Product data sheet
Characteristics

ATV930C13N4F
floor standing drive - ATV930 - 132kW - 400/440V- w/o braking unit - IP21

Main

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	Floor-standing
EMC filter	Integrated conforming to EN/IEC 61800-3 category C3
IP degree of protection	IP21 conforming to IEC 61800-5-1 IP21 conforming to IEC 60529
Type of cooling	Forced convection
Supply frequency	50...60 Hz (+/- 5 %)
Network number of phases	3 phases
[Us] rated supply voltage	380...440 V (- 15...10 %)
Motor power kW	132 kW (normal duty) 110 kW (heavy duty)
Line current	232 A at 400 V (normal duty) 197 A at 400 V (heavy duty) 250 A at 380 V (normal duty) 207 A at 380 V (heavy duty)
Prospective line Isc	50 kA
Apparent power	161 kVA at 400 V (normal duty) 136 kVA at 400 V (heavy duty)
Continuous output current	250 A at 2.5 kHz (normal duty) 211 A at 2.5 kHz (heavy duty)
Maximum transient current	300 A during 60 s (normal duty) 317 A during 60 s (heavy duty)
Asynchronous motor control profile	Variable torque standard Optimized torque mode

	Constant torque standard
Synchronous motor control profile	Permanent magnet motor
Speed drive output frequency	0.1...500 Hz
Nominal switching frequency	2.5 kHz
Switching frequency	2...8 kHz adjustable 2.5...8 kHz with derating factor
Safety function	STO (safe torque off) SIL 3
Discrete input logic	16 preset speeds
Communication port protocol	Modbus serial Ethernet/IP Modbus TCP
Option card	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 CANopen daisy chain RJ45 Slot A : communication module for CANopen SUB-D 9 Slot A : communication module for CANopen screw terminals Slot A : communication module for 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

Complementary

Output voltage	<= power supply voltage
Motor slip compensation	Can be suppressed Automatic whatever the load Not available in permanent magnet motor law Adjustable
Acceleration and deceleration ramps	S, U or customized Linear adjustable separately from 0.01 to 9000 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, M12 bar Motor, M12 bar Control, removable screw terminals : 0.5...1.5 mm²
Motor recommanded cable cross section	1 x (3 x 150 mm²) (normal duty) 2 x (3 x 70 mm²) (normal duty) 1 x (3 x 120 mm²) (heavy duty) 2 x (3 x 50 mm²) (heavy duty)
Cable composition	2 x (3 x 70 mm²) (normal duty) 2 x (3 x 70 mm²) (heavy duty) 1 x (3 x 185 mm²) (normal duty) 1 x (3 x 185 mm²) (heavy duty)
Connector type	2 RJ45 (on the control block) for Ethernet IP/Modbus TCP 1 RJ45 (on the control block) for Modbus serial
Physical interface	2-wire RS 485 for Modbus serial
Transmission frame	RTU for Modbus serial

