

# Table of contents

1	Introduction.....	11
2	Safety information/instructions.....	15
2.1	Information for those responsible for the plant or system.....	15
2.2	Use in hazardous areas.....	15
2.3	Qualified personnel.....	16
2.4	The five safety rules.....	16
2.5	Safe handling.....	16
2.6	Electrostatic sensitive devices.....	19
2.7	Electromagnetic compatibility.....	19
2.8	Interference immunity.....	20
2.9	Interference voltages when operating the converter.....	20
3	Description.....	21
3.1	Application.....	21
3.2	Brief description.....	21
3.3	Additional components.....	24
3.4	Rating plate.....	24
4	Preparations for use.....	27
4.1	Application planning/configuration.....	27
4.2	Foundation/machine mounting.....	30
4.2.1	Preparing the foundation.....	30
4.2.2	Preparing the soleplates for fastening the machine in place.....	31
4.3	Dispatch.....	31
4.3.1	Shipping system.....	31
4.3.2	Packaging.....	37
4.3.3	Receipt of goods.....	37
4.4	Transport.....	38
4.5	Storage.....	41
4.5.1	Short-term storage (up to 12 months).....	42
4.5.2	Long-term storage (over 12 months).....	45
5	Installation.....	47
5.1	Removing the packaging.....	47
5.2	Installing the machine.....	48
5.2.1	Preparing to install the machine.....	48
5.2.2	Installing and mounting the machine.....	48

5.2.3	Removing preservative from the machine.....	49
5.3	Aligning the machine.....	49
5.4	Performing the soft foot check.....	55
5.5	Connecting the coolant supply.....	56
5.6	Filling the bearings with oil.....	56
5.7	Assembling the terminal boxes.....	57
5.8	Complete the installation work.....	57
<b>6</b>	<b>Electrical connection.....</b>	<b>59</b>
6.1	Checking the insulation resistances.....	59
6.2	Establishing grounding connections.....	63
6.3	Establishing the power connection.....	64
6.4	Connecting the auxiliary circuits.....	70
<b>7</b>	<b>Commissioning.....</b>	<b>75</b>
7.1	Preparing for commissioning.....	75
7.2	Before switching on.....	77
7.3	Switching on.....	78
7.4	Performing the test run.....	80
7.5	Pinning down the machine.....	81
7.6	Coupling the machine.....	81
<b>8</b>	<b>Operation.....</b>	<b>83</b>
8.1	Safety information/instructions.....	83
8.2	Switching on.....	84
8.3	Running.....	84
8.4	Switching off.....	85
8.5	Shut down the machine.....	86
8.5.1	Shutdown with standby.....	86
8.5.2	Shutdown without standby.....	87
8.6	Faults.....	88
8.6.1	Mechanical faults.....	88
8.6.2	Electrical faults.....	89
8.6.3	Cooling system faults.....	90
<b>9</b>	<b>Maintenance.....</b>	<b>93</b>
9.1	Maintenance.....	93
9.1.1	Maintenance intervals.....	93
9.1.2	Preparing for maintenance.....	94
9.1.3	Maintenance work.....	96
9.1.3.1	Machine, complete.....	96
9.1.3.2	Fixing, foundation, alignment.....	97
9.1.3.3	Machine interior.....	97

9.1.3.4	Stator.....	98
9.1.3.5	Rotor.....	99
9.1.3.6	Bearings.....	99
9.1.3.7	Cooling system.....	100
9.1.3.8	Attachments, terminal boxes.....	101
9.1.3.9	Anti-condensation heating .....	102
9.1.3.10	Coupling.....	102
9.1.3.11	Touch up any damaged paintwork.....	103
9.1.4	Completing maintenance work.....	103
9.2	Repair.....	103
10	<b>Spare parts.....</b>	105
10.1	General information.....	105
10.2	Ordering data.....	105
11	<b>Disposal.....</b>	107
11.1	Introduction.....	107
11.2	Preparing for disassembly.....	107
11.3	Dismantling the machine.....	108
11.4	Disposal of components.....	108
A	<b>Service and Support.....</b>	111
A.1	Siemens Service Center.....	111
A.2	Manufacturing location.....	112
A.3	Bolt tightening torques.....	113
A.4	Tightening torques for mounting the machine.....	116
A.5	Tightening torques for electrical connections.....	117
A.6	Standards, regulations, guidelines.....	118
B	<b>Technical data and drawings.....</b>	125
C	<b>Quality documents.....</b>	127
D	<b>Additional documents.....</b>	129
E	<b>Checklists and forms.....</b>	131
	<b>Index.....</b>	133

## Tables

Table 3-1	Machine design .....	21
Table 3-2	NEMA-compliant motor design .....	22
Table 3-3	Machine version for use in area Class I, Division 2.....	22
Table 3-4	Legend for rating plate.....	25
Table 4-1	Shipping information.....	35
Table 5-1	Results of an axial measurement.....	51

Table 5-2	Results of a radial measurement.....	53
Table 5-3	Alignment accuracies for the machine.....	54
Table 6-1	Minimum cross-sections for ground connections.....	64
Table 6-2	Clearances and creepage distances.....	67
Table 6-3	Cable outer diameter/cable gland assignment.....	71
Table 8-1	Faults with mechanical causes .....	89
Table 8-2	Faults with electrical causes - part 1 .....	89
Table 8-3	Faults with electrical causes - part 2.....	90
Table 8-4	Air-to-water cooler faults .....	90
Table 9-1	Maintenance intervals.....	94
Table 9-2	Maintenance work – machine, complete .....	96
Table 9-3	Maintenance work – machine fixing and alignment .....	97
Table 9-4	Maintenance work - machine interior .....	97
Table 9-5	Maintenance work – Stator .....	98
Table 9-6	Maintenance work – rotor .....	99
Table 9-7	Maintenance work – Bearings .....	99
Table 9-8	Maintenance work – cooling system .....	100
Table 9-9	Maintenance work – attachments, terminal boxes .....	101
Table 9-10	Maintenance work –Anti-condensation heating .....	102
Table 9-11	Maintenance work – Coupling .....	102
Table A-1	Tightening torques for metric bolted joints .....	113
Table A-2	Tightening torques for stainless steel screws .....	114
Table A-3	Tightening torques for machine mounting .....	116
Table A-4	Tightening torques for electrical screw connections.....	118

## Figures

Figure 3-1	Rating plate.....	25
Figure 4-1	Factory serial number.....	33
Figure 4-2	Product package label.....	34
Figure 4-3	Assignment of components.....	36
Figure 4-4	Hoisting a transport crate.....	39
Figure 4-5	Humidity indicator.....	45
Figure 5-1	Measuring points for axial alignment.....	51
Figure 5-2	Measuring points for radial alignment.....	53
Figure 5-3	Vertical alignment with adjusting screws.....	55
Figure 6-1	Electrical connection with cable lugs.....	66
Figure 6-2	Clearances and creepage distances, shown schematically using a cable lug connection as example.....	69
Figure A-1	Connecting cable lugs with busbars.....	117

Figure A-2     Connecting busbars.....118