TR electronic 362 Series Rotary Encoder Instruction Manual

Contents [hide]

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Revision index

Revision	**Date**	**Index**
First release	07/07/2023	00
Validity for measuring systems in ATEX protective enclos ure	10/24/2023	01
Series 362 added	10/10/2024	02
“**Enclosure Option:** Heavy duty 115” and “Potential equ alization – connection” added	12/18/2024	03

General information

This Assembly Instruction includes the following topics:

- General functional description
- Basic safety instructions with declaration of the intended use
- Instructions for mounting

As the documentation is arranged in a modular structure, this Assembly Instruction is

supplementary to other documentation, such as product datasheets, dimensional drawings, leaflets and interface-specific User Manuals etc.

Applicability/Type designation code

These Assembly Instructions apply exclusively to the following measuring system series:

- 362
- 582
- 802
- 1102

The products are labeled with affixed nameplates and are components of a system.

Other applicable documents

- the operator’s operating instructions specific to the system
- these Assembly Instructions
- Pin assignment
- interface-specific User Manual
- the product accompanying sheet provided at the time of delivery
- Product data sheet (www.tr-electronic.com/product-selector)
- **optional**: Ex User Manual

EU Declaration of conformity

The measuring systems have been developed, designed and manufactured under observation of the applicable international and European standards and directives.

A corresponding declaration of conformity can be requested from TR Electronic GmbH.

The manufacturer of the product, TR Electronic GmbH in D-78647 Trossingen, operates a certified quality assurance system in accordance with ISO 9001.

Abbreviations and definitions

EC	***E***uropean ***C***ommunity
EU	***E***uropean ***U***nion
EMC	***E***lectro ***M***agnetic ***C***ompatibility
ESD	***E***lectro ***S***tatic ***D***ischarge
IEC	***I***nternational ***E***lectro technical ***C***ommission
NEC	***N***ational ***E***lectrical ***C***ode
VDE	Association for Electrical, Electronic & Information Technologies

Basic safety instructions

Definition of symbols and instructions

⚠ WARNING means that death or serious injury can occur if the required precautions are not met.

⚠ CAUTION means that minor injuries can occur if the required precautions are not met.

NOTICE means that damage to property can occur if the required precautions are not met.

 indicates important information or features and application tips for the product used.

 means that appropriate ESD-protective measures are to be considered according to DIN EN 61340-5-1 supplementary sheet 1.

Obligation of the operator before start-up

As an electronic device the measuring system is subject to the regulations of the EMC

Directive.

It is therefore only permitted to start up the measuring system if it has been established that the system/machine into which the measuring system is to be fitted satisfies the provisions of the EU EMC Directive, the harmonized standards, European standards or the corresponding national standards.

UL / CSA approval

Measuring systems with this approval are signed with the UL Symbol on the name plate:

The measuring systems comply to the following UL / cUL -requirements:

- US Standard UL508, Industrial Control Equipment
- Canadian Standard CSA C22.2 No. 107.1-01, General Use Power Supplies

It is therefore only permitted to start up these measuring systems if it has been established that the system/machine into which the measuring system is to be fitted satisfies the following requirements:

- NFPA 79 Standard, “Electrical Standard for Industrial Machinery”

- Class 2 power source, according to the requirements of the NEC

  Supply voltage

  24 V DC (11…27 V DC), ≤ 3 watt or 5 V DC (4.75…5.25 V DC), ≤ 3 watt
- Environmental temperature ≤ 70°C, type 1

 **UL compliant connection cables are available from the manufacturer**

- PROFIBUS, Order-No.: 64 200 086
- SSI, Incremental, Order-No.: 64 200 014 or equivalent.

General risks when using the product

The product, hereinafter referred to as “the measuring system”, is manufactured according to state of-the-art technology and accepted safety rules. ***Nevertheless, non-intended use can pose a danger to life and limb of the user or third parties, or lead to impairment of the measuring system or other property!***

Only use the measuring system in a technically faultless state, and only for its intended use, taking safety and hazard aspects into consideration, and observing the ***Other applicable documents***! Faults which could threaten safety should be eliminated without delay!

Intended use

The measuring system is used to measure angular motion and to condition the measurement data for the subsequent control of industrial control processes.

Intended use also includes:

- observing all instructions in the other applicable documents,
- observing the nameplate and any prohibition or instruction symbols on the measuring system,
- observing the enclosed documents,
- operating the measuring system within the limit values specified in the technical data, see Product Data Sheet

Non-intended use

***Danger of death, physical injury and damage to property in case of* non-intended use of the measuring system!**

- **⚠ WARNING** As the measuring system does not constitute a safety component according to the EC machinery directive, a plausibility check of the measuring system values must be performed through the subsequent control system.
- ***NOTICE*** It is mandatory for the operator to integrate the measuring system into his own safety concept.
- **The following area of use is especially forbidden:**
  - standard measuring-system: in environments with an explosive atmosphere according to the ATEX Directive
  - for medical purposes in accordance with the Medical Devices Directive

Usage in explosive atmospheres

The standard measuring system must be installed in an appropriate explosion protection enclosure as required when used in explosive atmospheres.

The products are labeled with an additional  marking on the nameplate.

The “intended use” as well as any information on the safe usage of the ATEX-compliant measuring system in explosive atmospheres are contained in the  User Manual.

Standard measuring systems that are installed in the explosion protection enclosure and are intended for use with safety instrumented applications can therefore be used in explosive atmospheres.

When the measuring system is installed in the explosion protection enclosure, which means that it meets explosion protection requirements, the properties of the measuring system will no longer be as they were originally.

Following the specifications in the  User Manual, please check whether the properties defined in that manual meet the application-specific requirements.

Fail-safe usage requires additional measures and requirements. Such measures and requirements must be determined prior to initial commissioning and must be taken and met accordingly.

Warranty and liability

The General Terms and Conditions (“Allgemeine Geschäftsbedingungen”) of TR Electronic GmbH always apply. These are available to the operator with the Order Confirmation or when the contract is concluded at the latest. Warranty and liability claim in the case of personal injury or damage to property are excluded if they result from one or more of the following causes:

- Non-intended use of the measuring system.
- Improper assembly, installation, start-up and programming of the measuring system.
- Incorrectly undertaken work on the measuring system by unqualified personnel.
- Operation of the measuring system with technical defects.
- Mechanical or electrical modifications to the measuring systems undertaken autonomously.
- Repairs carried out autonomously.
- Third party interference and Acts of God.

Organisational measures

- The other applicable documents must always be kept accessible at the place of use of the measuring system.
- In addition to the other applicable documents, generally applicable legal and other binding accident prevention and environmental protection regulations are to be observed and must be mediated.
- The respective applicable national, local and system-specific provisions and requirements must be observed and mediated.
- The operator is obliged to inform personnel on special operating features and requirements.
- The personnel instructed to work with the measuring system must have read and understood the Assembly Instruction, especially the chapter “Basic safety instructions” prior to commencing work.

- The nameplate as well as any prohibition or instruction symbols applied on the measuring system must always be maintained in a legible state.
- Do not undertake any mechanical or electrical modifications on the measuring system, apart from those explicitly described in the other applicable documents.
- Repairs may only be undertaken by the manufacturer or a facility or person authorized by the manufacturer.

Personnel qualification; obligations

- All work on the measuring system must only be carried out by qualified personnel.
- Qualified personnel include persons, who, through their training, experience and instruction, as well as their knowledge of the relevant standards, provisions, accident prevention regulations and operating conditions, have been authorized by the persons responsible for the system to carry out the required work and are able to recognize and avoid potential hazards.
- The definition of “Qualified Personnel” also includes an understanding of the standards VDE 0105-100 and IEC 364 (source: e.g. Beuth Verlag GmbH, VDE-Verlag GmbH).
- Define clear rules of responsibilities for the assembly, installation, start-up and operation.
  The obligation exists to provide supervision for trainee personnel!

Safety information’s

- ***Destruction, damage or malfunctions of the measuring system and risk of physical injury!***
  - **⚠ WARNING** De-energize the system before carrying out wiring work or opening and closing electrical connections.
  - ***NOTICE*** Do not carry out welding if the measuring system has already been wired up or is switched on.
  - ***NOTICE*** Ensure that the area around the assembly site is protected from corrosive media (acid, etc.).
  - Avoid any shocks (e.g. hammer-blow) on the shaft while mounting.
  - Do not open the measuring system.

-  ***The measuring system contains electrostatically endangered circuit elements and units which can be destroyed by an improper use.***
    - Contacts of the measuring system connection contacts with the fingers are to be avoided, or the appropriate ESD protective measures are to be applied.
-  **Disposal**

  If disposal has to be undertaken after the life span of the device, the respective applicable country-specific regulations are to be observed.

Transportation / Storage

Notes on transportation

Do not drop the device or expose it to strong strokes!

Only use the original packaging!

The wrong packaging material can cause damage to the device during transportation.

Storage

Storage temperature: see product data sheet Store in a dry place

Instructions for mounting / schematic

The customer connection of the measuring system depends on the shaft design and the flange type. It consists of the shaft mounting, which connects the customer shaft with the measuring system shaft, and the flange mounting, which prevents the measuring system housing from rotating.

 The following principle illustrations of mounting types are generally valid for the measuring system series 582, 802 and 1102 and may therefore differ from the actual appearance of the measuring system.

Solid shaft

The following instructions are not exhaustive as the assembly situation may be different for each application.

