Electric Rotary Module
RE-50 I RE-75

- Declaration of Incorporation
- Module Information
- Montage Instructions
- Maintenance Instructions

„Translation” of the original Montage Instructions
© Copyright by Afag Automation AG
This Montage Instructions applies to:

<table>
<thead>
<tr>
<th>Type</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RE-50</td>
<td>50285554</td>
</tr>
<tr>
<td>RE-75</td>
<td>50285555</td>
</tr>
<tr>
<td>RE-50 24V/48V</td>
<td>50328767</td>
</tr>
<tr>
<td>RE-75 48V</td>
<td>50332293</td>
</tr>
</tbody>
</table>

Version of this documentation: RE-50-RE-75-OI-vers. 2.6 gb 28.07.14

Symbols: Assembly and initial start-up must be carried out by qualified personnel only and according to these Montage Instructions.

[DANGER]
Indicates an immediate threatening danger. Non-compliance with this information can result in death or serious personal injuries (invalidity).

[WARNING]
Indicates a possible dangerous situation. Non-compliance with this information can result in death or serious personal injuries (invalidity).

[CAUTION]
Indicates a possibly dangerous situation. Non-compliance with this information can result in damage to property or light to medium personal injuries.

[NOTE]
Indicates general notes, useful operator tips and operating recommendations which don't affect safety and health of the personnel.
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1.0.0 EC Declaration for Incorporation


The manufacturer: Afag Automation AG, Fiechtenstrasse 32, CH-4950 Huttwil
Tel. 0041 (0)62 959 87 02, www.afag.com

As manufacturer of the partly completed machine we declare that:

- The specified machine corresponds to the listed essential requirements of the directive 2006/42/EG, where applicable the other directives and standards listed below.

Product name: Rotary modules electrical

Types:
RE-50 / RE-75
RE-50 24V/48V
RE-75 48V

Sequential series:

- Machinery Directive 2006/42/EC
- Low voltage Directive 2006/42/EG
- EMV-Guideline 2004/108/EG
- EG Production Safety Directive 2001/95/EG
- EG RoHS 2002/95/EG
- The relevant technical documentation is compiled in accordance with part B of Annex VI
- The relevant technical documentation in accordance with part B of Annex VI will be transmitted in response to a reasonable request by the national authorities in printed from or in electronic form (pdf).

Notes to the Declaration of Incorporation according to the Machinery Directive 2006/42/EC, Annex IIB, section 4.

(Checklist on accurate and basic health and safety requirements).
- 1.1; 1.1.1; 1.1.2; 1.2; 1.2.1; 1.2.3; 1.2.4.4; 1.2.5; 1.3; 1.3.3; 1.3.5; 1.3.6; 1.3.7; 1.3.8.1; 1.3.8.2; 1.3.9; 1.4; 1.4.1; 1.5; 1.5.1; 1.6; 1.6.1; 1.6.3; 1.6.4; 1.7; 1.7.1; 1.7.4.; 1.7.4.1; 1.7.4.2; 1.7.4.3; 3.3.5; 3.4.1
- Increase of the harmonized standards applied:
- EN 349; EN ISO 12100-1; EN 12100-2; EN ISO 14121-1; EN 60204-1: 2006 partly fulfilled
This partly completed machinery must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of this Directive 2006/42/EC, where appropriate.

Name and address of the person authorised to compile the relevant technical documentation: Lanz Beat, PM & Marketing-Services, Afag Automation AG

Place/Date: Huttwil, 28.07.2014

Markus Werro
Managing Director
Afag Automation AG

Siegfried Egli
Head of HT
Afag Automation AG
2.0.0 Module Information

2.1.0 Safety

Modifications to the RE rotary module that are not described in this Montage Instructions or have not been approved in writing by the company Afag Automation AG are not permitted. In case of improper changes or assembly, installation, operation, maintenance or repair, Afag Automation AG rejects all liability.

2.1.1 Transport, Handling, Storage

For transport and storage, the following must be met:

Temperature storage: 0-50°C
Humidity: <90%, non condensing

<table>
<thead>
<tr>
<th>CAUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>The RE rotary module is packed in the original box. In the case of improper handling the module may drop out of the box when it is unpacked and cause injuries to limbs.</td>
</tr>
</tbody>
</table>

The RE rotary module has weight of less than 1 kg (RE-50) or less than 2 kg (RE-75) respectively.

<table>
<thead>
<tr>
<th>NOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please note: A technical safety information sheet is enclosed with each module. This information sheet must be read by every person who operates the module.</td>
</tr>
</tbody>
</table>

2.1.2 Module Description

The RE rotary module is a very compact electrical rotary module which is suitable for rotating useful loads (see Technical Data). The RE rotary modules are fitted with a 17-pole industrial connector (G13) and a 4-pole M15 connector.

The RE rotary module is designed for being operated with the Afag SE-24 control system. It can also be operated with other controller types.

Further technical details can be found in section 3.5 of this manual.
Module designation

The RE rotary module consists of the servo-drive with gearing (1) with integrated electric motor.

