**SEW
EURODRIVE**

MOVI-SWITCH®

Edition

10/2001

**Operating Instructions**

1052 5912 / EN

SEW
EURODRIVE
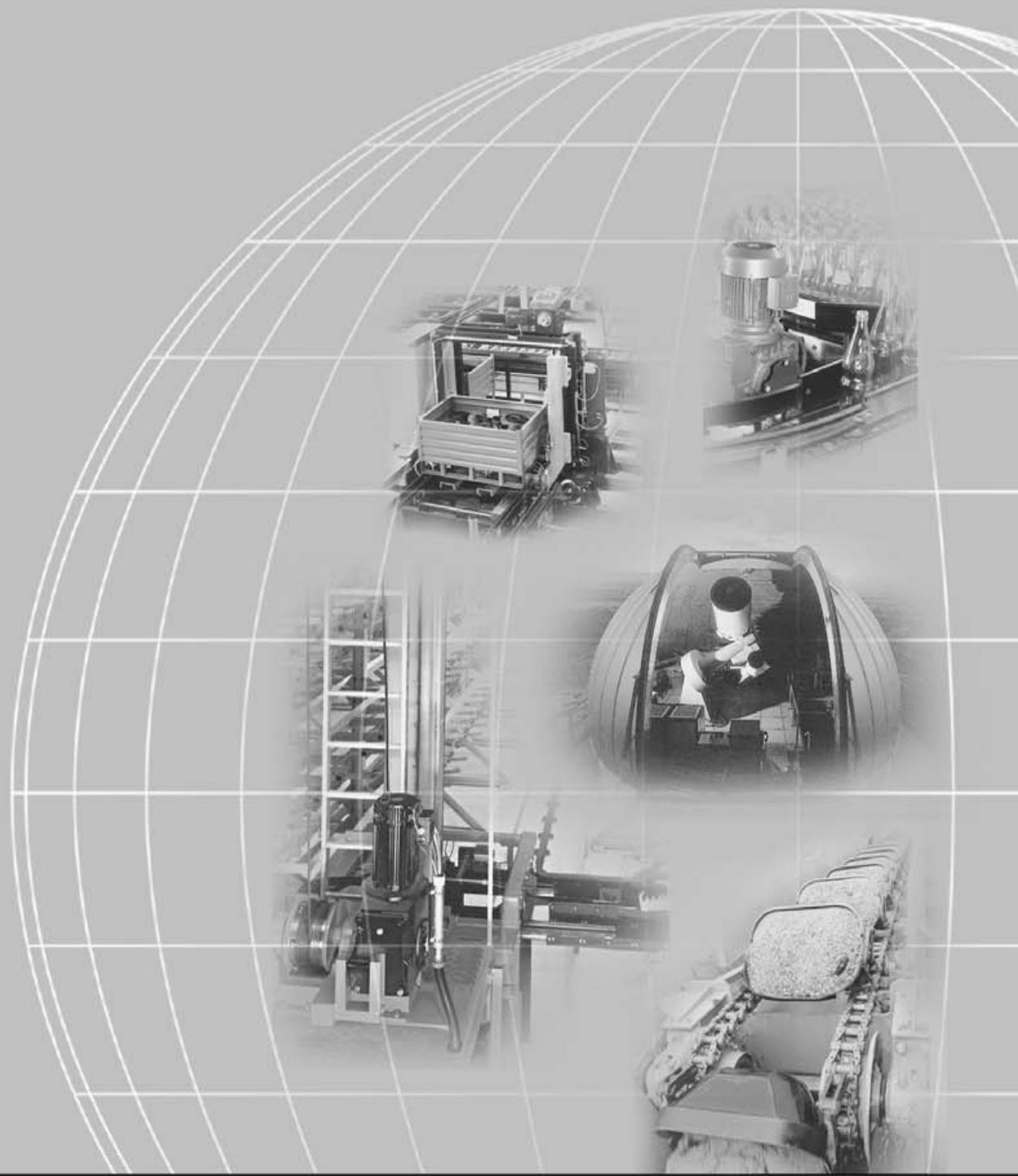
SEW-EURODRIVE

Contents

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1 Important Notes

Warnings and Safety Instructions

Always follow the warnings and safety instructions in this publication!

Electrical hazard
Possible effects: Serious or fatal injury.

Immediate danger
Possible effects: Serious or fatal injury.

Dangerous situation
Possible effects: Minor injury.

Harmful situation
Possible effects: Damage to equipment or surroundings.

Application hints and useful information.

Following these instructions is required for fault-free operation and fulfillment of any warranty claims. Read these instructions carefully before you start working with the drive!

These operating instructions contain vital servicing information and should be kept in close proximity to the drive.

Additional Applicable Documentation

• System Manual "Drive Systems for Decentral Installation"
• "Geared Motors" catalog

Disposal

This product consists of:
• Iron
• Aluminium
• Copper
• Plastic
• Electronic components

All components should be disposed of in accordance with applicable regulations!

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2 MOVI-SWITCH® Safety Instructions

- **Never install or operate damaged products.** In the event of damage, please submit a complaint to the transport company immediately.

- In compliance with existing regulations (e.g. EN 60204, VBG 4, DIN-VDE 0100/0113/ 0160), only **electrical specialists** with accident prevention training are permitted to perform **installation, startup, and service work** on MOVI-SWITCH®.

- Make sure that **preventive measures** and **protection devices** are in accordance with **applicable regulations** (e.g. EN 60204 or EN 50178).
    - **Necessary protective measures:** Grounding of MOVI-SWITCH®

- Before **removing the terminal box cover**, disconnect the **MOVI-SWITCH® from the supply system**.

- The terminal box cover must remain closed during operation.

- **Mechanical blocking** or unit-internal **safety functions** can cause a **motor standstill**. Removing the cause of this problem or performing a reset can result in the **motor re-starting on its own.** If this is not permissible for safety reasons: **In case of a malfunction of MOVI-SWITCH®, the unit must be disconnected from the supply system**.

- **Caution – Danger of burns:** The MOVI-SWITCH® surface temperature can **exceed 60 °C** during operation!

Intended Usage   These MOVI-SWITCH® (geared) motors are intended for industrial equipment. They conform to valid standards and regulations and meet the requirements of the Low Voltage Directive 73/23/EEC.

Technical data and information on approved conditions on site can be found on the nameplate and in these operating instructions.

These details must be observed!

3

3 MOVI-SWITCH® Unit Design
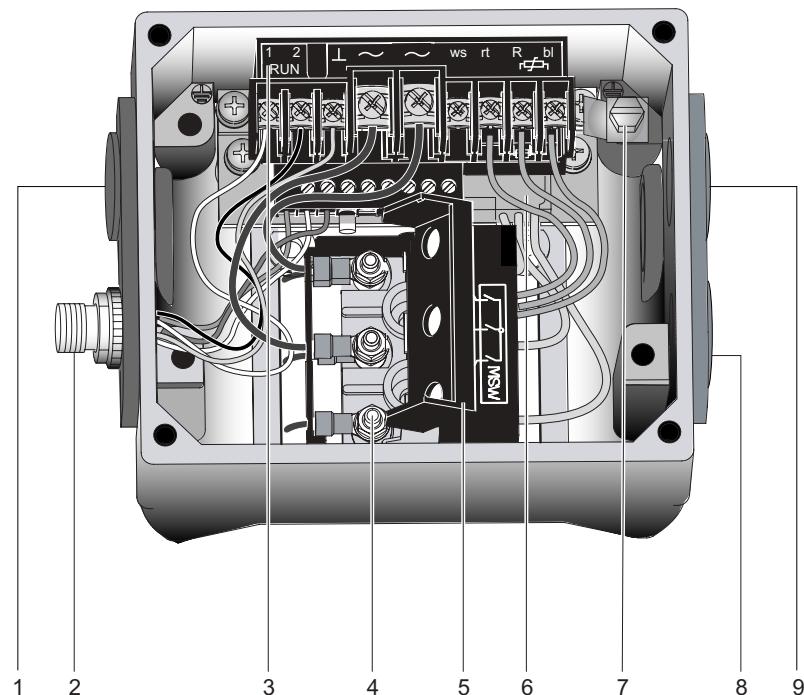
50390AXX

1 Cable gland 2 x M25 x 1.5
2 M12 connector AVS1, standard coding (connection for control signals)
3 BGW brake control (only with brake motors)
4 Power supply connection (L1, L2, L3)
5 Protective cover for power supply connections
6 MOVI-SWITCH® module
7 Screw for connecting protective ground ⏚
8 Cable gland M16 x 1.5
9 Cable gland 2 x M25 x 1.5

Sample Nameplate, Type Designation **3**

3.1   Sample Nameplate, Type Designation

Sample Nameplate

SEW-EURODRIVE   Bruchsal / Germany

Typ R27 DT71D4/BMG/TF/Z/MSW   3∿ IEC 34
Nr.   01.3207611303.0014.00   i 32.47   1
r/min   1380/43   Nm 83
kW 0.37 S1   cosφ 0.76
V 400 Y   A 1.16   Hz 50
IM B7   kg 15.190   IP 54   Iso.Kl. F

