

# Product data sheet

Specifications



## Variable speed drive, Altivar Process ATV900, ATV930, 110 kW, 380...480 V, with braking unit, IP20

ATV930C11N4

### Main

<b>Range of product</b>	Altivar Process ATV900
<b>Device application</b>	Industrial application
<b>Product or component type</b>	Variable speed drive
<b>Product destination</b>	Synchronous motors Asynchronous motors
<b>Product specific application</b>	Process for industrial
<b>Variant</b>	Standard version With braking chopper
<b>Network number of phases</b>	3 phases Single phase
<b>Mounting mode</b>	Wall mount
<b>Communication port protocol</b>	Ethernet IP/Modbus TCP Modbus
<b>[Us] rated supply voltage</b>	380...480 V - 15...10 %
<b>Motor power kW</b>	110.0 kW for normal duty 90.0 kW for heavy duty
<b>Motor power hp</b>	150.0 hp for normal duty 125.0 hp for heavy duty
<b>Continuous output current</b>	211 A at 4 kHz for normal duty 173 A at 4 kHz for heavy duty
<b>EMC filter</b>	Integrated With EMC plate option
<b>IP degree of protection</b>	IP21
<b>Degree of protection</b>	UL type 1
<b>Option module</b>	Slot A: communication module for Profibus DP V1 Slot A: communication module for PROFINET Slot A: communication module for DeviceNet Slot A: communication module for EtherCAT Slot A: communication module for CANopen daisy chain RJ45 Slot A: communication module for CANopen SUB-D 9 Slot A: communication module for CANopen screw terminals 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
<b>Asynchronous motor control profile</b>	Constant torque standard Variable torque standard Optimized torque mode
<b>Synchronous motor control profile</b>	Permanent magnet motor Synchronous reluctance motor

<b>Maximum output frequency</b>	599 Hz
<b>Switching frequency</b>	1...8 kHz adjustable 2.5...8 kHz with derating factor
<b>Nominal switching frequency</b>	2.5 kHz
<b>Line current</b>	201.0 A at 380 V (normal duty) 170.0 A at 380 V (heavy duty) 165.0 A at 480 V (normal duty) 143.0 A at 480 V (heavy duty)
<b>Apparent power</b>	121.8 kVA at 380...480 V (normal duty) 102.6 kVA at 380...480 V (heavy duty)
<b>Maximum transient current</b>	253 A during 60 s (normal duty) 259.5 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>Relay output type</b>	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
<b>Physical interface</b>	Ethernet 2-wire RS 485
<b>Connector type</b>	2 RJ45 1 RJ45
<b>Method of access</b>	Slave Modbus TCP
<b>Transmission rate</b>	10, 100 Mbits 4.8 kbps 9600 bit/s 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 S, U or customized
<b>Motor slip compensation</b>	Adjustable Automatic whatever the load Can be suppressed Not available in permanent magnet motor law
<b>Braking to standstill</b>	By DC injection
<b>Brake chopper integrated</b>	True
<b>Maximum input current</b>	201.0 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>	173.0 A
<b>Base load current at low overload</b>	211.0 A
<b>With safety function Safely Limited Speed (SLS)</b>	True
<b>With safety function Safe brake management (SBC/SBT)</b>	True

With safety function Safe Operating Stop (SOS)	False
With safety function Safe Position (SP)	False
With safety function Safe programmable logic	False
With safety function Safe Speed Monitor (SSM)	False
With safety function Safe Stop 1 (SS1)	True
With sft fct Safe Stop 2 (SS2)	False
With safety function Safe torque off (STO)	True
With safety function Safely Limited Position (SLP)	False
With safety function Safe Direction (SDI)	False
<b>Protection type</b>	Thermal protection: motor Safe torque off: motor Motor phase break: motor Thermal protection: drive Safe torque off: drive Overheating: drive Overcurrent between output phases and earth: drive Overload of output voltage: drive Short-circuit protection: drive Motor phase break: drive Overvoltages on the DC bus: drive Line supply overvoltage: drive Line supply undervoltage: drive Line supply phase loss: drive Overspeed: drive Break on the control circuit: drive
<b>Quantity per set</b>	1
<b>Width</b>	320 mm
<b>Height</b>	1205 mm
<b>Depth</b>	393 mm
<b>Net weight</b>	104 kg
<b>Electrical connection</b>	Line side: screw terminal 2 x 50...3 x 120 mm <sup>2</sup> /2 x AWG 1/0...2 x 300 kcmil DC bus: screw terminal 0.5...1.5 mm <sup>2</sup> /AWG 20...AWG 16 Control: screw terminal 0.5...1.5 mm <sup>2</sup> /AWG 20...AWG 16  10/100 Mbit/s for Ethernet IP/Modbus TCP 4.8, 9.6, 19.2, 38.4 kbit/s for Modbus serial  8 bits, configurable odd, even or no parity for Modbus serial
<b>Type of polarization</b>	No impedance for Modbus serial  1...247 for Modbus serial
<b>Local signalling</b>	Local diagnostic: 3 LEDs (mono/dual colour) 5 LEDs (dual colour) 2 LEDs (dual colour) 1 LED (red)
<b>Isolation</b>	Between power and control terminals
<b>Environment</b>	
<b>Operating position</b>	Vertical +/- 10 degree
<b>Product certifications</b>	UL CSA TÜV
<b>Marking</b>	CE
<b>Standards</b>	UL 508C EN/IEC 61800-3 EN/IEC 61800-5-1