Mounting of the coupling (general)

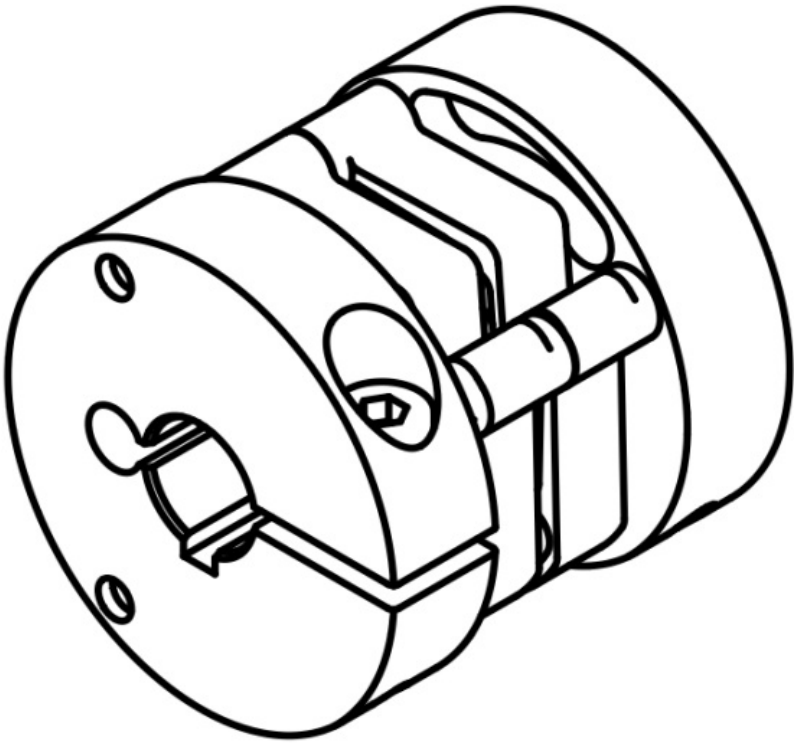


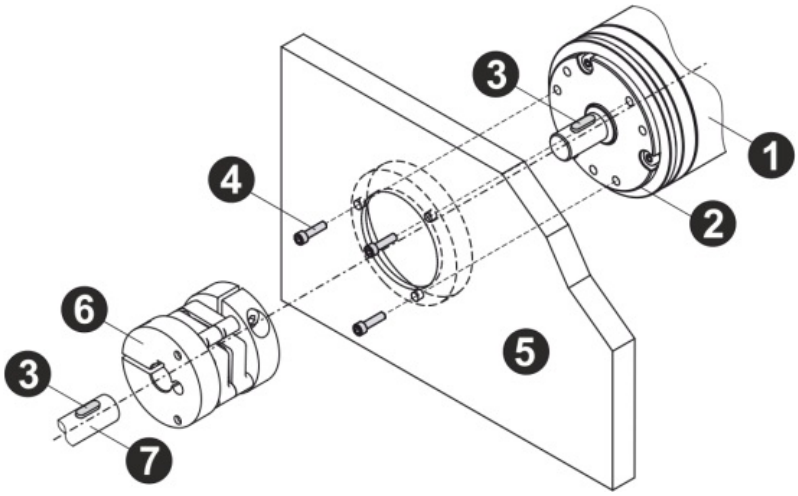
Figure 1: Coupling CPS 34-000-XXX

- A coupling with a positive connection suitable for the application must be used.
- The notes and installation instructions of the coupling manufacturer must be observed.
- **In particular, it must be ensured that**
  - the coupling is suitable for the specified speed and the possible axial misalignment,
  - the mounting is carried out on a grease-free shaft,
  - the coupling and the measuring system are not subjected to axial loads,
  - the clamping screws are tightened to the torque defined by the coupling manufacturer,
  - the coupling screws are secured against unintentional loosening.
- Axial slippage of the measuring system on the drive shaft must be prevented by fixing the coupling.
- Radial slippage (slip) of the measuring system on the drive shaft must be prevented by means of positive locking by using a feather key / keyway combination; a coupling with keyway must be used for this purpose.

Flange mounting

- The measuring system is mounted to the flange (centering collar) on the machine side using three screws.
- The flange plate for mounting on the machine should have a suitable centering collar.
- The screws must be tightened to a torque of 2.2 Nm and secured against unintentional loosening with medium-strength thread locker.
    - Make sure that the thread length is sufficient and that the screws can be screwed in completely.
- The assembly instructions for coupling assembly must be observed, see chapter: 4.1.1 “Mounting of the coupling (general)”.

Components:



igure 2: Flange mounting, principle illustration

1. Measuring system
2. Centering collar
3. Parallel key, according to Art.-No.-related drawing
4. 3x Screws
5. Flange plate (machine)
6. Coupling with groove
7. Drive shaft

Clamping flange mounting

- The measuring system is fastened to the centering collar on the machine side by means of a clamping connection with a slotted or divided hub.
- The clamping plate for mounting on the machine should have a suitable centering

collar.

- The screw must be tightened with a defined tightening torque to obtain the required joint pressure which guarantees that the measuring system does not slip. The screw must be secured against unintentional loosening with medium-strength thread locker.
- The assembly instructions for the coupling assembly must be observed, see chapter: 4.1.1 “Mounting of the coupling (general)”.

Components:

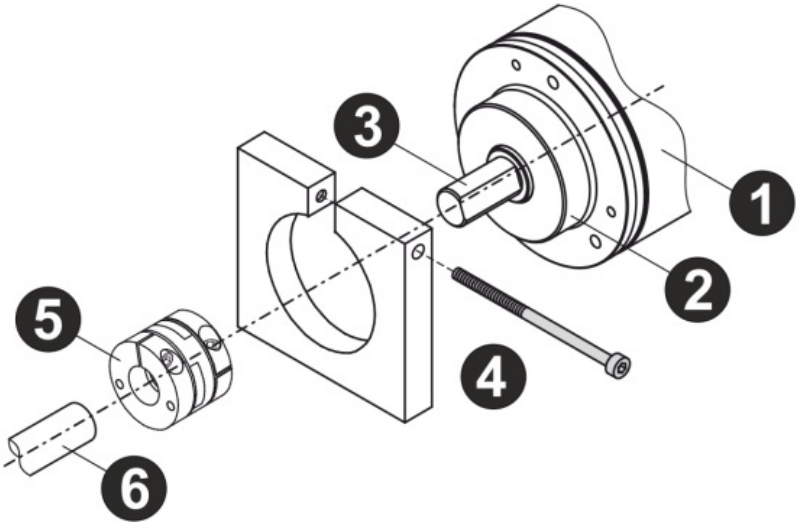


Figure 3: Clamping flange mounting, principle illustration

1. Measuring system
2. Centering collar
3. Solid shaft with flat surface
4. Clamping flange with screw (machine)
5. Coupling
6. Drive shaft

Servo clamps

- Dimensions, as well as individual mounting options, can be found in the customer-specific drawing.
- For mounting, 3 servo clamps are used, which are distributed around the measuring system offset by 120° and are each fastened to the flange plate with an M4 screw.
- The flange plate for mounting on the machine should have a suitable centering collar.
- To fasten the servo clamps to the flange plate, M4 steel screws (recommended: coated steel screws, e.g. galvanized) with a strength class of min. 6.8 (recommended:

8.8) should be used.
    - Depending on the ambient conditions, stainless steel screws with a strength class of min. 70 should be used.
- The M4 screws must be tightened to a torque of 2.2 Nm and secured against unintentional loosening with medium-strength thread locker.
    - Make sure that the thread length is sufficient and that the screws can be screwed in completely.
- The screw-in depth in the flange plate must be at least 4 mm in steel and at least 6 mm in aluminum.
- The surfaces to be clamped should be as free as possible from lubricants or other contamination.
- The servo clamps must match the outer diameter of the flange ring by type and be mounted according to the “top” orientation.
    - When the spring engages the flange groove, properly oriented servo clamps should rest flat on the flange plate.
- The assembly instructions for the coupling assembly must be observed, see chapter: 4.1.1 “Mounting of the coupling (general)”.

Components:

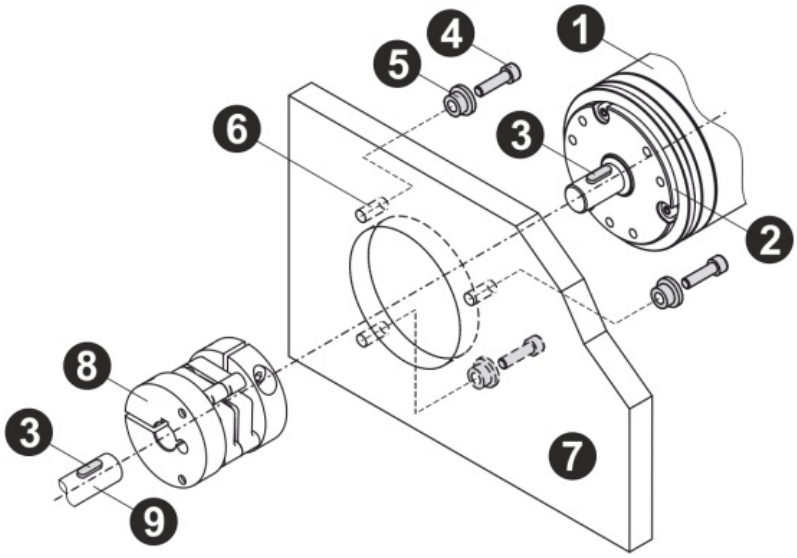


Figure 4: Mounting with servo clamps, principle illustration

1. Measuring system
2. Centering collar
3. Parallel key, according to Art.-No.-related drawing
4. 3x M4 cylinder head screw

5. 3x Servo clamp
6. 3x M4 threaded hole
7. Flange plate (machine)
8. Coupling with groove
9. Drive shaft

Clamping jaws

- Dimensions, as well as individual mounting options, can be found in the customer-specific drawing.
- For mounting, 2 clamping jaws are used, which are mounted offset by 180° if possible and fastened to the flange plate with two M4 screws each.
- To fasten the clamping jaws to the flange plate, M4 steel screws (recommended: coated steel screws, e.g. galvanized) with a strength class of min. 6.8 (recommended: 8.8) should be used.
    - Depending on the ambient conditions, stainless steel screws with a strength class of min. 70 should be used.
- The M4 screws must be tightened to a torque of 2.2 Nm and secured against unintentional loosening with medium-strength thread locker.
    - Make sure that the thread length is sufficient and that the screws can be screwed in completely.
- The screw-in depth in the flange plate must be at least 4 mm in steel and at least 6 mm in aluminum.
- The surfaces to be clamped should be as free as possible from lubricants or other contamination.
- Clamping claws must match the outside diameter of the flange ring by type and be mounted according to the “top” orientation.
    - When the spring engages the flange groove, properly oriented servo clamps should rest flat on the flange plate.
- The specifications for mounting the clamping jaws in relation to the pitch circle of the threaded holes must be observed so that the spring of the clamping jaws can engage in the flange groove.
- The assembly instructions for the coupling assembly must be observed, see chapter: 4.1.1 “Mounting of the coupling (general)”.

