SEW EURODRIVE

Addendum to the Operating Instructions

Drive Unit

MGF..4..-DSM/XT

Design with Increased Torque

Edition 08/2015

22286616/EN

Contents

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1 General information

1.1 About this documentation

This documentation is an integral part of the product. The documentation is intended for all employees who perform assembly, installation, startup, and service work on the product.

Make sure this documentation is accessible and legible. Ensure that persons responsible for the machinery and its operation as well as persons who work on the device independently have read through the documentation carefully and understood it. If you are unclear about any of the information in this documentation or require further information, contact SEW-EURODRIVE.

1.2 Structure of the safety notes

1.2.1 Meaning of signal words

The following table shows the grading and meaning of the signal words for safety notes.

Signal word	Meaning	Consequences if disregarded
⚠ DANGER	Imminent hazard	Severe or fatal injuries.
⚠ WARNING	Possible dangerous situation	Severe or fatal injuries.
⚠ CAUTION	Possible dangerous situation	Minor injuries
NOTICE	Possible damage to property	Damage to the drive system or its environment.
INFORMATION	Useful information or tip: Simplifies handling of the drive system.	

1.2.2 Structure of section-related safety notes

Section-related safety notes do not apply to a specific action but to several actions pertaining to one subject. The hazard symbols used either indicate a general hazard or a specific hazard.

This is the formal structure of a safety note for a specific section:

SIGNAL WORD

Type and source of hazard.

Possible consequence(s) if disregarded.

- Measure(s) to prevent the hazard.

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Meaning of the hazard symbols

The hazard symbols in the safety notes have the following meaning:

Hazard symbol	Meaning
	General hazard
	Warning of dangerous electrical voltage
	Warning of hot surfaces
	Warning of risk of crushing
	Warning of suspended load
	Warning of automatic restart

1.2.3 Structure of embedded safety notes

Embedded safety notes are directly integrated into the instructions just before the description of the dangerous action.

This is the formal structure of an embedded safety note:

- ⚠ **SIGNAL WORD** Type and source of hazard.

  Possible consequence(s) if disregarded.

  – Measure(s) to prevent the hazard.

1.3 Rights to claim under limited warranty

Read the information in this documentation. This is essential for fault-free operation and fulfillment of any rights to claim under limited warranty. Read the documentation before you start working with the unit!

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1.4 Exclusion of liability

Read the information in this documentation, otherwise safe operation is impossible. You must comply with the information contained in this documentation to achieve the specified product characteristics and performance features. SEW-EURODRIVE assumes no liability for injury to persons or damage to equipment or property resulting from non-observance of these operating instructions. In such cases, SEW-EURODRIVE assumes no liability for defects.

1.5 Applicable documents

This additional information does not replace the detailed operating instructions.

Also observe the following publications:

- "MGF..-DSM Drive Unit" operating instructions

1.6 Product names and trademarks

The brands and product names in this documentation are trademarks or registered trademarks of their respective titleholders.

