Product datasheet

Specifications





variable speed drive, ATV320, 15 kW, 380...500 V, 3 phases, compact

ATV320D15N4C

Main

Range of product	Altivar Machine ATV320
Product or component type	Variable speed drive
Product specific application	Complex machines
variant	Standard version
Format of the drive	Compact
mounting mode	Wall mount
Communication port protocol	Modbus serial CANopen
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
[Us] rated supply voltage	380500 V - 1510 %
Nominal output current	33.0 A
Motor power kW	15.0 kW for heavy duty
EMC filter	Integrated
IP degree of protection	IP20

Complementary

Discrete input number	7
Discrete input type	STO safe torque off, 24 V DC, impedance: 1.5 kOhm DI1DI6 logic inputs, 24 V DC (30 V) DI5 programmable as pulse input: 030 kHz, 24 V DC (30 V)
Discrete input logic	Positive logic (source) Negative logic (sink)
Discrete output number	3
Discrete output type	Open collector DQ+ 01 kHz 30 V DC 100 mA Open collector DQ- 01 kHz 30 V DC 100 mA
Analogue input number	3
Analogue input type	Al1 voltage: 010 V DC, impedance: 30 kOhm, resolution 10 bits Al2 bipolar differential voltage: +/- 10 V DC, impedance: 30 kOhm, resolution 10 bits Al3 current: 020 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	1

Price is "List Price" and may be subject to a trade discount – check with your local distributor or retailer for actual price.