Bremse V 230 AC   Nm 2.5   Gleichrichter BGW1.5

Schmierstoff MINER. OEL CLP220 / 2.3l   Made in Germany 181 868 6.14
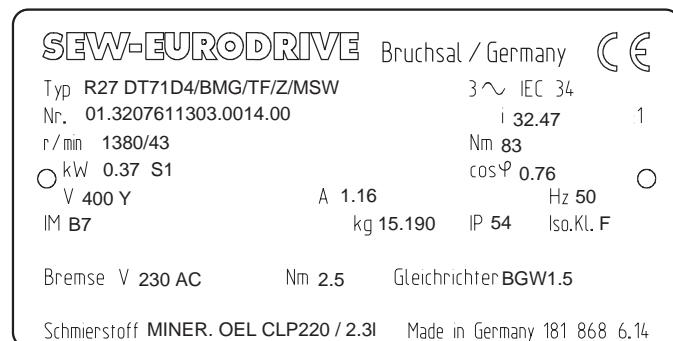
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Sample Type Designation

R   27   DT   71D4   /BMG   /TF   /Z   /MSW

MOVI-SWITCH®

Motor option Heavy fan

Thermistor sensor (standard)

Motor option Brake

Motor size and number of poles

Motor series

Gear unit size

Gear unit series
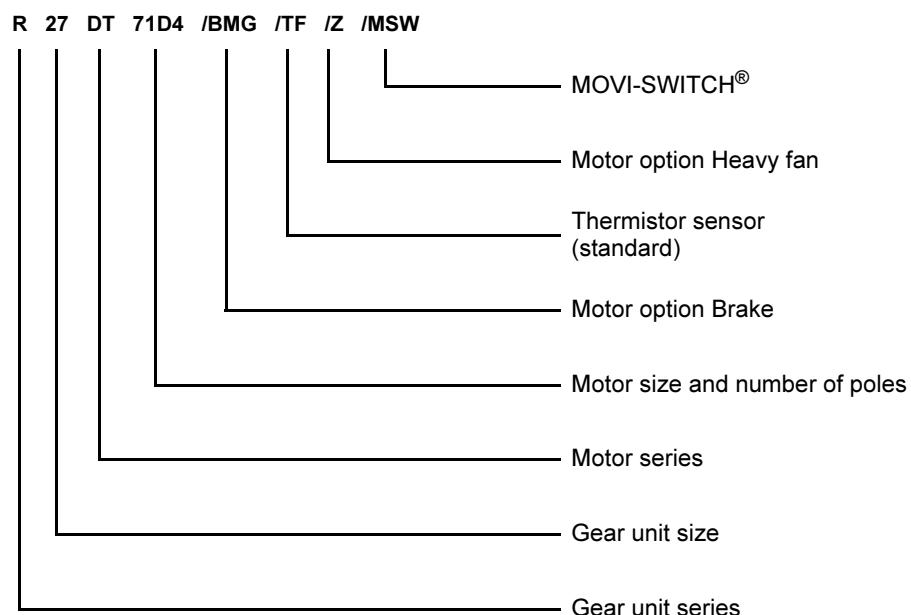
4 **Sample Nameplate, Type Designation**

4 Mechanical Installation of MOVI-SWITCH®

Before You Begin MOVI-SWITCH® may only be installed if:

- the entries on the nameplate of the drive match the supply voltage
- the drive is not damaged (no damage resulting from transport or storage)
- the following requirements have been properly fulfilled:
  - temperature range can be limited by the gear unit, see the gear unit operating instructions
  - no oils, acids, gases, vapors, radiation, etc.

Installation Tolerances

Shaft end	Flanges
Diametric tolerances in accordance with DIN 748 • ISO k6 with ∅ ≤ 50mm • ISO k6 with ∅ > 50mm (Center hole in accordance with DIN 332, shape DR)	Centering shoulder tolerances in accordance with DIN 42948 • ISO j6 with ∅ ≤ 230 mm • ISO j6 with ∅ > 230 mm

Setting up MOVI-SWITCH®

- MOVI-SWITCH® may only be mounted or installed in the specified position on a level, vibration-free and torsionally rigid support structure.
- Thoroughly remove any anti-corrosion agents from the shaft ends (use a commercially available solvent). Do not allow the solvent to penetrate the bearings and shaft seals – this could cause material damage!
- Carefully align MOVI-SWITCH® and driven machine to avoid placing any unacceptable strain on motor shafts (observe permissible overhung load and axial thrust data!).
- Do not butt or hammer the shaft end.
- Protect motors in vertical mounting positions from objects or fluids entering with an appropriate cover!
- Ensure an unobstructed cooling air supply and that air heated by other devices cannot be drawn in.
- Balance components for subsequent mounting on the shaft with half the key (outgoing shafts are balanced with half the key). Any condensation drain holes will be sealed by plastic plugs and should only be opened when necessary.
- Open condensation drain holes are not permissible, as this would invalidate higher classes of enclosure.

Installation in Damp Areas or in Open Air

- Use suitable screwed cable glands for the supply leads (use reducing adapters if necessary).
- Coat the threads of screwed cable glands and sealing plugs with sealant, and tighten well – apply another coating of sealant.
- Clean the sealing faces of connection box covers well before re-assembly.
- Apply protective coating agent if necessary.

Check that the type of enclosure is authorized (refer to the nameplate).

5   Electrical Installation of MOVI-SWITCH®

5.1   Description of Control Signals (M12 Connection)

PIN	Assignment	Function
1	**24 V**	Power supply voltage 24 V_{DC}
2	**RUN**	Control signal 24 V_{DC}, high = Start, low = Stop
3	⊥	Reference potential 0V24
4	**OK**	Checkback signal Ready for operation, 24 V_{DC}, high = ready for operation, low = overtemperature or no 24 V supply

5.2   MOVI-SWITCH® Connection
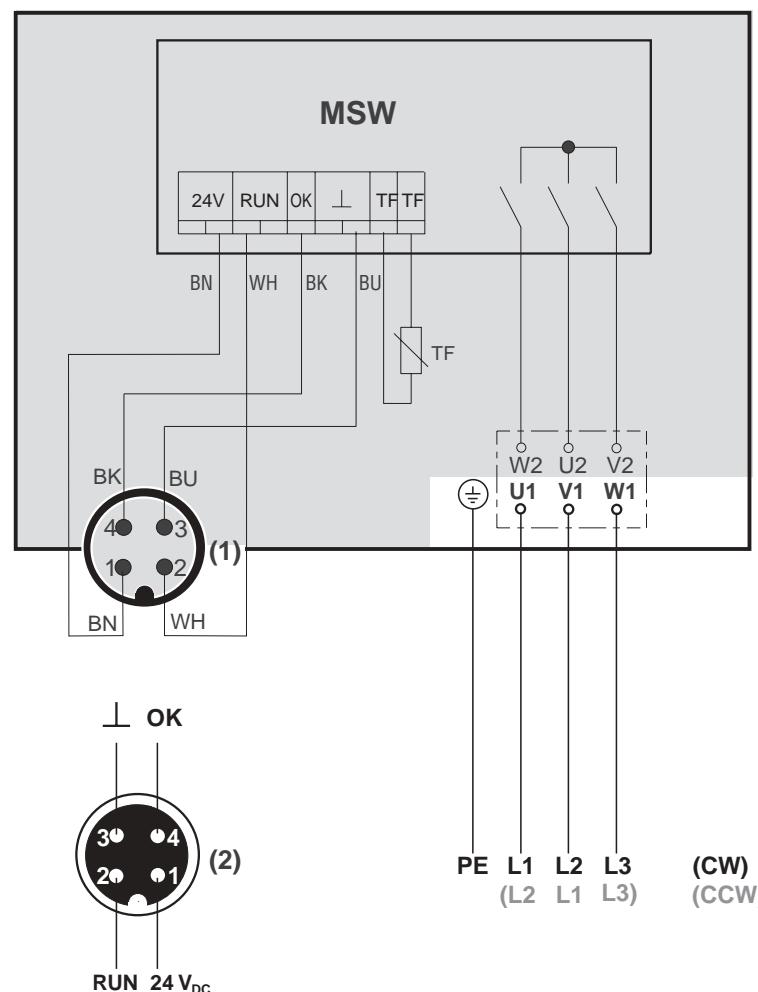
05005AXX

(1)   M12 connector AVS1 (standard coding)
(2)   M12 socket (standard coding)
CW   Clockwise rotation
CCW   Counter-clockwise rotation