Transmission rate	10/100 Mbit/s for Ethernet IP/Modbus TCP 4.8, 9.6, 19.2, 38.4 kbit/s for Modbus serial
Exchange mode	Half duplex, full duplex, autonegotiation for 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
Method of access	Slave for Modbus TCP
Supply	External supply for digital inputs : 24 V DC (19...30 V) current <= 1.25 mA (overload and short-circuit protection) Internal supply for reference potentiometer (1 to 10 kOhm) : 10.5 V DC +/- 5 % current <= 10 mA (overload and short-circuit protection) Internal supply for digital inputs and STO : 24 V DC (21...27 V) current <= 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	400 mm
Height	2150 mm
Depth	605 mm
Product weight	300 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 (<= 30 V) impedance 3.5 kOhm Programmable as pulse input DI7, DI8 0...30 kHz : 24 V DC (<= 30 V) Safe torque off STOA, STOB : 24 V DC (<= 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
Discrete input logic	STOA, STOB, positive logic (source) : < 5 V (state 0) > 11 V (state 1) DI1...DI8, positive logic (source) : < 5 V (state 0) > 11 V (state 1) DI1...DI8, negative logic (sink) : > 16 V (state 0) < 10 V (state 1) DI7, DI8, positive logic (source) : < 0.6 V (state 0) > 2.5 V (state 1)
Analogue output number	2
Analogue output type	Software-configurable voltage AQ1, AQ2 : 0...10 V DC impedance 470 Ohm, resolution 10 bits Software-configurable current AQ1, AQ2 : 0...20 mA impedance 500 Ohm, resolution 10 bits
Discrete output number	2
Discrete output type	Logic output DQ+ : 0...1 kHz (<= 30 V) DC, < 100 mA Programmable as pulse output DQ+ : 0...30 kHz (<= 30 V) DC, < 20 mA Logic output DQ- : 0...1 kHz (<= 30 V) DC, < 100 mA
Sampling duration	Discrete input DI1...DI8 : 2 ms (+/- 0.5 ms) Pulse input DI7, DI8 : 5 ms (+/- 1 ms) Analog input AI1, AI2, AI3 : 1 ms (+/- 1 ms) Analog output AQ1, AQ2 : 5 ms (+/- 1 ms)
Accuracy	Analog input AI1, AI2, AI3 : +/- 0.6 % for a temperature variation 60 °C Analog output AQ1, AQ2 : +/- 1 % for a temperature variation 60 °C
Linearity error	Analog input AI1, AI2, AI3 : +/- 0.15 % of maximum value Analog output AQ1, AQ2 : +/- 0.2 %
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 (+/- 0.5 ms)
Minimum switching current	Relay output R1, R2, R3 : 5 mA at 24 V DC
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
Isolation	Between power and control terminals
Specific application	Process
IP degree of protection	IP21
Discrete and process manufacturing	Food and beverage processing mixer Food and beverage processing conveyor Food and beverage processing shredder Hoisting process crane Marine thruster Marine winch Material working (wood, ceramic, stone, pvc, metal) press Material working (wood, ceramic, stone, pvc, metal) extruder Mining mineral and metal other application Oil and gas drilling rig Oil and gas progressive cavity pump Oil and gas rod pump Oil and gas swapping pump Oil and gas compressor for regasification Oil and gas separator Oil and gas other application Water and waste water separator
Power range	110...220 kW 380...440 V 3 phases
Motor starter type	Variable speed drive

Environment

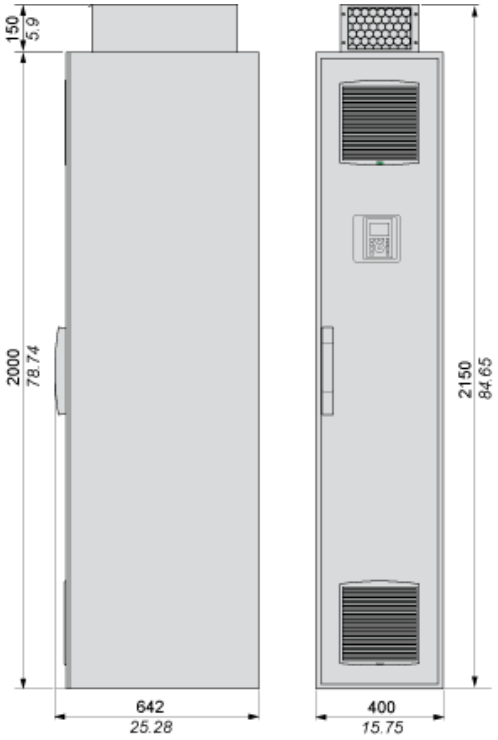
Insulation resistance	> 1 mOhm at 500 V DC for 1 minute to earth
Noise level	69 dB conforming to 86/188/EEC
Power dissipation in W	3150 W switching frequency 2.5 kHz (normal duty) 2520 W switching frequency 2.5 kHz (heavy duty)
Volume of cooling air	720 m3/h
Operating position	Vertical +/- 10 degree
THDI	<= 48 % full 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
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
Relative humidity	5...95 % without condensation conforming to IEC 60068-2-3
Ambient air temperature for operation	-15...40 °C without derating 40...50 °C with derating factor
Ambient air temperature for storage	-40...70 °C
Operating altitude	1000...4800 m with current derating 1 % per 100 m <= 1000 m without derating
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
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 2 category C3)
Product certifications	CSA TÜV REACH
Marking	CE

Offer Sustainability

Sustainable offer status	Green Premium product
RoHS (date code: YYWW)	Compliant - since 1601 - 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
Product end of life instructions	Available