IEC 61000-3-12  
IEC 60721-3  
IEC 61508  
IEC 13849-1

<b>Maximum THDI</b>	<48 % full load conforming to IEC 61000-3-12
<b>Assembly style</b>	Enclosed
<b>Electromagnetic compatibility</b>	Electrostatic discharge immunity test level 3 conforming to IEC 61000-4-2 Radiated radio-frequency electromagnetic field immunity test level 3 conforming to IEC 61000-4-3 Electrical fast transient/burst immunity test level 4 conforming to IEC 61000-4-4 1.2/50 $\mu$ s - 8/20 $\mu$ s surge immunity test level 3 conforming to IEC 61000-4-5 Conducted radio-frequency immunity test level 3 conforming to IEC 61000-4-6
<b>Environmental class (during operation)</b>	Class 3C3 according to IEC 60721-3-3 Class 3S3 according to IEC 60721-3-3
<b>Maximum acceleration under shock impact (during operation)</b>	150 m/s <sup>2</sup> at 11 ms
<b>Maximum acceleration under vibrational stress (during operation)</b>	10 m/s <sup>2</sup> at 13...200 Hz
<b>Maximum deflection under vibratory load (during operation)</b>	1.5 mm at 2...13 Hz
<b>Permitted relative humidity (during operation)</b>	Class 3K5 according to EN 60721-3
<b>Overvoltage category</b>	III
<b>Regulation loop</b>	Adjustable PID regulator
<b>Insulation resistance</b>	> 1 MOhm 500 V DC for 1 minute to earth
<b>Noise level</b>	69.9 dB conforming to 86/188/EEC
<b>Vibration resistance</b>	1.5 mm peak to peak (f= 2...13 Hz) conforming to IEC 60068-2-6 1 gn (f= 13...200 Hz) conforming to IEC 60068-2-6
<b>Shock resistance</b>	6 gn for 11 ms conforming to IEC 60068-2-27
<b>Environmental characteristic</b>	Chemical pollution resistance class 3C3 conforming to EN/IEC 60721-3-3 Dust pollution resistance class 3S3 conforming to EN/IEC 60721-3-3
<b>Relative humidity</b>	5...95 % without condensation conforming to IEC 60068-2-3
<b>Ambient air temperature for operation</b>	-15...50 °C (without derating) 50...60 °C (with derating factor)
<b>Noise level</b>	69.9 dB
<b>Pollution degree</b>	2
<b>Ambient air transport temperature</b>	-25...70 °C
<b>Ambient air temperature for storage</b>	-25...70 °C

## Packing Units

<b>Unit Type of Package 1</b>	PCE
<b>Number of Units in Package 1</b>	1
<b>Package 1 Height</b>	68.000 cm
<b>Package 1 Width</b>	48.500 cm
<b>Package 1 Length</b>	144.500 cm
<b>Package 1 Weight</b>	128.000 kg