Components:

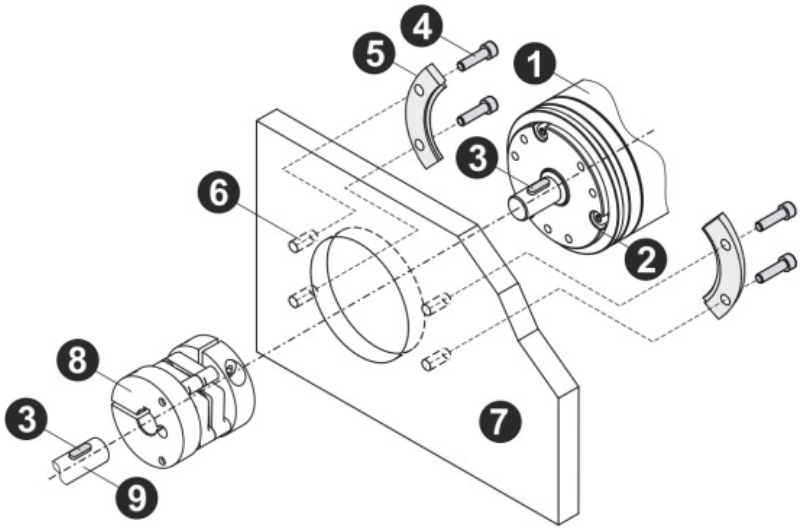


Figure 5: Mounting with clamping jaws, principle illustration

1. Measuring system
2. Centering collar
3. Parallel key, according to Art.-No.-related drawing
4. 4x M4 cylinder head screw
5. 2x Clamping jaws
6. 4x M4 threaded hole
7. Flange plate (machine)
8. Coupling with groove
9. Drive shaft

Blind hole shaft / Hollow shaft

The following instructions are not exhaustive as the assembly situation may be different for each application.

Mounting of the clamping ring (general)

- Dimensions and individual mounting options can be found in the customer-specific drawing. For further information, please refer to the relevant standards and directives.
- The measuring system must be mounted on a grease-free shaft.
- Axial slippage of the measuring system on the drive shaft must be prevented by fixing the clamping ring.
    - If necessary, further measures are required to prevent axial slippage of the

measuring system.

- Radial slippage (slip) of the measuring system on the drive shaft may also have to be prevented by means of positive locking using a key / keyway combination.
- The clamping of the measuring system must not be axially loaded.
- The screw of the clamping ring must be tightened with sufficient torque and secured against unintentional loosening with medium-strength thread locker.

Requirements for the customer shaft

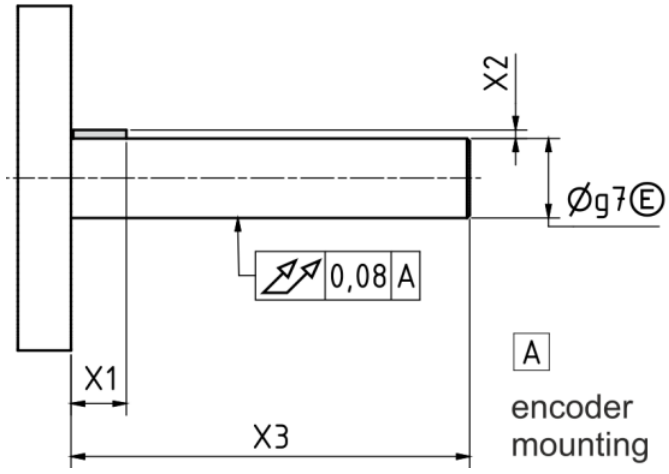
Clamping ring on flange side											
Series	Type	Connection on the customer side TH [in mm]				Connection on the customer side FRPG [in mm]					
		X1	**X2**	**X3**	**X4**	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
C_H582	with keyway	10,4	acc. to standard	min. 77	/	6-0,2	acc. to standard	min. 77	23	/	/
C_H582	without keyway	/	/	min. 77	/	/	/	min. 77	23	max. 56	/
C_S582	with keyway	10,4	acc. to standard	min. 15 max. 30	/	6-0,2	acc. to standard	min. 15 max. 30	23	/	22-1
C_S582	without keyway	/	/	min. 15 max. 30	/	/	/	min. 15 max. 30	23	max. 16	/

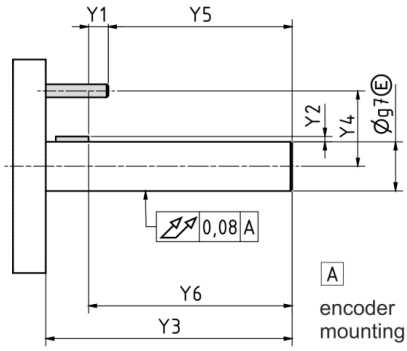
Clamping ring on hood side											
Series	Type	Connection on the customer side TH [in mm]				Connection on the customer side FRPG [in mm]					
		X1	**X2**	**X3**	**X4**	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
C_H582	with keyway	10,4	acc. to standard	min. 80	/	6-0,2	acc. to standard	min. 77	23	/	/
C_H582	without keyway	/	/	min. 80	/	/	/	min. 77	23	max. 56	/

Series	
C_ 362	see customer drawing
C_ 802	
C_1102	

See below the legend and the corresponding drawings for the series 582.

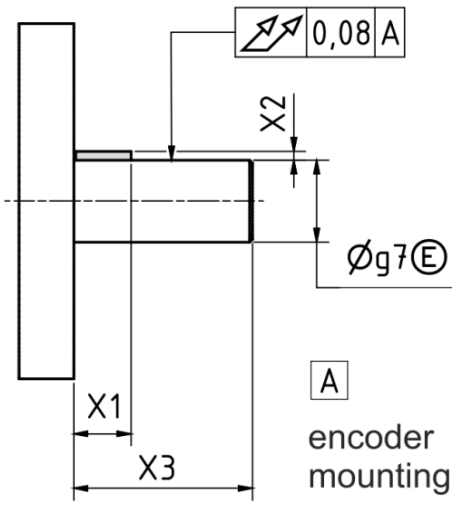
C_H582 (hollow shaft)	
with torque holder (TH)	with flange ring pin/groove (FRPG)

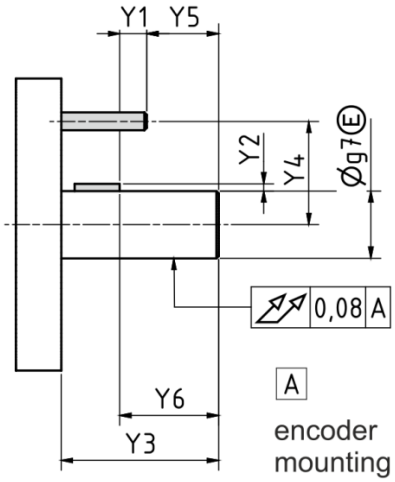




C_S582 (blind hole shaft)

with torque holder (TH)	with flange ring pin/groove (FRPG)





Legend:

X1 = Distance from customer side to end of feather key

X2 = Height of the feather key

X3 = Length of the customer shaft

X4 = Distance from customer shaft to strain gauge fastening

Y1 = Distance from end of feather key to end of pin

Y2 = Height of the feather key

Y3 = Length of the customer shaft

Y4 = Distance from center of pin to center of customer shaft

Y5 = Distance from end of pin to end of customer shaft

Y6 = Distance from end of feather key to end of customer shaft

Clamping ring versions

Clamping ring on the flange side:

With this type of mounting, the clamping ring is located between the measuring system and the attachment, i.e. on the side of the flange.