Dimensions

Views: Right - Front



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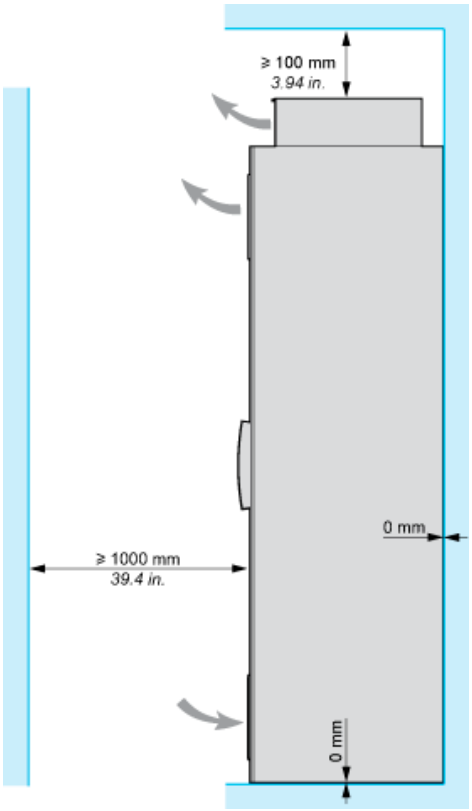
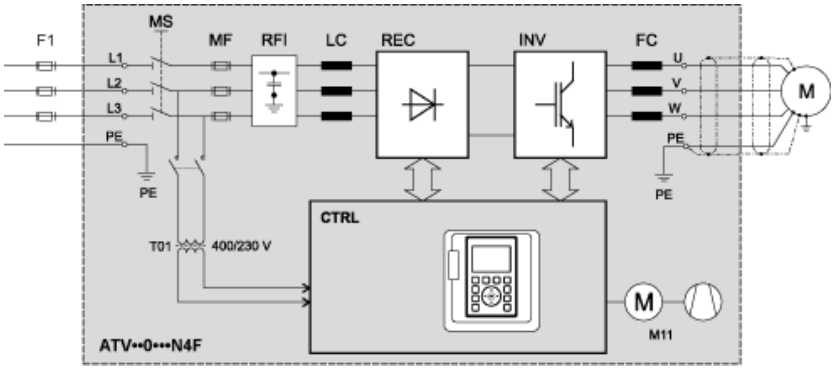
Clearances

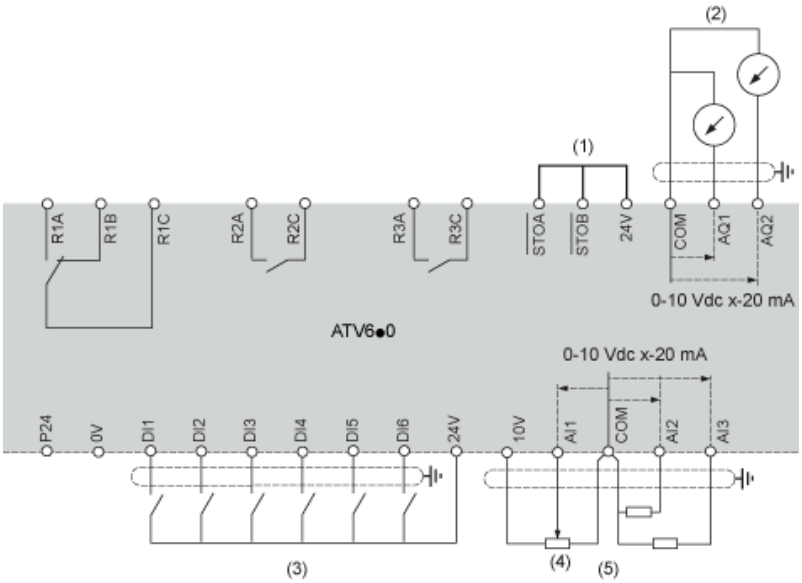


Floor Standing Drive Circuit Diagram



F1 External pre-fuse or circuit breaker
MS Built-in main switch (only available on IP54 drives)
T01 Control transformer 400 / 230 V AC
MF aR fuses
RFI Built-in RFI filter
LC Line reactor choke
REC Rectifier module
INV Inverter module
FC dv/dt filter (from 355 kW the dv/dt filter choke 150 m is built-in as standard)
CTRLControl panel
M11 Fan in enclosure door

