi = 1$ ) : 3 A at 30 V DC<br>Relay output R2, R3 on resistive load ( $\cos \phi = 1$ ) : 5 A at 250 V AC<br>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<br>Configurable relay logic R2: sequence relay NO electrical durability 1000000 cycles<br>Configurable relay logic R3: sequence relay NO electrical durability 1000000 cycles   |
| Refresh time              | Relay output R1, R2, R3: 5 ms (+/- 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  |
| IP degree of protection   | IP21   |

## Environment

|                                       |  |
|---------------------------------------|--|
| Insulation resistance                 | > 1 mOhm at 500 V DC for 1 minute to earth   |
| Noise level                           | 68.3 dB conforming to 86/188/EEC   |
| Power dissipation in W                | 131 W (natural convection) at 380 V switching frequency 2.5 kHz<br>917 W (forced convection) at 380 V switching frequency 2.5 kHz  |
| Vibration resistance                  | 1.5 mm peak to peak (f = 2...13 Hz) conforming to IEC 60068-2-6<br>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                 | 77932.15 Gal/hr(US) (295 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<br>Electrical fast transient/burst immunity test level 4 conforming to IEC 61000-4-4<br>Electrostatic discharge immunity test level 3 conforming to IEC 61000-4-2<br>Radiated radio-frequency electromagnetic field immunity test level 3 conforming to IEC 61000-4-3<br>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<br>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<br>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<br><= 3280.84 ft (1000 m) without derating   |
| Standards                             | EN/IEC 61800-3<br>UL 508C<br>EN/IEC 61800-5-1<br>IEC 61000-3-12<br>IEC 60721-3<br>IEC 61508<br>IEC 13849-1<br>EN/IEC 61800-3 (environment 1 category C2)<br>EN/IEC 61800-3 (environment 2 category C3)   |
| Product certifications                | UL<br>CSA<br>TÜV<br>REACH  |
| Marking                               | CE   |

## Ordering and shipping details

|                       |                             |
|-----------------------|-----------------------------|
| Category              | 22277 - ATV930 FRAMES 3 & 4 |
| Discount Schedule     | CP4E                        |
| GTIN                  | 00785901472582              |
| Nbr. of units in pkg. | 1                           |
| Package weight(Lbs)   | 157                         |
| Returnability         | Y                           |
| Country of origin     | IN                          |

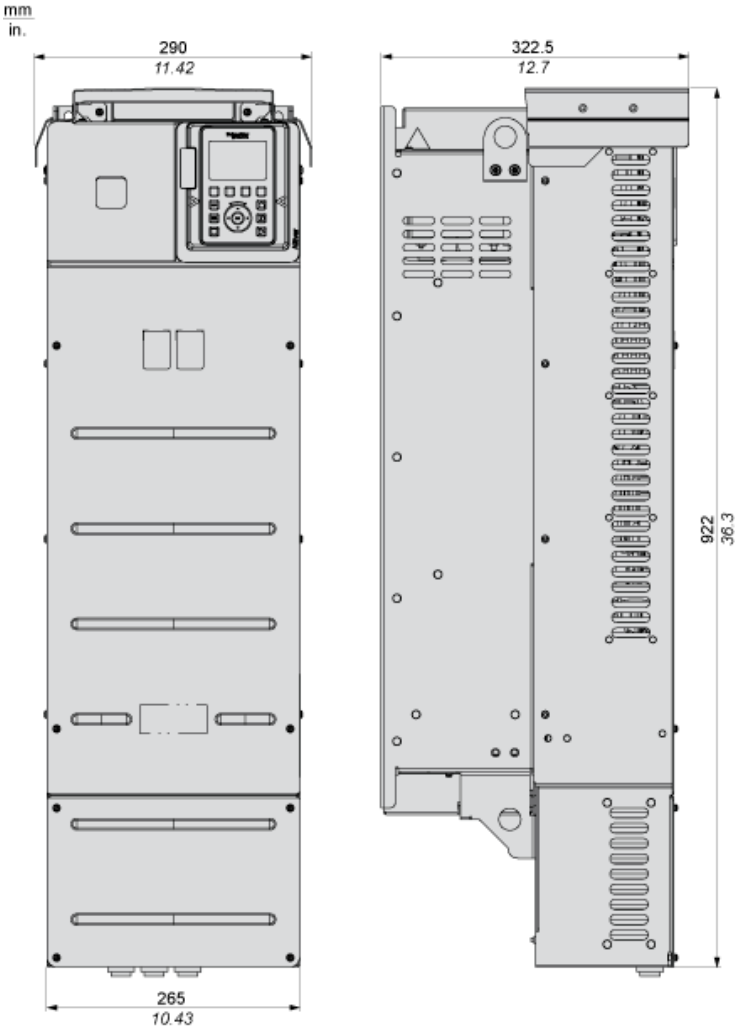
## Offer Sustainability

|                               |   |
|-------------------------------|---|
| Sustainable offer status      | Green Premium product   |
| RoHS (date code: YYWW)        | Compliant - since 1526 - Schneider Electric declaration of conformity<br><a href="#">Schneider Electric declaration of conformity</a> |
| REACH                         | Reference not containing SVHC above the threshold<br><a href="#">Reference not containing SVHC above the threshold</a>                |
| Product environmental profile | Available<br><a href="#">Product Environmental Profile</a>  |