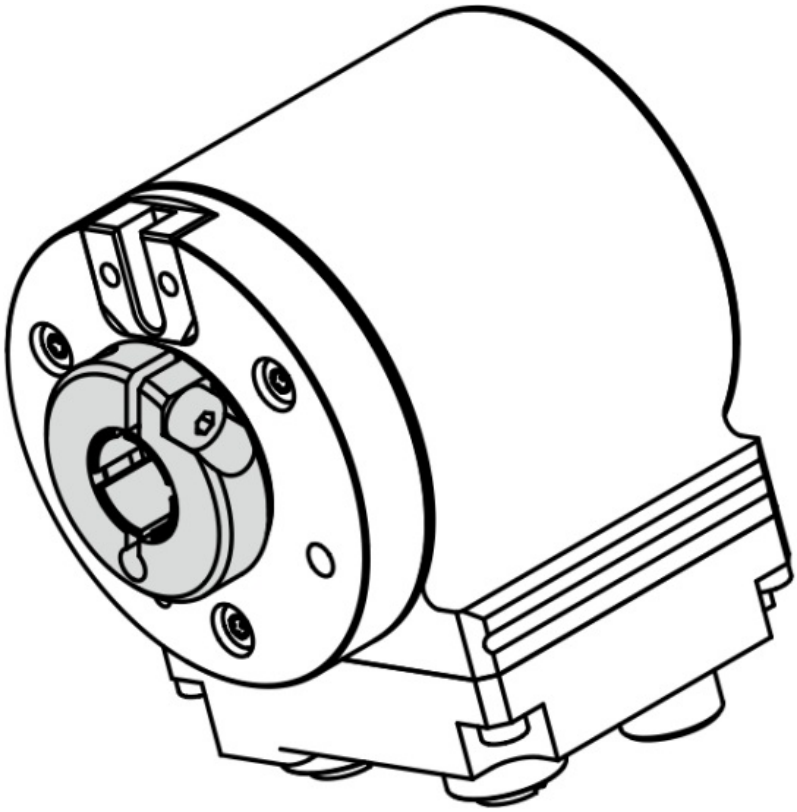


Figure 6: Example for clamping ring on the front

Clamping ring on the hood side:

With this type of mounting, the clamping ring is located behind the measuring system and is therefore opposite the attachment.

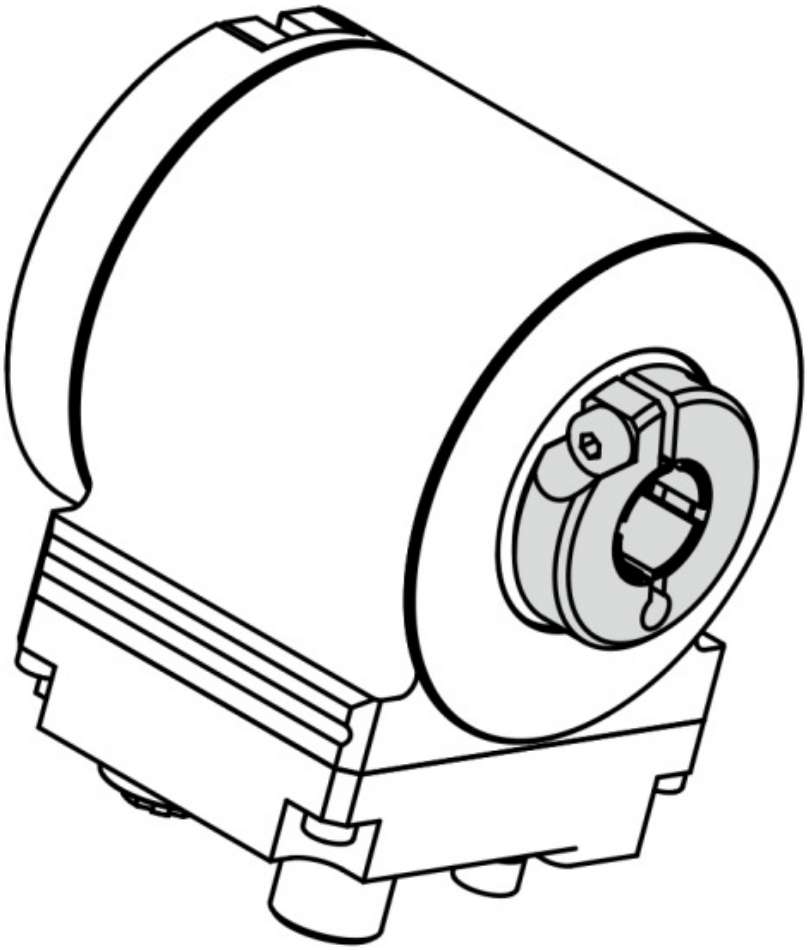


Figure 7: Example for clamping ring on the back

Dowel pin / groove insert

- Rotation of the measuring system housing is prevented by a locating pin on the machine and a grooved insert on the measuring system. See Figure 8.
- The specifications for the dowel pin can be found in chapter: 4.2.1.1 “Requirements for the customer shaft”.
- The assembly instructions for the clamping ring assembly must be observed, see chapter: 4.2.1 “Mounting of the clamping ring (general)”.

Components:

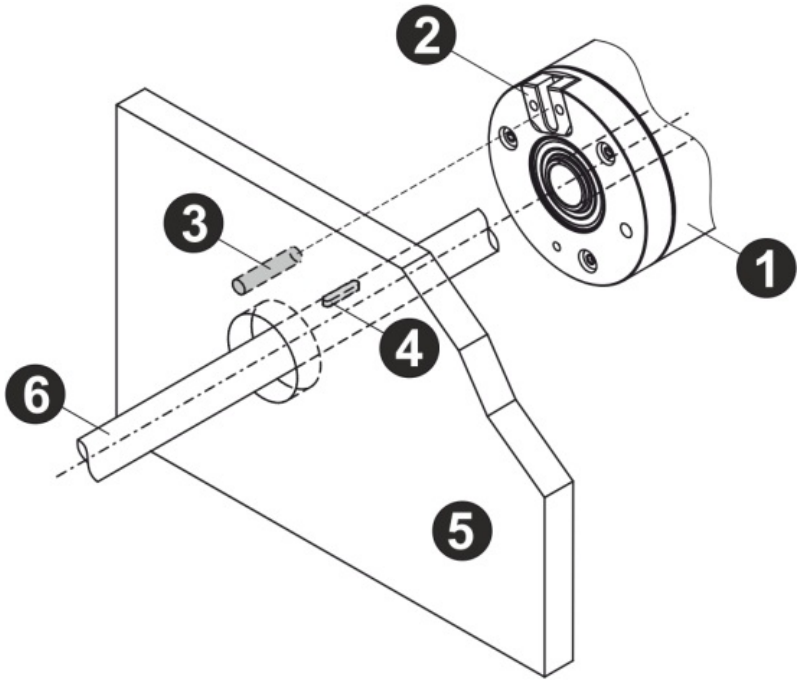


Figure 8: Mounting with dowel pin / groove insert, principle illustration

1. Measuring system
2. Groove insert
3. Dowel pin
4. Parallel key, according to Art.-No.-related drawing
5. Machine
6. Drive shaft

Lateral locating dowel pin

- The rotation of the measuring system housing is prevented by a locating pin on the side of the measuring system and a groove in the machine on the customer side. See Figure 9.
- The specifications can be found in the customer-specific dimensional drawing.
- The assembly instructions for the clamping ring assembly must be observed, see chapter: 4.2.1 “Mounting of the clamping ring (general)”.

Components:

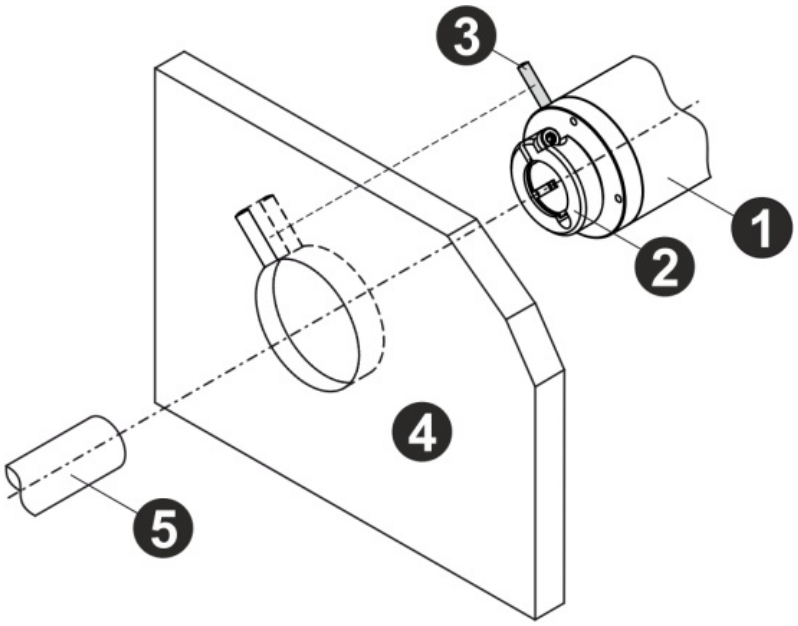


Figure 9: Mounting with lateral dowel pin and customer-side groove, principle illustration

1. Measuring system
2. Clamping ring
3. Dowel pin
4. Machine with groove
5. Drive shaft

Spring metal sheet as torque holder

- The ambient conditions, the shaft load and the axially and radially permissible shaft movement tolerances specified in the article number-specific data sheet must be observed.
- Stress-free mounting in idle state.
- Slide the measuring system onto the drive shaft.
- Each wing of the torque holder must be fastened to the machine with at least one M3 cylinder head screw in combination with a suitable washer.
    - The spring metal sheet must not be warped or prestressed.
    - Screw connections must be secured against unintentional loosening with medium-strength thread locker.
    - Select the nominal tightening torque depending on the thread and the strength class according to VDI 2230.
- Fasten the clamping ring to the drive shaft using the clamping ring screw with a

tightening torque of 2 Nm. The torque holder must not be warped or prestressed.

- The Spring metal sheet is corrosion-resistant in industrial atmosphere. Special ambient conditions / media must be clarified with TR-Electronic.
- Improperly mounted or damaged torque supports must not be used.
- The assembly instructions for the assembly of the clamping ring must be observed, see chapter: 4.2.1 “Mounting of the clamping ring (general)”.