2.1.3 Mounting, Connection

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Servo-drive with gearing</td>
</tr>
<tr>
<td>2</td>
<td>Encoder casing</td>
</tr>
<tr>
<td>3</td>
<td>Rotary flange</td>
</tr>
<tr>
<td>4</td>
<td>Encoder connection</td>
</tr>
<tr>
<td>5</td>
<td>Proximity switch</td>
</tr>
<tr>
<td>6</td>
<td>Motor connection</td>
</tr>
<tr>
<td>7</td>
<td>Mounting holes on the rear (see dimensions drawing)</td>
</tr>
</tbody>
</table>

Figure 1: Module designation

**WARNING**

Due to the rotating movement of the rotary flange garments, hair or other materials may be caught and drawn into the system while the module is being operated.

Caution: Commissioning may only be executed by qualified personnel.
**WARNING**

Due to the decentral controller the operator of the RE rotary module needs not to be near the product so that third persons might be endangered by the rotation mode. Always switch off the controller and protect it from being switched on again unintentionally when you work on the RE rotary module. The signals of the control system can cause unintentional movements of the module which may lead to personal injuries.

The RE-50 / RE-75 rotary modules can be installed in a vertical and horizontal position.

The RE-50 / RE-75 rotary modules are fastened at the rear of the housing. The RE-50 is fitted in the 30 x 30mm hole matrix with 4 M4 bolts (bolt circle 58 mm, through-hole 4 x 3.4 mm) while the RE-75 module is fitted in the 48 x 48 mm hole matrix with 4 M5 bolts (bolt circle 88 mm, through-hole 4 x 5.5 mm).

The corresponding connection plates must be used for mounting the Afag modules.

*Figure 2: Installation and mounting options*

Use the centering bushings included in the scope of supply for positioning and insert these sleeves in the diagonally opposite bore holes of the mounting grid.
Tightening moments for screw

The screws to be used for assembly must at least satisfy the following conditions:

Standard: VDI 2230
Strength: class 8.8
Surface: galvanized blue, oiled or greased

<table>
<thead>
<tr>
<th>Thread</th>
<th>Tightening moments</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2</td>
<td>0,3 … 0,35 Nm</td>
</tr>
<tr>
<td>M2,5</td>
<td>0,5 … 0,73 Nm</td>
</tr>
<tr>
<td>M3</td>
<td>1,1 … 1,4 Nm</td>
</tr>
<tr>
<td>M4</td>
<td>2,6 … 3,3 Nm</td>
</tr>
<tr>
<td>M5</td>
<td>5,2 … 6,5 Nm</td>
</tr>
<tr>
<td>M6</td>
<td>9,0 … 11,3 Nm</td>
</tr>
<tr>
<td>M8</td>
<td>21,6 … 27,3 Nm</td>
</tr>
</tbody>
</table>

*Table 1: Tightening moments for bolts*

2.1.4 Installation in a system

**DANGER**

The RE rotary modules must not be used in an explosion-hazardous environment.

**WARNING**

If add-ons at the RE rotary module could cause danger in connection with moving parts a safe operation must be ensured.

Ensure that the operator cannot reach into the operating range of the RE rotary module during normal operation.

Ensure that there is no danger to the operator of the system in special operating modes. The concept depends on the safety concept of the system and the attached machine parts.
<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Warning Icon]</td>
</tr>
<tr>
<td>Due to the decentral controller the operator of the RE rotary module needs not to be near the product so that third persons might be endangered by the rotation mode.</td>
</tr>
<tr>
<td>Lock the controller while you are working on the RE rotary module and switch the controller only on again after work is finished.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Caution Icon]</td>
</tr>
<tr>
<td>The RE rotary module is a partly complete machine.</td>
</tr>
<tr>
<td>The RE rotary modules must be integrated in the safety concept of the system so that a safe operation can be ensured.</td>
</tr>
<tr>
<td>Ensure that the operating personnel cannot reach into the operating range of the RE rotary modules during operation.</td>
</tr>
<tr>
<td>The RE rotary modules may only be operated in accordance with the intended purpose.</td>
</tr>
<tr>
<td>Ensure that the operator cannot reach into the operating range of the RE rotary module during normal operation. This can be achieved by taking appropriate safety measures such as casings, a light grid or by disconnecting the drive from the power supply.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Note Icon]</td>
</tr>
<tr>
<td>This Montage Instructions should be read carefully before carrying out any activity on or with the RE rotary modules.</td>
</tr>
</tbody>
</table>
2.1.5 Preferred combinations to RE-50

Beachten Sie die möglichen Anbaulegen der Module zueinander.

Erforderliche Verbindungselemente und das Ständerprogramm finden Sie im Register: »Verbindungselemente und Ständerprogramm.«

Note that the connection elements required and the range of pedestals are depicted in the «Connection elements and supports/columns» register.

Noter que les situations de montage peuvent varier d’un module à l’autre.

Vous trouverez dans le registre «Éléments de jonction et supports/colonnes» les éléments de jonction nécessaires ainsi que notre gamme de montants.