1.7 Copyright notice

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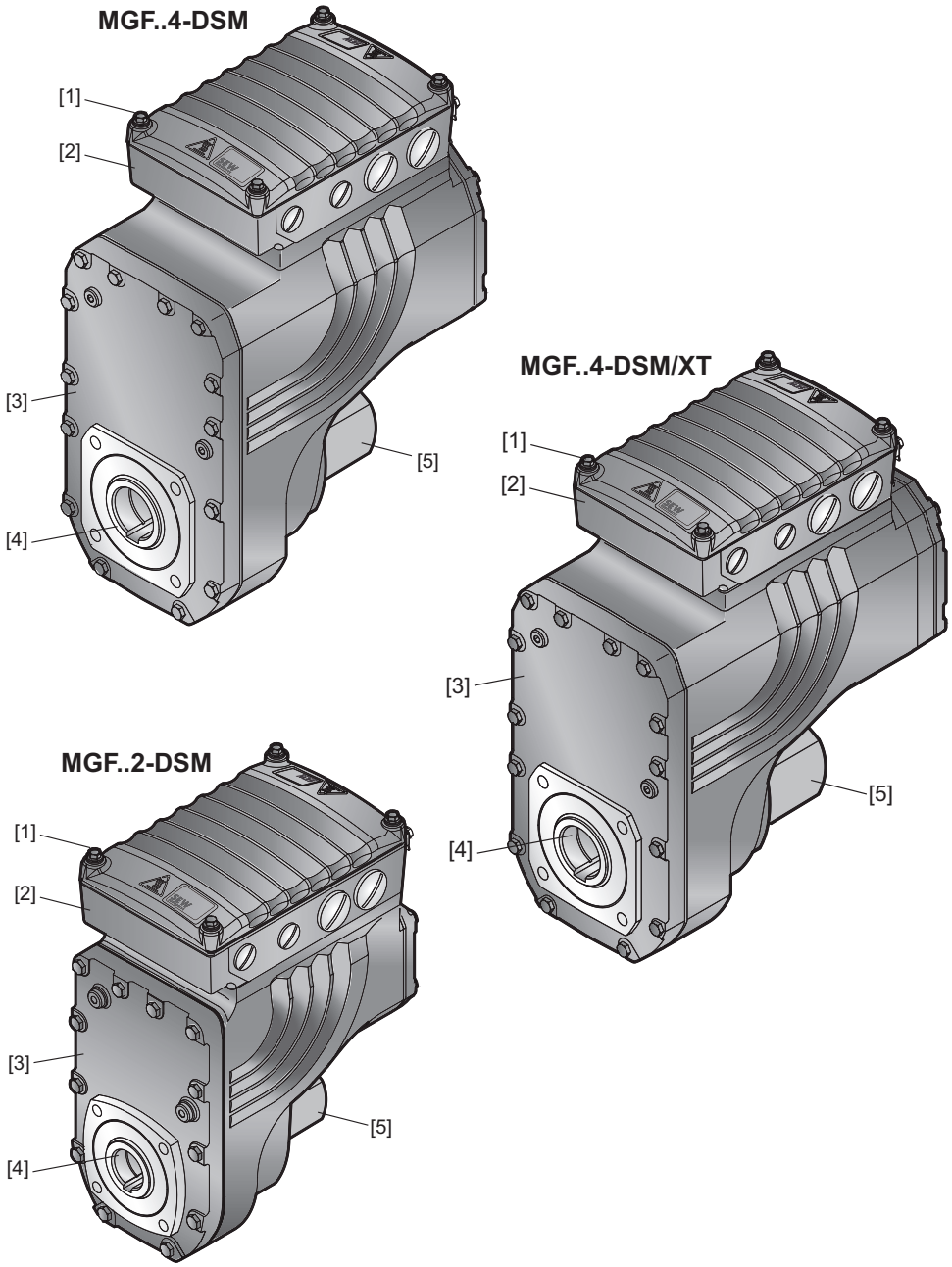
2 Unit structure

2.1 MGF..-DSM drive unit

MGF..-DSM is a unit consisting of a gear unit and a synchronous motor in a compact aluminum die cast housing (see following figure).



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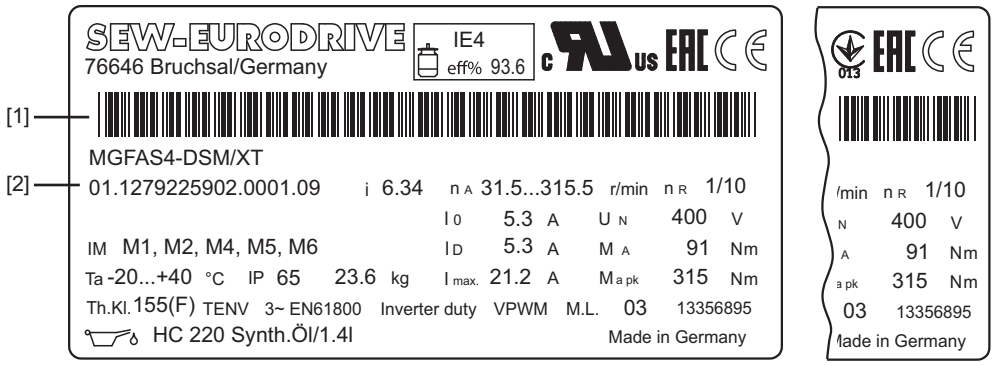
[1] MGF..-DSM cover
[2] Connection ring for cable glands
[3] Inspection cover
[4] Output shaft variant (pictured here: hollow shaft with keyway)
[5] Optional cover

2.2 Type designation

2.2.1 Nameplate

The following figure gives an example of an MGF..-DSM nameplate. For the structure of the type designation, refer to chapter "Type designation".



