

# Fișă tehnică produs

Specificatii



## Variator de viteza ATV320 Book, 5.5 kW, 380...500 V, trifazat

ATV320U55N4B

### Principal

Gama de produse	Altivar Machine ATV320
Tip produs sau componenta	Variator de viteza
Aplicatie specifica produsului	Mașini complexe
Varianta	Standard version
Formatul unitatii	Book
Mod de montare	Wall mount
Protocol port de comunicatie	Serial Modbus CANopen
Card optional	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] tensiune nominala de alimentare	380...500 V - 15...10 %
Curent nominal de iesire	14,3 A
Putere motor kW	5,5 kW pentru heavy duty
Filtru EMC	Clasa C2 filtru EMC integrat
Grad de protectie IP	IP20

### Suplimentar

Numar intrare discreta	7
Tip de intrare discreta	STO cuplu de siguranță, 24 V c.c., impedanță: 1.5 kOhm DI1...DI6 logic inputs, 24 V c.c. (30 V) DI5 programmable as pulse input 0...30 kHz, 24 V c.c. (30 V)
Logica de intrare discreta	Logica pozitiva (sursa) Logica negativa (derivatie)
Numar iesire discreta	3
Tip de iesire discreta	Colector deschis DQ+ 0...1 kHz 30 V c.c. 100 mA Colector deschis DQ- 0...1 kHz 30 V c.c. 100 mA
Numarul intrarii analogice	3
Tip de intrare analogica	AI1 tensiune 0...10 V c.c., impedanță: 30 kOhm, rezoluție 10 bits AI2 tensiune diferențială bipolară +/- 10 V c.c., impedanță: 30 kOhm, rezoluție 10 bits AI3 curent 0...20 mA (sau 4-20 mA, x-20 mA, 20-x mA sau alte configurații), impedanță: 250 Ohm, rezoluție 10 bits

<b>Numarul iesirii analogice</b>	1
<b>Tip iesire analogica</b>	Curent configurabil soft AQ1 0...20 mA 800 Ohm, rezoluție 10 bits Tensiune configurabilă soft AQ1 0...10 V c.c. 470 Ohm, rezoluție 10 bits
<b>Tip releu iesire</b>	Configurable relay logic R1A 1 NO 100000 cic Configurable relay logic R1B 1 NC 100000 cic Configurable relay logic R1C Configurable relay logic R2A 1 NO 100000 cic Configurable relay logic R2C
<b>Curent maxim de comutatie</b>	Relay output R1A, R1B, R1C pornit rezistiv sarcina, cos phi = 1 3 A la 250 V c.a. Relay output R1A, R1B, R1C pornit rezistiv sarcina, cos phi = 1 3 A la 30 V c.c. Relay output R1A, R1B, R1C, R2A, R2C pornit inductiv sarcina, cos phi = 0,4 si stanga/dreapta = 7 ms 2 A la 250 V c.a. Relay output R1A, R1B, R1C, R2A, R2C pornit inductiv sarcina, cos phi = 0,4 si stanga/dreapta = 7 ms 2 A la 30 V c.c. Relay output R2A, R2C pornit rezistiv sarcina, cos phi = 1 5 A la 250 V c.a. Relay output R2A, R2C pornit rezistiv sarcina, cos phi = 1 5 A la 30 V c.c.
<b>Curentul minim de comutare</b>	Relay output R1A, R1B, R1C, R2A, R2C 5 mA la 24 V c.c.
<b>Metoda de acces</b>	Slave CANopen
<b>4 quadrant operation possible</b>	True
<b>Profil de control al motorului asincron</b>	Raport tensiune/frecvență, 5 puncte Control vectorial de flux fără senzor, standard Raport tensiune/frecvență - economie de energie, pătratic U/f Controlul vectorului fluxului fara senzor - Economie de energie Raport tensiune/frecvență, 2 puncte
<b>Profil de control al motorului sincron</b>	Control vectorial fără senzori
<b>Frecventa maxima de iesire</b>	0,599 kHz
<b>Cuplu excesiv tranzitoriu</b>	170...200 % cuplul nominal al motorului
<b>Rampe de accelerare si decelerare</b>	Liniar U S CUS Comutarea rampelor Adaptarea rampei de accelerare/decelerare Oprire automată prin injecție de c.c. pentru accelerare/decelerare
<b>Compensare alunecare motor</b>	Automat indiferent de sarcina Reglabil 0...300 % Indisponibilin raport tensiune/frecventa (2 sau 5 puncte)
<b>Frecventa de comutare</b>	2...16 kHz reglabil 4...16 kHz cu
<b>Frecventa de comutare nominala</b>	4 kHz
<b>Franare sau imobil</b>	Cu injectie c.c.
<b>Brake chopper integrated</b>	True
<b>Curent de linie</b>	20,7 A la 380 V (heavy duty) 14,5 A la 500 V (heavy duty)
<b>Curent maxim de intrare</b>	20,7 A
<b>Maximum output voltage</b>	500 V
<b>Putere aparenta</b>	12,6 kVA la 500 V (heavy duty)
<b>Frecventa retea electrica</b>	50...60 Hz
<b>Relative symmetric network frequency tolerance</b>	5 %
<b>Curent de scurtcircuit prezumat I<sub>sc</sub></b>	22 kA
<b>Base load current at high overload</b>	14,3 A
<b>Puterea disipata in W</b>	Ventilator 195,0 W la 380 V 4 kHz
<b>With safety function Safely Limited Speed (SLS)</b>	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
Tip de protecție	Înterupere fază intrare variator Supracurent între fazele de ieșire și pământ variator Protecție la supraîncălzire variator Scurtcircuit între fazele motorului variator Protecție termică variator
Latime	150 mm
Inaltime	308,0 mm
Adancime	232,0 mm
Greutate neta	4,4 kg