Analogue output type Software-configurable current AQ1 020 mA impedance 800 Ohm, resolution 10 bits Software configurable voltage AQ1 010 V DC impedance 470 Ohm, resolution 10 bits Relay output type Configurable relay logic R1A 1 NO electrical durability 100000 cycles Configurable relay logic R1A 1 NC electrical durability 100000 cycles Configurable relay logic R24 TN Celectrical durability 100000 cycles Configurable relay logic R24 TN Celectrical durability 100000 cycles Configurable relay logic R26 TN Celectrical durability 100000 cycles Configurable relay logic R26 TN Celectrical durability 100000 cycles Configurable relay logic R26 TN Celectrical durability 100000 cycles Configurable relay logic R26 TN Celectrical durability 100000 cycles Configurable relay logic R26 TN Celectrical durability 100000 cycles Configurable relay logic R26 TN Celectrical durability 100000 cycles Configurable relay logic R26 TN Celectrical durability 100000 cycles Configurable relay logic R26 TN Celectrical durability 100000 cycles Configurable relay logic R26 TN Celectrical durability 100000 cycles Configurable relay logic R26 TN Celectrical durability 100000 cycles Configurable relay logic R26 TN Celectrical durability 100000 cycles Configurable relay logic R26 TN Celectrical durability 100000 cycles Configurable relay logic R26 TN Celectrical durability 100000 cycles Configurable relay logic R26 TN Celectrical durability 100000 cycles Configurable relay logic R26 TN Celectrical durability 100000 cycles Configurable relay logic R26 TN Celectrical durability 100000 cycles Configurable logic R26 TN Celectrical durability 100000 cycles Configurable logic R26 TN Celectrical durability 100000 cycles Cellsy logic R26 TN Celectrical logic R26 TN Celectrical logic R26 TN Celectrical R26		
Relay output type Configurable relay logic R1A 1 NO electrical durability 100000 cycles Configurable relay logic R1A 1 NO electrical durability 100000 cycles Configurable relay logic R1A 1 NO electrical durability 100000 cycles Configurable relay logic R2A 1 NO electrical durability 100000 cycles Configurable relay logic R2A 1 NO electrical durability 100000 cycles Configurable relay logic R2A 1 NO electrical durability 100000 cycles Configurable relay logic R2A 1 NO electrical durability 100000 cycles Configurable relay logic R2A 1 NO electrical durability 100000 cycles Configurable relay logic R2A 1 NO electrical durability 100000 cycles Configurable relay logic R2A 1 NO electrical durability 100000 cycles Configurable relay logic R2A 1 NO electrical durability 100000 cycles Configurable relay logic R2A 1 NO electrical durability 100000 cycles Configurable relay logic R2A 1 NO electrical durability 100000 cycles Configurable relay logic R2A 1 NO electrical durability 100000 cycles Configurable relay logic R2A 1 NO electrical durability 100000 cycles Configurable relay logic R2A 1 NO electrical durability 100000 cycles Configurable relay logic R2A 1 NO electrical durability 100000 cycles Configurable relay logic R2A 1 NO electrical durability 100000 cycles Configurable relay logic R2A 1 NO electrical durability 100000 cycles Configurable relay logic R2A 1 NO electrical durability 100000 cycles Configurable relay logic R2A 1 NO electrical durability 100000 cycles Configurable R2A 1 NO electrical durability 100000 cycles Configurable R2A 1 NO electrical services and configurable related to a 1 NO electrical services and configurable related to relate related to related to relate related to related	Analogue output type	bits Software-configurable voltage AQ1: 010 V DC impedance 470 Ohm, resolution 10
Configurable relay logic R18 1 NC electrical durability 100000 cycles Configurable relay logic R10 Configurable relay logic R10 Configurable relay logic R20 Configurable relay configurab		DIES
Configurable relay logic RZ4 x 1 NO electrical durability 100000 cycles Configurable relay logic RZ4 x 1 NO electrical durability 100000 cycles Configurable relay logic RZ6 x 1 NO electrical durability 100000 cycles Configurable relay logic RZ6 x 1 NO electrical durability 100000 cycles Configurable relay logic RZ6 x 1 NO electrical durability 100000 cycles Configurable relay logic RZ6 x 1 NO electrical durability 100000 cycles x 1 S A at 350 V AC Relay output R1A, R1B, R1C on resistive load, cos phi = 1: 3 A at 250 V AC Relay output R1A, R1B, R1C, R2A, R2C on inductive load, cos phi = 0.4 and L/R = 7 ms; 2 A at 350 V AC Relay output R1A, R1B, R1C, R2A, R2C on resistive load, cos phi = 1: 5 A at 30 V DC Relay output R1A, R1B, R1C, R2A, R2C: 5 mA at 24 V DC Relay output R1A, R1B, R1C, R2A, R2C: 5 mA at 24 V DC Relay output R1A, R1B, R1C, R2A, R2C: 5 mA at 24 V DC Relay output R1A, R1B, R1C, R2A, R2C: 5 mA at 24 V DC Relay output R1A, R1B, R1C, R2A, R2C: 5 mA at 24 V DC Relay output R1A, R1B, R1C, R2A, R2C: 5 mA at 24 V DC Relay output R1A, R1B, R1C, R2A, R2C: 5 mA at 24 V DC Relay output R1A, R1B, R1C, R2A, R2C: 5 mA at 24 V DC Relay output R1A, R1B, R1C, R2A, R2C: 5 mA at 24 V DC Relay output R1A, R1B, R1C, R2A, R2C: 5 mA at 24 V DC Relay output R1A, R1B, R1C, R2A, R2C: 5 mA at 24 V DC Relay output R1A, R1B, R1C, R2A, R2C: 5 mA at 24 V DC Relay output R1A, R1B, R1C, R2A, R2C: 5 mA at 24 V DC R2A, R2	Relay output type	