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[1] The bar code on the nameplate (code 39) according to ISO/IEC 16388 represents the unique serial number (with a period as separator).
[2] Unique serial number

2.2.2 Type designation

The following table shows the type designation for MGF..-DSM:

MG	**Product line** MG = MOVIGEAR®
F	**Gear unit type** F = Parallel-shaft helical gear unit
A	**Shaft type** A = Shaft-mounted gear unit (hollow shaft with key) T = TorqLOC® hollow shaft mounting system
S	**Housing mounting** T = Drive with torque arm S = Housing with threads for mounting a torque arm
2	**Size** 2 = Torque class 200 Nm 4 = Torque class 400 Nm
–	
DSM	**Motor type**
/	
XT	**Option** XT = Increased torque WA = Variant for wet areas PE = Pressure compensation fitting electronics PG = Integrated pressure compensation gear unit

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3 Technical data and dimension sheets

3.1 MGF..-DSM motor data

3.1.1 System voltage: 400 V, connection type of motor: 人

Motor	J_{mot}	n_N	n_{max}	KTY limit	V_N	M_0	I_0	V_{p0} cold	C_T	R_1	L_1	Number of poles
	[kgm² × 10⁻⁴]	[r/min]	[r/min]	[°C]	[V]	[Nm]	[A]	[V]	[Nm/A]	Ω	[mH]	Motor
MGF..2-DSM	2.26	2000	2000	150	400	4	1.85	144.8	2.17	5.17	47.3	10
MGF..4-DSM	11.05	2000	2000	150	400	10	4.40	165	2.28	1.1	17.8	10
MGF..4-DSM/XT	14.86	2000	2000	150	400	14.3	5.3	181	2.70	0,887	16.7	10

J_{mot}	=	Mass moment of inertia of the motor
n_N	=	Rated speed
n_{max}	=	Maximum permitted speed
KTY limit	=	Maximum permitted motor temperature measured at KTY
V_N	=	Nominal voltage
M_0	=	Standstill torque (thermal continuous torque at low speeds)
I_0	=	Standstill current
V_{p0} cold	=	Internal voltage at 1000 r/min
C_T	=	Torque constant
R_1	=	Resistance between connection phase and star point
L_1	=	Inductance between connection phase and star point

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3.2 Permitted currents, speeds and torques

⚠ CAUTION

Damage to the MGF..-DSM unit.

Possible damage to property.

- It is essential that you adhere to the following current, speed and torque values to protect the MGF..-DSM unit.

MGF4..-DSM/XT									
	n_a		M_a	$I_{cont.}$	M_{apk}	I_{max}	$M_{aEmergOff}$	i_{tot}	Weight
	at n_e= 1 r/min	at n_e= 2000 r/min							
	[r/min]	[r/min]	[Nm]	[A]	[Nm]	[A]	[Nm]		[kg]
2-stage	0.20	400.8	71	5.30	250	21.20	420	4.99	23.6
	0.17	347.2	82	5.30	288	21.20	450	5.76	
	0.16	315.5	91	5.30	315	21.20	470	6.34	
	0.13	268.8	106	5.30	345	19.55	515	7.44	
	0.13	253.8	113	5.30	352	18.80	525	7.88	
	0.11	223.2	128	5.30	375	17.55	560	8.96	
	0.09	182.3	157	5.30	450	17.20	675	10.97	
	0.08	158	181	5.30	475	15.65	710	12.66	
	0.07	143.6	199	5.30	475	14.10	710	13.93	
	0.06	122.2	234	5.30	475	11.85	710	16.36	
	0.06	115.4	248	5.30	475	11.15	710	17.33	
	0.05	101.5	282	5.30	475	9.65	710	19.70	
	0.05	91.7	312	5.30	475	8.60	710	21.82	
	0.04	77.8	368	5.30	475	7.15	710	25.72	
3-stage	0.03	69.3	400	5.10	475	6.25	710	28.88	24.0
	0.03	58.3	400	4.13	475	5.10	710	34.29	
	0.03	54.6	400	3.80	475	4.70	710	36.61	
	0.02	46.7	400	3.09	475	3.85	710	42.86	
	0.02	41.7	400	2.65	475	3.35	710	48.00	
	0.02	35.4	400	2.09	475	2.70	710	56.49	

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3.2.1 Key

	=	Preferred gear ratio
M_{apk}	=	Maximum permitted torque for short-time operation[1)]
I_{max}	=	Maximum permitted current for short-time operation
M_a	=	Continuous output torque
$I_{cont.}$	=	Continuous current S1 duty
$M_{aEmerg.Off}$	=	Maximum permitted torque for non-cyclical special loads, maximum 1000 cycles
n_a	=	Output speed
n_e	=	Motor speed

1) If this occurs more than 10 times per hour, detailed project planning must be carried out using SEW Workbench.