factory-wired

5   **MOVI-SWITCH® with BGW Brake Control**

5.3   MOVI-SWITCH® with BGW Brake Control

Brake Voltage = Power Supply Voltage/$\sqrt{3}$ (Phase Star Point)
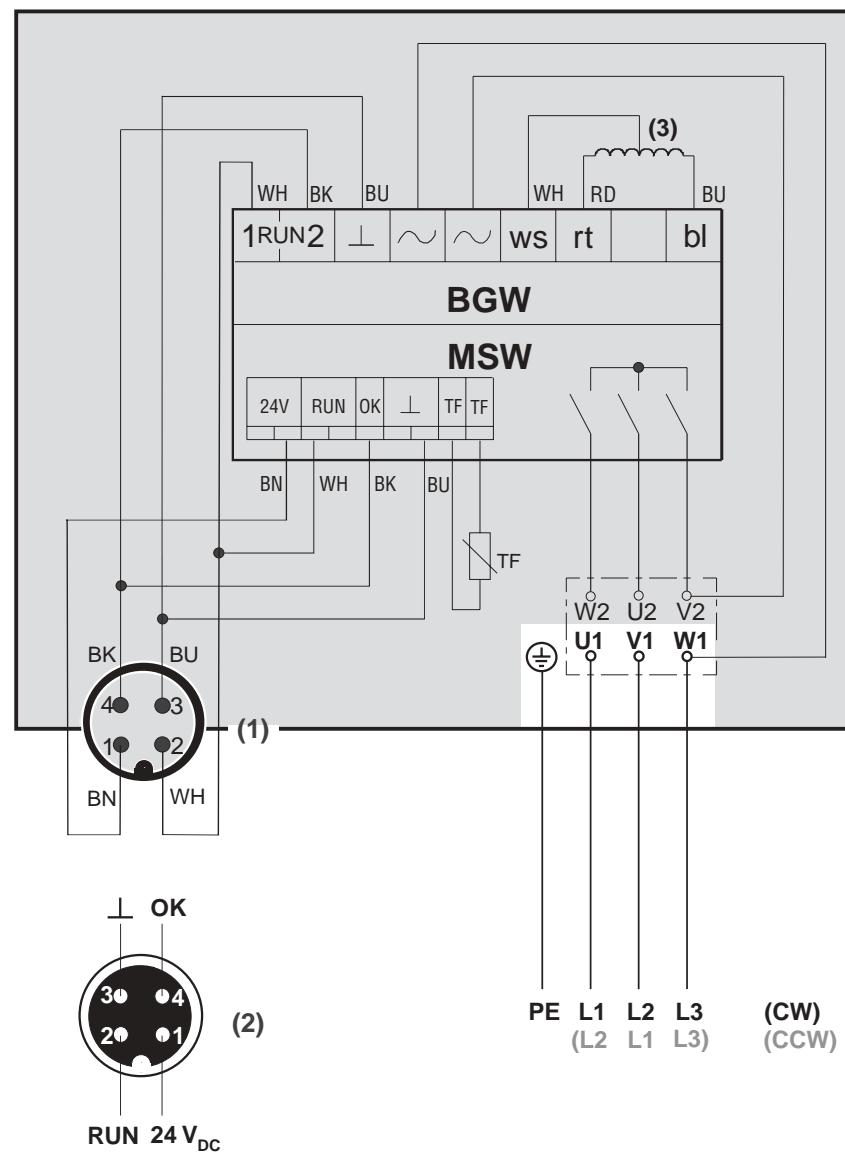
05006AXX

(1)   M12 connector AVS1 (standard coding)
(2)   M12 socket (standard coding)
(3)   Brake coil
CW   Clockwise rotation
CCW   Counter-clockwise rotation

              factory-wired

MOVI-SWITCH® with BGW Brake Control

5

Braking Voltage = Power Supply Voltage (Phase-Phase)
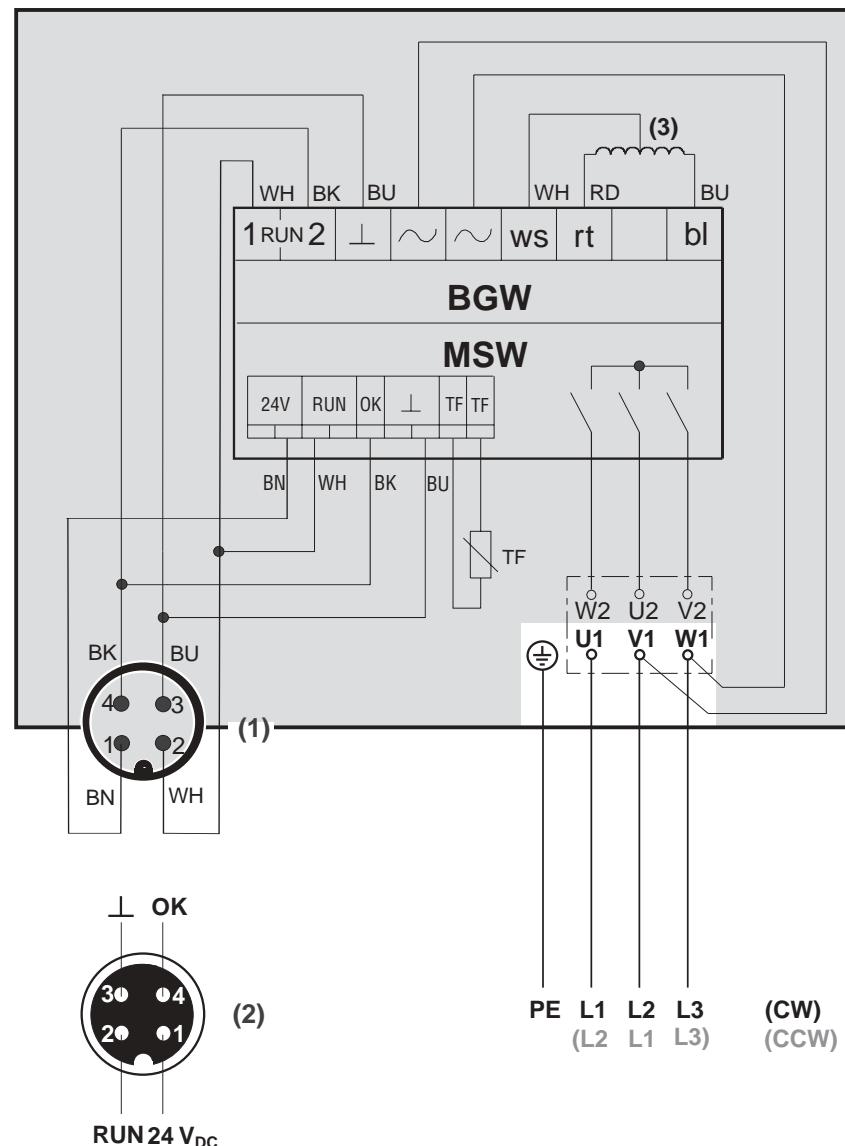
05007AXX

(1)   M12 connector AVS1 (standard coding)
(2)   M12 socket (standard coding)
(3)   Brake coil
CW   Clockwise rotation
CCW   Counter-clockwise rotation

            factory-wired

5 Connection with AS-i Binary Slave MLK11

5.4 Connection with AS-i Binary Slave MLK11
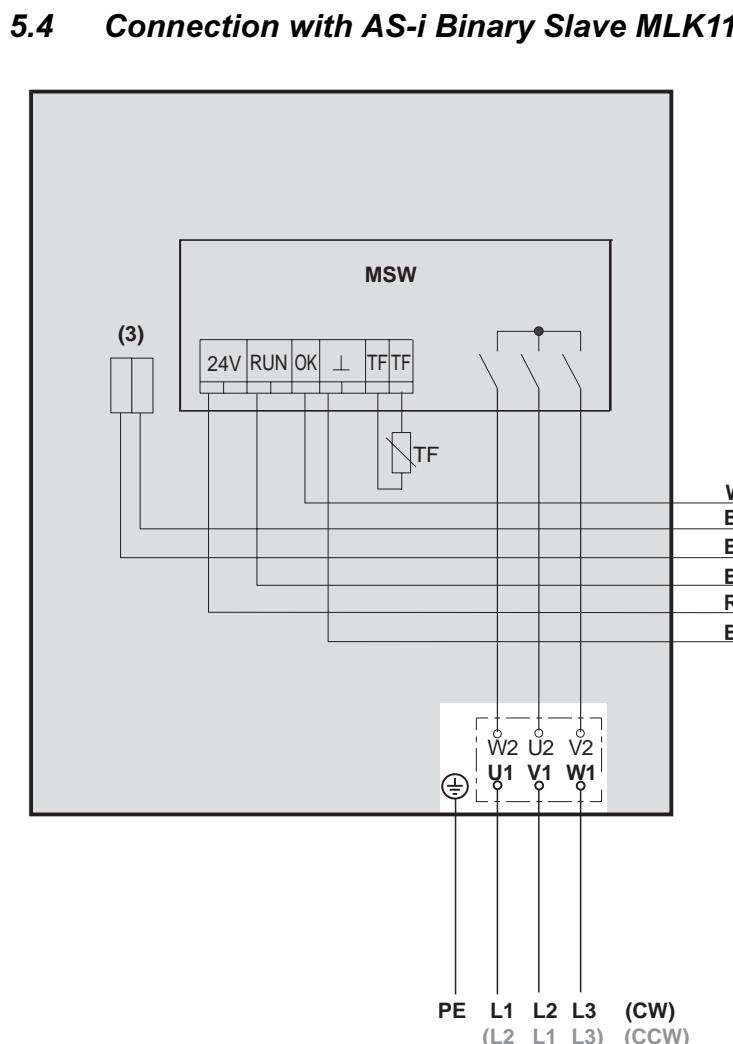
05090AXX

(1)   AS-i connection
(2)   Connection for 2 external sensors
(3)   Insulated cable ends (without function)
CW   Clockwise rotation
CCW   Counter-clockwise rotation