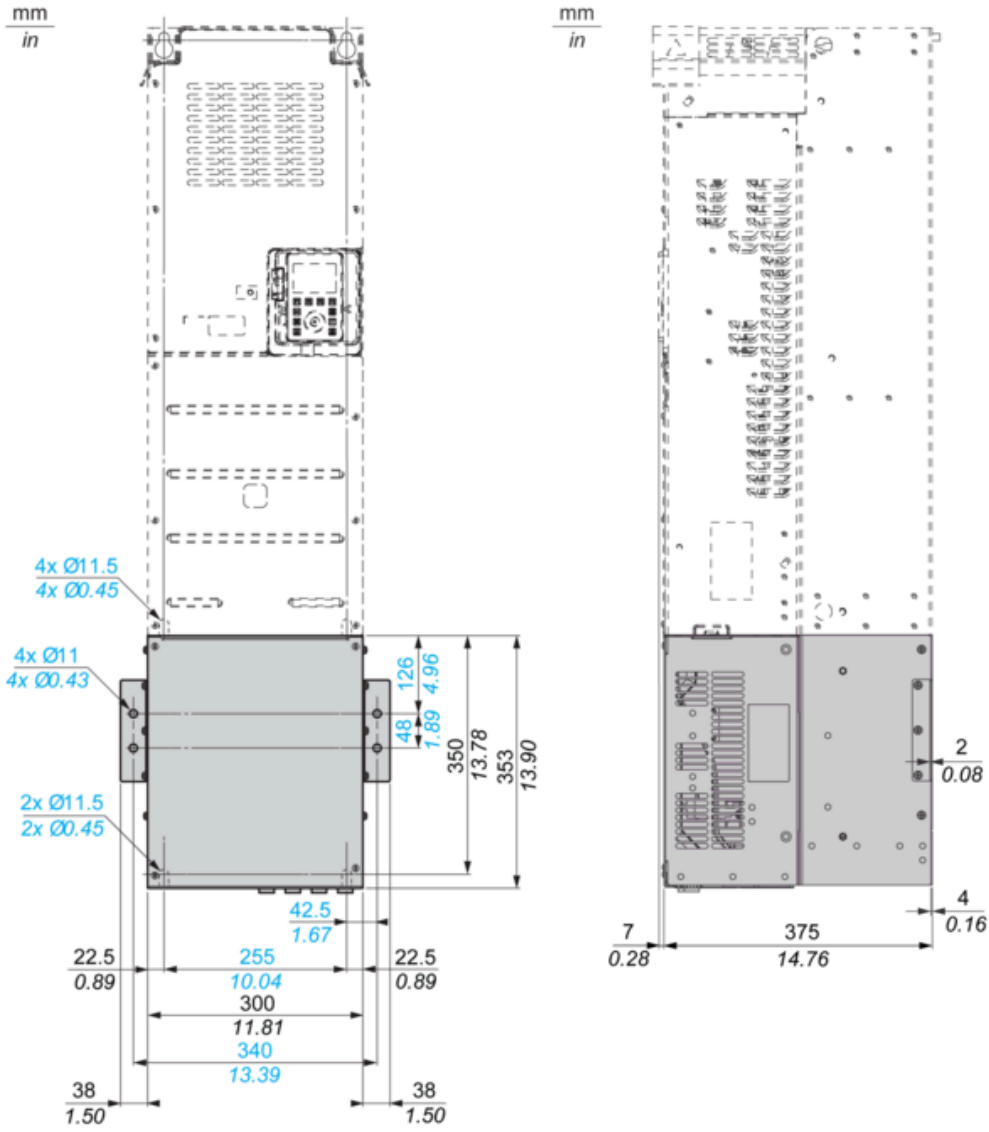
## Offer Sustainability

<b>Sustainable offer status</b>	Green Premium product
<b>REACH Regulation</b>	<a href="#">REACH Declaration</a>

<b>EU RoHS Directive</b>	Pro-active compliance (Product out of EU RoHS legal scope) <a href="#">EU RoHS Declaration</a>
<b>Mercury free</b>	Yes
<b>China RoHS Regulation</b>	<a href="#">China RoHS declaration</a>
<b>RoHS exemption information</b>	Yes
<b>Environmental Disclosure</b>	<a href="#">Product Environmental Profile</a>
<b>Circularity Profile</b>	<a href="#">End of Life Information</a>
<b>WEEE</b>	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins
<b>California proposition 65</b>	WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a>
<b>Upgradeability</b>	Upgraded components available