## Mediu

Pozitie de operare	Vertical +/- 10 grade
Certificari produs	CE ATEX NOM GOST EAC RCM KC
Marcaj	CE ATEX UL CSA EAC RCM
Standarde	EN/IEC 61800-5-1
Compatibilitate electromagnetica	Test de imunitate la descarcari electrostatice nivel 3 conformitate cu IEC 61000-4-2 Test de imunitate la frecventa radio radiata nivel 3 conformitate cu IEC 61000-4-3 Tranzienți rapizi/test de imunitate la impulsuri de ionizare nivel 4 conformitate cu IEC 61000-4-4 1.2/50 μs - 8/20 μs test de imunitate la supratensiuni nivel 3 conformitate cu IEC 61000-4-5 Test de imunitate la radiofrecvență condusă nivel 3 conformitate cu IEC 61000-4-6 Test de imunitate la căderi de tensiune și întreruperi conformitate cu 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/s <sup>2</sup> at 11 ms
Maximum acceleration under vibrational stress (during operation)	10 m/s <sup>2</sup> at 13...200 Hz
Maximum deflection under vibratory load (during operation)	1.5 mm at 2...13 Hz

Permitted relative humidity (during operation)	Class 3K5 according to EN 60721-3
Volumul aerului de racire	60 m3/h
Categorie de supratensiune	III
Bucla de reglare	Regulator PID reglabil
Precizie viteza	+/- 10 % din alunecarea nominală 0.2 Tn la Tn
Grad de poluare	2
Ambient air transport temperature	-25...70 °C
Temperatura ambientala de utilizare	-10...50 °C fără declasare 50...60 °C cu
Temperatura de depozitare	-25...70 °C

## Unitati de ambalare

Tip unitate a formei de impachetare 1	PCE
Număr de produse în pachet	1
Greutate colet(Lbs)	5,511 kg
Inaltimea formei de impachetare 1	20,5 cm
Latimea formei de impachetare 1	33 cm
Lungimea formei de impachetare 1	27,2 cm
Tip unitate a formei de impachetare 2	P06
Numar de unitati in forma de impachetare 2	10
Greutatea formei de impachetare 2	68,11 kg
Inaltimea formei de impachetare 2	73,5 cm
Latimea formei de impachetare 2	60 cm
Lungimea formei de impachetare 2	80 cm