factory-wired

Connection with AS-i Binary Slave MLK11 and BGW **5**

5.5 Connection with AS-i Binary Slave MLK11 and BGW
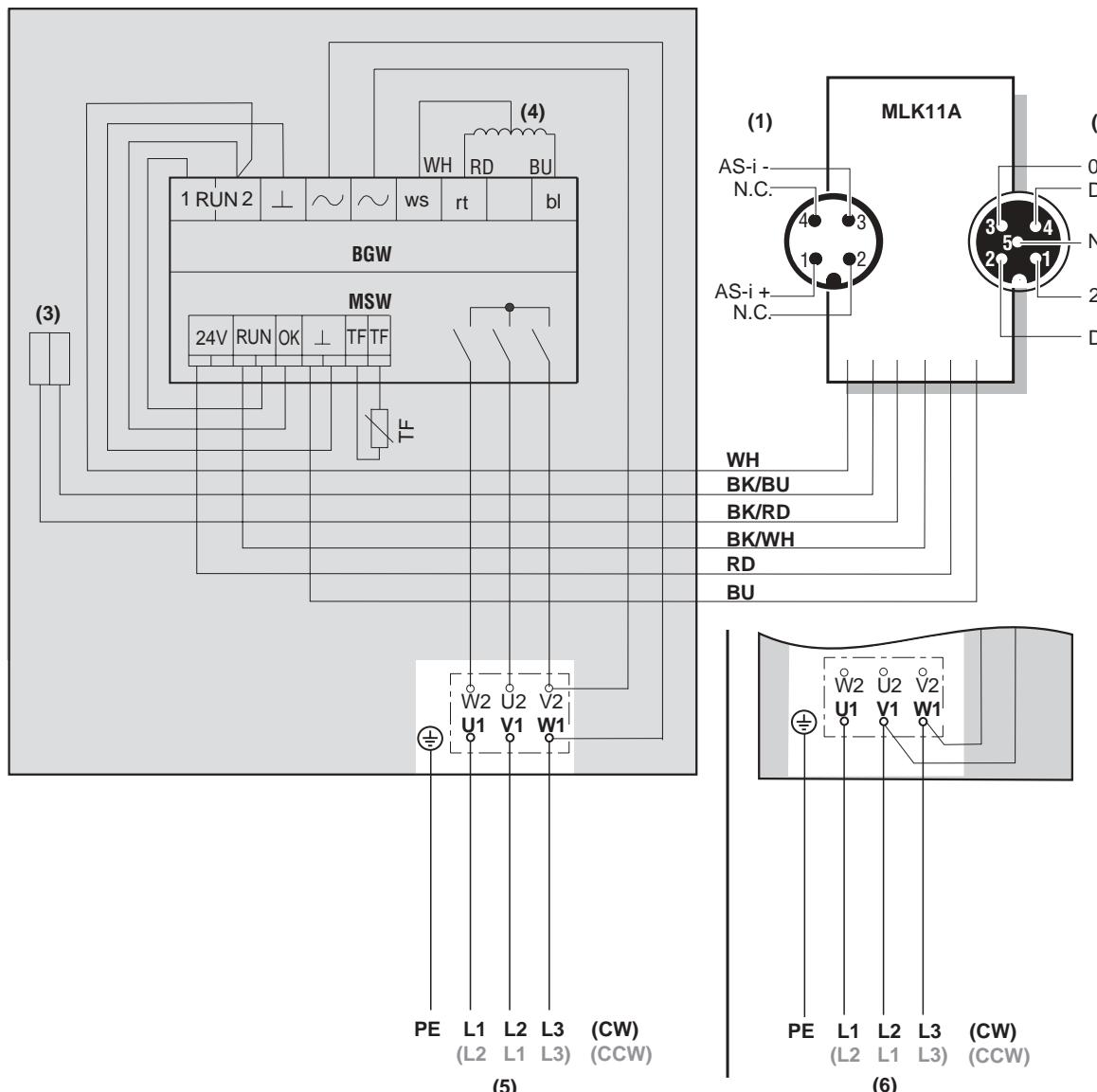
05016AXX

(1)   AS-i connection
(2)   Connection for 2 external sensors
(3)   Insulated cable ends (without function)
(4)   Brake coil
(5)   Braking voltage = power supply voltage / $\sqrt{3}$
(6)   Braking voltage = power supply voltage
CW   Clockwise rotation
CCW   Counter-clockwise rotation

        factory-wired

5   **Connection Example 2 x MOVI-SWITCH® with MF.. Fieldbus Interface**

5.6   Connection Example 2 x MOVI-SWITCH® with MF.. Fieldbus Interface

Connection via terminals (MF.2. fieldbus interface)
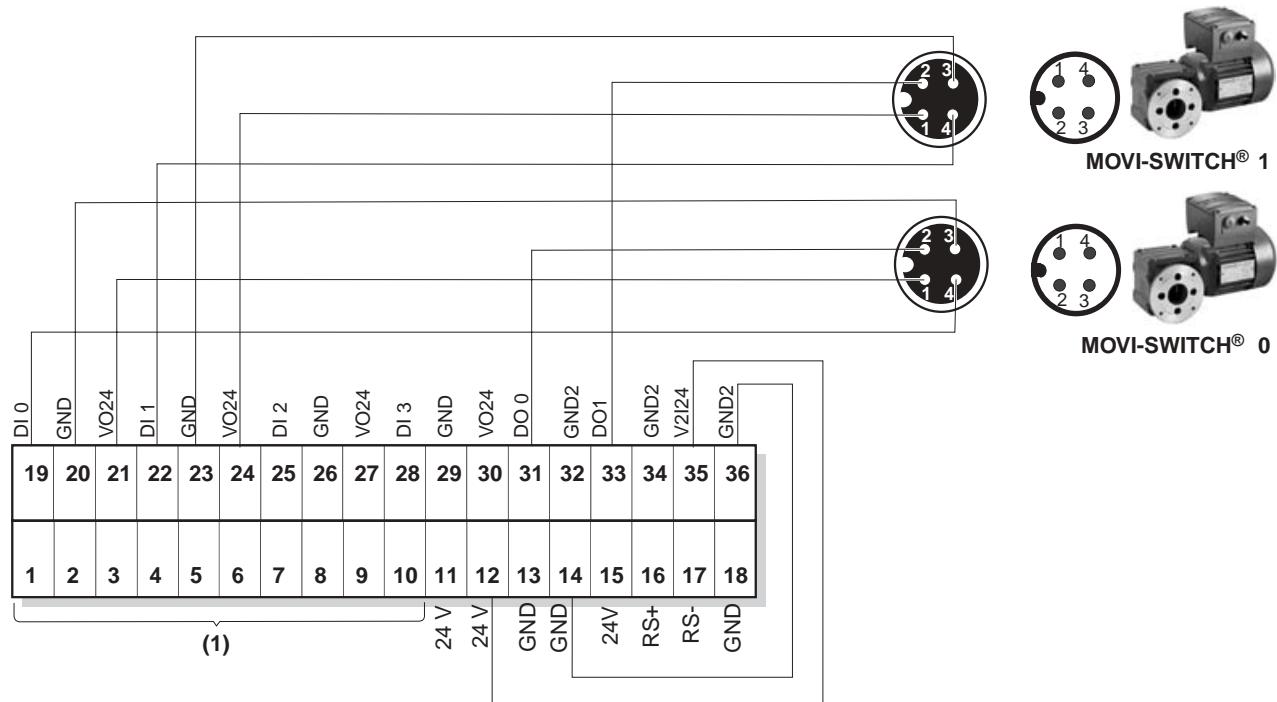
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(1)   Assignment dependent upon fieldbus being used

Connection Example 2 x MOVI-SWITCH® with MF.. Fieldbus Interface **5**

Connection via M12 Connector (MF.22 Fieldbus Interface)

The required outputs must internally be jumpered to the sockets being used according to the following figure.
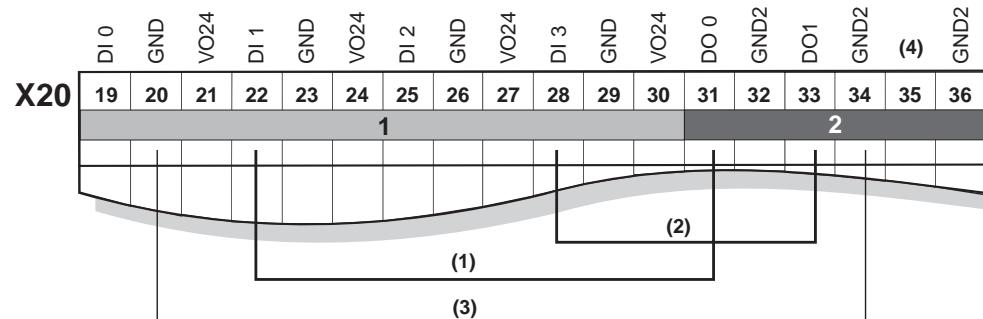
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(1) DO0 is connected to PIN2 of socket DI0
(2) DO1 is connected to PIN2 of socket DI2
    (only required for connection of 2 MOVI-SWITCH® to an MF.22 bus module)
(3) only required if fieldbus nodes are installed with two 24 V voltage circuits

After the outputs have been jumpered to the input sockets, two MOVI-SWITCH® can be connected to the M12 sockets DIO and DI2.