Anbaulecken / areas de la montaje / mounting areas

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PMP / PMP-c</td>
<td>SA</td>
<td>OZ</td>
<td>PEZ / PDZ</td>
<td>HM</td>
<td></td>
</tr>
</tbody>
</table>

| 1  | 1  | 1       | 1       | 1             | 1                                     |
| 2  | 2  | 2       | 2       |               |                                        |
2.1.6 Preferred combinations to RE-75

- **OZ-50**: RE-50, VP 148
- **OZ-60**: RE-60, VP 148
- **PEZ-65**: RE-65, VP 148
- **PEZ-80**: RE-80, VP 148
- **PEZ-100**: RE-100, VP 148
- **POZ-160**: RE-160, VP 148
- **LE-50**: RE-50, VP 148
- **LE-60**: RE-60, VP 148
- **LE-70**: RE-70, VP 148
- **CS 29**: RE-29, VP 148
- **CS 25**: RE-25, VP 148
- **PS 25**: RE-25, VP 148
- **PS 32**: RE-32, VP 148
- **HM 16**: RE-16, VP 148
- **HM 25**: RE-25, VP 148
- **PMP**: RE-50, VP 148
- **PMP-c**: RE-50, VP 148
- **MT 45x2a**: RE-25, VP 148
- **MT 45x25**: RE-25, VP 148
- **MT 45x2**: RE-25, VP 148

---

**Anbauflächen / areas de la montaje / mounting areas**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Preferred combinations to RE-75**

- **VP 146**: RE-75
- **SA**: RE-75
- **SA-1**: RE-75
- **SA-3**: RE-75
- **SA-6**: RE-75
- **SG-50**: RE-75
- **CS 16**: RE-75
- **CS 20**: RE-75
- **CS 25**: RE-75
- **LM 16**: RE-75
- **LM 20**: RE-75
- **LM 25**: RE-75
- **PS 16**: RE-75
- **PS 25**: RE-75
- **GM 20**: RE-75
- **GM 32**: RE-75

---

Beachten Sie die möglichen Anbaulagen der Module zueinander. Noter que les situations de montage peuvent varier d’un module à l’autre. Noter que there might be different mounting positions from one module to another one.

Erforderliche Verbindungselemente und das Ständerprogramm finden Sie im Register: «Verbindungselemente und Ständerprogramm.» Vous trouverez dans le registre «Éléments de jonction et supports/collonnes» les éléments de jonction nécessaires ainsi que notre gamme de montants. The connection elements required and the range of pedestals are depicted in the «Connection elements and supports/columns» register.
3.0.0 Montage Instructions

3.1.0 These Montage Instructions are valid for:

<table>
<thead>
<tr>
<th>Product name:</th>
<th>Rotary modules electrical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Types:</td>
<td>RE-50 I RE-75</td>
</tr>
<tr>
<td></td>
<td>RE-50 24V/48V</td>
</tr>
<tr>
<td></td>
<td>RE-75 48V</td>
</tr>
<tr>
<td>Sequential series:</td>
<td>No. 50xxxxxx</td>
</tr>
</tbody>
</table>

This is an incomplete machine

This partly completed machinery must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of this Directive 2006/42/EG, Annex II B IV where appropriate.

Name and address of the person authorised to compile the relevant technical documentation: Lanz Beat, PM & Marketing-Services, Afag Automation AG
3.1.1 Scope of delivery

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Module</td>
<td>(RE-50)</td>
</tr>
<tr>
<td>2</td>
<td>Centering bushings Ø 7x3 mm (RE-50)</td>
<td>(RE-50)</td>
</tr>
<tr>
<td>4</td>
<td>Mounting screw M3x22 mm (RE-50)</td>
<td>(RE-50)</td>
</tr>
<tr>
<td>2</td>
<td>Centering bushings Ø 9x4 mm (RE-75)</td>
<td>(RE-75)</td>
</tr>
<tr>
<td>4</td>
<td>Mounting screw M4x30 mm (RE-75)</td>
<td>(RE-75)</td>
</tr>
<tr>
<td>1</td>
<td>Operating instructions</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Included in the delivery

3.1.2 Intended use

The RE rotary modules are used for the smooth rotary movement of loads in non-explosion hazardous ambient and operating conditions that are specified for this module (see Technical Data).

The RE rotary modules are exclusively intended for rotating useful loads (see Technical Data) which do neither impair the safety of persons nor present a danger to property and the environment. Combined with other modules they can be used as a pick&place station.

**NOTE**

Any use that exceeds the use mentioned above is regarded as improper.
The manufacturer does not accept any liability for damage resulting from such use. The risk is that of the user alone.

Intended use also includes paying attention to the Montage Instructions and observing the maintenance and repair instructions specified by the manufacturer.

**CAUTION**

The RE rotary module may only be operated and serviced by correspondingly trained personnel who have also profound knowledge of the dangers.

The applicable regulations for prevention of accidents and the other generally accepted safety-relevant and occupational safety and health regulations are to be followed.
3.1.3 Warranty

The RE rotary module is designed for 40 million load changes / 2 years\(^1\) operational performance under the ambient and operating conditions defined for this module (see “Technical Data”). Load data and design- and acceleration diagrams must be observed.

