Main

Variant

Option card

Communication module, CANopen Communication module, EtherCAT Communication module, Profibus DP V1 Communication module, PROFINET Communication module, Ethernet Powerlink Communication module, EtherNet/IP Communication module. DeviceNet

200...240 V - 15...10 %

variable speed drive, Altivar

[Us] rated supply voltage

Motor power kW 11 kW for heavy duty

EMC filter Without EMC filter

IP degree of protection

Complementary

Discrete input number 7

Discrete input type STO safe torque off, 24 V DC, impedance: 1.5 kOhm DI1...DI6 logic inputs, 24 V DC (30 V)

IP20

DI5 programmable as pulse input: 0...30 kHz, 24 V DC (30 V)

Discrete input logic Positive logic (source)

Negative logic (sink)

Discrete output number

Open collector DQ+ 0...1 kHz 30 V DC 100 mA Discrete output type

Open collector DQ- 0...1 kHz 30 V DC 100 mA

Analogue input number

Analogue input type Al1 voltage: 0...10 V DC, impedance: 30 kOhm, resolution 10 bits

Al2 bipolar differential voltage: +/- 10 V DC, impedance: 30 kOhm, resolution 10 bits

Al3 current: 0...20 mA (or 4-20 mA, x-20 mA, 20-x mA or other patterns by configuration), impedance:

250 Ohm, resolution 10 bits

Analogue output number

Analogue output type Softwee-Configurate current AST 1, 23 m A meedance 800 Own, resolution 10 bits Softwee configurate relay legis PLA1 N Ordershad building (20000 cycles Configurate relay legis PLA1 N Ordershad building (20000 cycles Configurate relay legis PLA1 N Ordershad building (20000 cycles Configurate relay legis PLA1 N Ordershad building (20000 cycles Configurate relay legis PLA1 N Ordershad building (20000 cycles Configurate relay legis PLA1 N Ordershad building) (20000 cycles Configurate relay legis PLA1 N Ordershad durshadly (20000 cycles Configurate relay legis PLA1 N Ordershad building) (20000 cycles Configurate relay legis PLA1 N Ordershad building) (20000 cycles Configurate relay legis PLA1 N Ordershad building) (20000 cycles Configurate relay legis PLA1 N Ordershad building) (20000 cycles Configurate relay legis PLA1 N Ordershad building) (20000 cycles Configurate relay legis PLA1 N Ordershad building) (20000 cycles Configurate relay legis PLA1 N Ordershad building) (20000 cycles Configurate relay legis PLA1 N Ordershad Relay output PLA1 R PLA1 PLA1 C CAN PLA2 Control of PLA1 PLA1 PLA1 PLA1 PLA1 PLA1 PLA1 PLA1		
Configurable restly sign R.R.R. NC interfaced durability 1000000 cycles Configurable restly sign R.R.C. PEA. PEC or electrical durability 100000 cycles Configurable restly sign R.R.C. PEA. PEC or electrical durability 100000 cycles Configurable restly sign R.R.C. PEA. PEC or instaltive load. cos phi = 1.3 A st 250 V.A.C. Peters of the period of the p	Analogue output type	
Configurable relay logic RZA No electrical durability 1000000 cycles Configurable relay logic RZA No electrical durability 1000000 cycles Maximum switching current Relay public R1A, R1B, R1C (no residite bad, cap pile = 1.5 A at 250 V AC Relay public R1A, R1B, R1C, R2A, R2C on inductive load, cap pile - 0.4 and LR = 7 ms. 2 A at 250 V AC Relay public R1A, R1B, R1C, R2A, R2C on inductive load, cap pile - 0.4 and LR = 7 ms. 2 A at 250 V AC Relay public R2A, R1B, R1C, R2A, R2C on inductive load, cap pile - 0.4 and LR = 7 ms. 2 A at 250 V AC Relay public R2A, R2C on residitive load, cap pile - 0.4 and LR = 7 ms. 2 A at 250 V AC Relay public R2A, R2C on residitive load, cap pile - 0.4 and LR = 7 ms. 2 A at 250 V AC Relay public R2A, R2C on residitive load, cap pile - 1.5 A at 250 V AC Relay public R2A, R2C on residitive load, cap pile - 1.5 A at 250 V AC Relay public R2A, R2C on residitive load, cap pile - 1.5 A at 250 V AC Relay public R2A, R2C on residitive load, cap pile - 1.5 A at 250 V AC Relay public R2A, R2C on residitive load, cap pile - 1.5 A at 250 V AC Relay public R2A, R2C on residitive load, cap pile - 1.5 A at 250 V AC Relay public R2A, R2C on residitive load, cap pile - 1.5 A at 250 V AC Relay public R2A, R2C on residitive load, cap pile - 1.5 A at 250 V AC Relay public R2A, R2C on residitive load, cap pile - 1.5 A at 250 V AC Relay public R2A, R2C on residitive load, cap pile - 1.5 A at 250 V AC Relay public R2A, R2C on residitive load, cap pile - 1.5 A at 250 V AC Relay public R2A, R2C on residitive load, cap pile - 1.5 A at 250 V R2A, R2C on residitive load, cap pile - 1.5 A at 250 V R2A, R2C on residitive load, cap pile - 1.5 A at 250 V R2A, R2C on residitive load, cap pile - 1.5 A at 250 V R2A, R2C on residitive load, cap pile - 1.5 A at 250 V R2A, R2C on residitive load, cap pile - 1.5 A at 250 V R2A, R2C on residitive load, cap pile - 1.5 A at 250 V R2A, R2C on residitive load, cap pile - 1.5 A at 250 V R2A, R2C on residitive load, cap pile - 1.5 A at 250 V R2A, R2C on residitive lo	Relay output type	Configurable relay logic R1B 1 NC electrical durability 100000 cycles
Realy output RIA. RISE. RIC. Can. RCC on industrical, cos phi = 1:3 A at 30 V DC Realy output RIA. RISE. RIC. RAC. RCC on industrical, cos phi = 0.4 and LIR = 7 ms: 2 A at 250 V Realy output RIA. RISE. RIC. RAC. RCC on industrical, cos phi = 1:5 A at 250 V AC Realy output RIA. RISE. RIC. RAC. RCC on industrical, cos phi = 1:5 A at 250 V AC Realy output RIA. RISE. RIC. RAC. RCC on industrical can. cos phi = 1:5 A at 250 V AC Realy output RIA. RISE. RIC. RAC. RCC on industrical can. cos phi = 1:5 A at 250 V AC Realy output RIA. RISE. RIC. R2A. R2C: 5 mA at 24 V DC Method of access Slave CANopen 4 quadrant operation possible True Asynchronous motor control Profile Asynchronous motor control Profile Transient overtorque 170—200 % of nominal motor torque Maximum output frequency 0.599 kHz Acceleration and deceleration Automatic weather the load Adjustable D. 300 % Reap weithing Rea		Configurable relay logic R2A 1 NO electrical durability 100000 cycles