Input socket DI1 and output socket DO0 as well as input socket DI3 and output socket DO1 can no longer be used.
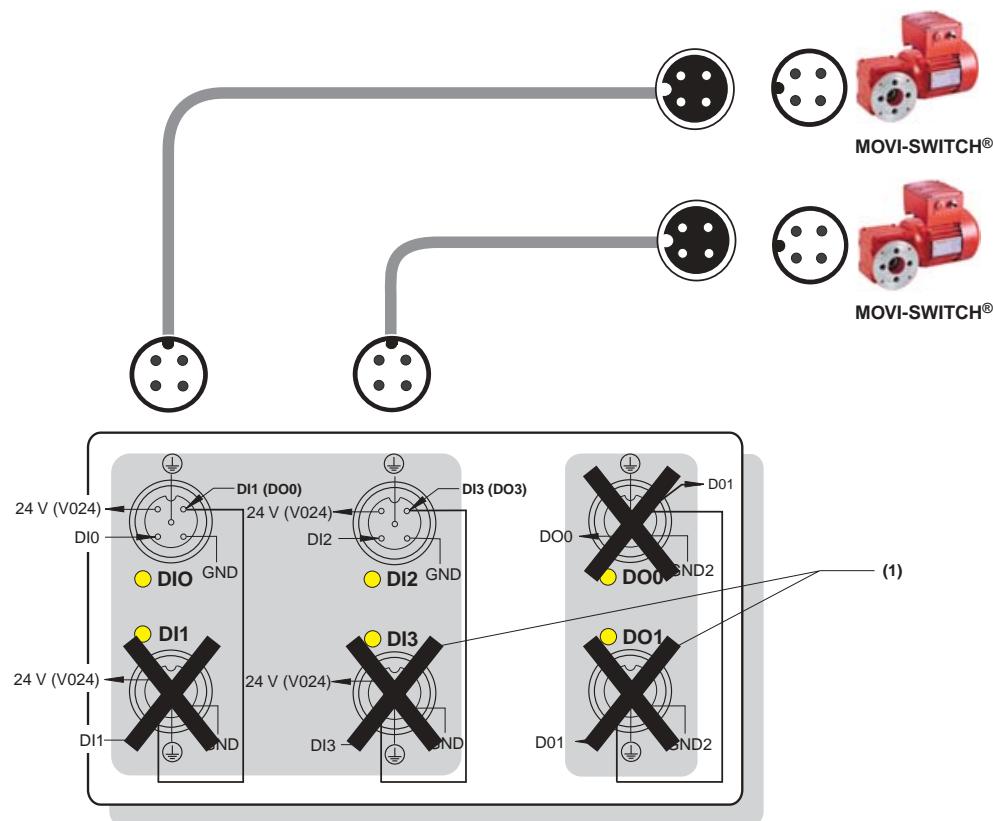
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(1) Cannot be used any longer if 2 MOVI-SWITCH® are connected

6 Startup Information

6 Startup of MOVI-SWITCH®

6.1 Startup Information

Before startup ensure that:

• The drive is not damaged or blocked.

• All connections have been made correctly.

• The direction of motor/geared motor is correct.

• All protective covers are installed correctly.

During startup ensure that:

• The motor is running perfectly (no variations in speed, loud noise, etc.).

Caution: On brake motors with a self-reengaging manual brake release, the lever must be removed after commissioning! A bracket for the lever is attached to the motor.

6.2 Starting the Motor

• Apply supply voltage

• **Caution! The supply potential is permanently present in the terminal box (even with resting motor).**

• If supply voltage is present at all times (terminals U1, V1, W1), the drive is switched on/off by means of a control signal (RUN signal).

6.3 Monitoring

• The solid state power component of the motor switch and the motor winding are thermally controlled.

• In case of an overload, the MOVI-SWITCH® drive automatically switches off.

• The monitoring status is signaled by a 24 V output (OK signal).

• **The OK output must be evaluated by a controlling system (e.g. PLC).**

• **Since a starting command causes the motor to restart automatically after cooling off, an external restarting lockout must be implemented if an automatic restart should represent a danger to person or equipment.**

• By connecting the check-back output (OK signal) with ground potential, switch-on is prevented or the motor is stopped.

• The MOVI-SWITCH® module is protected against power supply overvoltage.

6.4   Startup with AS-i Binary Slave MLK11A

Outputs (Function and Designation)

Bit	Function	Display / LED color
D0	Start / Stop (RUN)	DO 0 / yellow
D1	-	DO 1 / yellow
D2	-	DO 2 / yellow
D3	Power supply / reset (terminal 24 V)	DO 3 / green

Inputs (Function and Designation)

Bit	Function	Display / LED color
D0	Message Ready for operation (OK)	DI 0 / yellow
D1	-	-
D2	Sensor 1 (M12 socket, pin 4)	DI 2 / yellow
D**3**	Sensor 2 (M12 socket, pin 2)	DI 3 / yellow

LED Display
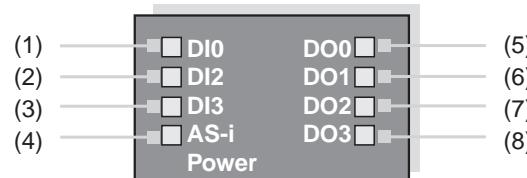
5070AXX

(1) MOVI-SWITCH® ready for operation
(2) external input DI2
(3) external input DI3
(4) Voltage supply via AS-i system is ok

(5) Start (motor turns)
(6) No function
(7) No function
(8) MOVI-SWITCH® voltage supply

6 Startup with AS-i Binary Slave MLK11A

Assigning Slave Address via Programming Device

An AS-i addressing device can be used to assign the slave address. This allows for simple and network-independent addressing.

The AS-i addressing devices offer the following functions:

• Reading an AS-i slave address
• Incrementally adjusting address to new value
• New addressing of slaves
• Functional test with output to LCD display

The use of an addressing device requires an adapter that fits onto the M12 plug connector of the MLK module (see the following figure).
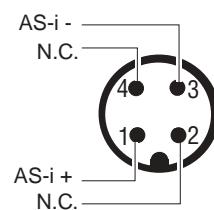
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Example: Every AS-i participant is individually addressed (A) and then reintegrated in the bus (B).
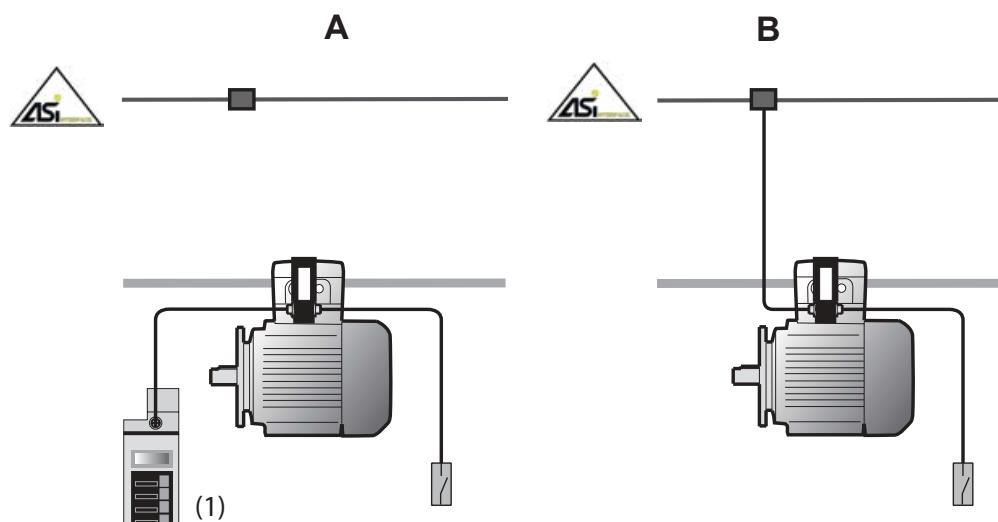
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(1) AS-i addressing device

7   MOVI-SWITCH® Diagnostics

Problem	Possible cause	Solution
Drive has incorrect direction of rotation	• Incorrect phase sequence	• Exchange two phases at the terminal block
Motor does not run, no current input	• No supply voltage	• Inspect the supply lines and correct them • Check and replace line protection fuse
	• No control voltage	• Check 24 V_{DC} signal (terminal 24 V) and correct
	• No enable signal	• Check RUN signal (terminal RUN), correct controller fault
	• Not ready for operation, OK signal LOW	• No control voltage (terminal 24 V), correct • OK output shorted to ground, correct • Motor too hot, let motor cool, reduce load • TF not connected, check connections and correct
Motor hums, high current consumption	• Mechanical system is blocked • Brake does not release • Winding is faulty	• Mechanical fault corrected • Brake maintenance according to section "Inspection and Maintenance of MOVI-SWITCH®" • Exchange drive

Note: If you require assistance from customer service:
• State the data on the nameplate
• State type and extent of the fault
• Indicate when and under which operating conditions the fault occurred
• State the probable cause

8 **Inspection and Maintenance Intervals**

8   Inspection and Maintenance of MOVI-SWITCH®

- Use only original parts in accordance with the valid spare parts list!
- Caution – Danger of burns: Motors can become very hot during operation!

