

# Product data sheet

Specifications



Refurbish variable speed drive,  
Altivar Process ATV900, ATV930,  
75kW, 400 to 480V, with braking  
unit, IP21

ATV930D75N4R



This refurbished option saves 423.841 over  
the standard condition

## Main

|                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Range of product                   | Altivar Process ATV900                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Device application                 | Industrial application                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Product or component type          | Variable speed drive                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Product destination                | Synchronous motors<br>Asynchronous motors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Product specific application       | Process for industrial                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Variant                            | Standard version<br>With braking chopper                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Network number of phases           | 3 phases                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| mounting mode                      | Wall mount                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Communication port protocol        | Modbus TCP<br>Modbus serial<br>EtherNet/IP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| [Us] rated supply voltage          | 380...480 V - 15...10 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Continuous output current          | 145 A at 2.5 kHz for normal duty<br>106 A at 2.5 kHz for heavy duty                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| EMC filter                         | Integrated<br>With EMC plate option                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| IP degree of protection            | IP21                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Degree of protection               | UL type 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| option module                      | Slot A: communication module for Profibus DP V1<br>Slot A: communication module for PROFINET<br>Slot A: communication module for DeviceNet<br>Slot A: communication module for EtherCAT<br>Slot A: communication module for CANopen daisy chain RJ45<br>Slot A: communication module for CANopen SUB-D 9<br>Slot A: communication module for CANopen screw terminals<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 |
| Discrete input logic               | 16 preset speeds                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Motor power kW                     | 75.0 kW for normal duty<br>55.0 kW for heavy duty                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Asynchronous motor control profile | Variable torque standard<br>Optimized torque mode<br>Constant torque standard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

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

|                                          |                                                                                                                                  |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>Synchronous motor control profile</b> | Permanent magnet motor<br>Synchronous reluctance motor                                                                           |
| <b>Maximum output frequency</b>          | 599 Hz                                                                                                                           |
| <b>Switching frequency</b>               | 1...8 kHz adjustable<br>2.5...8 kHz with derating factor                                                                         |
| <b>Nominal switching frequency</b>       | 2.5 kHz                                                                                                                          |
| <b>Line current</b>                      | 131.3 A at 380 V (normal duty)<br>98.9 A at 380 V (heavy duty)<br>112.7 A at 480 V (normal duty)<br>86.9 A at 480 V (heavy duty) |
| <b>Apparent power</b>                    | 93.7 kVA at 480 V (normal duty)<br>72.2 kVA at 480 V (heavy duty)                                                                |
| <b>Maximum transient current</b>         | 174 A during 60 s (normal duty)<br>159 A during 60 s (heavy duty)                                                                |
| <b>Network frequency</b>                 | 50...60 Hz                                                                                                                       |
| <b>Prospective line I<sub>sc</sub></b>   | 50 kA                                                                                                                            |

## Complementary

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Discrete input number</b>     | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Discrete input type</b>       | DI1...DI8 programmable, 24 V DC ( $\leq 30$ V), impedance: 3.5 kOhm<br>DI7, DI8 programmable as pulse input: 0...30 kHz, 24 V DC ( $\leq 30$ V)<br>STOA, STOB safe torque off, 24 V DC ( $\leq 30$ V), impedance: $> 2.2$ kOhm                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Discrete output number</b>    | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Discrete output type</b>      | 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Analogue input number</b>     | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Analogue input type</b>       | AI1, AI2, AI3 software-configurable voltage: 0...10 V DC, impedance: 30 kOhm, resolution 12 bits<br>AI1, AI2, AI3 software-configurable current: 0...20 mA/4...20 mA, impedance: 250 Ohm, resolution 12 bits                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Analogue output number</b>    | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Analogue output type</b>      | Software-configurable voltage AQ1, AQ2: 0...10 V DC impedance 470 Ohm, resolution 10 bits<br>Software-configurable current AQ1, AQ2: 0...20 mA impedance 500 Ohm, resolution 10 bits                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Relay output number</b>       | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Relay output type</b>         | 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                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Maximum switching current</b> | 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 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 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<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 |
| <b>Minimum switching current</b> | Relay output R1, R2, R3: 5 mA at 24 V DC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Physical interface</b>        | Ethernet<br>2-wire RS 485                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Connector type</b>            | 2 RJ45<br>1 RJ45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Method of access</b>          | Slave Modbus TCP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