Configurable relay logic R2C Maximum switching current Relay output R1A, R1B, R1C on resistive load, cos phi = 1: 3 A at 250 V AC Relay output R1A, R1B, R1C on resistive load, cos phi = 1: 3 A at 30 V DC Relay output R1A, R1B, R1C on resistive load, cos phi = 0.4 and LIR = 7 ms: 2 A at 250 V AC Relay output R1A, R1B, R1C, R2A, R2C on inductive load, cos phi = 0.4 and LIR = 7 ms: 2 A at 250 V AC Relay output R2A, R2C on resistive load, cos phi = 1.5 A at 250 V AC Relay output R2A, R2C on resistive load, cos phi = 1.5 A at 250 V AC Relay output R2A, R2C on resistive load, cos phi = 1.5 A at 250 V AC Relay output R2A, R2C on resistive load, cos phi = 1.5 A at 250 V AC Relay output R2A, R2C on resistive load, cos phi = 1.5 A at 250 V AC Relay output R2A, R2C on resistive load, cos phi = 1.5 A at 250 V AC Relay output R2A, R2C on resistive load, cos phi = 1.5 A at 250 V AC Relay output R2A, R2C on resistive load, cos phi = 1.5 A at 250 V AC Relay output R2A, R2C on resistive load, cos phi = 1.5 A at 250 V AC Relay output R2A, R2C on resistive load, cos phi = 1.5 A at 250 V AC Relay output R2A, R2C on resistive load, cos phi = 1.5 A at 250 V AC Relay output R2A, R2C on resistive load, cos phi = 1.5 A at 250 V AC Relay output R2A, R2C on resistive load, cos phi = 1.5 A at 250 V AC Relay output R2A, R2C on resistive load, cos phi = 1.5 A at 250 V AC Relay output R2A, R2C on resistive load, cos phi = 1.5 A at 250 V AC Relay output R2A, R2C on resistive load, cos phi = 1.5 A at 250 V AC Relay output R2A, R2C on resistive load, cos phi = 1.5 A at 250 V R2A, at 250 V R2A, at 250 V R2A, R2C on resistive load, cos phi = 1.5 A at 250 V R2A,		
Relay output R1A, R1B, R1C, A2A, R2C on inductive load, cos phi = 1.3 A at 30 V DC Relay output R1A, R1B, R1C, R2A, R2C on inductive load, cos phi = 0.4 and LIR = 7 ms : 2 A at 350 V AC Relay output R1A, R1B, R1C, R2A, R2C on inductive load, cos phi = 0.4 and LIR = 7 ms : 2 A at 30 V DC Relay output R2A, R2C on resistive load, cos phi = 1.5 A at 30 V DC Relay output R2A, R2C on resistive load, cos phi = 1.5 A at 30 V DC Relay output R1A, R1B, R1C, R2A, R2C; 5 mA at 24 V DC Minimum switching current Relay output R1A, R1B, R1C, R2A, R2C; 5 mA at 24 V DC Minimum switching current Relay output R1A, R1B, R1C, R2A, R2C; 5 mA at 24 V DC Minimum switching current Voltage/frequency ratio, 5 points Flux vector control without sensor, standard Voltage/frequency ratio, 2 points Flux vector control without sensor - Energy Saving, quadratic U/f Flux vector control without sensor - Energy Saving Voltage/frequency ratio, 2 points Synchronous motor control profile Vector control without sensor - Energy Saving Voltage/frequency ratio, 2 points Synchronous motor output frequency 170200 % of nominal motor torque Maximum output frequency 0.599 k1z Acceleration and deceleration Acceleration ramp adaptation Acceleration adoreside relation automatic stop with DC injection Acceleration deceleration automatic stop with DC injection Acceleration deceleration ramp adaptation Acceleration deceleration ramp adaptation Acceleration frequency 2.16 k1z adjustable 4.16 k1z with derating factor Nominal switching frequency 4 k1z Braking to standstill By DC injection Brake chopper integrated True 47.3 A at 380 V (heavy duty) Maximum output voltage 500 V Apparent power 28.8 kVA at 500 V (heavy duty) Maximum output voltage 500 V Apparent power 28.8 kVA at 500 V (heavy duty) Flux editor current at high overload Flux self-current at high overload		
Relay output R1A, R1B, R1C, R2A, R2C on inductive load, cos phi = 0.4 and L/R = 7 ms: 2 A at 250 V AC Relay output R1A, R1B, R1C, R2A, R2C on inductive load, cos phi = 0.4 and L/R = 7 ms: 2 A at 30 V DC Relay output R2A, R2C on resistive load, cos phi = 1: 5 A at 250 V AC Relay output R2A, R2C on resistive load, cos phi = 1: 5 A at 30 V DC Minimum switching current Relay output R1A, R1B, R1C, R2A, R2C: 5 mA at 24 V DC Minimum switching current Relay output R1A, R1B, R1C, R2A, R2C: 5 mA at 24 V DC Minimum switching current Voltage/frequency ratio. 5 points Flux vector control without sensor, standard Voltage/frequency ratio. 5 points Flux vector control without sensor - Energy Saving, quadratic U/f Flux vector control without sensor - Energy Saving Voltage/frequency ratio. 2 points Synchronous motor control profile Vector control without sensor - Energy Saving Voltage/frequency ratio. 2 points Synchronous motor control profile Vector control without sensor - Energy Saving Voltage/frequency ratio. 2 points Synchronous motor control profile Vector control without sensor - Energy Saving Voltage/frequency Voltage/frequency ratio. 2 points Synchronous motor control profile Vector control without sensor Transient overtorque 170200 % of nominal motor torque Maximum output frequency Acceleration/doceleration 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 standatill By DC injection Brake chopper integrated True V13 A at 380 V (heavy duty) Maximum input current 47.3 A Maximum input current 47.3 A Maximum input current 5 % Constitution of the V Apparent power 28.8 kVA at 500 V (heavy duty) 30.0 A Apparent power 28.8 kVA at 500 V (heavy duty) Frequency tolerance Frepospective line line 29 kA Base load current at high overload True With safety function S	Maximum switching current	Relay output R1A, R1B, R1C on resistive load, cos phi = 1: 3 A at 250 V AC