Relay output RIA, RISB, RIC, R2A, R2C on inabutive load, cost phi = 0.4 and LIR = 7 ms; 2.4 at 30 V DC Relay output RIA, RISB, RIC, R2A, R2C on resistive load, cost phi = 1.5 A at 30 V DC Relay output RIA, RISB, RIC, R2A, R2C: 5 mA at 24 V DC Months of access Slave CANopen 4 quadrant operation possible True Voltage/Fequency ratio. 5 points Flave-section of control profile Voltage/Fequency ratio. 5 points Flave-section entrol sention; standard Flave-section of voltage/Fequency ratio. 5 points Flave-section of voltage/Fequency ratio. 2 points Flave-section of voltage/Fequency ratio (2 or 5 points) Section Acceleration and deceleration Acceleration automatic stop with DC injection Acceleration deceleration automatic stop with DC injection Acceleration deceleration automatic stop with DC injection Acceleration deceleration automatic stop with DC injection Flave-section of voltage/Fequency ratio (2 or 5 points) Section Flave-section of voltage/Fequency ratio (2 or 5 points) Section Flave-section of voltage/Fequency ratio (2 or 5 points) Section Flave-section of voltage/Fequency ratio (2 or 5 points) Section Flave-section of voltage/Fequency ratio (2 or 5 points) Section Flave-section flav	Maximum switching current	Relay output R1A, R1B, R1C on resistive load, cos phi = 1: 3 A at 30 V DC
Relay output RZA, R2C or resistive load, cos pi = 1:5 A at 200 V AC Relay output RZA, R2C or resistive load, cos pi = 1:5 A at 30 V DC Minimum switching current Relay output RIA, R16, R1C, R2A, R2C: 6 mA at 24 V DC Method of access Slave CANopon 4 quadrant operation possible True Asynchronous motor control profile Voltage/frequency ratio, 5 points Flick vector control without sensor, standard Voltage/frequency ratio, 5 points Flick vector control without sensor, standard Voltage/frequency ratio, 2 points Synchronous motor control Synchronous motor control Yector control without sensor, standard Voltage/frequency ratio, 2 points Yector control without sensor profile Transient overtorque 170. 200 % of nominal motor torque Maximum output frequency 170. 200 % of nominal motor torque Acceleration and deceleration Ramps Acceleration and deceleration Acceleration and submatic stop with DC injection Acceleration/secleration automatic stop with DC injection Acceleration/secleration automatic stop with DC injection Motor slip compensation Acceleration/secleration automatic stop with DC injection Motor slip compensation Acceleration/secleration automatic stop with DC injection Motor slip compensation Acceleration/secleration automatic stop with DC injection Brake chopper integrated True Line current 50.9 A at 200 V (heavy duty) 51.4 A at 240 V (heavy duty) 51.4 A 1240 V (heavy duty) 51.4 A 1240 V (heavy duty) 60.9 A Maximum input current 60.9 A Maximum input current 60.9 A Maximum input current 60.9 A Maximum input current at high overload Power dissipation in W Fan-468.0 W at 200 V, switching frequency 4 kHz With safety function Safety True With safety function Safety With safety function Safet With safety function Safet With safety function Safe		Relay output R1A, R1B, R1C, R2A, R2C on inductive load, cos phi = 0.4 and L/R = 7 ms: 2 A at 30 V
Method of access Slave CANopen 4 quadrant operation possible True Asynchronous motor control profile Synchronous motor control profile Synchronous motor control profile Synchronous motor control profile Transient overtorque 170200 % of nominal motor torque Maximum output frequency 170200 % of nominal motor torque Maximum output frequency 170200 % of nominal motor torque Maximum output frequency 170200 % of nominal motor torque Maximum output frequency 170200 % of nominal motor torque Maximum output frequency 170200 % of nominal motor torque Motor slip compensation Automatic whatever the load Aquistable 0300 % Roap switching Acceleration deceleration ramp adaptation Acceleration ramp adapta		Relay output R2A, R2C on resistive load, cos phi = 1: 5 A at 250 V AC
4 quadrant operation possible Asynchronous motor control profile Asynchronous motor control profile Synchronous motor control profile Synchronous motor control profile Synchronous motor control profile Yestor control without sensor - Emergy Saving Quadratic U.ff Flux vector control without sensor - Emergy Saving Voltagafrequency ratio. 