Series

Altivar Machine ATV320

Variable speed drives



APPLICATION

Altivar Machine ATV320 variable speed drives are designed to control fans with three-phase asynchronous motors rated from 0.37 to 22 kW.

They are used in general ventilation systems to regulate motor speed according to system parameters, which optimizes the operation of ventilation equipment and reduces energy consumption.

The ATV320 can also be used in pressurization systems to automatically maintain the required positive pressure in stairwells, airlocks, elevator shafts, and other protected areas.

Thanks to built-in safety functions, support for various control modes, and advanced configuration options, the ATV320 variable speed drives ensure reliable and efficient operation of ventilation equipment under various operating conditions.

COMMUNICATION PORT PROTOCOL

- Modbus serial
- CANopen (not supported for the ATV320D18N4C model)

NUMBER OF INTEGRATED I/O

- **Analog inputs (3):** 1 Bipolar differential ±10 V, 1 with Voltage 0...10 V and 1 with current (0-20 mA)
- **Digital inputs (6):** 4 configurable (positive or negative logic), 1 with PTC probe input, 1x20kHz pulse input
- **Analog outputs (1):** Configurable as voltage (0...10 V) or current (0-20 mA)
- **Digital outputs (1):** Configurable as sink or source
- **Relay outputs (2):** 1 with NO/NC contacts and 1 with NO contacts
- **Safety function inputs (1 + 4):** 1 with STO and 4 configurable for safety functions from digital inputs

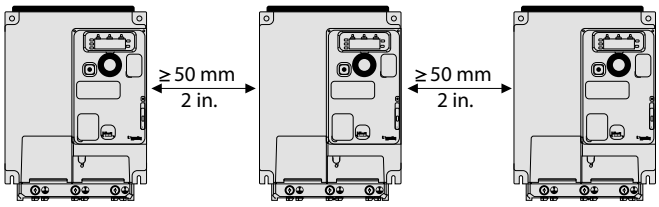
OPERATION

Operating air temperature: –10 to 50 °C without derating and 50 to 60 °C with derating. Printed circuit boards have a protective coating in accordance with Class 3C3 of the IEC 60721-3-3 standard for industrial environments and Class 3S2 for protection from solid particles.

Protection rating: IP20.

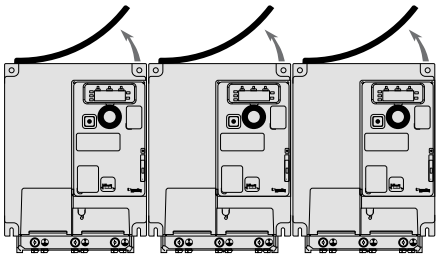
MOUNTING

Mounting Type A: Individual with Ventilation Cover

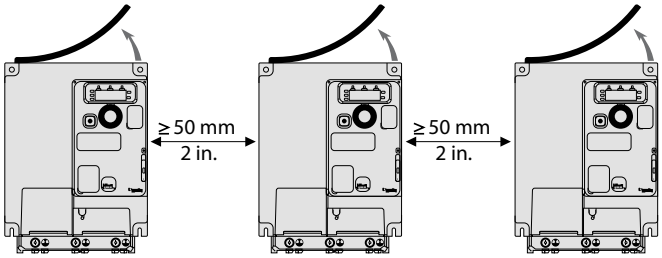


Only Possible at Ambient Temperature Less or Equal to 50 °C (122 °F)

Mounting Type B: Side by Side, Ventilation Cover Removed



Mounting Type C: Individual, Ventilation Cover Removed



For Operation at Ambient Temperature Above 50 °C (122 °F)