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3.3 Dimension drawing

3.3.1 Information

Scope of delivery

 = Standard parts supplied by SEW-EURODRIVE.

 = Standard parts not supplied by SEW-EURODRIVE.

Tolerances

Shaft ends

Diameter tolerance:

Ø	≤ 50 mm	→ ISO k6
Ø	> 50 mm	→ ISO m6

Center bores according to DIN 332, shape DR:

Ø	= 7...10 mm	→ M3
Ø	> 10...13 mm	→ M4
Ø	> 13...16 mm	→ M5
Ø	> 16...21 mm	→ M6
Ø	> 21...24 mm	→ M8
Ø	> 24...30 mm	→ M10
Ø	> 30...38 mm	→ M12
Ø	> 38...50 mm	→ M16

Keys: according to DIN 6885 (domed type).

Hollow shafts

Diameter tolerance:

Ø	→ ISO H7 measured with plug gauge

Breather valves and cable glands

The dimension drawings always show the screw plugs. The contour dimensions may vary slightly due to preinstalled breather valves, plug connectors or pressure compensation fittings (in conjunction with the design for wet areas, for example).

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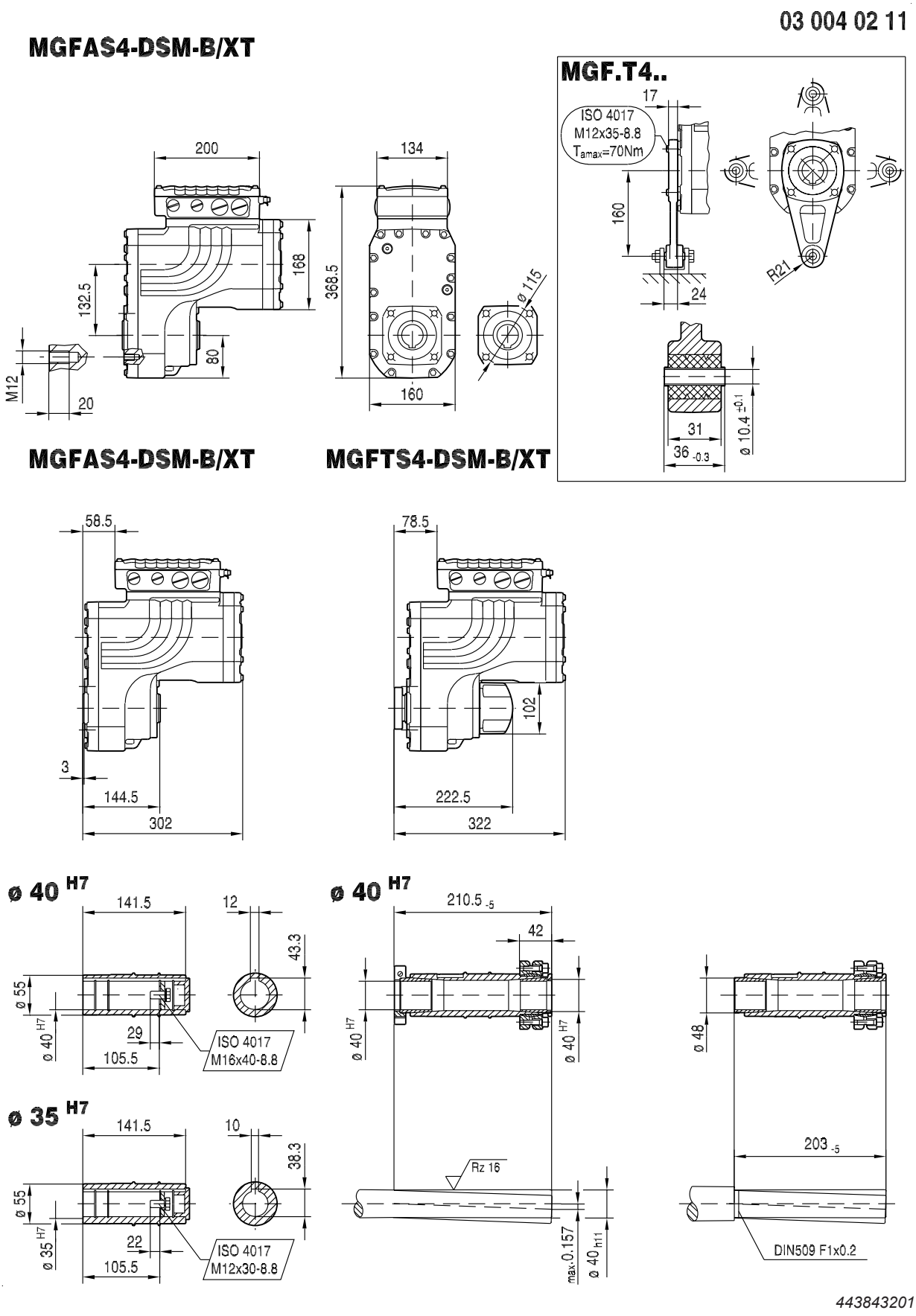
3.3.2 MGFAS4-DSM/XT – design with increased torque