Relay output R1A. R1B, R1C, R2A, R2C on inductive load, cos phi = 0.4 and L/R = 7 ms: 2 A at 30 V DC Relay output R2A. R2C on resistive load, cos phi = 1: 5 A at 30 V DC Relay output R2A. R2C on resistive load, cos phi = 1: 5 A at 30 V DC Minimum switching current Relay output R1A, R1B, R1C, 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 Asynchronous motor control profile Asynchronous motor control profile Voltage/frequency ratio - Energy Saving, quadratic Urf Flux vector control without sensor - Energy Saving Voltage/frequency ratio - Energy Saving, quadratic Urf Flux vector control without sensor Voltage/frequency ratio - Energy Saving Voltage/frequency and - Energy Saving Voltage/frequency Automatic whatever the load Adjustable on Voltage/frequency ratio (2 or 5 points) Switching frequency Automatic whatever the load Adjustable on Voltage/frequency ratio (2 or 5 points) Switching frequency 4 kHz Braking to standatill By DC injection True True True True True Ar3. A at 380 V (heavy duty) Maximum input current 47.3 A Maximum output voltage 500 V Apparent power 28.8 kVA at 500 V (heavy duty) Apparent power 28.8 kVA at 500 V (heavy duty) And Saving Frequency Voltage 500 V Apparent power 28.8 kVA at 500 V (heavy duty) Frequency Voltage/fr		Relay output R1A, R1B, R1C, R2A, R2C on inductive load, cos phi = 0.4 and L/R = 7
Relay output R2A, R2C on resistive load, cos phi = 1: 5 A at 30 V DC Minimum switching current Relay output R1A, R1B, R1C, R2A, R2C: 5 mA at 24 V DC Method of access Slave CANopen True Asynchronous motor control profile Voltage/frequency ratio, 5 points Flux vector control without sensor, standard Voltage/frequency ratio - Energy Saving, quadratic Urf Flux vector control without sensor - Energy Saving Voltage/frequency ratio, 2 points Synchronous motor control profile Vector control without sensor Transient overtorque 170200 % of nominal motor torque Maximum output frequency 0.599 kHz Acceleration and deceleration ramps Linear U S CUS Ramp switching Acceleration/deceleration automatic stop with DC injection Acceleration/deceleration automatic stop with DC injection Acceleration/deceleration automatic stop with DC injection Motor slip compensation 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 47.3 A at 380 V (heavy duty) 33.3 A at 500 V (heavy duty) Maximum input current 47.3 A Maximum output voltage 500 V Apparent power 28.8 kVA at 500 V (heavy duty) network frequency 5060 Hz Relative symmetric network frequency Frequency tolerance Prospective line isc 22 kA Base load current at high overfload With safety function Safety True		Relay output R1A, R1B, R1C, R2A, R2C on inductive load, cos phi = 0.4 and L/R = 7
Method of access Slave CANopen True Asynchronous motor control profile Asynchronous motor control profile Flux vector control without sensor, standard Voltage/frequency ratio, 5 points Flux vector control without sensor, standard Voltage/frequency ratio, 2 points Synchronous motor control profile Vector control without sensor Transient overtorque 170200 % of nominal motor torque Maximum output frequency 0.599 kHz Acceleration and deceleration ramps CUS Ramp switching Acceleration ramp adaptation Acceleration/deceleration ramp adaptation Acceleration/deceleration ramp adaptation 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 47.3 A at 380 V (heavy duty) 33.3 A at 500 V (heavy duty) 33.3 A at 500 V (heavy duty) Apparent power 28.8 kVA at 500 V (heavy duty) Apparent power 28.8 kVA at 500 V (heavy duty) 7 Lead of the control of the cont		
A quadrant operation possible Asynchronous motor control profile Asynchronous motor control profile Flux vector control without sensor, standard Voltage/frequency ratio, 2 points Flux vector control without sensor standard Voltage/frequency ratio, 2 points Synchronous motor control profile Vector control without sensor Transient overtorque 170200 % of nominal motor torque Maximum output frequency 1599 kHz Acceleration and deceleration ramps Linear U S CUS Ramp switching Acceleration ramp adaptation Acceleration/deceleration ramp adaptation Acceleration/deceleration/deceleration ramp adaptation Acceleration/deceleration/deceleration ramp adaptation Acceleration/deceleration/deceleration/deceleration/deceleration/deceler	Minimum switching current	Relay output R1A, R1B, R1C, R2A, R2C: 5 mA at 24 V DC
Asynchronous motor control profile Nottage/frequency ratio . 5 points Flux vector control without sensor . standard Voltage/frequency ratio . 2 points Flux vector control without sensor . Energy Saving quadratic U/f Flux vector control without sensor . Energy Saving Voltage/frequency ratio . 2 points Synchronous motor control profile Vector control without sensor Transient overtorque 170 200 % of nominal motor torque Maximum output frequency 0.599 kHz Acceleration and deceleration Linear U S CUS Ramp switching Acceleration/deceleration ramp adaptation Acceleration/deceleration automatic stop with DC injection 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 2 16 kHz adjustable 4 16 kHz with derating factor Nominal switching frequency 4 kHz Braking to standstill By DC injection Brake chopper integrated True 47.3 A at 380 V (heavy duty) 33.3 A at 500 V (heavy duty) Maximum input current 47.3 A Maximum input current 47.3 A Maximum output voltage 500 V Apparent power 28.8 kVA at 500 V (heavy duty) 5060 Hz Relative symmetric network frequency 15 % frequency olderance Prospective line Isc 22 kA Base load current at high over-load Power dissipation in W Fan: 452.0 W at 380 V, switching frequency 4 kHz With safety function Safety True	Method of access	Slave CANopen
Flux vector control without sensor, standard Voltage/frequency ratio - Energy Saving, quadratic U/f Flux vector control without sensor - Energy Saving, quadratic U/f Flux vector control without sensor - Energy Saving Voltage/frequency ratio, 2 points Synchronous motor control profile Vector control without sensor Transient overtorque 170200 % of nominal motor torque Maximum output frequency 0.599 kHz Acceleration and deceleration Linear US Ramp switching Acceleration ramps SUS 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 47.3 A at 380 V (heavy duty) 33.3 A at 500 V (heavy duty) Maximum input current 47.3 A Maximum output voltage 500 V Apparent power 28.8 kVA at 500 V (heavy duty) metwork frequency 5060 Hz Relative symmetric network requency 150 K (heavy duty) 150 K	4 quadrant operation possible	True