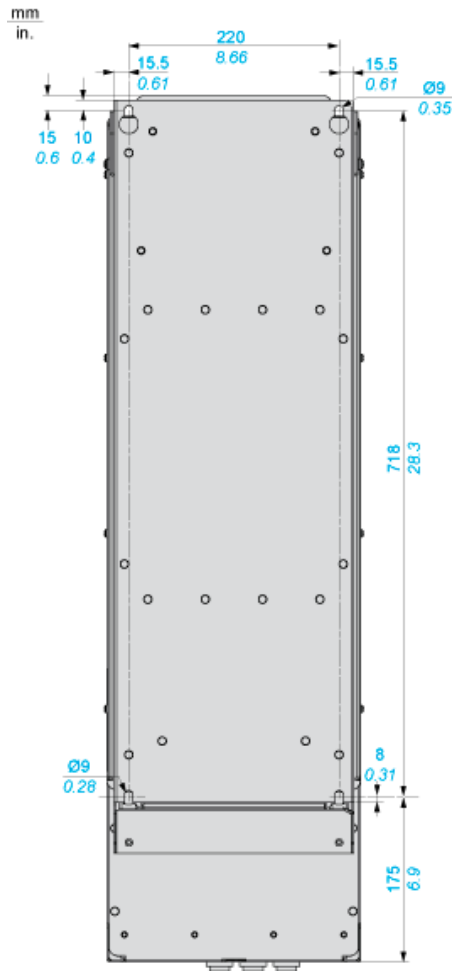
|                                  |  |
|----------------------------------|--|
| Product end of life instructions | Available<br><a href="#">End of Life Information</a>   |
| California proposition 65        | WARNING: This product can expose you to chemicals including:   |
| ----- Substance 1                | 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 <a href="http://www.p65warnings.ca.gov">www.p65warnings.ca.gov</a>                                    |

Dimensions

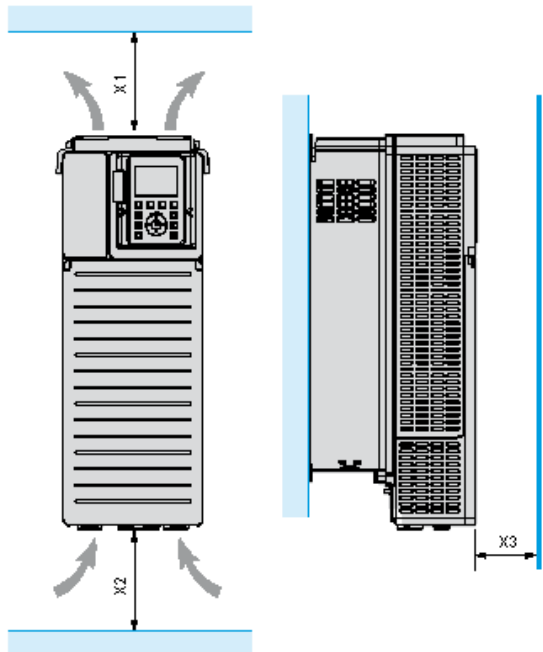
IP21 / UL Type 1 Drives - Front and Left Side View



# Drives without IP21 Top Cover - 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.

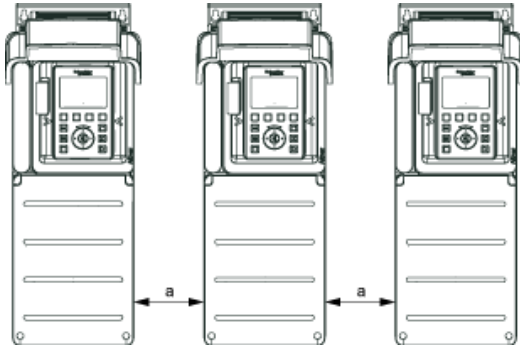


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Mounting Types

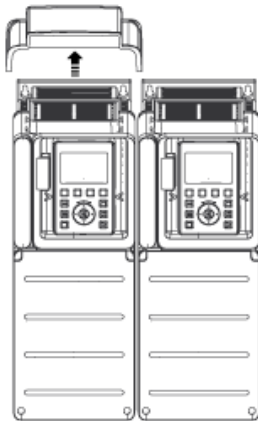
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Mounting Type A: Individual IP21

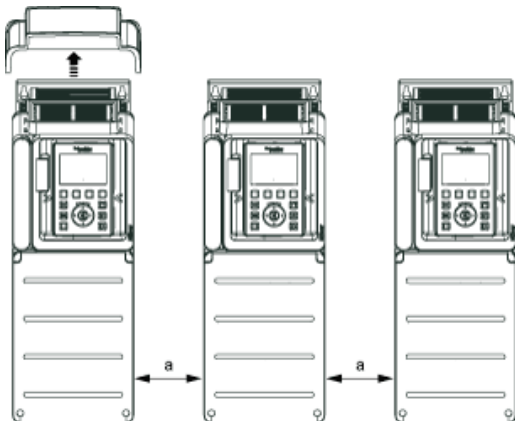


$a \geq 110 \text{ mm (4.33 in.)}$

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



Mounting Type C: Individual IP20



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