Torque holder with one wing:

Components:

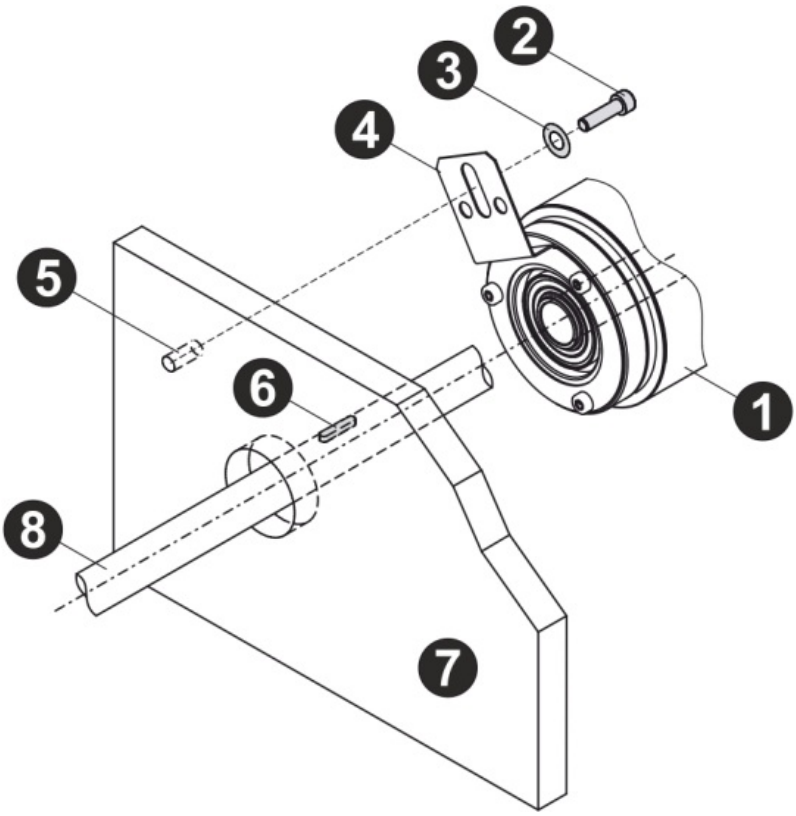


Figure 10: Mounting with torque holder (Spring metal sheet with one wing), principle illustration

1. Measuring system
2. M3 cylinder head screw
3. Washer
4. Torque holder
5. M3 threaded hole
6. Parallel key, according to Art.-No.-related drawing
7. Machine
8. Drive shaft

Torque holder with two wings:

Components:

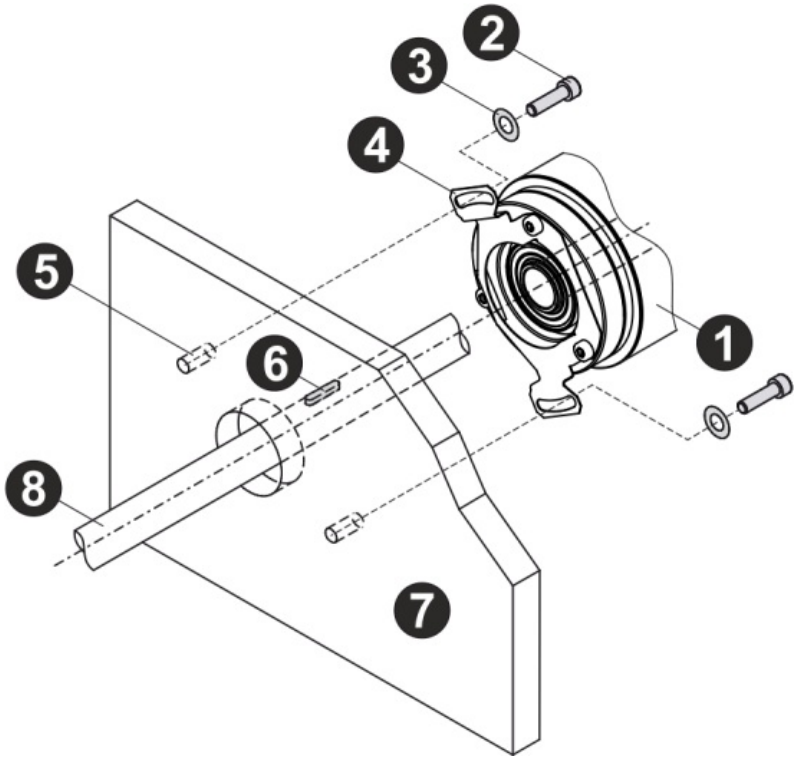


Figure 11: Mounting with torque holder (Spring metal sheet with two wings), principle illustration

1. Measuring system
2. 2x M3 cylinder head screw
3. 2x Washer
4. Torque holder
5. 2x M3 threaded hole
6. Parallel key, according to Art.-No.-related drawing
7. Machine
8. Drive shaft

Joint rod as torque holder

- Please refer to the customer-specific drawing for any variations in size and individual assembly options. Please refer to the manufacturer’s individual technical data for joint head rod specifications, such as the permissible tilt angle of the joint head.
- A joint rod with two joint heads and two M5 cylinder head screws are required for assembly.

- For mounting on the measuring system, the joint rod can be screwed to one of the two M5 threaded holes in the flange. For optimum support of the measuring system, the joint rod must be mounted at a 90° angle to the line connecting of the threaded hole to the center of the shaft, see Figure 13.
- The M5 screws must be tightened with a tightening torque of 2.2 Nm and secured against unintentional loosening with a medium-strength screw locking device.
    - Ensure the thread is sufficiently long for the screws to be completely screwed in.
- The minimum thread reach into the flange plate is 4 mm in steel and 6 mm in aluminum. The minimum thread reach into the measuring system flange is 6 mm.
- The mounting surfaces should be free of any lubricants or dirt.
- The assembly instructions for the assembly of the clamping ring must be observed, see chapter: 4.2.1 “Mounting of the clamping ring (general)”.

Components:

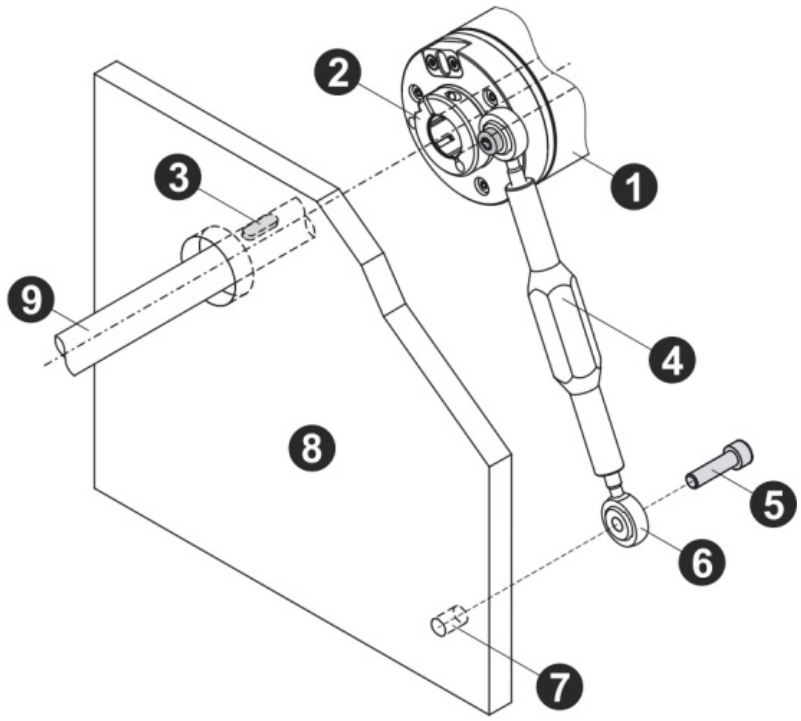


Figure 12: Mounting with torque holder (joint rod), principle illustration

1. Measuring system
2. Clamping ring (flange side)
3. Parallel key, according to Art.-No.-related drawing
4. Joint rod
5. 2x M5 cylinder head screw
6. 2x Joint head

7. M5 threaded hole
8. Machine
9. Drive shaft

Mounting variants:

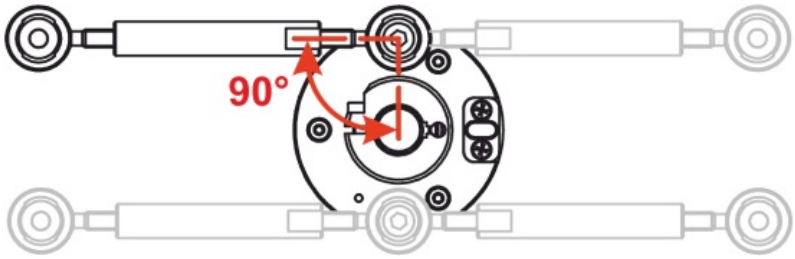
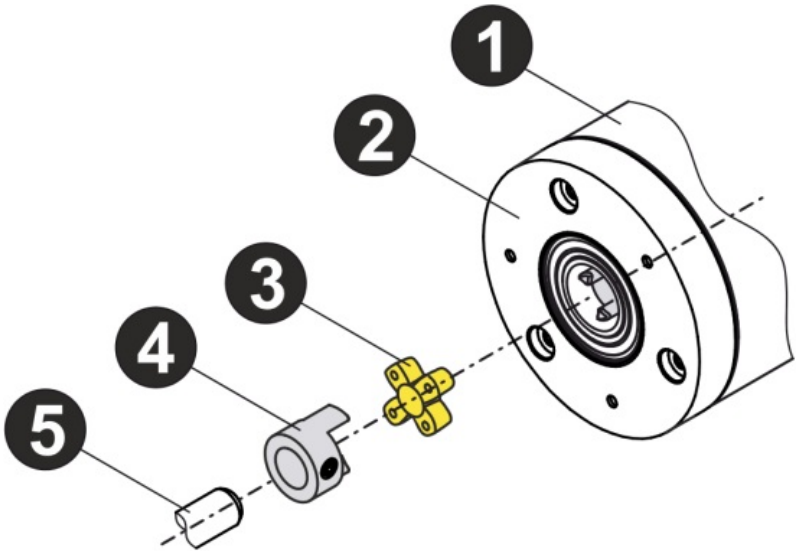


Figure 13: Joint rod mounting variants

Integrated coupling

Components:



no scope of delivery

Figure 14: Mounting with integrated coupling, principle illustration

1. Measuring system
2. Flange ring (customer-specific)
3. PU coupling element
4. Coupling element 1)
5. Drive shaft

Measuring systems with integrated coupling are independent devices and cannot be

manufactured by converting a standard device with shaft.