## Sustenabilitatea ofertei

Stare ofertă sustenabilă	Produs Green Premium
Regulamentul REACH	<a href="#">Declaratia REACH</a>
Directiva RoHS UE	Conformitate proactivă (Produs în afara domeniului de aplicare a EU RoHS) <a href="#">Declaratia RoHS UE</a>
Fara mercur	Da
Informatii privind scutirea de la RoHS	<a href="#">Da</a>
Regulamentul RoHS China	<a href="#">Declaratia RoHS China</a>
Raport de mediu	<a href="#">Profilul ambiental al produsului</a>
Profil circularitate	<a href="#">Informatii privind sfarsitul duratei de viata</a>
WEEE	În Uniunea Europeana, produsele trebuie reciclate respectand sistemul specific de colectare a deseurilor si nu trebuie sa ajunga in pubelele de colectare a deseurilor menajere.
Posibilitate de upgrade	Componente cu upgrade disponibile

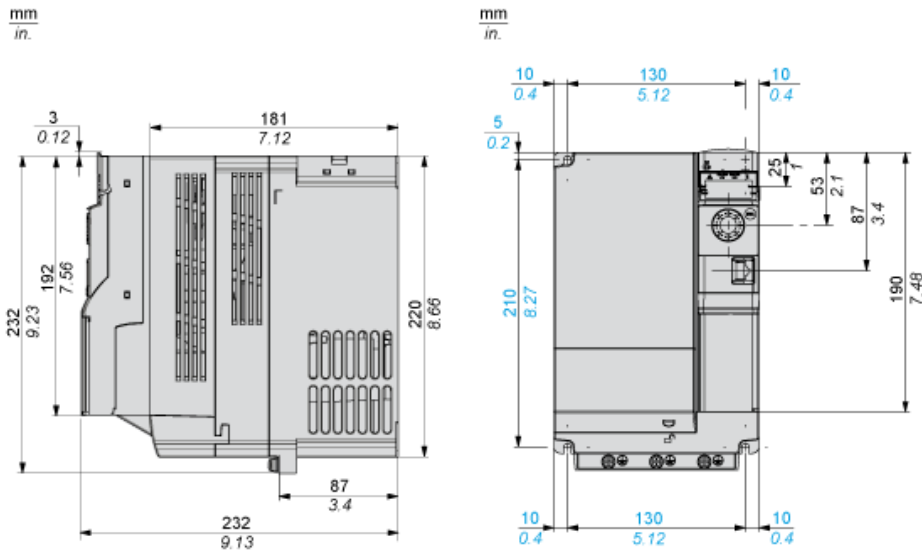
# Garanție contractuală

Garantie

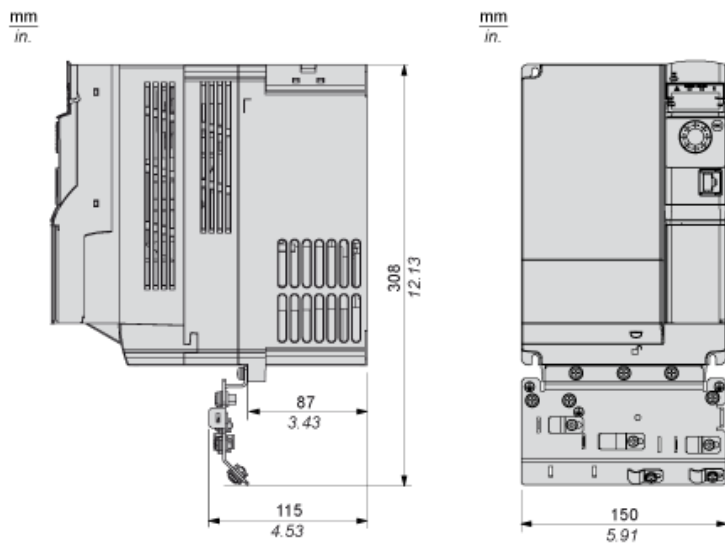