2 points Synchronous motor control profile Transient overtorque 170200 % of nominal motor torque Maximum output frequency 0.599 H-tz Acceleration and deceleration Linear U.S. S. U.I.S. Ramp saviching Ramp saviching Acceleration ramp adaptation Acceleration deceleration automatic stop with DC injection Motor slip compensation Automatic whatever the load Adjustable 0300 % Not available in voltagefrequency ratio (2 or 5 points) Switching frequency 216 H-tz with derating factor Nominal switching frequency 4 kH-tz Braking to standstill By DC injection Brake chopper integrated True 60.9 A at 200 V (heavy duty) Maximum input current 60.9 A at 240 V (heavy duty) Maximum input current 60.9 A Maximum output voltage 240 V Apparent power 21.4 kVA at 240 V (heavy duty) Network frequency 5% frequency tolerance Prospective line Isc 22 kA Base load current at high overload With safety function Safety Limited Speed (SLS) With safety function Safety Limited Speed (SLS) With safety function Safety With safety function Safe brake management (SBC/SBT) With safety function Safety With safety function Safety With safety function Safety With safety function Safety False	Minimum switching current	Relay output R1A, R1B, R1C, R2A, R2C: 5 mA at 24 V DC
Asynchronous motor control profile Voltagefrequency ratio, 5 points Flux vector control without sensor, standard Voltagefrequency ratio. Florety Saving, quadratic Ulf Flux vector control without sensor - Energy Saving Voltagefrequency ratio. 2 percent Saving quadratic Ulf Flux vector control without sensor - Energy Saving Voltagefrequency ratio. 2 percent Saving Voltagefrequency saving, quadratic Ulf Flux vector control without sensor Transient overtorque 170200 % of nominal motor torque Maximum output frequency Acceleration and deceleration ramps Linear U U S GUS Ramp switching Radiotagefrequency ratio (2 or 5 points) Switching frequency 2 -1 6 kHz with deraling factor Nominal switching frequency 4 kHz Braking to standstill By DC injection Brake chopper integrated True 60 9 A at 200 V (heavy duty) Maximum input current 60 9 A Maximum input current 60 9 A Maximum output voltage 240 V Apparent power 21.4 kVA at 240 V (heavy duty) Maximum output voltage Apparent power 21.4 kVA at 240 V (heavy duty) Network frequency 5060 Hz Relative symmetric network frequency tolerance Prospective line Isc 22 kA Base load current at high overload With safety function Safe brake management (SBC/SBT)	Method of access	Slave CANopen
Flix vector control without sensor, standard voltage/frequency ratio. Florry Saving, quadratic Uf Flix vector control without sensor - Energy Saving valuration under the profile of the p	4 quadrant operation possible	True
Voltage#requency ratio, 2 points	=	Flux vector control without sensor, standard Voltage/frequency ratio - Energy Saving, quadratic U/f
Profile Transient overtorque 170200 % of nominal motor torque Maximum output frequency 0.599 kHz Acceleration and deceleration ramps Linear U S CUS CUS CUS CUS S CUS CU		
Maximum output frequency O.599 kHz Acceleration and deceleration amps Linear U S CUS Ramp switching Acceleration automatic stop with DC injection Motor slip compensation Automatic whatever the load Adjustable 0300 % Not available in voltage/frequency ratio (2 or 5 points) Switching frequency 216 kHz adjustable 410 kHz with derating factor Nominal switching frequency 4 kHz Braking to standstill By DC injection Brake chopper integrated True Line current 60 9 A at 200 V (heavy duty) 51.4 A at 240 V (heavy duty) 51.4 A at 240 V (heavy duty) Maximum input current 60.9 A Maximum output voltage 240 V Apparent power 21.4 kVA at 240 V (heavy duty) Network frequency 5060 Hz Relative symmetric network frequency tolerance Prospective line Isc 22 kA Base load current at high overload Power dissipation in W Fan: 468.0 W at 200 V, switching frequency 4 kHz With safety function Safely Limited Speed (SLS) With safety function Safe brake management (SBC/SBT) With safety function Safe False		Vector control without sensor
Acceleration and deceleration ramps Linear U S CUS Ramp switching Acceleration/deceleration and acceleration and acceleration application Acceleration/deceleration and acceleration and acceleration faceleration deceleration and acceleration deceleration and matter stop with DC injection Motor slip compensation Automatic whatever the load Adjustable 0300 % Not available in voltage/frequency ratio (2 or 5 points) Switching frequency 4 kHz Braking to standstill By DC injection Brake chopper integrated True Line current 60.9 A at 200 V (heavy duty) 51.4 A at 240 V (heavy duty) 4 kHz Maximum input current 60.9 A Maximum output voltage 240 V Apparent power 21.4 kVA at 240 V (heavy duty) Network frequency 5060 Hz Relative symmetric network frequency frequency tolerance Prospective line Isc 22 kA Base load current at high overload Power dissipation in W Fan: 468.0 W at 200 V, switching frequency 4 kHz With safety function Safely Limited Speed (SLS) With safety function Safe brake management (SBC/SBT) With safety function Safe False With safety function Safe False	Transient overtorque	170200 % of nominal motor torque