Advantages over the standard versions:

- Short mounting, since coupling length is omitted (coupling integrated in measuring system shaft)
- Simple and fast assembly / disassembly
- Radial and axial tolerance to customer shaft
- Fewer mounting parts required

Mounting example:

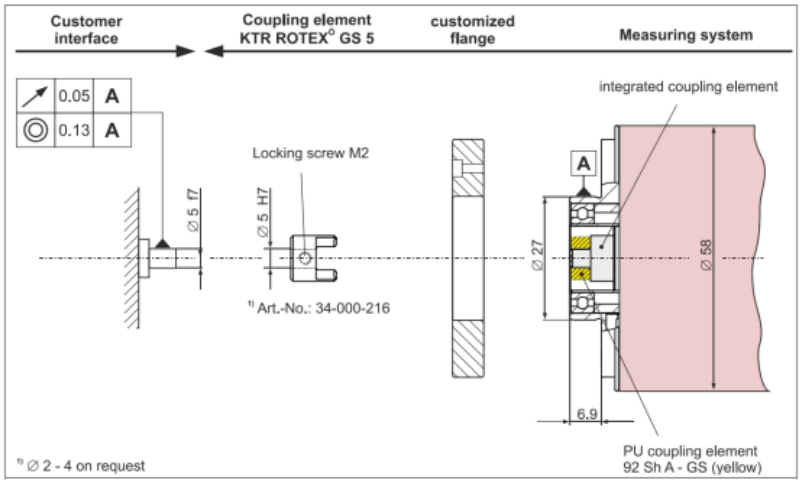
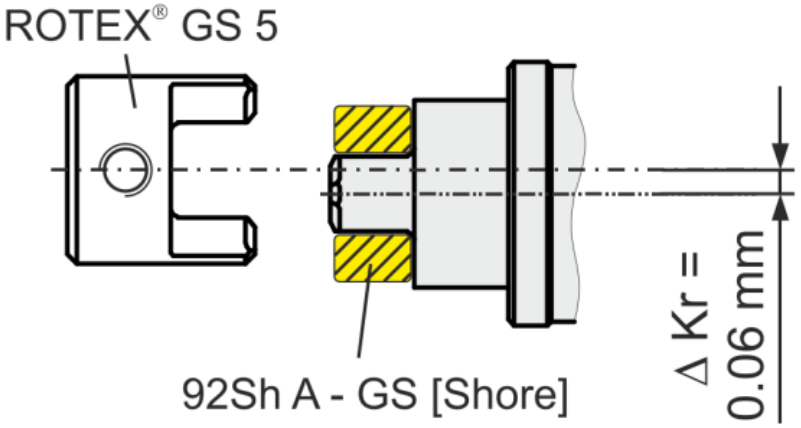


Figure 15: Mounting example with integrated coupling

Connecting the coupling pieces:



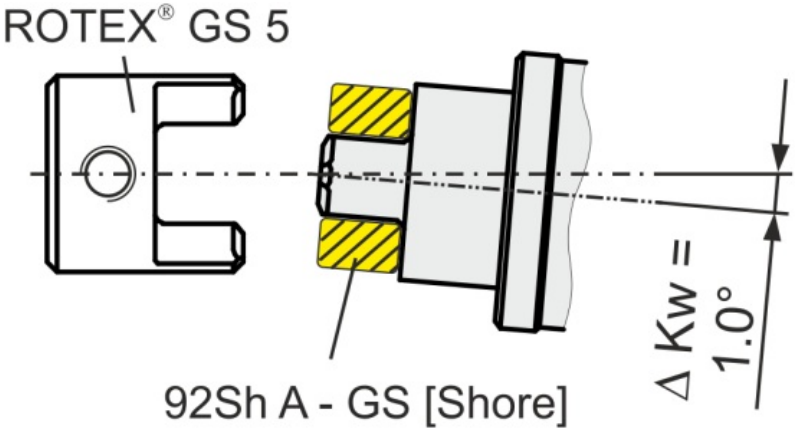


Figure 16: Connecting the coupling pieces

The couplings can accommodate either radial **(Kr)** or angular **(Kw)** misalignment. Careful and accurate alignment of the shafts increases the service life of the couplings. The shaft ends to be connected should be supported immediately in front of and behind the coupling. Rotating parts must be protected by the user against accidental contact (safety of machines see: DIN EN ISO 12100).

Enclosure Option: Heavy duty 115

Mounting

- The measuring system installed in a heavy duty 115 enclosure is mounted on the machine side using six screws through the device flange.
- The centering collar with the fit j6 centers the shaft. The customer’s flange plate should have a suitable centering collar.
- The mounting base only carries the weight of the measuring system and must be screwed to the mounting surface with four screws without tension.
- All screws must be tightened to the appropriate torque and secured against unintentional loosening with medium-strength thread locker.
    - Make sure that the thread length is sufficient and that the screws can be screwed in completely.
- The assembly instructions for coupling assembly must be observed, see chapter: 4.1.1 “Mounting of the coupling (general)”.
    - Dimensions are to be taken from the customer-specific drawing.
    - Tolerance specifications of the coupling manufacturer must be considered.

Components:

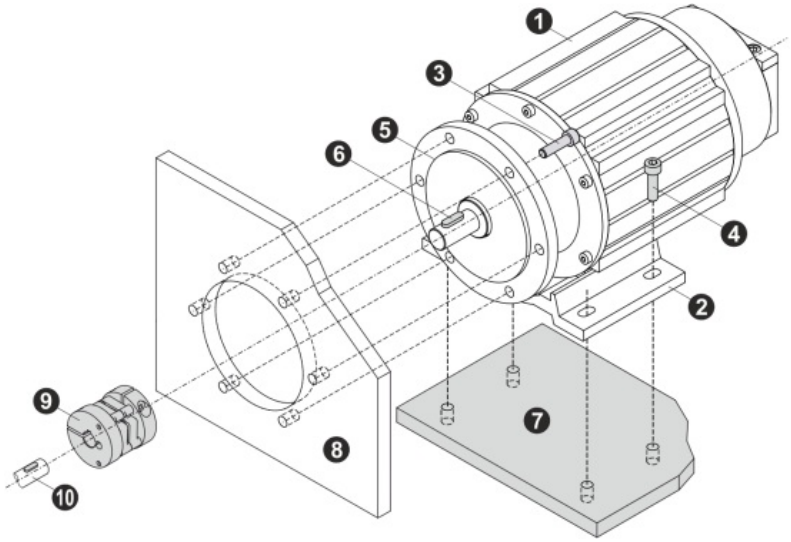


Figure 17: Mounting example, heavy duty 115 enclosure

1. Measuring system
2. Mounting base
3. 6x M6 Allen screws *
4. 4x M6 Allen screws *
5. Device flange with centering collar
6. Parallel key
7. Mounting surface *
8. Flange plate (machine) *
9. Coupling with groove *
10. Drive shaft *

Connection

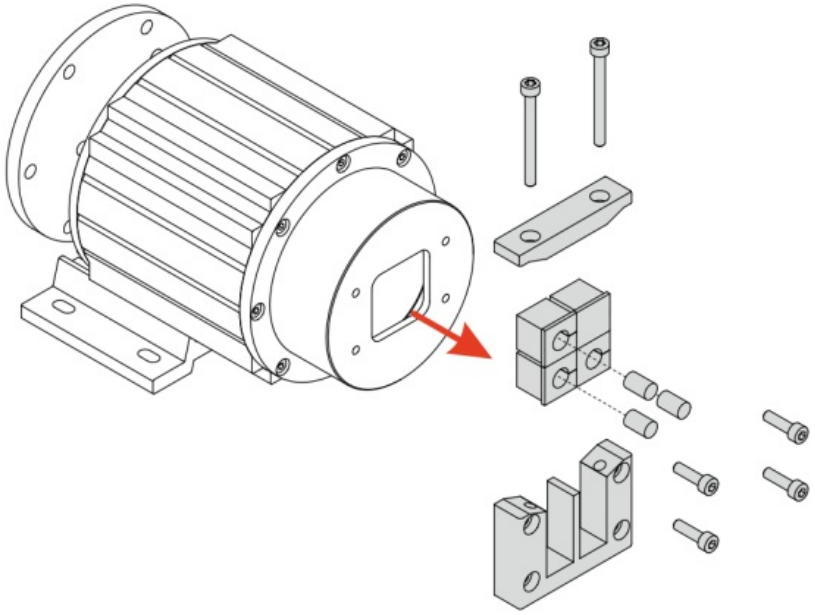
For measuring systems, that are installed in an optional heavy duty 115 enclosure, the following steps must be observed when connecting:

Step 1:

Remove the 4x cylinder head screws from the cable entry module using a 4 mm Allen key.