|                                                             |                                                                                                                                    |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| <b>Transmission rate</b>                                    | 10, 100 Mbits<br>4.8 kbps<br>9600 bit/s<br>19200 bit/s                                                                             |
| <b>Transmission frame</b>                                   | RTU                                                                                                                                |
| <b>Number of addresses</b>                                  | 1...247                                                                                                                            |
| <b>Data format</b>                                          | 8 bits, configurable odd, even or no parity                                                                                        |
| <b>Type of polarization</b>                                 | No impedance                                                                                                                       |
| <b>4 quadrant operation possible</b>                        | True                                                                                                                               |
| <b>Acceleration and deceleration ramps</b>                  | Linear adjustable separately from 0.01...9999 s                                                                                    |
| <b>Motor slip compensation</b>                              | Not available in permanent magnet motor law<br>Adjustable<br>Automatic whatever the load<br>Can be suppressed                      |
| <b>Braking to standstill</b>                                | By DC injection                                                                                                                    |
| <b>Brake chopper integrated</b>                             | True                                                                                                                               |
| <b>Maximum input current</b>                                | 131.3 A                                                                                                                            |
| <b>Maximum output voltage</b>                               | 480.0 V                                                                                                                            |
| <b>Relative symmetric network frequency tolerance</b>       | 5 %                                                                                                                                |
| <b>Base load current at high overload</b>                   | 106.0 A                                                                                                                            |
| <b>Base load current at low overload</b>                    | 145.0 A                                                                                                                            |
| <b>Power dissipation in W</b>                               | Natural convection: 174 W at 380 V, switching frequency 2.5 kHz<br>Forced convection: 1369 W at 380 V, switching frequency 2.5 kHz |
| <b>With safety function Safely Limited Speed (SLS)</b>      | True                                                                                                                               |
| <b>With safety function Safe brake management (SBC/SBT)</b> | True                                                                                                                               |
| <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>               | True                                                                                                                               |
| <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                                                                                                                              |

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Protection type       | Thermal protection: motor<br>Safe torque off: motor<br>Motor phase break: motor<br>Thermal protection: drive<br>Safe torque off: drive<br>Overheating: drive<br>Overcurrent between output phases and earth: drive<br>Overload of output voltage: drive<br>Short-circuit protection: drive<br>Motor phase break: drive<br>Overvoltages on the DC bus: drive<br>Line supply overvoltage: drive<br>Line supply undervoltage: drive<br>Line supply phase loss: drive<br>Overspeed: drive<br>Break on the control circuit: drive |
| Quantity per set      | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Width                 | 290 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Height                | 922 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Depth                 | 325.5 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Product weight        | 59 kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Electrical connection | Control: screw terminal 0.5...1.5 mm²/20 AWG...16 AWG<br>DC bus: screw terminal 70...120 mm²/1/0 AWG...250 kcmil<br>Line side: screw terminal 95...120 mm²/3/0 AWG...250 kcmil<br>Motor: screw terminal 95...120 mm²/3/0 AWG...250 kcmil                                                                                                                                                                                                                                                                                     |
| Transmission rate     | 10/100 Mbit/s for 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 for Modbus serial                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Type of polarization  | No impedance for Modbus serial                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Number of addresses   | 1...247 for Modbus serial                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Supply                | External supply for digital inputs: 24 V DC (19...30 V), <1.25 mA, protection type: overload and short-circuit protection<br>Internal supply for reference potentiometer (1 to 10 kOhm): 10.5 V DC +/- 5 %, <10 mA, protection type: overload and short-circuit protection<br>Internal supply for digital inputs and STO: 24 V DC (21...27 V), <200 mA, protection type: overload and short-circuit protection                                                                                                               |
| Local signalling      | Local diagnostic: 3 LED (mono/dual colour)<br>Embedded communication status: 5 LED (dual colour)<br>Communication module status: 2 LED (dual colour)<br>Presence of voltage: 1 LED (red)                                                                                                                                                                                                                                                                                                                                     |
| Input compatibility   | DI1...DI8: discrete input level 1 PLC conforming to IEC 61131-2<br>DI7, DI8: pulse input level 1 PLC conforming to IEC 65A-68<br>STOA, STOB: discrete input level 1 PLC conforming to IEC 61131-2                                                                                                                                                                                                                                                                                                                            |
| Discrete input logic  | Positive logic (source) (DI1...DI8), < 5 V (state 0), > 11 V (state 1)<br>Negative logic (sink) (DI1...DI8), > 16 V (state 0), < 10 V (state 1)<br>Positive logic (source) (DI7, DI8), < 0.6 V (state 0), > 2.5 V (state 1)<br>Positive logic (source) (STOA, STOB), < 5 V (state 0), > 11 V (state 1)                                                                                                                                                                                                                       |
| Sampling duration     | 2 ms +/- 0.5 ms (DI1...DI8) - discrete input<br>5 ms +/- 1 ms (DI7, DI8) - pulse input<br>1 ms +/- 1 ms (AI1, AI2, AI3) - analog input<br>5 ms +/- 1 ms (AQ1, AQ2) - analog output                                                                                                                                                                                                                                                                                                                                           |
| Accuracy              | +/- 0.6 % AI1, AI2, AI3 for a temperature variation 60 °C analog input<br>+/- 1 % AQ1, AQ2 for a temperature variation 60 °C analog output                                                                                                                                                                                                                                                                                                                                                                                   |
| Linearity error       | AI1, AI2, AI3: +/- 0.15 % of maximum value for analog input<br>AQ1, AQ2: +/- 0.2 % for analog output                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Refresh time          | Relay output (R1, R2, R3): 5 ms (+/- 0.5 ms)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Isolation             | Between power and control terminals                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