Voltage/frequency ratio - Energy Saving, quadratic U/f Flux vector control without sensor - Energy Saving Voltage/frequency ratio , 2 points Synchronous motor control profile Vector control without sensor Transient overtorque 170200 % of nominal motor torque Maximum output frequency 0.599 kHz Acceleration and deceleration Linear Use Scutter of Control without sensor Scutter of Control Without Sensor Energy Saving Voltage/frequency Linear Use Scutter of Control Without Sensor Energy Saving Voltage/frequency Acceleration/deceleration ramp adaptation 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 47.3 A at 380 V (heavy duty) 33.3 A at 500 V (heavy duty) Maximum input current 47.3 A Maximum input current 47.3 A Maximum output voltage 500 V Apparent power 28.8 kVA at 500 V (heavy duty) network frequency 5060 Hz Relative symmetric network frequency 5 % From Sensor	•	
Fitx vector control without sensor - Energy Saving Voltage/frequency ratio, 2 points Synchronous motor control profile Vector control without sensor Transient overtorque 170200 % of nominal motor torque Maximum output frequency 0.599 kHz Acceleration and deceleration Linear US 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 47.3 A at 380 V (heavy duty) 33.3 A at 500 V (heavy duty) Maximum input current 47.3 A Maximum output voltage 500 V Apparent power 28.8 kVA at 500 V (heavy duty) network frequency 5060 Hz Relative symmetric network frequency 5060 Hz Relative symmetric network frequency 52 kA Base load current at high overload Power dissipation in W Fan: 452.0 W at 380 V, switching frequency 4 kHz With safety function Safely True	prome	,
Synchronous motor control profile Vector control without sensor Transient overtorque 170200 % of nominal motor torque 0.599 kHz Acceleration and deceleration ramps Linear 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 47.3 A at 380 V (heavy duty) 33.3 A at 500 V (heavy duty) Maximum input current 47.3 A Maximum output voltage 500 V Apparent power 28.8 kVA at 500 V (heavy duty) network frequency 5060 Hz Relative symmetric network frequency 5 % frequency tolerance 22 kA Base load current at high overload Safety True With safety function Safety True		Flux vector control without sensor - Energy Saving
Transient overtorque 170200 % of nominal motor torque Maximum output frequency 0.599 kHz Acceleration and deceleration ramps U S CUS Ramp switching 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 47.3 A at 380 V (heavy duty) 33.3 A at 500 V (heavy duty) Maximum input current 47.3 A Maximum output voltage 500 V Apparent power 28.8 kVA at 500 V (heavy duty) network frequency 5060 Hz Relative symmetric network frequency tolerance 22 kA Base load current at high overload Power dissipation in W Fan: 452.0 W at 380 V, switching frequency 4 kHz With safety function Safely True		Voltage/frequency ratio, 2 points
Maximum output frequency O.599 kHz Acceleration and deceleration ramps Linear U S CUS Ramp switching 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 47.3 A at 380 V (heavy duty) 33.3 A at 500 V (heavy duty) 33.3 A at 500 V (heavy duty) Maximum input current 47.3 A Maximum output voltage Apparent power 28.8 kVA at 500 V (heavy duty) network frequency 5060 Hz Relative symmetric network frequency 5 % Relative symmetric network frequency 22 kA Base load current at high overload Power dissipation in W Fan: 452.0 W at 380 V, switching frequency 4 kHz With safety function Safely True With safety function Safely True	Synchronous motor control profile	Vector control without sensor
Acceleration and deceleration ramps Linear 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 47.3 A at 380 V (heavy duty) 33.3 A at 500 V (heavy duty) Maximum input current 47.3 A Maximum output voltage 500 V Apparent power 28.8 kVA at 500 V (heavy duty) network frequency 5060 Hz Relative symmetric network frequency 5 % Frospective line Isc 22 kA Base load current at high overload Power dissipation in W Fan: 452.0 W at 380 V, switching frequency 4 kHz With safety function Safely True	Transient overtorque	170200 % of nominal motor torque
Tamps U S CUS Ramp switching Acceleration/deceleration ramp adaptation Acceleration/deceleration automatic stop with DC injection Motor slip compensation 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 True Line current 47.3 A at 380 V (heavy duty) 33.3 A at 500 V (heavy duty) Maximum input current 47.3 A Maximum output voltage 500 V Apparent power 28.8 kVA at 500 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: 452.0 W at 380 V, switching frequency 4 kHz With safety function Safely True	Maximum output frequency	0.599 kHz
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 47.3 A at 380 V (heavy duty) 33.3 A at 500 V (heavy duty) Maximum input current 47.3 A Maximum output voltage 500 V Apparent power 28.8 kVA at 500 V (heavy duty) network frequency 5 % Relative symmetric network frequency Frospective line Isc 22 kA Base load current at high overload Power dissipation in W Fan: 452.0 W at 380 V, switching frequency 4 kHz With safety function Safely True With safety function Safely		
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 47.3 A at 380 V (heavy duty) 33.3 A at 500 V (heavy duty) Maximum input current 47.3 A Maximum output voltage 500 V Apparent power 28.8 kVA at 500 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: 452.0 W at 380 V, switching frequency 4 kHz With safety function Safely True	•	