ramps U S CUS Ramp switching Acceleration/deceleration ramp adaptation Acceleration/deceleration automatic stop with DC injection Motor slip compensation Automatic whatever the load Adjustable 0300 % Not available in voltage/frequency ratio (2 or 5 points) Switching frequency 216 kHz adjustable 416 kHz with derating factor Nominal switching frequency 4 kHz Braking to standstill By DC injection Brake chopper integrated True Line current 60.9 A at 200 V (heavy duty) 51.4 A at 240 V (heavy duty) Maximum input current 60.9 A Maximum output voltage 240 V Apparent power 21.4 kVA at 240 V (heavy duty) Network frequency 5060 Hz Relative symmetric network frequency tolerance Prospective line Isc 22 kA Base load current at high overload Power dissipation in W Fan: 468.0 W at 200 V, switching frequency 4 kHz With safety function Safe brake management (SBC/SBT) With safety function Safe brake management (SBC/SBT) With safety function Safe False	Maximum output frequency	0.599 kHz
Acceleration/deceleration automatic stop with DC injection Automatic whatever the load Adjustable 0, 300 % Not available in voltage/frequency ratio (2 or 5 points) Switching frequency 216 kHz adjustable 416 kHz with derating factor Nominal switching frequency 4 kHz Braking to standstill By DC injection Brake chopper integrated True Line current 60.9 A at 200 V (heavy duty) 51.4 A at 240 V (heavy duty) Maximum input current 60.9 A Maximum output voltage 240 V Apparent power 21.4 kVA at 240 V (heavy duty) Network frequency 5060 Hz Relative symmetric network frequency tolerance Prospective line Isc 22 kA Base load current at high overload Power dissipation in W Fan: 468.0 W at 200 V. switching frequency 4 kHz With safety function Safe brake management (SBC/SBT) With safety function Safe False		U S CUS Ramp switching
Adjustable 0300 % Not available in voltage/frequency ratio (2 or 5 points) Switching frequency 216 kHz adjustable 416 kHz with derating factor Nominal switching frequency 4 kHz Braking to standstill By DC injection Brake chopper integrated True Line current 60.9 A at 200 V (heavy duty) 51.4 A at 240 V (heavy duty) Maximum input current 60.9 A Maximum output voltage 240 V Apparent power 21.4 kVA at 240 V (heavy duty) Network frequency 5060 Hz Relative symmetric network frequency tolerance Prospective line Isc 22 kA Base load current at high overload Power dissipation in W Fan: 468.0 W at 200 V, switching frequency 4 kHz With safety function Safe brake management (SBC/SBT) With safety function Safe False		·
416 kHz with derating factor Nominal switching frequency 4 kHz Braking to standstill By DC injection Brake chopper integrated True Line current 60.9 A at 200 V (heavy duty) 51.4 A at 240 V (heavy duty) Maximum input current 60.9 A Maximum output voltage 240 V Apparent power 21.4 kVA at 240 V (heavy duty) Network frequency 5060 Hz Relative symmetric network frequency tolerance Prospective line Isc 22 kA Base load current at high overload Power dissipation in W Fan: 468.0 W at 200 V, switching frequency 4 kHz With safety function Safely Limited Speed (SLS) With safety function Safe brake management (SBC/SBT) With safety function Safe False	Motor slip compensation	Adjustable 0300 %
Braking to standstill By DC injection Brake chopper integrated True Line current 60.9 A at 200 V (heavy duty) 51.4 A at 240 V (heavy duty) Maximum input current 60.9 A Maximum output voltage 240 V Apparent power 21.4 kVA at 240 V (heavy duty) Network frequency 5060 Hz Relative symmetric network frequency tolerance Prospective line Isc 22 kA Base load current at high overload Power dissipation in W Fan: 468.0 W at 200 V, switching frequency 4 kHz With safety function Safely Limited Speed (SLS) With safety function Safe brake management (SBC/SBT) With safety function Safe False	Switching frequency	•
Brake chopper integrated Line current 60.9 A at 200 V (heavy duty) 51.4 A at 240 V (heavy duty) Maximum input current 60.9 A Maximum output voltage 240 V Apparent power 21.4 kVA at 240 V (heavy duty) Network frequency 5060 Hz Relative symmetric network frequency tolerance Prospective line Isc 22 kA Base load current at high overload Power dissipation in W Fan: 468.0 W at 200 V, switching frequency 4 kHz With safety function Safely Limited Speed (SLS) With safety function Safe brake management (SBC/SBT) With safety function Safe False	Nominal switching frequency	4 kHz