# Environment

|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating altitude                                               | <= 1000 m without derating<br>1000...4800 m with current derating 1 % per 100 m                                                                                                                                                                                                                                                                                                                                                  |
| Operating position                                               | Vertical +/- 10 degree                                                                                                                                                                                                                                                                                                                                                                                                           |
| Product certifications                                           | UL<br>CSA<br>TÜV                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Marking                                                          | CE                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Standards                                                        | UL 508C<br>IEC 61800-3<br>IEC 61800-5-1<br>IEC 61000-3-12<br>IEC 60721-3<br>IEC 61508<br>IEC 13849-1                                                                                                                                                                                                                                                                                                                             |
| Maximum THDI                                                     | <48 % from 80...100 % of load conforming to IEC 61000-3-12                                                                                                                                                                                                                                                                                                                                                                       |
| Assembly style                                                   | Enclosed                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Electromagnetic compatibility                                    | 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>Electrical fast transient/burst immunity test level 4 conforming to IEC 61000-4-4<br>1.2/50 µs - 8/20 µs surge immunity test level 3 conforming to IEC 61000-4-5<br>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<br>Class 3S3 according to IEC 60721-3-3                                                                                                                                                                                                                                                                                                                                                     |
| Maximum acceleration under shock impact (during operation)       | 150 m/s² at 11 ms                                                                                                                                                                                                                                                                                                                                                                                                                |
| Maximum acceleration under vibrational stress (during operation) | 10 m/s² 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                                            | 295 m3/h                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Overvoltage category                                             | III                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Regulation loop                                                  | Adjustable PID regulator                                                                                                                                                                                                                                                                                                                                                                                                         |
| Insulation resistance                                            | > 1 MOhm 500 V DC for 1 minute to earth                                                                                                                                                                                                                                                                                                                                                                                          |
| Noise level                                                      | 68.3 dB conforming to 86/188/EEC                                                                                                                                                                                                                                                                                                                                                                                                 |
| 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 for 11 ms conforming to IEC 60068-2-27                                                                                                                                                                                                                                                                                                                                                                                     |
| Environmental characteristic                                     | Chemical pollution resistance class 3C3 conforming to IEC 60721-3-3<br>Dust pollution resistance class 3S3 conforming to IEC 60721-3-3                                                                                                                                                                                                                                                                                           |
| Relative humidity                                                | 5...95 % without condensation conforming to IEC 60068-2-3                                                                                                                                                                                                                                                                                                                                                                        |
| Ambient air temperature for operation                            | -15...50 °C (without derating)<br>50...60 °C (with derating factor)                                                                                                                                                                                                                                                                                                                                                              |
| Noise level                                                      | 68.3 dB                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Pollution degree                                                 | 2                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Ambient air transport temperature                                | -40...70 °C                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Ambient air temperature for storage                              | -40...70 °C                                                                                                                                                                                                                                                                                                                                                                                                                      |

# Packing Units

|                              |            |
|------------------------------|------------|
| Unit Type of Package 1       | PCE        |
| Number of Units in Package 1 | 1          |
| Package 1 Height             | 55.000 cm  |
| Package 1 Width              | 80.000 cm  |
| Package 1 Length             | 120.000 cm |
| Package 1 Weight             | 74.000 kg  |



## 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

Lower carbon footprint

424 kg CO2 eq.

## Use Better



### Materials and Substances

SCIP Number

B8d5fdde-166b-4332-b5d0-afde1be95439

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 [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

## Use Longer



### Lifetime extension

Repair

No

## Use Again



### Repack and remanufacture

WEEE Label



The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins

Image of product / Alternate images

Alternative

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