There are no wearing parts for the RE rotary module!

The warranty includes the replacement or repair of defective module parts at Afag Automation AG.

When repairs are carried out by the customer without prior training or instruction from Afag Automation AG the warranty will become void. Any use which exceeds the intended purpose will result in the warranty becoming null and void.

Any further claims are excluded.

3.1.4 Safety

This Montage Instructions should be read carefully before carrying out any activity on or with the module. The module may only be deployed in accordance with the intended purpose. Modifications on the module that are not described in this Montage Instructions or have not been approved in writing by Afag are not permitted. In case of improper changes or assembly, installation, operation, maintenance or repairs, Afag AG rejects all liability.

---

\[\text{CAUTION}\]

Connection of a control system and operation of the RE rotary module can lead to unpredictable movements which may result in personal injury or damage to property.

These Montage Instructions should be read carefully before carrying out any activity on or with the module.

\(^1\) whichever occurs first
3.1.5 Dimension drawing RE-50 / RE-75

RE-50
mit Flansch
avec bride
with flange

RE-75
mit Flansch
avec bride
with flange

Schwenkzeit / Rotation du temps / Rotation time

Figure 3: Dimension drawing RE-50 / RE-75
## 3.1.6 Technical data

<table>
<thead>
<tr>
<th>Typ Bestellnummer mit Flansch</th>
<th>Type Article No. with flange</th>
<th>Order no. with flange</th>
<th>RE-50</th>
<th>RE-50</th>
<th>RE-75</th>
<th>RE-75</th>
</tr>
</thead>
<tbody>
<tr>
<td>Einbaufläche</td>
<td>Position de montage</td>
<td>Mounting position</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Übersetzung</td>
<td>Transmission</td>
<td>Gear ratio</td>
<td>i = 30</td>
<td>i = 30</td>
<td>i = 30</td>
<td>i = 30</td>
</tr>
<tr>
<td>*Max. Abtriebs-Moment</td>
<td>*Max. moment de sortie</td>
<td>*Max. moment at output</td>
<td>1.8 Nm</td>
<td>1.8 Nm</td>
<td>9 Nm</td>
<td>9 Nm</td>
</tr>
<tr>
<td>*Max. Abtriebs-Geschwindig</td>
<td>*Max. vitesse de sortie</td>
<td>*Max. speed at output</td>
<td>200 U/min</td>
<td>200 U/min</td>
<td>200 U/min</td>
<td>200 U/min</td>
</tr>
<tr>
<td>Nenn-Drehmoment</td>
<td>Nominale moment de torsion</td>
<td>Nominal torque</td>
<td>0.75 Nm</td>
<td>0.75 Nm</td>
<td>3.5 Nm</td>
<td>3.5 Nm</td>
</tr>
<tr>
<td>Nenn-Geschwindigkeit</td>
<td>Nominale vitesse</td>
<td>Nominal speed</td>
<td>117 U/min</td>
<td>200 U/min</td>
<td>100 U/min</td>
<td>200 U/min</td>
</tr>
<tr>
<td>*Zulässige Axialast</td>
<td>*Force axiale autorisée</td>
<td>*Permissible axial force</td>
<td>0-200 N</td>
<td>0-200 N</td>
<td>0-600 N</td>
<td>0-600 N</td>
</tr>
<tr>
<td>*Zulässige Radialast</td>
<td>*Force radiale autorisée</td>
<td>*Permissible radial force</td>
<td>0-800 N</td>
<td>0-800 N</td>
<td>0-1200 N</td>
<td>0-1200 N</td>
</tr>
<tr>
<td>Max. Kippmoment stat.</td>
<td>Couple de basculement stat.</td>
<td>Tilt torque static</td>
<td>93 Nm</td>
<td>93 Nm</td>
<td>230 Nm</td>
<td>230 Nm</td>
</tr>
<tr>
<td>Max. Kippmoment dynam.</td>
<td>Couple de reversion.</td>
<td>Tilt torque dynamically</td>
<td>15 Nm</td>
<td>15 Nm</td>
<td>75 Nm</td>
<td>75 Nm</td>
</tr>
<tr>
<td>Kippfestigkeit</td>
<td>Inclinez la stabilité</td>
<td>Tilt stability</td>
<td>5.8 Nm/arcmin</td>
<td>5.8 Nm/arcmin</td>
<td>23.5 Nm/arcmin</td>
<td>23.5 Nm/arcmin</td>
</tr>
<tr>
<td>Wiederholgenauigkeit</td>
<td>Précision de répétition</td>
<td>Repeat accuracy</td>
<td>±b(6’6&quot;) = 2.90888r (mm) x 10⁻⁶</td>
<td>±b(6’6&quot;) = 2.90888r (mm) x 10⁻⁶</td>
<td>±b(6’6&quot;) = 2.90888r (mm) x 10⁻⁶</td>
<td>±b(6’6&quot;) = 2.90888r (mm) x 10⁻⁶</td>
</tr>
<tr>
<td>Betriebsspannung</td>
<td>Tension de service nominale</td>
<td>Operating voltage</td>
<td>230 VAC</td>
<td>24/48 V</td>
<td>230 VAC</td>
<td>48 V</td>
</tr>
<tr>
<td>Hohlwellen Durchmesser</td>
<td>Diamètre creuse arbre</td>
<td>Diameter hollow shaft</td>
<td>6.2 mm</td>
<td>6.2 mm</td>
<td>13.5 mm</td>
<td>13.5 mm</td>
</tr>
<tr>
<td>Modugewicht</td>
<td>Poids du module</td>
<td>Weight of module</td>
<td>0.575 kg</td>
<td>0.575 kg</td>
<td>1.725 kg</td>
<td>1.725 kg</td>
</tr>
<tr>
<td>Lärmmessung</td>
<td>Niveau de bruit</td>
<td>Noise level</td>
<td>&lt; 65 dB (A)</td>
<td>&lt; 65 dB (A)</td>
<td>&lt; 65 dB (A)</td>
<td>&lt; 65 dB (A)</td>
</tr>
<tr>
<td>Befestigungstrager hinten</td>
<td>Trame de fixation derrière</td>
<td>Fixing grid in the back</td>
<td>30x30 mm</td>
<td>30x30 mm</td>
<td>48x48 mm</td>
<td>48x48 mm</td>
</tr>
<tr>
<td>Befestigungstrager vorne</td>
<td>Trame de fixation devant</td>
<td>Fixing grid in front</td>
<td>30x38 mm</td>
<td>30x38 mm</td>
<td>48x48 mm</td>
<td>48x48 mm</td>
</tr>
<tr>
<td>Temperatur:</td>
<td>Temperature:</td>
<td>Temperature:</td>
<td>0°C+50°C</td>
<td>0°C+50°C</td>
<td>0°C+50°C</td>
<td>0°C+50°C</td>
</tr>
<tr>
<td>– Lager</td>
<td>– de stockage</td>
<td>– Storage</td>
<td>0°C+40°C</td>
<td>0°C+40°C</td>
<td>0°C+40°C</td>
<td>0°C+40°C</td>
</tr>
<tr>
<td>– Betrieb</td>
<td>– d’utilisation</td>
<td>– Operation</td>
<td>IP 44</td>
<td>IP 44</td>
<td>IP 44</td>
<td>IP 44</td>
</tr>
<tr>
<td>Schutzart</td>
<td>Type of protection</td>
<td>Degree of protection</td>
<td>IP 40</td>
<td>IP 40</td>
<td>IP 40</td>
<td>IP 40</td>
</tr>
</tbody>
</table>