VARIABLE SPEED DRIVES AND ORDER CODES

Three-phase supply voltage: 380...500 V 50/60 Hz			
Power [kW]	**Nominal output current [A]**	**Order Code**	**EMC filter**
0.37	1.5	ATV320U04N4C	C2
0.75	2.3	ATV320U07N4C	C2
1.5	4.1	ATV320U15N4C	C2
2.2	5.5	ATV320U22N4C	C2
3	7.1	ATV320U30N4C	C2
4	9.5	ATV320U40N4C	C2
5.5	14.3	ATV320U55N4C	C2
7.5	17	ATV320U75N4C	C2
11	27.7	ATV320D11N4C	C2
15	33	ATV320D15N4C	C2
18.5	40	ATV320D18N4C	C2
22	46	ATV320D22N4C	C2

DIMENSIONS

Variable speed drive	**Dimensions [mm]**			**Net weight [kg]**
	Width	**Height**	**Depth**	
ATV320U04N4C	105	142	158	1.2
ATV320U07N4C	105	142	158	1.2
ATV320U15N4C	105	142	158	1.3
ATV320U22N4C	140	184	158	2.1
ATV320U30N4C	140	184	158	2.1
ATV320U40N4C	140	184	158	2.2
ATV320U55N4C	150	232	178	3.5
ATV320U75N4C	150	232	178	3.6
ATV320D11N4C	180	330	198	6.8
ATV320D15N4C	180	330	198	6.9
ATV320D18N4C	180	390	229	9.5
ATV320D22N4C	180	390	229	9.5

CABLE LENGTH

Power [kW]	**Variable speed drive**	**Maximum length of shielded cable**	
		IEC/EN 61800-3 category C2 (commercial/residential environment)	**IEC/EN 61800-3 category C3 (industrial environment)**
		m	**m**
0.37	ATV320U04N4C	10	10
0.75	ATV320U07N4C	10	10
1.5	ATV320U15N4C	10	10
2.2	ATV320U22N4C	10	20
3	ATV320U30N4C	10	20
4	ATV320U40N4C	10	20
5.5	ATV320U55N4C	2	20
7.5	ATV320U75N4C	2	20
11	ATV320D11N4C	-	25
15	ATV320D15N4C	-	25
18.5	ATV320D18N4C	5	25
22	ATV320D22N4C	5	25
The EMC filter enables compliance with standard IEC/EN 61800-3, category C2 or C3 in environment 1 or 2 and to comply with the European Electromagnetic Compatibility Directive (EMC).			

Notes
1. If motors are connected in parallel, it is the total cable length that should be taken into account.
2. The maximum motor cable lengths is at 4 kHz switching frequency.

ACCESSORIES

Variable speed drive	UL Type 1 conformity kit	DIN rail kit	EMC conformity kits
			
ATV320U04N4C	VW3A95812	VW3A9805	VW3A9524
ATV320U07N4C	VW3A95812	VW3A9805	VW3A9524
ATV320U15N4C	VW3A95812	VW3A9805	VW3A9524
ATV320U22N4C	VW3A95814	VW3A9805	VW3A9525
ATV320U30N4C	VW3A95814	VW3A9805	VW3A9525
ATV320U40N4C	VW3A95814	VW3A9805	VW3A9525
ATV320U55N4C	VW3A95816	–	VW3A9532
ATV320U75N4C	VW3A95816	–	VW3A9532
ATV320D11N4C	VW3A95818	–	VW3A9533
ATV320D15N4C	VW3A95818	–	VW3A9533
ATV320D18N4C	VW3A9925	–	VW3A9926
ATV320D22N4C	VW3A9925	–	VW3A9926

The UL Type 1 conformity kit enables the ATV320 variable speed drive to meet the UL Type 1 requirements. With this kit, cables can be connected directly to the drive via tubes or cable glands. The cable shielding is connected inside the kit. The kit can be used to ensure UL Type 1 conformity even when the ATV320 is mounted directly on a wall outside the enclosure. The kit is mounted to the bottom of the ATV320.

The EMC mounting plate ensures electromagnetic compatibility (EMC) compliance and must be ordered separately. The board helps organize the layout of power and motor cables. The product is certified by EMC, CE, and UL. The kit includes a metal EMC plate, clamps, and mounting accessories. The EMC mounting plate is to be installed under the ATV320 variable speed drive.