8.1   Inspection and Maintenance Intervals

Interval	Unit /unit part	What to do?
depending on the loading characteristics: **Every 2 to 4 years** [1]	Brake	• Inspect brake (working air gap, brake disc, pressure plate, carrier / gearing, pressure rings) • Extract abraded matter.
Every 10,000 operating hours	Motor	• Inspect motor (replace ball bearing/oil seal) • Clean cooling air passages
Varying intervals **(depending on external factors)**	Motor	• Touch up or renew the anti-corrosion coating

[1] Wear times are influenced by many factors that can shorten life span. Calculate the required inspection and maintenance intervals separately in accordance with the project planning documents.

Inspection and Maintenance Work of the Motor **8**

8.2 Inspection and Maintenance Work of the Motor

Example motor DFT...MSW..
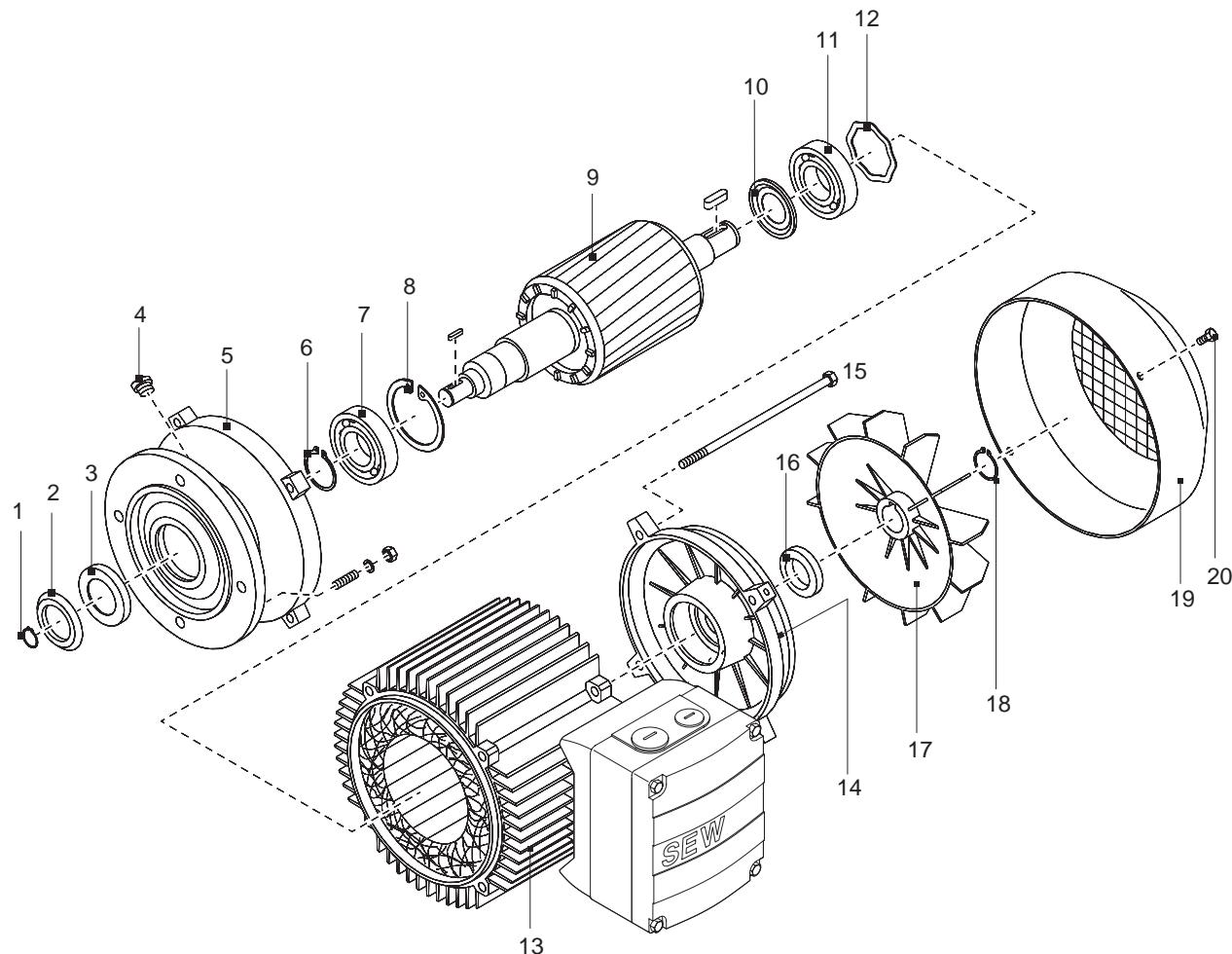
03396AXX

1	Snap ring	6	Snap ring	11	Ball bearing	16	V-ring
2	Oil flinger	7	Ball bearing	12	Equalizing ring	17	Fan
3	Oil seal	8	Snap ring	13	Stator	18	Snap ring
4	Screw plug	9	Rotor	14	B-bearing shield	19	Fan guard
5	A-(flange) bearing shield	10	Nilos-ring	15	Hexagon head screw	20	Housing screw

8 **Inspection and Maintenance Work of the Motor**

Inspecting the Motor

1. **Caution: Switch off MOVI-SWITCH® and prevent it from unintentional restart.**

2. If present, remove NV16 / NV26 proximity sensor, remove flange cover or fan guard (19).

3. Remove hexagon head cap screws (15) from drive end (5) and non-drive end bearing shields (14), and detach stator (13) from drive end bearing shield.

4. a) Motors with brake
   – Open terminal box cover, remove brake cable from terminals.
   – Push the non drive-end bearing shield and brake off the stator and carefully remove them (drag brake cable by means of trailing wire, if necessary).

   b) Pull back stator by approx. 3–4 cm.

5. Visual inspection:

   Are there traces of condensation or gear oil inside the stator?

   – If not, continue with 9.
   – If condensation is present, continue with 7.
   – If gear oil is present, the motor must be repaired by a specialized workshop.

6. a) for geared motors: Remove the motor from the gear unit.

   b) Motors without gear unit: Remove drive end flange.

   c) Remove the rotor (9)

7. Clean the winding, dry and conduct electrical tests

8. Replace the ball bearings (7, 11) (use only approved ball bearings, see page 27) Replace oil seal (3) in drive end bearing shield

9. Reseal the stator seat, install motor, brake, etc.

10. Check the gear unit, if applicable (see Gear Unit Operating Instructions).

8.3 Inspection and Maintenance of Brake

Type BMG 05 - BMG4:
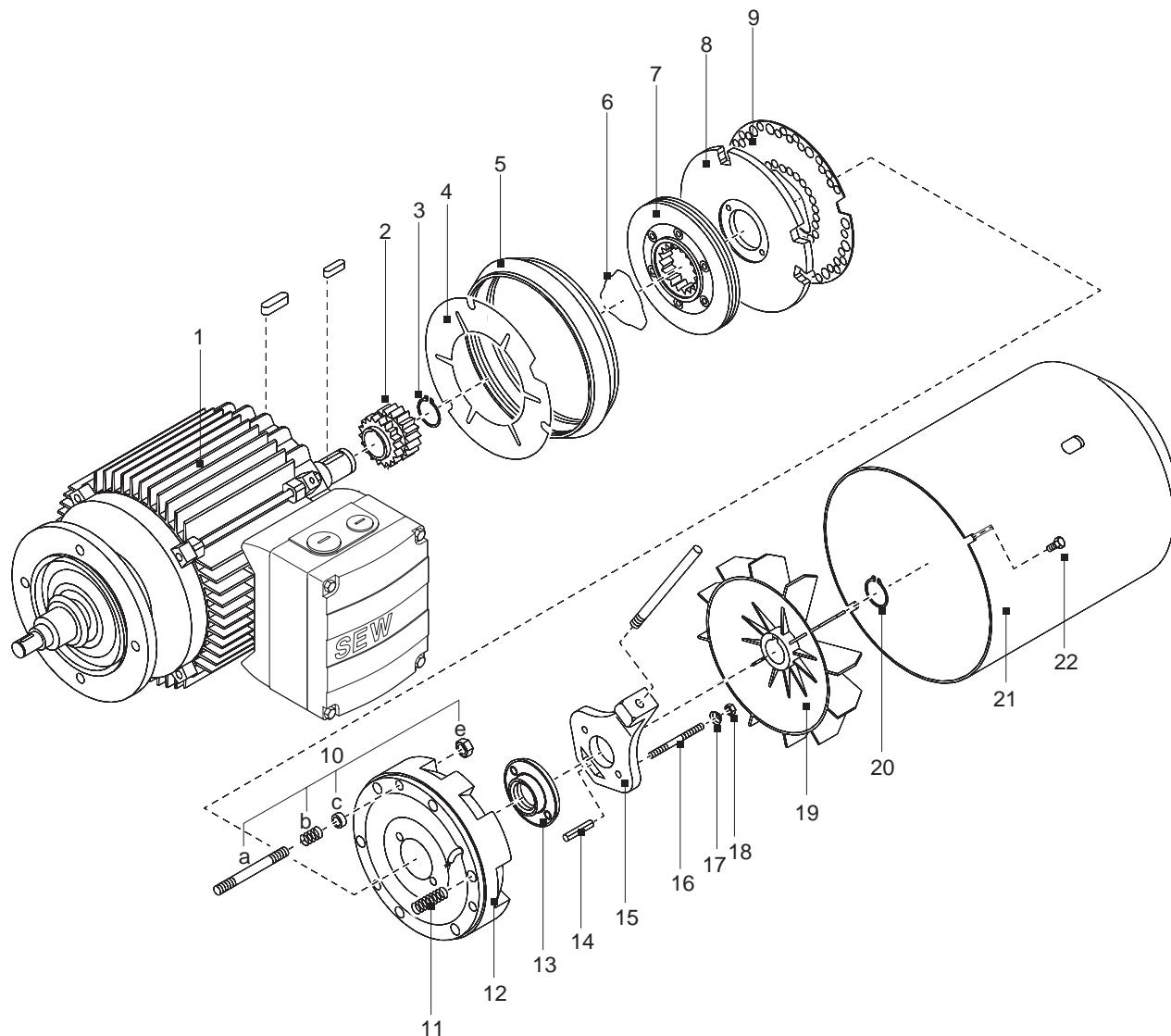
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1	Motor with brake end shield	10a	Stud (3x)	16	Stud (2x)
2	Driver	10b	Counter spring	17	Conical coil spring
3	Snap ring	10c	Pressure ring	18	Setting nut
4	Niro washer	10e	Hex nut	19	Fan
5	Rubber sealing collar	11	Brake spring	20	Snap ring
6	Annular spring	12	Brake coil body	21	Fan guard
7	Brake disc	13	Sealing ring	22	Housing screw
8	Pressure plate	14	Dowel pin		
9	Damping plate (only for BMG)	15	Releasing lever with hand lever		