Die technischen Daten beziehen sich auf die Afga Standard-Testbedingungen.

* Die oben genannten Maximalwerte sind abhängig von der Anwendung und dürfen nicht kombiniert werden. Wenden Sie sich im Zweifelsfall an Ihren Afga Partner.

Im Lieferumfang inbegriffen:

RE-50
- 2 Zentrierhülsen Ø7 x 3 mm
- 4 Montageschr. M3 x 22 mm
- 1 Betriebsanleitung

RE-75
- 2 Zentrierhülsen Ø9 x 4 mm
- 4 Montageschr. M5 x 30 mm
- 1 Betriebsanleitung

Reinraumklasse:
- 10 000 (Federal Standard 209E)

Les caractéristiques techniques se basent sur les tests standard Afga.

* Les valeurs maximales indiquées sont fonction de l’application et ne doivent pas être combinées. En cas de doute, adressez-vous à votre partenaire Afga.

The technical data refer to a nominal under Afga standard test conditions.

* The maximum values mentioned above are dependent and must not be combined. In the case of doubt, please contact your Afga partner.

Includes in the delivery:

RE-50
- 2 Centering bushings Ø7 x 3 mm
- 4 Mounting screws M3 x 22 mm
- 1 Operating Instruction

RE-75
- 2 Centering bushings Ø9 x 4 mm
- 4 Mounting screw M5 x 30 mm
- 1 Operating Instruction

Clean room class:
- 10 000 (Federal Standard 209E)

Table 3: Technical data RE-50 / RE-75
3.1.7 Rotary module electrical (without flange)

RE-50 / RE-50 24V/48V
ohne Flansch
sans bride
without flange
Modulgewicht / Poids du module / Weight of modul 0.502 kg

RE-75 / RE-75 48V
ohne Flansch
sans bride
without flange
Modulgewicht / Poids du module / Weight of modul 1.482 kg