18 luni

**Dimensions**

**Right and Front View**

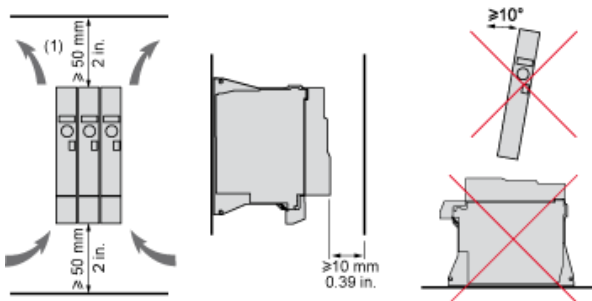


**Right and Front View with EMC Plate**



Mounting and Clearance

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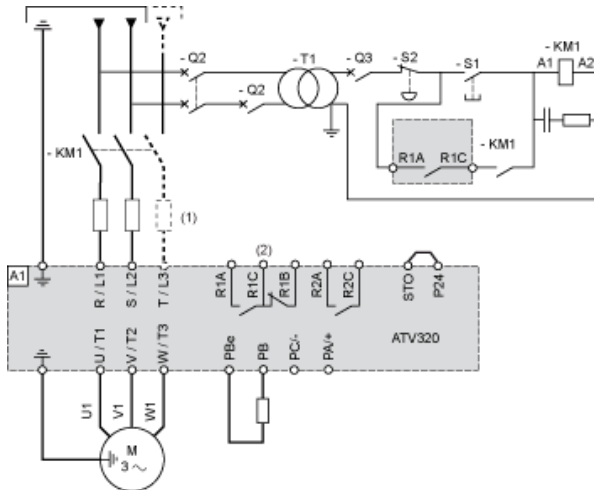


(1) Minimum value corresponding to thermal constraints.

**Connection Diagrams**

**Diagram with Line Contactor**

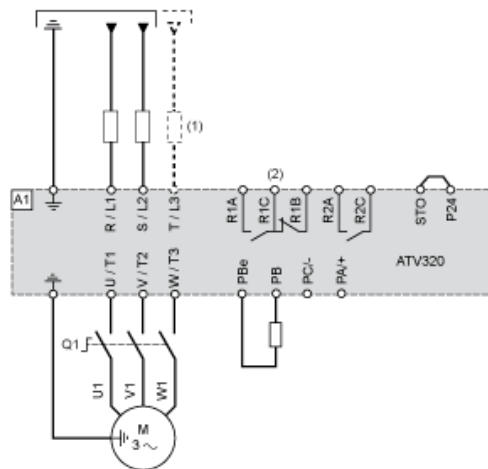
Connection diagrams conforming to standards ISO13849 category 1 and IEC/EN 61508 capacity SIL1, stopping category 0 in accordance with standard IEC/EN 60204-1.



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

**Diagram with Switch Disconnect**

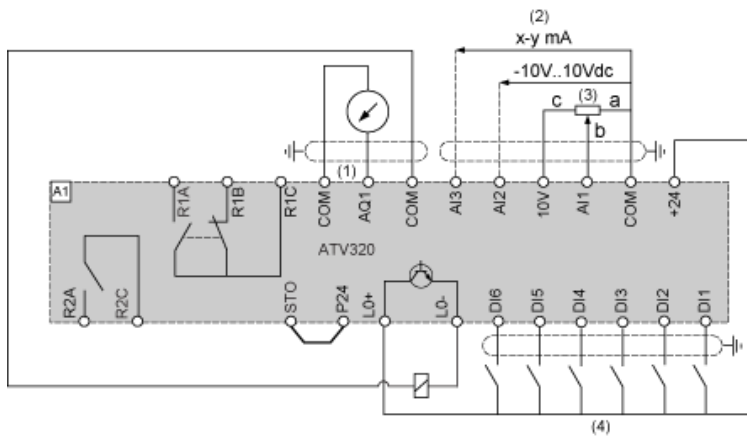
Connection diagrams conforming to standards EN 954-1 category 1 and IEC/EN 61508 capacity SIL1, stopping category 0 in accordance with standard IEC/EN 60204-1.