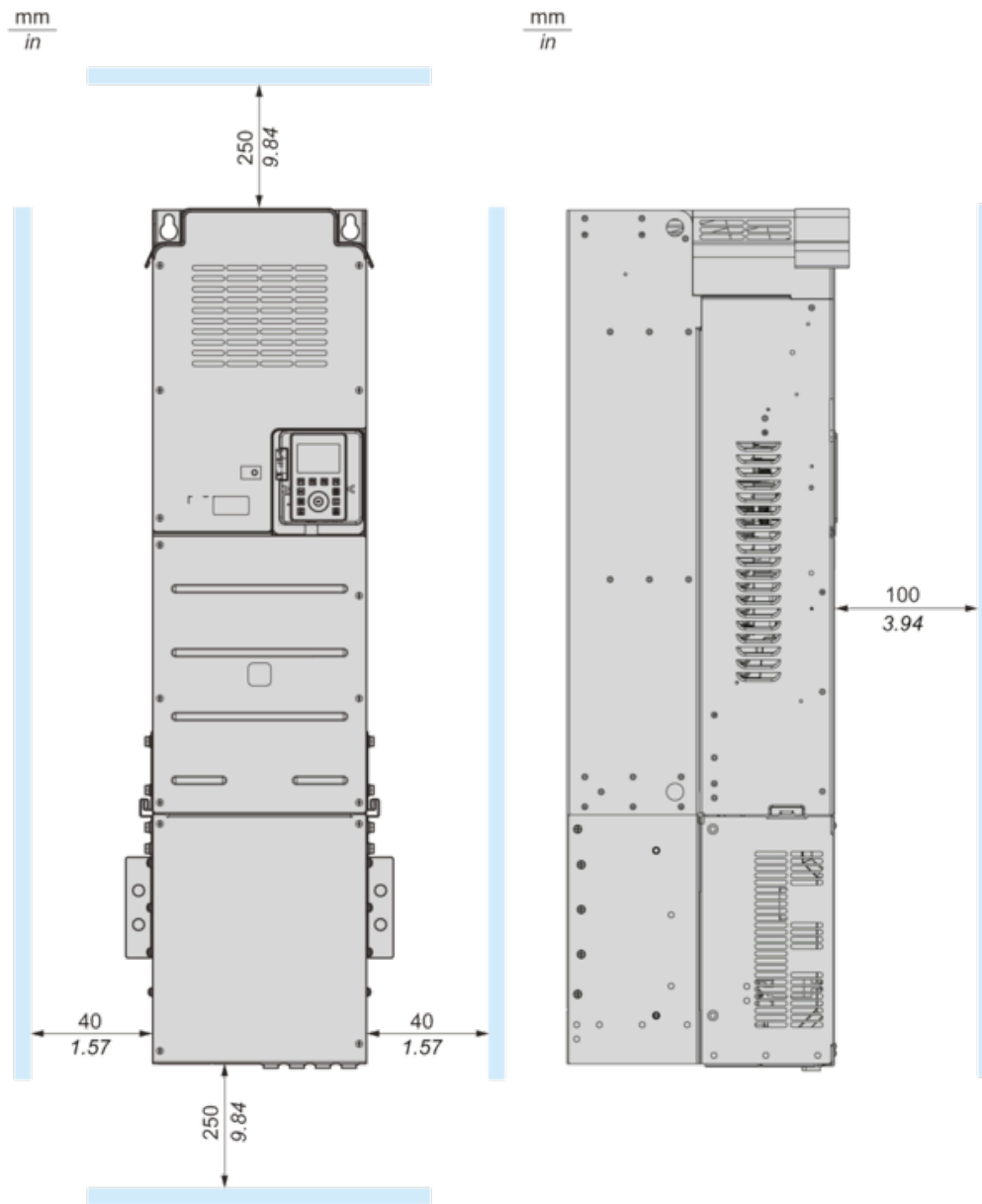
Dimensions

Front and Side Views

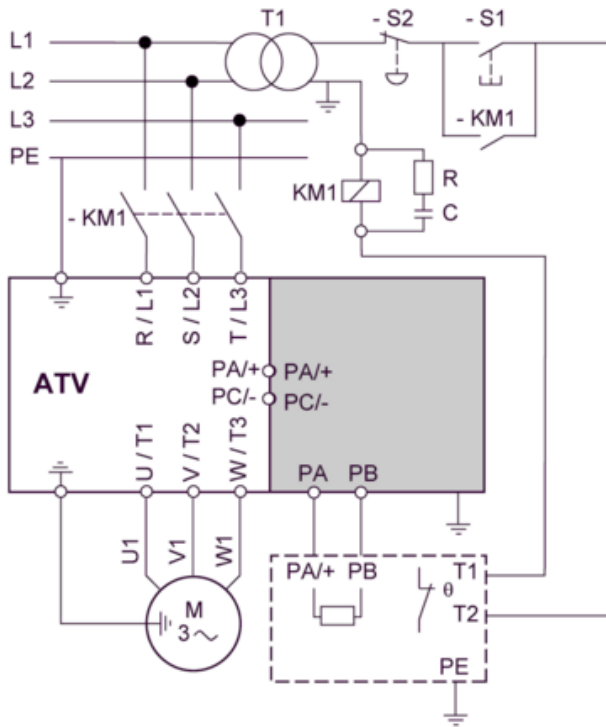


**Dimensions**

**Front and Side Views**



**Standard Connection Diagram**



**Recommended replacement(s)**