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 47.3 A at 380 V (heavy duty) 33.3 A at 500 V (heavy duty) Maximum input current 47.3 A Maximum output voltage 500 V Apparent power 28.8 kVA at 500 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: 452.0 W at 380 V, switching frequency 4 kHz With safety function Safely		
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 47.3 A at 380 V (heavy duty) 33.3 A at 500 V (heavy duty) Maximum input current 47.3 A Maximum output voltage 500 V Apparent power 28.8 kVA at 500 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: 452.0 W at 380 V, switching frequency 4 kHz With safety function Safely True		Acceleration/deceleration ramp adaptation
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 47.3 A at 380 V (heavy duty) 33.3 A at 500 V (heavy duty) Maximum input current 47.3 A Maximum output voltage 500 V Apparent power 28.8 kVA at 500 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: 452.0 W at 380 V, switching frequency 4 kHz With safety function Safely True		Acceleration/deceleration automatic stop with DC injection
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 47.3 A at 380 V (heavy duty) 33.3 A at 500 V (heavy duty) Maximum input current 47.3 A Maximum output voltage 500 V Apparent power 28.8 kVA at 500 V (heavy duty) network frequency 5060 Hz Relative symmetric network frequency tolerance Prospective line lsc 22 kA Base load current at high overload Power dissipation in W Fan: 452.0 W at 380 V, switching frequency 4 kHz With safety function Safely True	Motor slip compensation	
416 kHz with derating factor Nominal switching frequency 4 kHz Braking to standstill By DC injection Brake chopper integrated True Line current 47.3 A at 380 V (heavy duty) 33.3 A at 500 V (heavy duty) Maximum input current 47.3 A Maximum output voltage 500 V Apparent power 28.8 kVA at 500 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: 452.0 W at 380 V, switching frequency 4 kHz With safety function Safely True		
Braking to standstill By DC injection Brake chopper integrated True Line current 47.3 A at 380 V (heavy duty) 33.3 A at 500 V (heavy duty) Maximum input current 47.3 A Maximum output voltage 500 V Apparent power 28.8 kVA at 500 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: 452.0 W at 380 V, switching frequency 4 kHz With safety function Safely True	Switching frequency	216 kHz adjustable
Braking to standstill By DC injection Brake chopper integrated True Line current 47.3 A at 380 V (heavy duty) 33.3 A at 500 V (heavy duty) Maximum input current 47.3 A Maximum output voltage 500 V Apparent power 28.8 kVA at 500 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: 452.0 W at 380 V, switching frequency 4 kHz With safety function Safely True		·
Brake chopper integrated Line current 47.3 A at 380 V (heavy duty) 33.3 A at 500 V (heavy duty) Maximum input current 47.3 A Maximum output voltage 500 V Apparent power 28.8 kVA at 500 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: 452.0 W at 380 V, switching frequency 4 kHz With safety function Safely True	Nominal switching frequency	4 kHz
Line current 47.3 A at 380 V (heavy duty) 33.3 A at 500 V (heavy duty) Maximum input current 47.3 A Maximum output voltage 500 V Apparent power 28.8 kVA at 500 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: 452.0 W at 380 V, switching frequency 4 kHz With safety function Safely True	Braking to standstill	By DC injection
Maximum input current 47.3 A Maximum output voltage 500 V Apparent power 28.8 kVA at 500 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: 452.0 W at 380 V, switching frequency 4 kHz With safety function Safely True	Brake chopper integrated	True
Maximum output voltage 500 V Apparent power 28.8 kVA at 500 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: 452.0 W at 380 V, switching frequency 4 kHz With safety function Safely True	Line current	· · · · · · · · · · · · · · · · · · ·
Apparent power 28.8 kVA at 500 V (heavy duty) network frequency 5060 Hz Relative symmetric network frequency tolerance 5 % Prospective line Isc 22 kA Base load current at high overload 33.0 A Power dissipation in W Fan: 452.0 W at 380 V, switching frequency 4 kHz With safety function Safely True	Maximum input current	47.3 A
network frequency 5060 Hz Relative symmetric network frequency tolerance 5 % Prospective line Isc 22 kA Base load current at high overload 33.0 A Power dissipation in W Fan: 452.0 W at 380 V, switching frequency 4 kHz With safety function Safely True	Maximum output voltage	500 V
Relative symmetric network frequency tolerance 5 % Prospective line Isc 22 kA Base load current at high overload 33.0 A Power dissipation in W Fan: 452.0 W at 380 V, switching frequency 4 kHz With safety function Safely True	Apparent power	28.8 kVA at 500 V (heavy duty)
frequency tolerance Prospective line Isc 22 kA Base load current at high overload 33.0 A Power dissipation in W Fan: 452.0 W at 380 V, switching frequency 4 kHz With safety function Safely True	network frequency	5060 Hz
Base load current at high overload Power dissipation in W Fan: 452.0 W at 380 V, switching frequency 4 kHz With safety function Safely True		5 %
overload Power dissipation in W Fan: 452.0 W at 380 V, switching frequency 4 kHz With safety function Safely True	Prospective line Isc	22 kA
With safety function Safely True		33.0 A
	Power dissipation in W	Fan: 452.0 W at 380 V, switching frequency 4 kHz
	With safety function Safely Limited Speed (SLS)	True