Schwenkzeit / Rotation du temps / Rotation time

RE-50 24V, 180° - horizontal mit SE-24

RE-50 48V, 180° - horizontal mit SE-48

RE-75 24V, 180° - horizontal mit SE-48

RE-75 180° - horizontal mit SE-Power
3.1.8 Flange rotation

<table>
<thead>
<tr>
<th>Flanschplattenset RE-50</th>
<th>Jue de brides RE-50</th>
<th>Flange set RE-50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bestellnummer</td>
<td>Article No.</td>
<td>Order No.</td>
</tr>
<tr>
<td>Gewicht inkl. Schrauben</td>
<td>Poids incl. de vis</td>
<td>Weight incl. the screws</td>
</tr>
<tr>
<td>6 Montageschrauben</td>
<td>6 Vis montage</td>
<td>6 Mounting screw</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flanschplattenset RE-75</th>
<th>Jue de brides RE-75</th>
<th>Flange set RE-75</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bestellnummer</td>
<td>Article No.</td>
<td>Order No.</td>
</tr>
<tr>
<td>Gewicht inkl. Schrauben</td>
<td>Poids incl. de vis</td>
<td>Weight incl. the screws</td>
</tr>
<tr>
<td>6 Montageschrauben</td>
<td>6 Vis montage</td>
<td>6 Mounting screw</td>
</tr>
</tbody>
</table>
Accessories to: **RE-50** (without flange)
Flange kit (incl. screw) Order No. **50294008**

Accessories to: **RE-75** (without flange)
Flange kit (incl. screw) Order No.: **50294009**
3.1.9 Measured values with

![Graphs showing measured values]

3.2.0 Installation of external Modules

The rotary flange is designed for the attachment of Afag modules. If third party modules are used the rotary flange can also be removed.

The engineer can also manufacture a customized rotary flange which can be attached to third party modules.

NOTE

The permissible useful loads of the module must be observed, see Technical Table.

The manufacturer does not guarantee for modifications on RE modules carried out by the customer.

The manufacturer does not accept any liability for damage resulting from such modifications. The risk is that of the user alone.
3.2.1 Electrical interfaces

Motor cable
(M12 or M15)

Encoder cable
(G10 or G12)
3.1.2 Commissioning, Operation, Training

**WARNING**

Due to the rotating movement of the rotary flange garments, hair or other materials may be caught and drawn into the system while the module is being operated.

Caution: Commissioning may only be executed by qualified personnel.

**WARNING**

Due to the decentral controller the operator of the RE rotary module needs not to be near the product so that third persons might be endangered by the rotation mode.

Lock the controller while you are working on the RE rotary module and switch the controller only on again after work is finished.

Observe the operating instructions of the control system used.
3.1.3 Preparation for commissioning

The RE rotary modules are designed for being operated with the Afag SE-24 control system. They can also be operated with other controller types.

Operation of the SE-24 control system is described in the separate Installation Instructions.

The RE rotary modules are connected to the SE-24 control system with the M15 motor cable. This cable is designed for the motor output. The encoder cable (cable G13) and the cable for referencing (cable R4) are also required for operation of the rotary modules.

Connect the control system to the power supply. A supply cable is available for the Afag SE-24 control system (see accessories).

First connect the control system to a PC on which the operating software was installed and carry out the test run. Use of the operating software is described in the Installation Instructions of the control system.

If the RE rotary modules are delivered together with an Afag control system the operating parameters have already been stored on the controller. The RE rotary modules can be started immediately.

If the RE rotary modules are operated with an optional control system the user must provide special cables and determine the operating parameters himself.

<table>
<thead>
<tr>
<th>DANGER</th>
</tr>
</thead>
<tbody>
<tr>
<td>An inadmissible removal of the connector cover may lead to an electric shock.</td>
</tr>
<tr>
<td>Never remove the connector cover from an installed RE rotary module.</td>
</tr>
</tbody>
</table>
3.1.4 Commissioning

- Carry out the first start-up slowly and step by step.
- Note the permissible technical data (see catalogue) regarding:
  - useful load
  - motion frequency
  - moment load

⚠️ CAUTION

Limbs may be crushed by moving components.

- Make sure that there are no persons or tools within the operating range of the module.
- Carry out a test run.

At first at slow traverse speed, then under the effective Installation conditions.

Training

The unit may only be installed and operated by persons who are familiar with the contents of these Installation Instructions.

3.1.5 Setting, Changing

⚠️ WARNING

Due to the rotating movement of the rotary flange garments, hair or other materials may be caught and drawn into the system while the module is being operated.

If add-ons at the RE rotary module could cause danger in connection with moving parts a safe operation must be ensured.

⚠️ WARNING

Due to the decentral controller the operator of the RE rotary module needs not to be near the product so that third persons might be endangered by the rotation mode.

Lock the controller while you are working on the RE rotary module and switch the controller only on again after work is finished.
3.1.6 Normal operation

**WARNING**

Due to the rotating movement of the rotary flange garments, hair or other materials may be caught and drawn into the system while the module is being operated.

If add-ons at the RE rotary module could cause danger in connection with moving parts a safe operation must be ensured.

**WARNING**

Due to the decentral controller the operator of the RE rotary module needs not to be near the product so that third persons might be endangered by the rotation mode.

Do not reach into the system during standard operation.

**DANGER**

An inadmissible removal of the connector cover² may lead to an electric shock.

Never remove the connector cover from an installed RE rotary module.