8 Inspection and Maintenance of Brake

Inspecting Brake, Adjusting Working Air Gap

1. **Switch off MOVI-SWITCH® and prevent it from unintentional restart.**

2. Remove
   – NV16 / NV26 proximity sensor, if present
   – Flange cover or fan guard (21)

3. Move rubber sealing collar (5) (loosen clamp, if necessary). Extract abraded matter.

4. Measure the brake disc (7, 7b):
   – If brake disc $\leq$ 9 mm: Replace brake disc (see page 25)

5. Measure the working air gap A (see the following figure)
   – with feeler gauge in three places, approx. 120° apart, between pressure plate and damping plate (9).
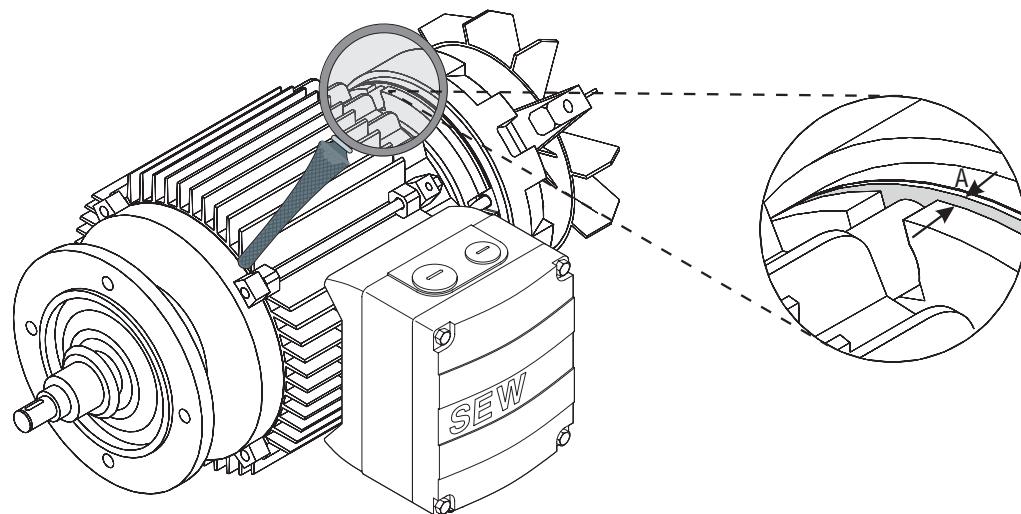
03398AXX

6. Tighten the hexagon nut (10e) until working air gap is set correctly (see page 27)

7. Fix the rubber sealing collar back in place and re-install the dismantled parts.

Inspection and Maintenance of Brake   **8**

Replacing Brake Disc

When replacing brake disc, inspect the other removed parts and replace them, if necessary.

1. **Switch off MOVI-SWITCH® and prevent it from unintentional restart.**

2. Remove:
   – NV16 / NV26 proximity sensor, if present
   – Flange cover or fan guard (21), snap ring (20), and fan (19).

3. Remove rubber sealing collar (5).

   Remove manual brake release: Setting nuts (18), conical coil springs (17), studs (16), releasing lever (15)

4. Loosen hexagon nuts (10e), carefully pull off the coil body (12) (Caution, brake cable!), and take out the brake springs (11).

5. Remove damping plate (9), pressure plate (8) and brake disc (7, 7b), and clean the brake parts.

6. Install the new brake disc.

7. Re-install brake components (except rubber sealing collar, fan and fan guard)

8. Set the working air gap (see page 24, Points 5 to 7).

9. With manual brake release (type HF or HR):

10. Set the floating clearance via the setting nuts between the conical coil springs (pressed flat) and setting nuts (see the following figure).
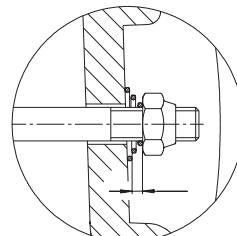
Brake	Floating clearance [mm]
BMG 05 - 1	1.5
BMG 2 - BMG4	2

01111AXX

Important: This floating clearance is necessary so that the pressure plate can move up as the brake lining wears.

11. Fix the rubber sealing collar back in place and re-install the dismantled parts.

Note:
• The lockable manual release brake (Type HF) is released if resistance is encountered when operating the manual release brake screw.

• The self-reengaging manual brake release (Type HR) can be opened with normal hand pressure.

Caution: On brake motors with a self-reengaging manual brake release, the lever must be removed after startup / maintenance! A bracket is provided for storing it on the outside of the motor.

8 Inspection and Maintenance of Brake

Changing the
Braking Torque

Braking torque can be adjusted in increments (see page 27)

• by installing various brake springs.

• by changing the number of the brake springs.

1. **Switch off MOVI-SWITCH® and prevent it from unintentional restart.**

2. Remove:

   – NV16 / NV26 proximity sensor, if present
   – Flange cover or fan guard (21), snap ring (20), and fan (19).

3. Remove rubber sealing collar (5).

   Remove manual brake release: Setting nuts (18), conical coil springs (17), studs (16), releasing lever (15)

4. Loosen hex nuts (10e), slide off brake coil body (12) by approximately 50 mm (Caution, brake cable!)

5. Change or add brake springs (11) (position brake springs symmetrically).

6. Re-install brake components except for rubber sealing collar, fan and fan guard. Set working air gap (see page 24, Points 5 to 7).

7. For manual brake release:

   Set the floating clearance between the conical coil springs (pressed flat) and release lever via the setting nuts (see the following figure).
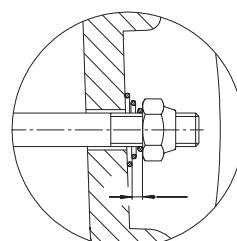
Brake	Floating clearance [mm]
BMG 05 - 1	1.5
BMG 2 - BMG4	2

01111AXX

Important: This floating clearance is necessary so that the pressure plate can move up as the brake lining wears.

8. Fix the rubber sealing collar back in place and re-install the dismantled parts.

Note: For repeated assembly, replace the setting nuts (18) and hexagon nuts (10e) (due to reduced self-locking of nuts)!

Approved Ball Bearing Types **8**

8.4 Approved Ball Bearing Types

Motor type	A-bearing (AC motors, brake motor)			B-bearing (foot, flanged or geared motors)	
	Flange mounted motor	Geared motor	Foot mounted motor	AC motor	Brake motor
DT 71-80	6204-Z-J	6303-Z-J	6204-Z-J	6203-J	6203-RS-J-C3
DT 90-DV100	6306-Z-J-C3			6205-J	6205-RS-J-C3

8.5 Working Air Gap, Brake Braking Torque

Brake	Motor	Working air gap mm		Brake torque settings				
		min.[1]	max.	Braking torque [Nm]	Type and number of springs		Spring order numbers	
					normal	red	normal	red
BMG 05	**DT 71**	0,25	0,6	5,0 4,0 2,5 1,6 1,2	3 2 - - -	- 2 6 4 3	135 017 X	135 018 8
BMG 1	**DT 80**			10 7,5 6,0	6 4 3	- 2 3		
BMG 2	**DT 90**			20 16 10 6,6 5,0	3 2 - - -	- 2 6 4 3	135 150 8	135 151 6
BMG 4	**DV 100**			40 30 24	6 4 3	- 2 3		

1) Observe while checking the working air gap: After a test run, deviations of 0.1 mm may occur due to parallelism tolerances of the brake disc.