With safety function Safe brake management (SBC/SBT)	False
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
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
Net weight	6.9 kg

Environment

Operating position	Vertical +/- 10 degree
Product certifications	CE ATEX NOM GOST EAC RCM KC
marking	CE ATEX UL CSA EAC RCM
Standards	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
Regulation loop	Adjustable PID regulator
Speed accuracy	+/- 10 % of nominal slip 0.2 Tn to Tn
Pollution degree	2
Ambient air transport temperature	-2570 °C
Ambient air temperature for operation	-1050 °C without derating 5060 °C with derating factor
Ambient air temperature for storage	-2570 °C

Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	22.500 cm
Package 1 Width	25.000 cm
Package 1 Length	42.000 cm
Package 1 Weight	7.785 kg
Unit Type of Package 2	P06
Number of Units in Package 2	6
Package 2 Height	75.000 cm
Package 2 Width	60.000 cm
Package 2 Length	80.000 cm
Package 2 Weight	57.500 kg



Green PremiumTM **label** is Schneider Electric's commitment to delivering products with best-inclass environmental performance. Green Premium promises compliance with the latest regulations, transparency on environmental impacts, as well as circular and low-CO₂ products.

Guide to assessing product sustainability is a white paper that clarifies global eco-label standards and how to interpret environmental declarations.

Learn more about Green Premium >

Guide to assess a product's sustainability >





Transparency RoHS/REACh

Resource performance



Upgraded Components Available

Well-being performance



Mercury Free



Rohs Exemption Information

Yes

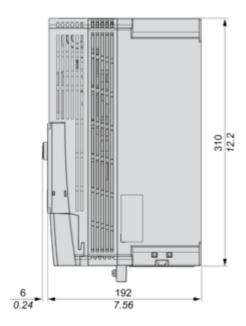
Certifications & Standards

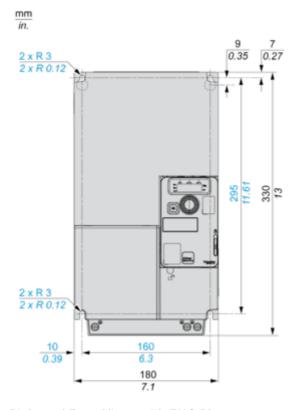
Reach Regulation	REACh Declaration
Eu Rohs Directive	Pro-active compliance (Product out of EU RoHS legal scope)
China Rohs Regulation	China RoHS declaration
Environmental Disclosure	Product Environmental Profile
Weee	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins
Circularity Profile	End of Life Information

Dimensions Drawings

Right and Front Views without EMC Plate

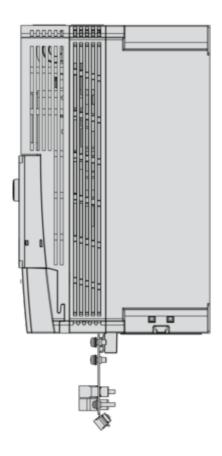
mm in.



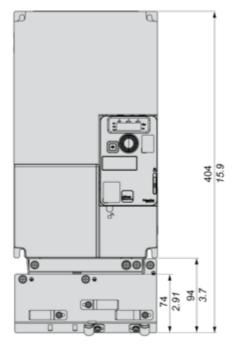


Right and Front Views with EMC Plate

mm in.



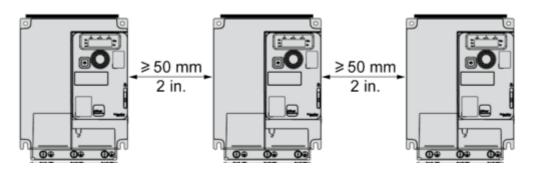
 $\frac{\text{mm}}{\text{in.}}$



Mounting and Clearance

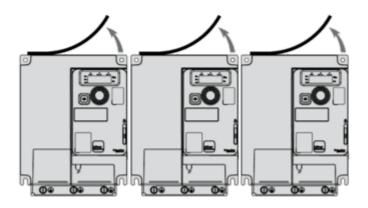
Mounting Types

Mounting Type A: Individual with Ventilation Cover

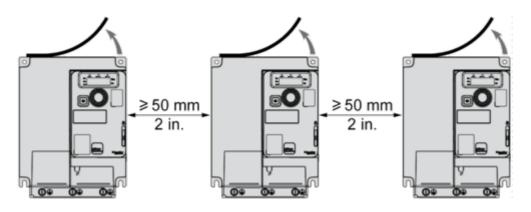


Only Possible at Ambient Temperature Less or Equal to 50 °C (122 °F)