Line current 60.9 A at 200 V (heavy duty) 51.4 A at 240 V (heavy duty) Maximum input current 60.9 A Maximum output voltage 240 V Apparent power 21.4 kVA at 240 V (heavy duty) Network frequency 5060 Hz Relative symmetric network frequency tolerance Prospective line Isc 22 kA Base load current at high overload Power dissipation in W Fan: 468.0 W at 200 V, switching frequency 4 kHz With safety function Safely Limited Speed (SLS) With safety function Safe brake management (SBC/SBT) With safety function Safe False With safety function Safe False	Braking to standstill	By DC injection
Maximum input current 60.9 A Maximum output voltage 240 V Apparent power 21.4 kVA at 240 V (heavy duty) Network frequency 5060 Hz Relative symmetric network frequency tolerance Prospective line Isc 22 kA Base load current at high overload Power dissipation in W Fan: 468.0 W at 200 V, switching frequency 4 kHz With safety function Safely Limited Speed (SLS) With safety function Safe brake management (SBC/SBT) With safety function Safe False	Brake chopper integrated	True
Maximum output voltage 240 V Apparent power 21.4 kVA at 240 V (heavy duty) Network frequency 5060 Hz Relative symmetric network frequency tolerance Prospective line Isc 22 kA Base load current at high overload Power dissipation in W Fan: 468.0 W at 200 V, switching frequency 4 kHz With safety function Safely Limited Speed (SLS) With safety function Safe brake management (SBC/SBT) With safety function Safe False	Line current	
Apparent power 21.4 kVA at 240 V (heavy duty) Network frequency 5060 Hz Relative symmetric network frequency tolerance Prospective line Isc 22 kA Base load current at high overload Power dissipation in W Fan: 468.0 W at 200 V, switching frequency 4 kHz With safety function Safely Limited Speed (SLS) With safety function Safe brake management (SBC/SBT) With safety function Safe False	Maximum input current	60.9 A
Network frequency 5060 Hz Relative symmetric network frequency tolerance Prospective line Isc 22 kA Base load current at high overload Power dissipation in W Fan: 468.0 W at 200 V, switching frequency 4 kHz With safety function Safely Limited Speed (SLS) With safety function Safe brake management (SBC/SBT) With safety function Safe False	Maximum output voltage	240 V
Relative symmetric network frequency tolerance Prospective line Isc 22 kA Base load current at high overload Power dissipation in W Fan: 468.0 W at 200 V, switching frequency 4 kHz With safety function Safely Limited Speed (SLS) With safety function Safe brake management (SBC/SBT) With safety function Safe False	Apparent power	21.4 kVA at 240 V (heavy duty)
Prospective line Isc 22 kA Base load current at high overload Power dissipation in W Fan: 468.0 W at 200 V, switching frequency 4 kHz With safety function Safely Limited Speed (SLS) With safety function Safe brake management (SBC/SBT) With safety function Safe False	Network frequency	5060 Hz
Base load current at high overload Power dissipation in W Fan: 468.0 W at 200 V, switching frequency 4 kHz With safety function Safely Limited Speed (SLS) With safety function Safe brake management (SBC/SBT) With safety function Safe False		5 %
Power dissipation in W Fan: 468.0 W at 200 V, switching frequency 4 kHz With safety function Safely Limited Speed (SLS) With safety function Safe brake management (SBC/SBT) With safety function Safe False	Prospective line Isc	22 kA
With safety function Safe brake management (SBC/SBT) True With safety function Safe brake management (SBC/SBT) With safety function Safe False		1.5 A
Limited Speed (SLS) With safety function Safe brake management (SBC/SBT) With safety function Safe False	Power dissipation in W	Fan: 468.0 W at 200 V, switching frequency 4 kHz
management (SBC/SBT) With safety function Safe False		True
		False
		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
Protection type	Input phase breaks: drive Overcurrent between output phases and earth: drive Overheating protection: drive Short-circuit between motor phases: drive Thermal protection: drive
Width	180 mm
Height	330 mm
Depth	198.0 mm
Product weight	6.8 kg
Environment	
Operating position	Vertical +/- 10 degree
Product certifications	CE ATEX NOM GOST EAC RCM KC
Marking	CE ATEX UL CSA EAC RCM
Standards	EN/IEC 61800-5-1
Electromagnetic compatibility	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 µs - 8/20 µs surge immunity test level 3 conforming to IEC 61000-4-5 Conducted radio-frequency immunity test level 3 conforming to IEC 61000-4-6 Voltage dips and interruptions immunity test conforming to IEC 61000-4-11
Environmental class (during operation)	Class 3C3 according to IEC 60721-3-3 Class 3S2 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 13200 Hz
Maximum deflection under vibratory load (during operation)	1.5 mm at 213 Hz
Permitted relative humidity (during operation)	Class 3K5 according to EN 60721-3
Volume of cooling air	156.0 m3/h
Overvoltage category	III