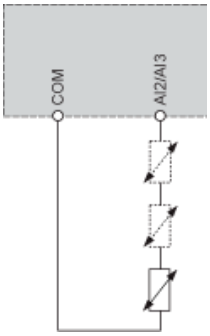
Control Block Wiring Diagram



(1) Safe Torque Off
(2) Analog Output
(3) Digital Input
(4) Reference potentiometer
(5) Analog Input
A1 : ATV6.. Drive
R1A, R1B, R1C : Fault relay
R2A, R2C : Sequence relay
R3A, R3C : Sequence relay

Sensor Connection

It is possible to connect either 1 or 3 sensors on terminals AI2 or AI3.



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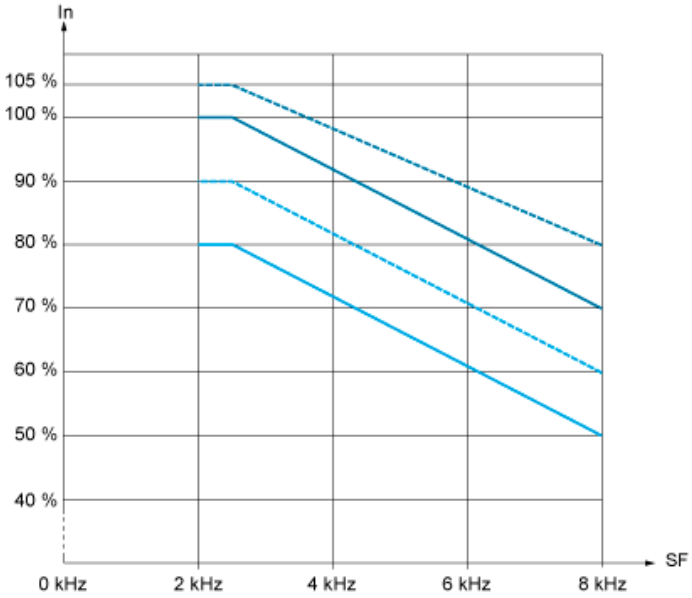
Derating Curves

Normal Duty

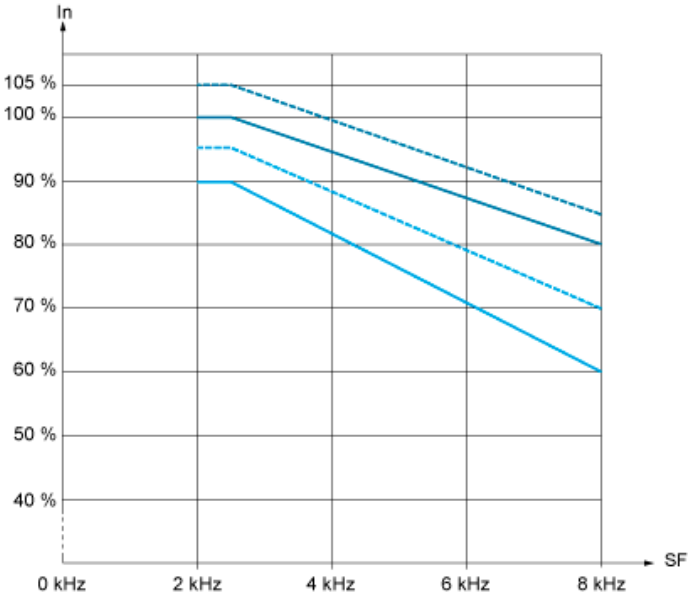


30 °C (86 °F)
40 °C (104 °F)
45 °C (122 °F)
50 °C (140 °F)C

In : Nominal Drive Current
SF : Switching Frequency

Derating Curves

Heavy Duty



30 °C (86 °F)
40 °C (104 °F)
45 °C (122 °F)
50 °C (140 °F)C

In : Nominal Drive Current
SF : Switching Frequency

Our Proposal: Circuit Breaker + Contactor + Drive for Motor Power 132 kW and 380 VAC

Motor power (kW)	Motor Starter	Information
132	 ATV930C13N4F	The base configuration is “ready to use” please contact an expert for further information.

Non contractual pictures.