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 $^{\circ}\text{F})$

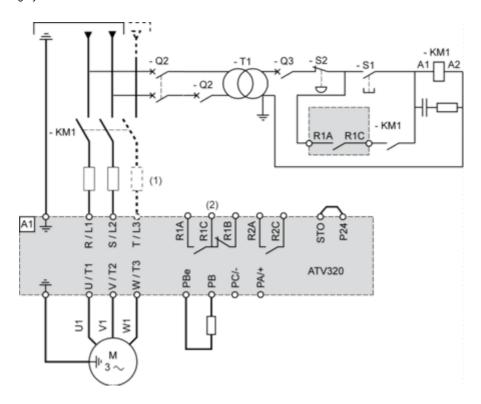
ATV320D15N4C

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.

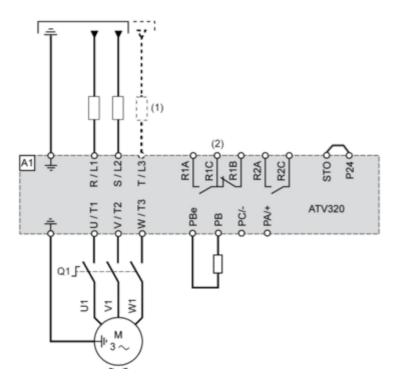


- (1) Line choke (if used)
- (2) Fault relay contacts, for remote signaling of drive status

Diagram with Switch Disconnect

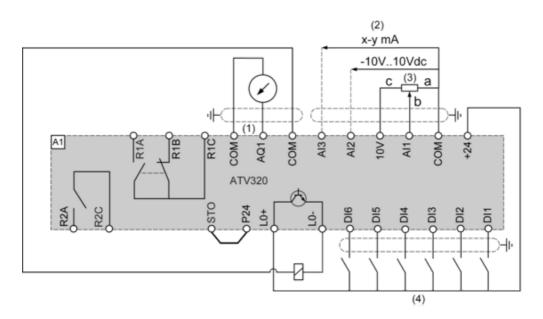
Connection diagrams conforming to standards EN 954-1 category 1 and IEC/EN 61508 capacity SIL1, stopping category 0 in accordance with standard IEC/EN 60204-1.

ATV320D15N4C



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

Control Connection Diagram in Source Mode

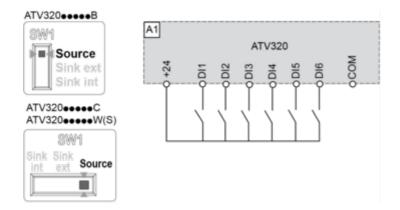


- (1) Analog output
- (2) Analog inputs
- (3) Reference potentiometer (10 kOhm maxi)
- (4) Digital inputs

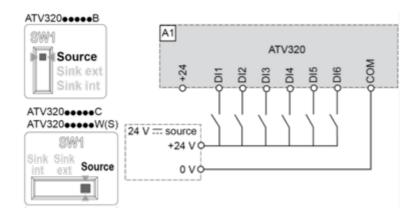
Digital Inputs Wiring

The logic input switch (SW1) is used to adapt the operation of the logic inputs to the technology of the programmable controller outputs.

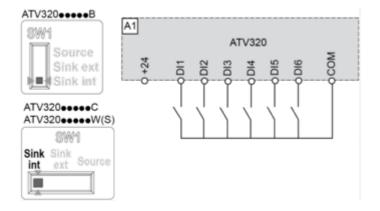
Switch SW1 set to "Source" position and use of the output power supply for the DIs.



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

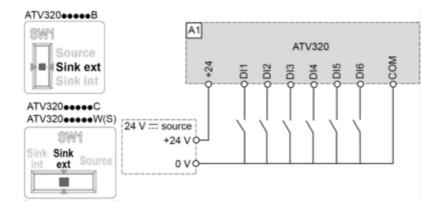


Switch SW1 set to "Sink Int" position and use of the output power supply for the DIs.



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

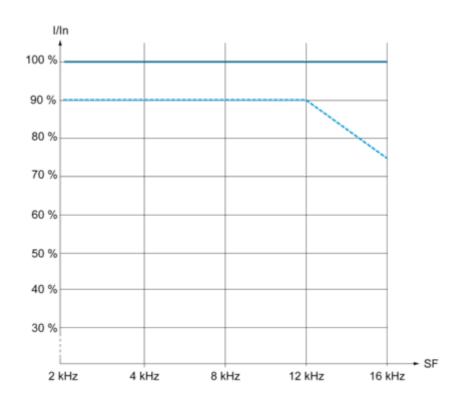
ATV320D15N4C



13

Performance Curves

Derating Curves



40 °C (104 °F) - Mounting type A and B 50 °C (122 °F) - Mounting type A and B

In: Nominal Drive Current SF: Switching Frequency