Adjustable PID regulator
+/- 10 % of nominal slip 0.2 Tn to Tn
2
-2570 °C
-1050 °C without derating 5060 °C with derating factor
-2570 °C

Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	22.5 cm
Package 1 Width	25.0 cm
Package 1 Length	42.0 cm
Package 1 Weight	7.887 kg
Unit Type of Package 2	S06
Number of Units in Package 2	6
Package 2 Height	73.5 cm
Package 2 Width	80.0 cm
Package 2 Length	60.0 cm
Package 2 Weight	60.982 kg

Offer Sustainability

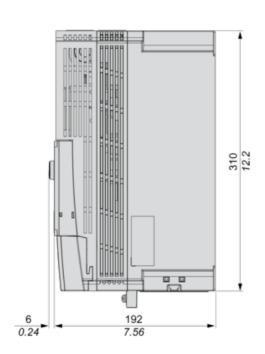
Sustainable offer status	Green Premium product
REACh Regulation	REACh Declaration
EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope) EU RoHS Declaration
Mercury free	Yes
China RoHS Regulation	China RoHS declaration
RoHS exemption information	Yes
Environmental Disclosure	Product Environmental Profile
Circularity Profile	End of Life Information
WEEE	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins
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
Upgradeability	Upgraded components available

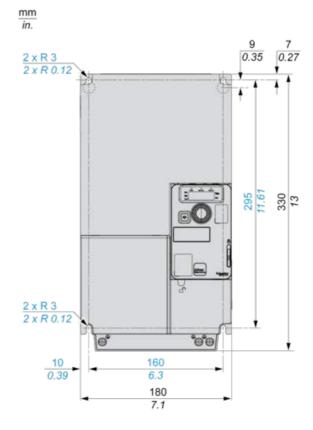
Dimensions Drawings

Dimensions

Right and Front View

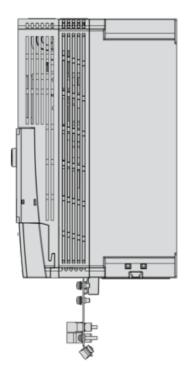
mm in



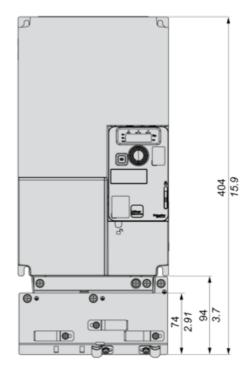


Right and Front View with EMC Plate

 $\frac{\text{mm}}{\text{in}}$



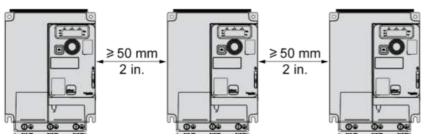




Mounting and Clearance

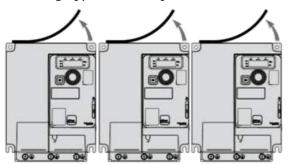
Mounting Types

Mounting Type A: Individual with Ventilation Cover

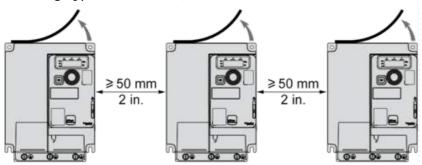


Only Possible at Ambient Temperature Less or Equal to 50 $^{\circ}\text{C}$ (122 $^{\circ}\text{F})$