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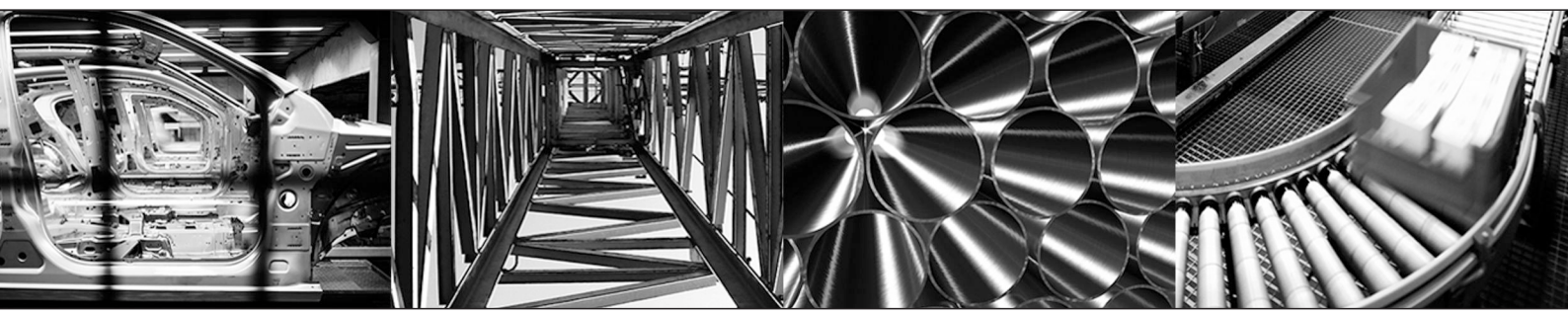

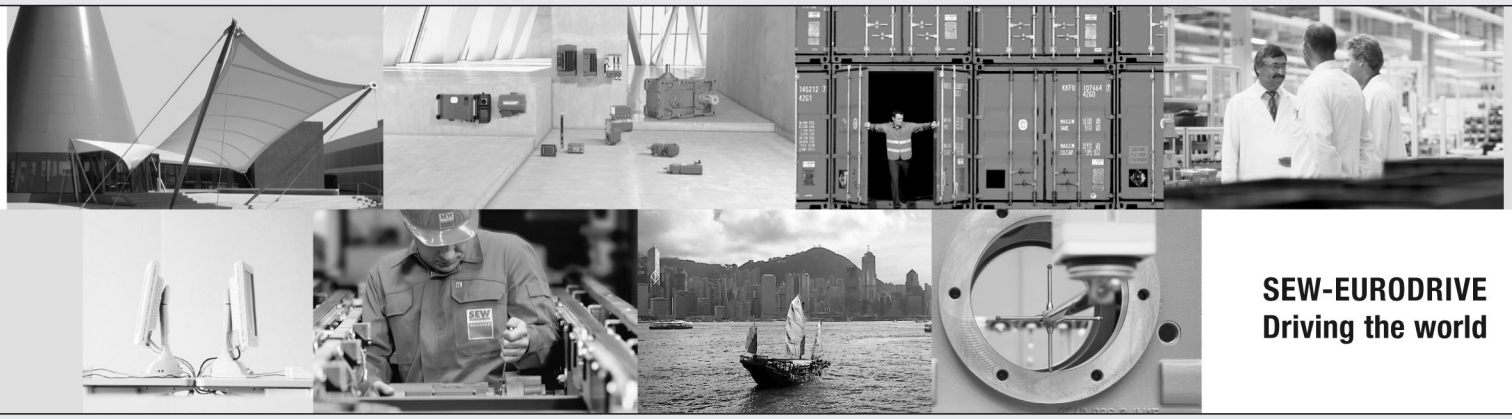

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