THE TECHNICAL DATA OF THE VACON® 100 X AC DRIVE

Technical item or function		Technical data
Mains connection	Input voltage U_{in}	3AC 208...240V 3AC 380...480V 3AC 380...500V
	Input voltage tolerance	-15%...+10% continuously
	Input frequency	50/60 Hz
	Protection class	I
	Input frequency tolerance	47.5...66 Hz
	Connection to mains	Once per minute or less
	Starting delay	<7 s
	Supply network	TN- and IT-network (cannot be used with corner earthed network)
	Short-circuit current	Max. short-circuit current has to be < 100kA
Motor connection	Output voltage	3AC 0... U_{in}
	Rated output current	I_N: Ambient temperature max. +40°C
	Overload output current	1.5 x I_N (1 min/10 min); 1.1 x I_N (1 min/10 min) only for MM6 0072
	Starting output current	I_S for 2 s every 20 s
	Output frequency	0...320 Hz (standard)
	Frequency resolution	0.01 Hz
	Protection class	I
	Motor characteristics	AC squirrel cage motors Permanent magnet motors
	Cable type	Screened motor cable
	Cable maximum length (full EMC compliance)	C2: 15m
Control characteristics	Switching frequency	Programmable 1.5...16 kHz; Default: 6 kHz (MM4 and MM5); 4 kHz (MM6) Automatic switching frequency derating in case of overheating
	Frequency reference Analogue input Panel reference	Resolution 0.1% (10-bit), accuracy ±1% Resolution 0.01 Hz
	Field weakening point	8...320 Hz
	Acceleration time	0.1...3000 sec
	Deceleration time	0.1...3000 sec
	Braking	Brake chopper standard in all frames External brake resistor optional

CABLE AND FUSE SIZES, NORTH AMERICA

We recommend the fuse class T (UL & CSA). To make a selection of the fuse voltage rating, refer to the mains. Refer also to local regulations, cable installation conditions and cable specification.
Do not use larger fuses than what is recommended.

Make sure that the operation time of the fuse is less than 0.4 seconds. The operation time agrees with the fuse type and the impedance of the supply circuit. For more information on faster fuses, speak to the manufacturer. The manufacturer can also recommend some high speed Class J (UL & CSA) fuse ranges.

The solid state short circuit protection does not supply protection for the branch circuit of the of the AC drive. To supply the branch circuit protection, refer to the National Electric Code and the local regulations. Do not use other devices than fuses to supply branch circuit protection.

UL STANDARDS ON CABLING

To obey the UL (Underwriters Laboratories) regulations, use a UL-approved Class 1 copper wire with a minimum heat resistance of +158 or +167 °F (+70 or +75°C).

You can use the drive on a circuit that gives a maximum of 100 000 rms symmetrical amperes, and a maximum of 600 V AC, when the drive is protected by Class T and J fuses.

The dimensions of the cables must agree with the requirements of the National ElectricCode (NEC) and the Canadian Electric Code (CEC).

- The cables must be PVC-isolated.
- The maximum ambient temperature is +104 °F. (+40°C).
- The maximum temperature of the cable surface is +158 or +167 °F (+70 or +75°C)
- Use only cables with a concentric copper shield.
- The maximum number of parallel cables is 9.

When you use parallel cables, make sure that you obey the requirements of the cross-sectional area and the maximum number of cables.

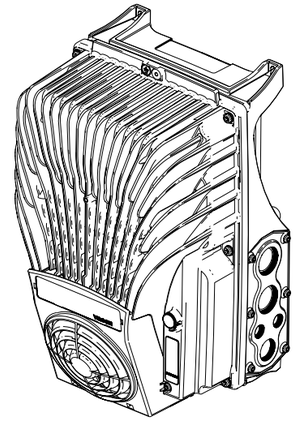
For important information on the requirements of the grounding conductor, see the NEC and CEC.

For the correction factors for each temperature, see the instructions of the NEC and CEC.

VACON®

VACON® 100 X AC DRIVES INSTALLATION IN US AND CANADA

QUICK GUIDE



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Download and read Vacon 100 X Installation Manual, wall-mounted drives at:

http://drives.danfoss.com/knowledge-center/technical-documentation/

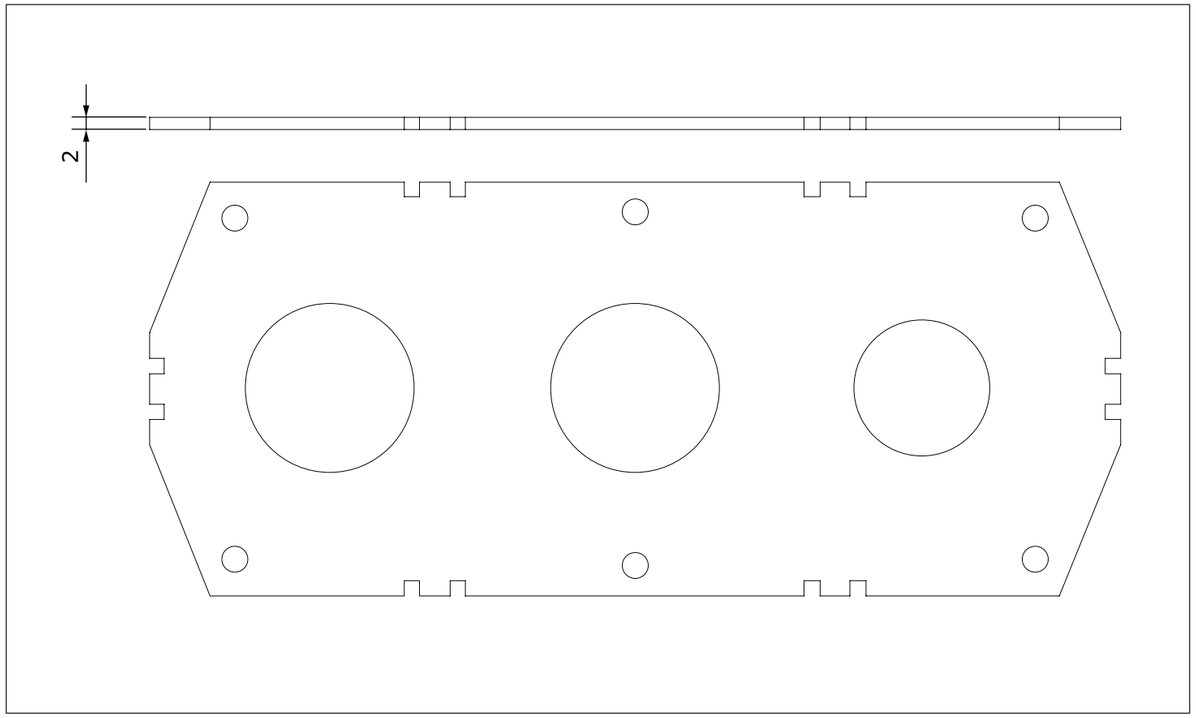
THE CABLE AND FUSE SIZES FOR VACON® 100 X IN NORTH AMERICA, MAINS VOLTAGE 208-240 V AND 380-500 V

Frame	Type	IL [A]	Fuse (class T) [A]	Mains and motor cable Cu	Terminal cable size	
					Main terminal	Earth terminal
MM4	0003 4 - 0004 4 0003 5 - 0004 5	3.4 - 4.6	6	AWG14	AWG24-AWG10	AWG17-AWG10 M4 ring terminal
	0007 2 - 0008 2 0005 4 - 0008 4 0005 5 - 0008 5	6.0 - 7.2 5.4 - 8.1	10	AWG14	AWG24-AWG10	AWG17-AWG10 M4 ring terminal
	0011 2 0009 4 0009 5	9.7 9.3	15	AWG14	AWG24-AWG10	AWG17-AWG10 M4 ring terminal
	0012 2 0012 4 0012 5	10.9 11.3	20	AWG14	AWG24-AWG10	AWG17-AWG10 M4 ring terminal
MM5	0018 2 0016 4 0016 5	16.1 15.4	25	AWG10	AWG20-AWG5	AWG17-AWG8 M5 ring terminal
	0024 2 0023 4 0023 5	21.7 21.3	30	AWG10	AWG20-AWG5	AWG17-AWG8 M5 ring terminal
	0031 2 0031 4 0031 5	27.7 28.4	40	AWG8	AWG20-AWG5	AWG17-AWG8 M5 ring terminal
MM6	0038 4 0038 5	36.7	50	AWG4	AWG13-AWG0 M6 ring terminal	AWG13-AWG2 M6 ring terminal
	0048 2 0046 4 0046 5	43.8 43.6	60	AWG4	AWG13-AWG0 M6 ring terminal	AWG13-AWG2 M6 ring terminal
	0062 2 0061 4 0061 5	57.0 58.2	80	AWG4	AWG13-AWG0 M6 ring terminal	AWG13-AWG2 M6 ring terminal
	0072 4 0072 5	67.5	100	AWG2	AWG9-AWG2/0 M6 ring terminal	AWG9-AWG2/0 M6 ring terminal

THE TIGHTENING TORQUES OF CABLE TERMINALS

Frame	Type	Tightening torque Power and motor terminals		Tightening torque EMC grounding clamps		Tightening torque Grounding terminals	
		[Nm]	lb-in.	[Nm]	lb-in.	[Nm]	lb-in.
MM4	0007 2 - 0012 2 0003 4 - 0012 4 0003 5 - 0012 5	1.2—1.5	10.6—13.3	1.5	13.3	2.0	17.7
MM5	0018 2 - 0031 2 0016 4 - 0031 4 0016 5 - 0031 5	1.2—1.5	10.6—13.3	1.5	13.3	2.0	17.7
MM6	0048 2 - 0062 2 0038 4 - 0072 4 0038 5 - 0072 5	4—5	35.4—44.3	1.5	13.3	2.0	17.7

CABLE ENTRY PLATE, MM5 UL INSTALLATION



THE TIGHTENING TORQUES OF CABLE GLANDS

Frame	Gland screw type [metric]	Tightening torque [Nm]	lb-in.
MM4	M16	1.0	8.9
	M25	4.0	35.5
MM5	M16	1.0	8.9
	M25	4.0	35.5
	M32	7.0	62.1
MM6	M16	1.0	8.9
	M25	4.0	35.5
	M40	10.0	88.7