Mounting Type B: Side by Side, Ventilation Cover Removed



Mounting Type C: Individual, Ventilation Cover Removed



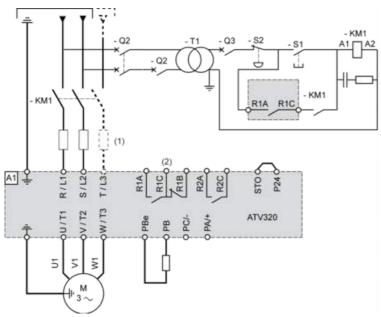
For Operation at Ambient Temperature Above 50 $^{\circ}\text{C}$ (122 $^{\circ}\text{F})$

Connections and Schema

Connection Diagrams

Diagram with Line Contactor

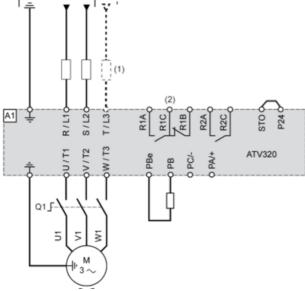
Connection diagrams conforming to standards ISO13849 category 1 and IEC/EN 61508 capacity SIL1, stopping category 0 in accordance with standard IEC/EN 60204-1.



- (1) Line choke (if used)
- (2) Fault relay contacts, for remote signaling of drive status

Diagram with Switch Disconnect

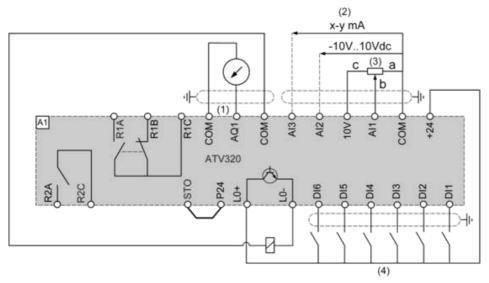
Connection diagrams conforming to standards EN 954-1 category 1 and IEC/EN 61508 capacity SIL1, stopping category 0 in accordance with standard IEC/EN 60204-1.



- (1) Line choke (if used)
- (2) Fault relay contacts, for remote signaling of drive status

Connections and Schema

Control Connection Diagram in Source Mode



- (1) Analog output
- (2) Analog inputs
- (3) Reference potentiometer (10 kOhm maxi)
- (4) Digital inputs

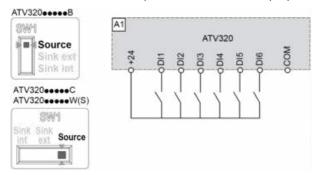
Product data sheet

ATV320D11M3C

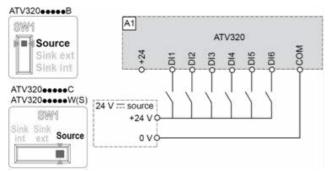
Connections and Schema

Digital Inputs Wiring

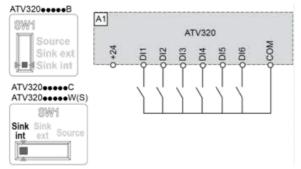
The logic input switch (SW1) is used to adapt the operation of the logic inputs to the technology of the programmable controller outputs. Switch SW1 set to "Source" position and use of the output power supply for the DIs.



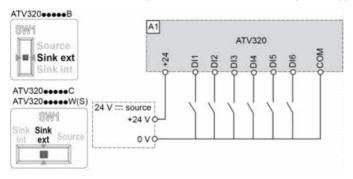
Switch SW1 set to "Source" position and use of an external power supply for the DIs.



Switch SW1 set to "Sink Int" position and use of the output power supply for the DIs.

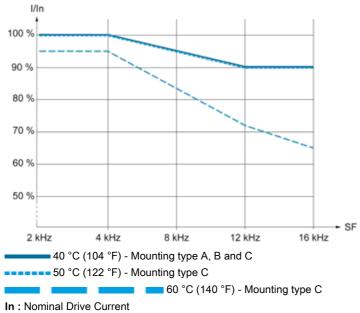


Switch SW1 set to "Sink Ext" position and use of an external power supply for the DIs.



Performance Curves

Derating Curves



SF: Switching Frequency

Recommended replacement(s)