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



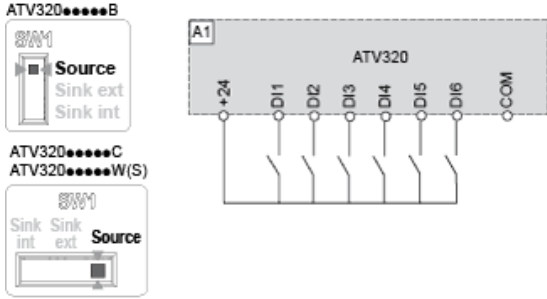
**Control Connection Diagram in Source Mode**



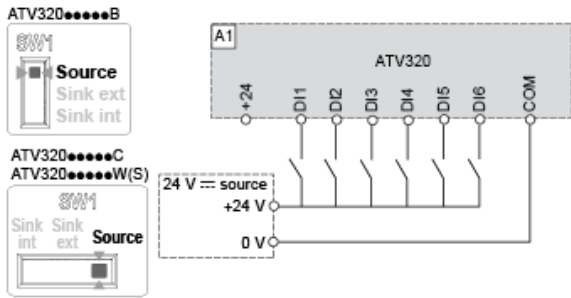
- (1) Analog output
- (2) Analog inputs
- (3) Reference potentiometer (10 kOhm maxi)
- (4) Digital inputs

**Digital Inputs Wiring**

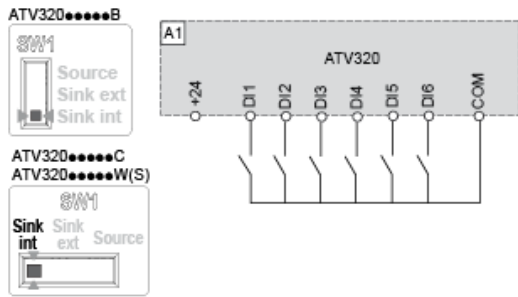
The logic input switch (SW1) is used to adapt the operation of the logic inputs to the technology of the programmable controller outputs. Switch SW1 set to "Source" position and use of the output power supply for the DIs.



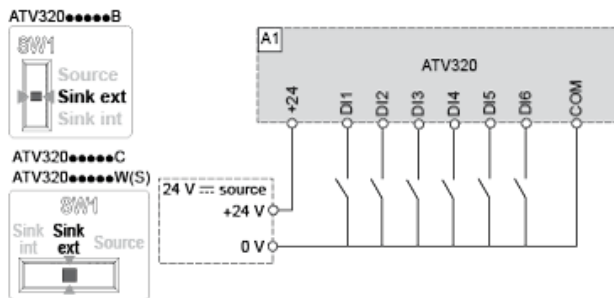
Switch SW1 set to "Source" position and use of an external power supply for the DIs.



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

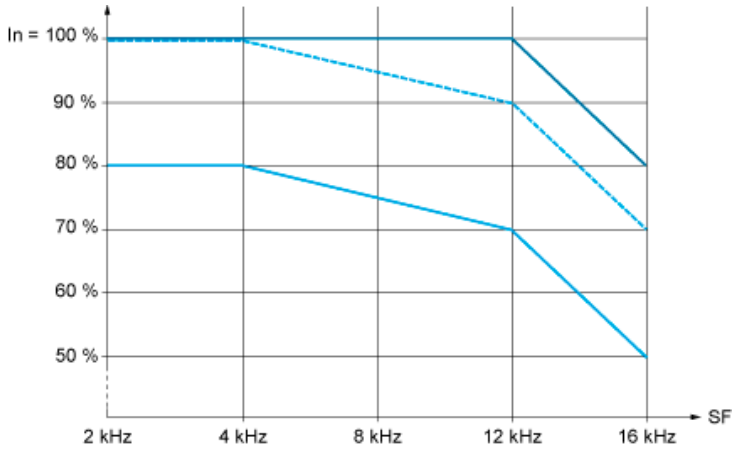


Switch SW1 set to "Sink Ext" position and use of an external power supply for the DIs.



Derating Curves

Derating curve for the nominal drive current ( $I_n$ ) as a function of temperature and switching frequency (SF).



- 40 °C (104 °F) - Mounting type A, B and C
  - - - 50 °C (122 °F) - Mounting type A, B and C
  - 60 °C (140 °F) - Mounting type B and C
- In :** Nominal Drive Current  
**SF :** Switching Frequency