² See Module Description 2.3
4.0.0 Maintenance Instructions

4.1.0 Maintenance and servicing

---

**WARNING**

Due to the rotating movement of the rotary flange garments, hair or other materials may be caught and drawn into the system while the module is being operated. Observe the Montage Instructions of the system into which the RE rotary module was incorporated. Maintenance and servicing may only be carried out by qualified personnel.

---

**WARNING**

Always switch off the controller and protect it from being switched on again unintentionally when you work on the RE rotary module. The signals of the control system can cause unintentional movements of the module which may lead to personal injuries. Observe the Montage Instructions of the control system used.

---

**DANGER**

An inadmissible removal of the connector cover\(^2\) may lead to an electric shock.

Never remove the connector cover from an installed RE rotary module.

---

\(^3\) See Module Description 2.3
4.1.1 Regular maintenance

<table>
<thead>
<tr>
<th>Maintenance interval</th>
<th>Maintenance work</th>
</tr>
</thead>
<tbody>
<tr>
<td>As required</td>
<td>Clean the module with a dry, lint-free cloth.</td>
</tr>
<tr>
<td></td>
<td>The module must not be washed down; do not use any aggressive cleaners.</td>
</tr>
</tbody>
</table>

Table 4: Maintenance

Additional maintenance

Under the ambient conditions mentioned below the RE electric module does not require any further maintenance:

- Clean workshop atmosphere
- No splash water
- No dust or fumes caused by abrasion or processing
- Climate and temperature according to the technical data

4.1.2 Hot surface during operation

![CAUTION]

High surface temperatures up to 80° may occur on RE rotary modules. Pay attention that no temperature-sensitive parts come into contact or are attached to RE modules

4.1.3 Troubleshooting and repair

![WARNING]

Due to the rotating movement of the rotary flange garments, hair or other materials may be caught and drawn into the system while the module is being operated. Observe the Montage Instructions of the system into which the RE rotary module was incorporated.
**WARNING**

Due to the decentral controller the operator of the RE rotary module needs not to be near the product so that third persons might be endangered by the rotation mode. Always switch off the controller and protect it from being switched on again unintentionally when you work on the RE rotary module. The signals of the control system can cause unintentional movements of the module which may lead to personal injuries.

**DANGER**

An inadmissible removal of the connector cover may lead to an electric shock. Never remove the connector cover from an installed RE rotary module.

### 4.1.4 Possible failures

<table>
<thead>
<tr>
<th>Fault</th>
<th>Possible cause</th>
<th>Fault clearance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotary flange oscillates (very strong vibrations at the drive)</td>
<td>Moments of inertia of the elements / useful load on the rotary flange too high</td>
<td>Reduce moment of inertia (keep to the indications of the catalogue)</td>
</tr>
<tr>
<td>Rotary flange turns continuously (stopper not mounted)</td>
<td>Wrong setting of control parameters</td>
<td>Reset parameters on the control system</td>
</tr>
<tr>
<td></td>
<td>Wrong connection of limit sensor</td>
<td>Check pin assignment and correct, if necessary</td>
</tr>
<tr>
<td></td>
<td>Limit sensor connection interrupted</td>
<td>Check sensor cable</td>
</tr>
<tr>
<td>Limit sensor defect</td>
<td>Replace limit sensor (only by the manufacturer)</td>
<td></td>
</tr>
<tr>
<td>Rotary flange turns up to the wrong side of the optional stopper and then stops</td>
<td>Wrong direction of reference run</td>
<td>Check direction of reference run and change, if necessary</td>
</tr>
<tr>
<td></td>
<td>Wrong drive connection</td>
<td>Check pin assignment and correct, if necessary</td>
</tr>
<tr>
<td>Rotary flange does not move</td>
<td>Wrong drive connection</td>
<td>Check pin assignment and correct, if necessary</td>
</tr>
<tr>
<td></td>
<td>Motor connection interrupted</td>
<td>Check motor cable</td>
</tr>
<tr>
<td>Fault</td>
<td>Possible cause</td>
<td>Fault clearance</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>----------------------------------------</td>
<td>------------------------------------------------------</td>
</tr>
<tr>
<td>Drive defect</td>
<td></td>
<td>Have the drive replaced by Afag AG</td>
</tr>
<tr>
<td>Rotary flange stops after a short turn</td>
<td>Important contouring error</td>
<td>Reduce values for acceleration and speed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check whether module shaft is mechanically blocked</td>
</tr>
<tr>
<td>Encoder connection interrupted</td>
<td></td>
<td>Check encoder cable</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check encoder for proper function.</td>
</tr>
</tbody>
</table>

### 4.1.5 End position sensor replacement

**NOTE**

The sensor may only be exchanged by the manufacturer! The sensor must not be exchanged by the customer as setting is rather complicated and the module may be damaged. The manufacturer does not accept any liability for a sensor which was replaced by the customer.