9   Technical Data
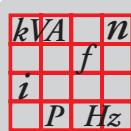
9.1   MOVI-SWITCH® Technical Data

MOVI-SWITCH®	
Power supply voltage (Signal: 24 V)	$V_{24\,V}$ 19 V...30 V $I_{24\,V}$ < (50 mA + I_{OK}) $I_{24\,V}$ < 2.5 A (at short-circuit output)
Control input (Signal: RUN) Circuit state RUN	$V_{RUN(OFF)}$ 0...5 V, I_{RUN} < 2 mA $V_{RUN(ON)}$ 15...30 V, I_{RUN} < 15 mA

Temperature monitoring
    Circuit state PTC (TF)
 	
    Module protection
	R_{OFF} > 3,990 Ohm
	R_{ON} < 1,650 Ohm
	
	Temperature shutdown 89 to 100 °C
	Temperature hysteresis typ. 5 K

Output (Signal OK)
    Checkback signal Ready for operation (high)
    Checkback signal Overtemperature(low)
    Current for checkback signal
    Short-circuit current
	V_{OK} > (V_{24V} - 3 V)
	high-resistance (I_{leak} < 2 mA)
	I_{OK} 0 to 0.65 A
	I_{OK} 0.7 to 2.4 A

Power connection
    Line current
    Line voltage range
	I_n motor 0.5 to 7 A
	V_n motor 380 V to 500 V (+/- 10 %), f = 48 to 62 Hz

Interference	meets EN 50081 Part 1 and EN 55011 limit B
Interference immunity	meets EN 50082 Part 2

9.2   Technical Data AS-i Binary Slave MLK11A

MLK11A Option	
Part number	823 121 4
AS-i profile	7.F (free profile)
I/O configuration	7_{hex}
ID code	F_{hex}
Address	1 to 31 (factory setting: address 0) max. number of address changes: 10
Watchdog	≥ 40 ms (all outputs de-energized)
Ambient temperature	-25 °C to +60 °C
Enclosure	IP65
Current consumption without external sensors	≤ 320 mA typically 250 mA (MLK11A with MOVIMOT®) typically 150 mA (MLK11A with MOVIMOT®)
Total current consumption	≤ 420 mA (including sensor power supply)
Sensor connection	
Power supply	18 V_{DC} to 30 V_{DC} from AS-i net, short-circuit proof I_{max} ≤ 100 mA

Binary inputs DI2 / DI3
    Signal level
 	
    Signal delay
	PNP switching
	    "1" : V ≥ 10 V, I ≥ 6 mA (max. 10 mA)
	    "0" : V ≤ 5 V, I ≤ 2 mA
	    < 5 ms

List of Changes **10**

10   List of Changes

Compared to the previous edition of the "MOVI-SWITCH® Operating Instructions" (Documentation number: 1050561x, Edition: 06/2000), the following additions and changes were made:

• New example for assigning the AS-i slave address by means of a programming device.

• New connection example:
  "MOVI-SWITCH® with MF.. fieldbus interfaces (connection via M12 connector)".

• Corrected wiring diagram for "Connection with AS-i binary slave MLK11 and BGW."
  The diagram inadvertently shows an incorrect internal cabling (2 lines reversed).

Address list

Address List

Germany			
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Production	**Graben**	SEW-EURODRIVE GmbH & Co Ernst-Blickle-Straße 1 D-76676 Graben-Neudorf P.O. Box Postfach 1220 · D-76671 Graben-Neudorf	Tel. (0 72 51) 75-0 Fax (0 72 51) 75-29 70 Telex 7 822 276
Assembly **Service**	**Garbsen** (near Hannover)	SEW-EURODRIVE GmbH & Co Alte Ricklinger Straße 40-42 D-30823 Garbsen P.O. Box Postfach 110453 · D-30804 Garbsen	Tel. (0 51 37) 87 98-30 Fax (0 51 37) 87 98-55 scm-garbsen@sew-eurodrive.de
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	Langenfeld (near Düsseldorf)	SEW-EURODRIVE GmbH & Co Siemensstraße 1 D-40764 Langenfeld	Tel. (0 21 73) 85 07-30 Fax (0 21 73) 85 07-55 scm-langenfeld@sew-eurodrive.de
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France			
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	Lyon	SEW-USOCOME Parc d'Affaires Roosevelt Rue Jacques Tati F-69120 Vaulx en Velin	Tel. 04 72 15 37 00 Fax 04 72 15 37 15
	Paris	SEW-USOCOME Zone industrielle 2, rue Denis Papin F-77390 Verneuil l'Etang	Tel. 01 64 42 40 80 Fax 01 64 42 40 88
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Argentina			
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Australia			
Assembly **Sales** **Service**	**Melbourne**	SEW-EURODRIVE PTY. LTD. 27 Beverage Drive Tullamarine, Victoria 3043	Tel. (03) 99 33 10 00 Fax (03) 99 33 10 03 http://www.sew-eurodrive.com.au enquires@sew-eurodrive.com.au
	Sydney	SEW-EURODRIVE PTY. LTD. 9, Sleigh Place, Wetherill Park New South Wales, 2164	Tel. (02) 97 25 99 00 Fax (02) 97 25 99 05 enquires@sew-eurodirve.com.au
Austria			
Assembly **Sales** **Service**	**Wien**	SEW-EURODRIVE Ges.m.b.H. Richard-Strauss-Strasse 24 A-1230 Wien	Tel. (01) 6 17 55 00-0 Fax (01) 6 17 55 00-30 http://sew-eurodrive.at sew@sew-eurodrive.at

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Belgium			
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Brazil			
Production **Sales** **Service**	**Sao Paulo**	SEW DO BRASIL Motores-Redutores Ltda. Rodovia Presidente Dutra, km 208 CEP 07210-000 - Guarulhos - SP	Tel. (011) 64 60-64 33 Fax (011) 64 80 33 28 http://www.sew.com.br sew@sew.com.br
	Additional addresses for service in Brazil provided on request!		
Bulgaria			
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	Additional addresses for service in Canada provided on request!		
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	Christchurch	SEW-EURODRIVE NEW ZEALAND LTD. 10 Settlers Crescent, Ferrymead Christchurch	Tel. 0064-3-3 84 62 51 Fax 0064-3-3 85 64 55 sales@sew-eurodrive.co.nz
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	Capetown	SEW-EURODRIVE (PROPRIETARY) LIMITED Rainbow Park Cnr. Racecourse & Omuramba Road Montague Gardens Cape Town P.O.Box 36556 Chempet 7442 Cape Town	Tel. +27 21 552 98 20 Fax +27 21 552 98 30 Telex 576 062 dswanepoel@sew.co.za
	Durban	SEW-EURODRIVE (PROPRIETARY) LIMITED 2 Monaceo Place Pinetown Durban P.O. Box 10433, Ashwood 3605	Tel. +27 31 700 34 51 Fax +27 31 700 38 47 dtait@sew.co.za
Spain			
Assembly **Sales** **Service**	**Bilbao**	SEW-EURODRIVE ESPAÑA, S.L. Parque Tecnológico, Edificio, 302 E-48170 Zamudio (Vizcaya)	Tel. 9 44 31 84 70 Fax 9 44 31 84 71 sew.spain@sew-eurodrive.es
Sweden			
Assembly **Sales** **Service**	**Jönköping**	SEW-EURODRIVE AB Gnejsvägen 6-8 S-55303 Jönköping Box 3100 S-55003 Jönköping	Tel. 0046 (036) 34 42 00 Fax 0046 (036) 34 42 80 http://www.sew-eurodrive.se info@sew-eurodrive.se
Switzerland			
Assembly **Sales** **Service**	**Basel**	Alfred Imhof A.G. Jurastrasse 10 CH-4142 Münchenstein bei Basel	Tel. 0041 (061) 4 17 17 17 Fax 0041 (061) 4 17 17 00 http://www.imhof-sew.ch info@imhof-sew.ch
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Turkey			
Assembly **Sales** **Service**	**Istanbul**	SEW-EURODRIVE Hareket Sistemleri Sirketi Bagdat Cad. Koruma Cikmazi No. 3 TR-81540 Maltepe ISTANBUL	Tel. (0216) 4 41 91 63 + 4 41 91 64 + 3 83 80 14 + 3 83 80 15 Fax (0216) 3 05 58 67 seweurodrive@superonline.com.tr
USA			
Production **Assembly** **Sales** **Service**	**Greenville**	SEW-EURODRIVE INC. 1295 Old Spartanburg Highway P.O. Box 518 Lyman, S.C. 29365	Tel. (864) 4 39 75 37 Fax Sales (864) 439-78 30 Fax Manuf. (864) 4 39-99 48 Fax Ass. (864) 4 39-05 66 Telex 805 550 http://www.seweurodrive.com cslyman@seweurodrive.com

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	Philadelphia/PA	SEW-EURODRIVE INC. Pureland Ind. Complex 200 High Hill Road, P.O. Box 481 Bridgeport, New Jersey 08014	Tel. (856) 4 67-22 77 Fax (856) 8 45-31 79 csbridgeport@seweurodrive.com
	Dayton	SEW-EURODRIVE INC. 2001 West Main Street Troy, Ohio 45373	Tel. (9 37) 3 35-00 36 Fax (9 37) 4 40-37 99 cstroy@seweurodrive.com
	Dallas	SEW-EURODRIVE INC. 3950 Platinum Way Dallas, Texas 75237	Tel. (214) 3 30-48 24 Fax (214) 3 30-47 24 csdallas@seweurodrive.com
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