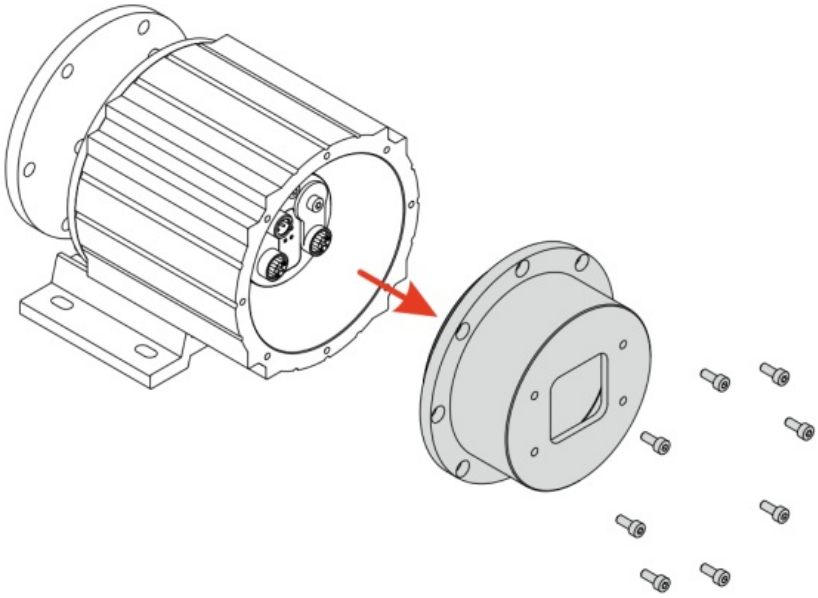
Remove the cable entry module from the cover hood and disassemble it.

The sealing plugs in the grommets must be removed according to the number and position of the cables used.



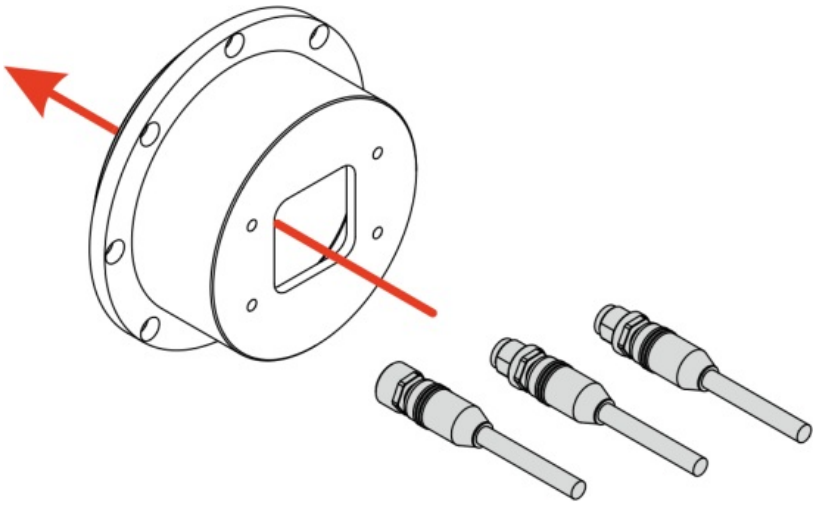
Step 2:

Remove the 8x cylinder head screws from the cover using a 3 mm Allen key. Pull the cover hood off the enclosure tube.



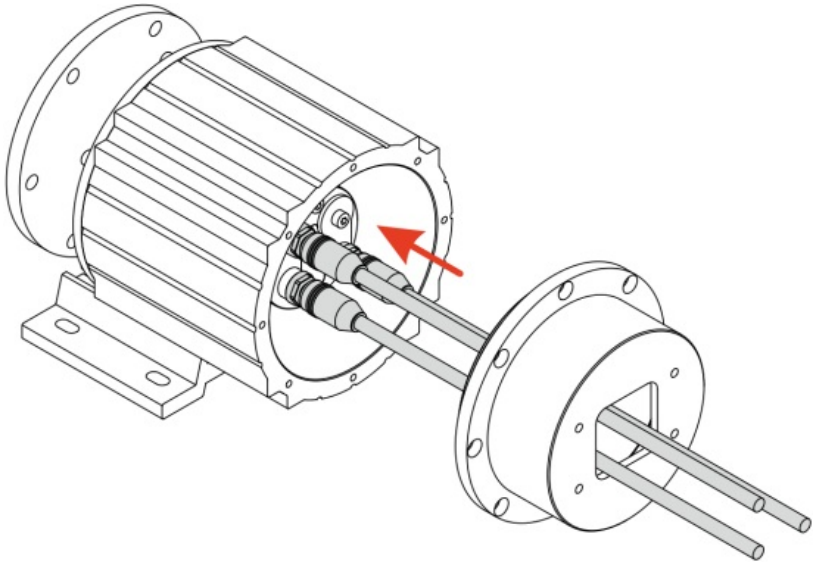
Step 3:

Feed the signal and supply lines one after the other through the opening in the cover hood.



Step 4:

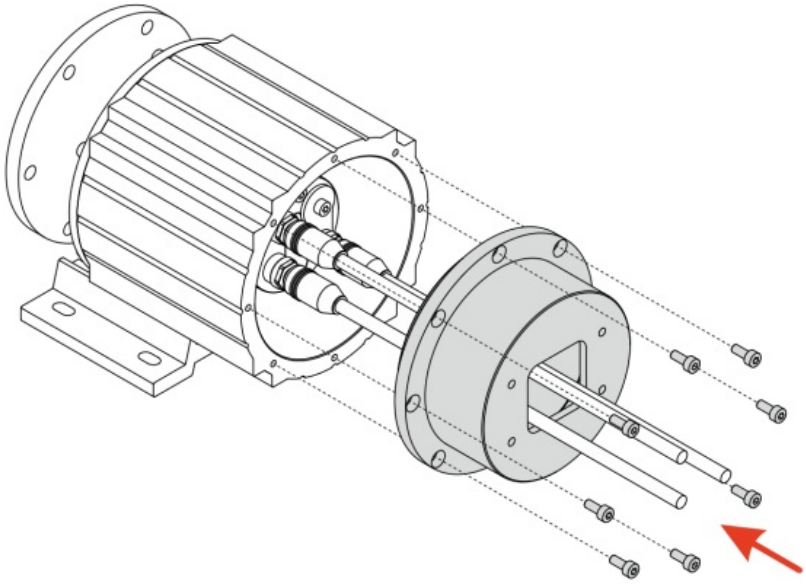
Connect the signal and supply lines to the measuring system and screw them tight.



Step 5:

Screw the cover hood back onto the housing tube using the 8x M4x10 cylinder head screws.

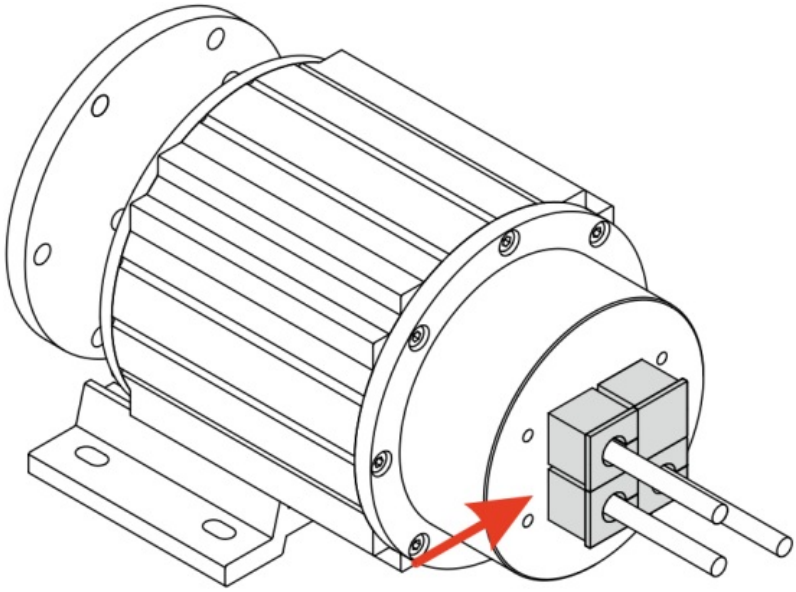
Note the alignment of the cover hood!



Step 6:

Place the grommets around the cables so that they are flush with the cover hood.