![Sensor](image)

---

### 4.1.6 Repair

**NOTE**

Repair of the RE rotary modules should only be carried out at Afag. There are no spare parts available.
### 4.1.7 Accessories

<table>
<thead>
<tr>
<th>Type</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centering bushings 7x3mm</td>
<td>11016850</td>
</tr>
<tr>
<td>Centering bushings 9x4mm</td>
<td>11004942</td>
</tr>
<tr>
<td>Flange set RE-50</td>
<td>50294008</td>
</tr>
<tr>
<td>Flange set RE-75</td>
<td>50294009</td>
</tr>
<tr>
<td>Motor cable-M12-5m-0-open (SE-Power)</td>
<td>50290459</td>
</tr>
<tr>
<td>Motor cable-M12-10m-0-open (SE-Power)</td>
<td>50310506</td>
</tr>
<tr>
<td>Motor cable-M12-5m-90-open (SE-Power)</td>
<td>50290460</td>
</tr>
<tr>
<td>Motor cable-M12-10m-90-open (SE-Power)</td>
<td>50310507</td>
</tr>
<tr>
<td>Motor cable-M15-3m-0-0 (SE-24/48)</td>
<td>50332418</td>
</tr>
<tr>
<td>Motor cable-M15-3m-90-0 (SE-24/48)</td>
<td>50332420</td>
</tr>
<tr>
<td>Motor cable-M15-5m-0-0 (SE-24/48)</td>
<td>50338977</td>
</tr>
<tr>
<td>Motor cable-M15-5m-90-0 (SE-24/48)</td>
<td>50338978</td>
</tr>
<tr>
<td>Encoder cable-G10-5m-0-0 (SE-Power)</td>
<td>50297199</td>
</tr>
<tr>
<td>Encoder cable-G10-10m-0-0 (SE-Power)</td>
<td>50310508</td>
</tr>
<tr>
<td>Encoder cable-G10-5m-90-0 (SE-Power)</td>
<td>50297200</td>
</tr>
<tr>
<td>Encoder cable-G10-10m-90-0 (SE-Power)</td>
<td>50310509</td>
</tr>
<tr>
<td>Encoder cable-G10-5m-0-open</td>
<td>50290461</td>
</tr>
<tr>
<td>Encoder cable-G10-10m-0-open</td>
<td>50310511</td>
</tr>
<tr>
<td>Encoder cable-G10-5m-90-open</td>
<td>50290462</td>
</tr>
<tr>
<td>Encoder cable-G10-10m-90-open</td>
<td>50310512</td>
</tr>
<tr>
<td>Encoder cable-G12-3m-0-0 (SE-24/48)</td>
<td>50332416</td>
</tr>
<tr>
<td>Encoder cable-G12-3m-90-0 (SE-24/48)</td>
<td>50332417</td>
</tr>
<tr>
<td>Encoder cable-G12-5m-0-0 (SE-24/48)</td>
<td>50338975</td>
</tr>
<tr>
<td>Encoder cable-G12-5m-90-0 (SE-24/48)</td>
<td>50338976</td>
</tr>
<tr>
<td>Proximity switch cable-R1-5m-0-open (SE-Power)</td>
<td>11006446</td>
</tr>
<tr>
<td>Proximity switch cable-R1-10m-0-open (SE-Power)</td>
<td>50072072</td>
</tr>
<tr>
<td>Proximity switch cable-R1-5m-90-open (SE-Power)</td>
<td>11007826</td>
</tr>
<tr>
<td>Proximity switch cable-R1-10m-90-open (SE-Power)</td>
<td>50310513</td>
</tr>
<tr>
<td>Proximity switch cable-R2-3m-0-0 (SE-24/SE-48)</td>
<td>11017754</td>
</tr>
<tr>
<td>Proximity switch cable-R2-5m-0-0 (SE-24/SE-48)</td>
<td>50340272</td>
</tr>
<tr>
<td>Proximity switch cable-R2-3m-90-0 (SE-24/SE-48)</td>
<td>50340903</td>
</tr>
<tr>
<td>Commander SE-24</td>
<td></td>
</tr>
<tr>
<td>Commander SE-48</td>
<td></td>
</tr>
<tr>
<td>Commander SE-Power 1 kVA</td>
<td></td>
</tr>
<tr>
<td>Sensor INI d8x36-SN2.0-PNP-NCM8x1</td>
<td>50285525</td>
</tr>
</tbody>
</table>

Table 5: Accessories
4.1.8 Disassembly and repair

When the module is damaged it can be returned to Afag Automation AG for repair.

---

**WARNING**

![Warning icon]

Before disassembly the power supply must be switched off and disconnected. Disassembly of the system may only be started after the power supply was definitely disconnected.

---

When the customer detects that the respective module is still under guarantee:

- he returns the module to Afag Automation AG for repair.

---

**NOTE**

Afag automation AG offers a reliable repair service. Please note that Afag does not guarantee for modules which were not repaired by the Afag Automation AG.

---

5 Disposal

---

**NOTE**

![Warning icon]

RE rotary modules which cannot be used any more must not be disposed off as a complete unit, but must be disassembled and recycled according to the type of material. Materials than cannot be recycled must be disposed off in accordance with the legal regulations.
6 Annexe

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