FMS winderGLIDE BKS.D.4
Installation Manual

Linear Actuator for Winding and Unwinding Stations

Document version 1.00
Published/author 01/2018 / NS

This operation manual is also available in English.
Please contact your local representative.

© by FMS Force Measuring Systems AG, CH-8154 Oberglatt – All rights reserved.
1 Content

1 CONTENT ................................................................................................................................................... 2

2 SAFETY INFORMATION ........................................................................................................................... 3
  2.1 Presentation of Safety Information ..................................................................................................... 3
    2.1.1 Danger that Could Result in Minor or Moderate Injuries ............................................................... 3
    2.1.2 Note Regarding Proper Function ................................................................................................... 3
  2.2 General Safety Information ................................................................................................................ 4

3 PRODUCT INFORMATION ........................................................................................................................ 5
  3.1 Mode of Operation ............................................................................................................................. 5
  3.2 Dimensions ........................................................................................................................................ 5
  3.3 Order Code ........................................................................................................................................ 6
  3.4 Scope of Supply .................................................................................................................................. 6

4 INSTALLATION .......................................................................................................................................... 7
  4.1 Preparation ......................................................................................................................................... 7
  4.2 Mounting Accessories ........................................................................................................................ 7
  4.3 Installation on Take-up Station .......................................................................................................... 9
  4.4 Installation on Pay-off Station ............................................................................................................ 9
  4.5 Electrical Connection to Web Guiding Controllers of the BKS309 Series ....................................... 10

5 TECHNICAL DATA .................................................................................................................................. 11
2 Safety Information

All safety information, operating and installation regulations listed here ensure proper function of the device. Safe operation of the system requires compliance at all times. Noncompliance with the safety information or using the device outside of the specified performance data can endanger the personal safety.

Work with respect to operation, maintenance, retrofit, repair, or setting the device described here must only be performed by qualified personnel.

2.1 Presentation of Safety Information

2.1.1 Danger that Could Result in Personal Injury

Danger, warning, caution

Type of danger and its source

Possible consequences of nonobservance

Measure for danger prevention

2.1.2 Note Regarding Proper Function

Note

Note regarding proper operation

Simplification of operation

Ensuring function
2.2 General Safety Information

⚠️ The linear actuators may not be subjected to loads outside of the specified values during installation and operation. In particular, the device must not be used outside of the temperature range and protection class.

⚠️ The installation points on the machine frame must be designed correctly to properly accommodate the installation of the actuator.

⚠️ The linear actuator and related web guiding controller must be wired correctly.
3 Product Information

3.1 Mode of Operation

The FMS winderGLIDE linear actuators feature a backlash-free ball screw driven by a stepper motor. This enables precise corrections at high adjusting speeds. The linear actuator is connected to the web guiding controller using one cable only and an easily accessible connector. Its compact dimensions and various mounting options make the FMS winderGLIDE the ideal candidate for retrofit on existing systems.

3.2 Dimensions

![Figure 1: Dimensions](BKS_D_4_Abmessungen.ai)

<table>
<thead>
<tr>
<th>Dimensions mm (in.)</th>
<th>BKS.D.4.125</th>
<th>BKS.D4.200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke</td>
<td>125 (4.9)</td>
<td>200 (9.8)</td>
</tr>
<tr>
<td>A Centers of rod ends, fully retracted</td>
<td>364 (14.3)</td>
<td>439 (17.3)</td>
</tr>
<tr>
<td>B Total length main body</td>
<td>288 (11.3)</td>
<td>363 (14.3)</td>
</tr>
<tr>
<td>C Overall length, fully retracted</td>
<td>396 (15.6)</td>
<td>471 (18.5)</td>
</tr>
</tbody>
</table>
3.3 Order Code

<table>
<thead>
<tr>
<th>BKS.D.4.125</th>
<th>Stroke in mm (125 or 200)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Size</td>
</tr>
<tr>
<td></td>
<td>Series</td>
</tr>
</tbody>
</table>

*Figure 2: Order Code*

3.4 Scope of Supply

The following is included in the scope of supply
- Linear actuator, rod ends on both sides
- Installation manual

The following is not included in the scope of supply
- Web guiding controller
- Mounting material
- Material sensor
- Connection cable to web guiding controller
4 Installation

4.1 Preparation

The FMS winderGLIDE linear actuators are defined as an “incomplete machine” in line with EC Directive 2006/42/EC, Article 2. When installing the FMS winderGLIDE, the following conditions must be met to ensure proper function and installation in a machine without negative impact on safety and health of persons:

- The linear actuators may not be subjected to loads outside of the specified values during installation and operation. In particular, the device must not be used outside of the temperature range and protection class.

- The installation points on the machine frame must be designed correctly to properly accommodate the installation of the actuator.

- The linear actuator and related web guiding controller must be wired correctly.

4.2 Mounting Accessories

<table>
<thead>
<tr>
<th>Overview and combination of mounting accessories</th>
<th>Attachment to static end</th>
<th>Attachment to moving end</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rod end (in scope of supply)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Clevis (accessories)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Hinge (accessories)</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Flange</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

*Table 2: Overview of mounting accessories*
Figure 3: Mounting Accessories

The static part of the linear actuator must be mounted to the machine frame, e.g., using the rod end on the housing or using the flange on the front part of the spindle housing. The push rod of the actuator is mounted to the take-up or pay-off station. The FMS winderGLIDE is designed for installation in horizontal position.
4.3 Installation on Pay-off (Undwind) Station

Figure 4: Installation on pay-off station
Tension_Control_Web_Guiding_Scheme_Schema.ai

4.4 Installation on Take-up (Rewind) Station
4.5 Electrical Connection to Web Guiding Controllers of the BKS309 Series

Table 3: Terminal assignment on Web guiding controller BKS309
BKS309_BA_Manual.ai
5 Technical Data

<table>
<thead>
<tr>
<th>Technical Data</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. thrust force</td>
<td>1,250 N (281 lbf)</td>
</tr>
<tr>
<td>Max. adjusting speed</td>
<td>25 mm/s (0.98 in/s)</td>
</tr>
<tr>
<td>Drive</td>
<td>Stepper motor, 16 mm ball screw with 5 mm pitch</td>
</tr>
<tr>
<td>Temperature range</td>
<td>−10 to +50 °C</td>
</tr>
<tr>
<td>Protection rating</td>
<td>IP42</td>
</tr>
<tr>
<td>Control accuracy</td>
<td>&lt;±0.1 mm</td>
</tr>
<tr>
<td>Power consumption</td>
<td>Max. 110 W</td>
</tr>
<tr>
<td>Stroke limiting, travel measurement</td>
<td>Potentiometer</td>
</tr>
</tbody>
</table>

*Table 4: Technical Data*