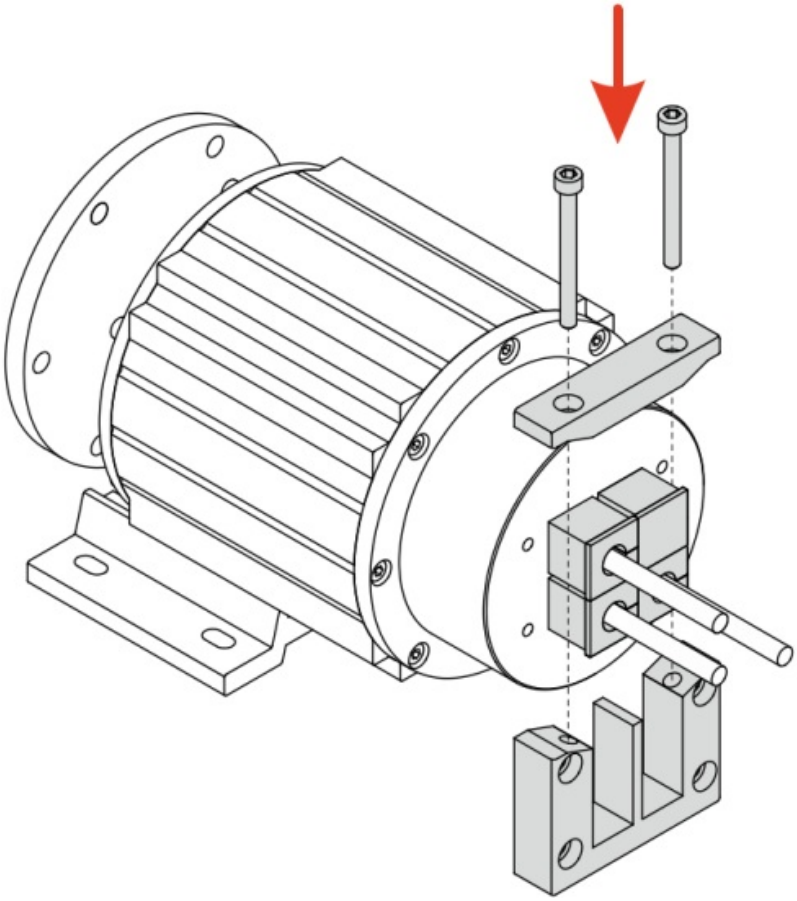
To ensure that the seal is tight, the individual installation direction of the grommets in relation to one another and the plug pattern of the installed measuring system must be observed. The sizes of the grommets must be selected according to the cable diameter.



Step 7:

Slide the frame of the cable entry module onto the grommets and pull it up to the stop of the cover. Screw the cable entry module tightly together with the 2x cylinder head screws.

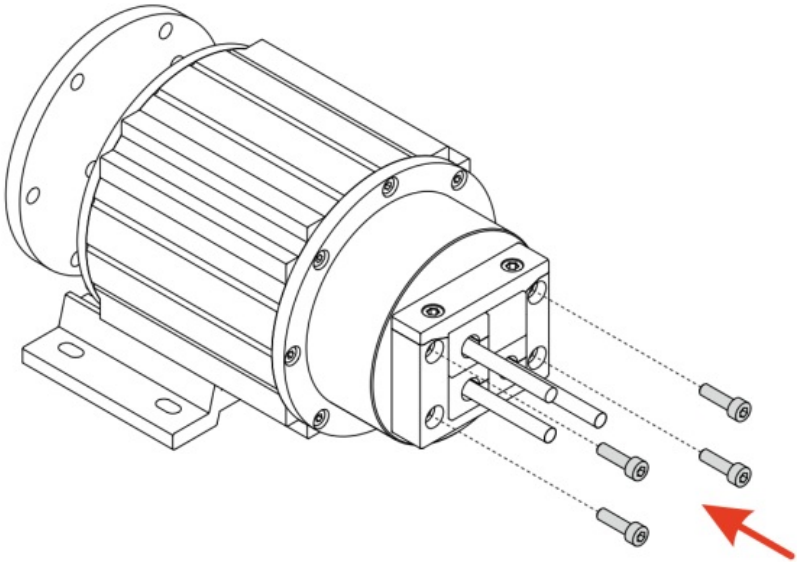
To ensure a tight seal, the frame and the yoke (cover) of the cable entry module must be positioned with the rubberized sealing side facing the cover hood.



Step 8:

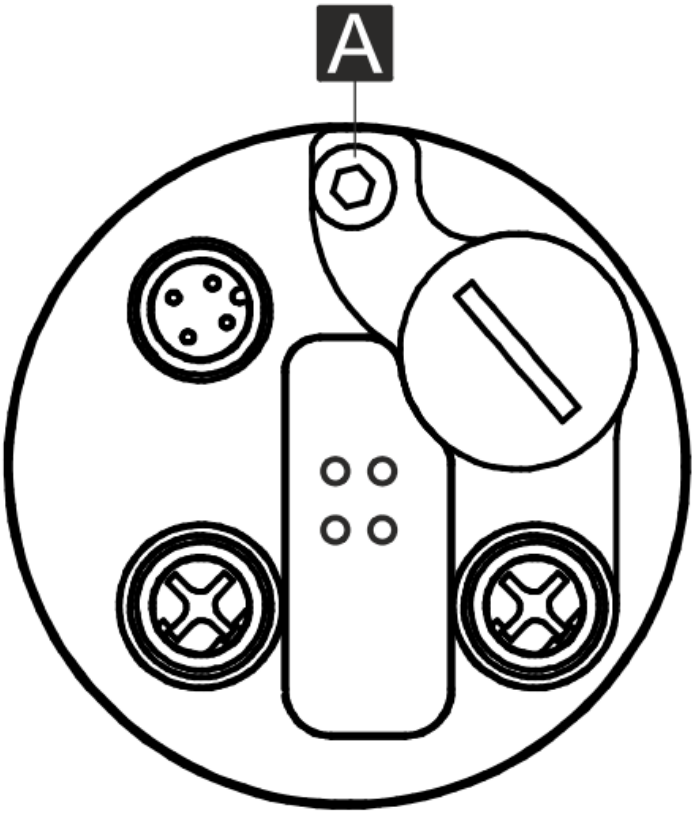
Screw the cable entry module to the cover hood using the 4x M5x18 cylinder head screws.

Care must be taken to ensure that the installation of the cable entry module does not exert too much pressure on the cables and thus on the measuring system!

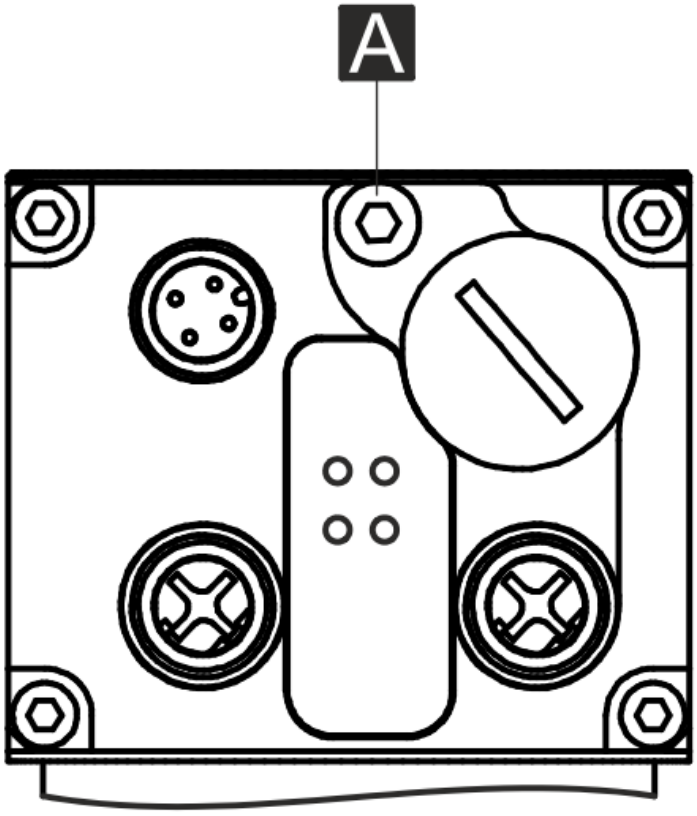


Potential equalization – connection

- Axial



- Radial



- **Enclosure Option**: Heavy Duty 115

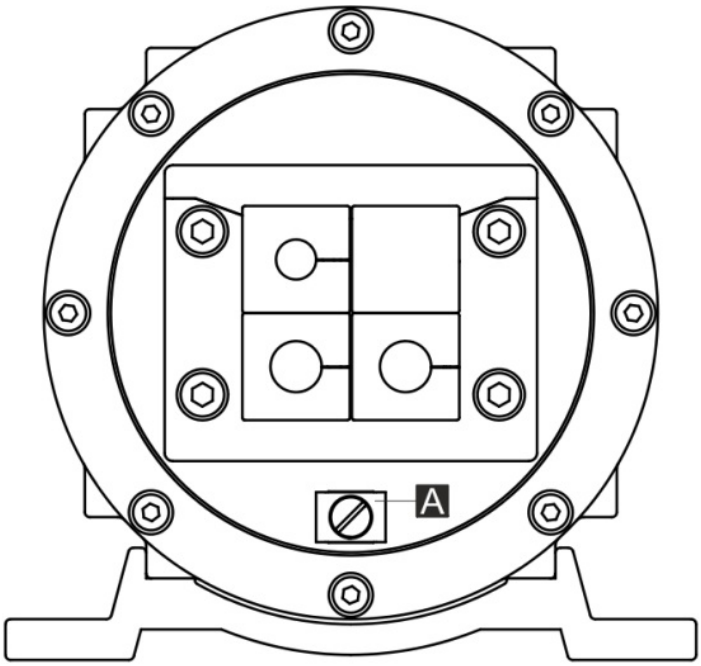


Figure 18: Grounding point

A : M4 thread or screw clamp for equipotential bonding

Accessories

www.tr-electronic.com/products/rotary-encoders/accessories.html

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Documents / Resources

	TR electronic 362 Series Rotary Encoder [pdf] Instruction Manual 362, 582, 802, 1102, 362 Series Rotary Encoder, 362 Series, Rotary Enc oder, Encoder

	TR electronic 362 Series Rotary Encoder [pdf] Instruction Manual 362 Series Rotary Encoder, 362 Series, Rotary Encoder, Encoder

References

- User Manual

TR-electronic 1102, 362, 362 Series, 362 Series Rotary Encoder, 582, 802, ENCODER, Rotary Encoder, TR-electronic

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