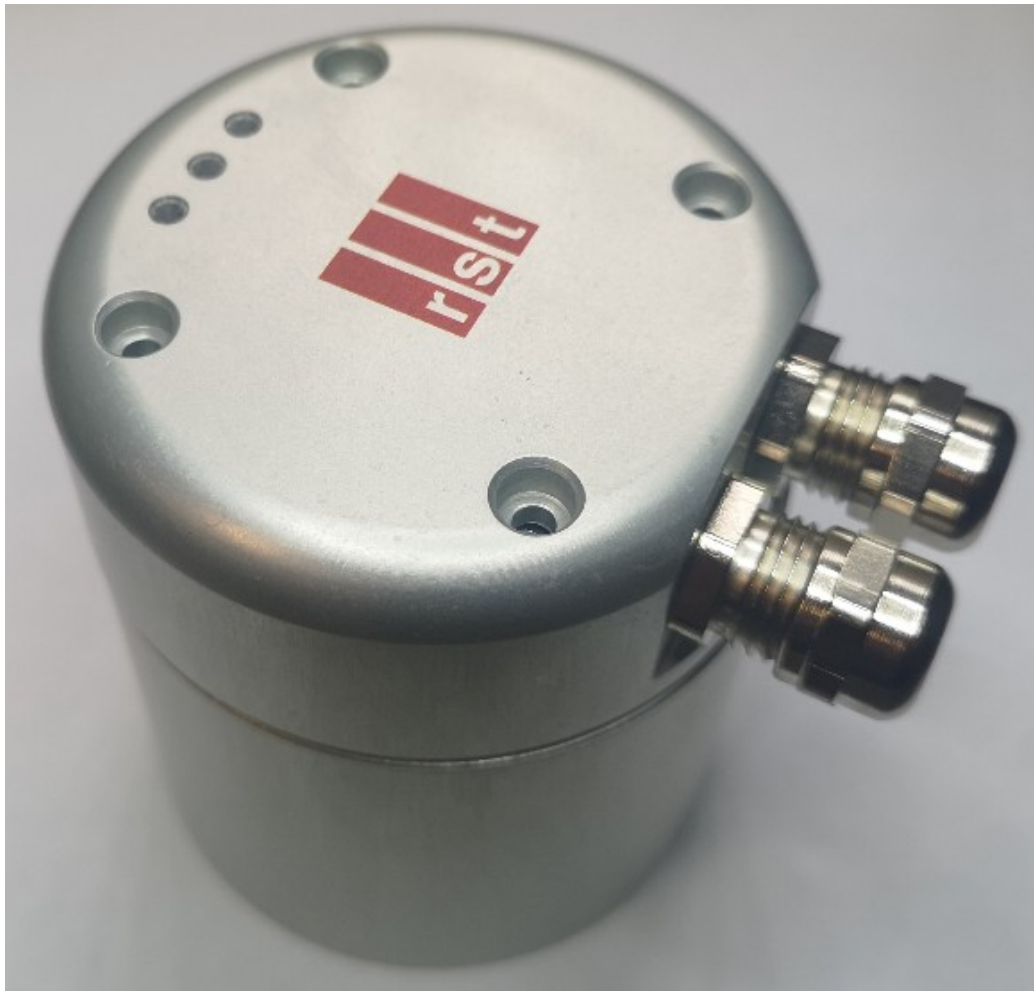


Description of Magnetostrictive Hollow Shaft Potentiometer VFP4



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1 Mechanical construction

The magnetoresistive hollow shaft potentiometer is accommodated in a round airtight casing made of aluminium.

It has a diameter of 69 mm and a length of 80 mm.

It is intended to be fixed directly onto a rotating shaft by means of a countersunk M8 hexagonal socket head screw, i.e. no other mechanical attachments such as feet or flanges are required, even chain or synchronous belt drive are dispensed with.

The mounting position should be such that the cable outlet faces approximately vertically downwards. The exact central position is displayed by a green light emitting diode. The shaft rotation angle is directly proportional to the level of the output signal and can be adjusted by a potentiometer in the range from $\pm 45^\circ$ to $\pm 90^\circ$ after removing the lid (Factory setting $\pm 45^\circ$).

Embodiments are available for two shaft diameters: VFP4-40 corresponds to a 40 mm shaft diameter as the basic version. By inserting an adapter ring, it can be adapted to accommodate a 30 mm shaft. See also the dimension sheet for more information.

The magnetoresistive hollow shaft potentiometer is provided with 2 shielded cables each 10 m in length, whereby the supply voltage + 15 V (terminal 14, orange), 0 V (terminal 10, yellow), - 15 V (terminal 15, green), input (terminal 13, black), output (terminal 11, brown) and inverted output (terminal 12, red) are carried in a 6-core cable.

The wires signalling the extreme positions are in the 4-core cable:

Upper stop position + 24 V (terminal 16, black), output (terminal 17, brown), lower stop position + 24 V (terminal 8, red), output (terminal 9, orange)

The cables are to be connected, as and when required, in an intermediate box.

Attention ! Switch off the power supply before connecting / disconnecting the potentiometer.

After removing the lid, the terminals for the wires, the potentiometer to adjust the angular field (potentiometer 5), the fine adjustment of the central position (potentiometer 4) and the signalling of the extreme positions (potentiometers 6 + 7) are accessible.

In addition, three light emitting diodes have been installed: two red ones (LED 1 + 3) signal each of the extreme positions and one green one (LED 2) shows that there is voltage on the potentiometer. The green LED extinguishes to show the central position.

The hollow shaft potentiometer has protection class IP 65.

Warning: The bolts to fix the electronics are sealed and may only be unscrewed by RST personnel! Any warranty claims expire if the sealing is damaged.

2 Description

The magnetoresistive hollow shaft potentiometer has been designed to record rotation angles, positions and settings. Thus position and setting controls can be realised in connection with rockers or dancers.

The core piece is a non-contact magnetic position and angle sensor, so that completely wear-free working is guaranteed.

The input voltage is unipolar and may lie in the range of 0 ... + 15 V. The input voltage can be a fixed voltage or also a variable voltage, e.g. a reference setpoint.

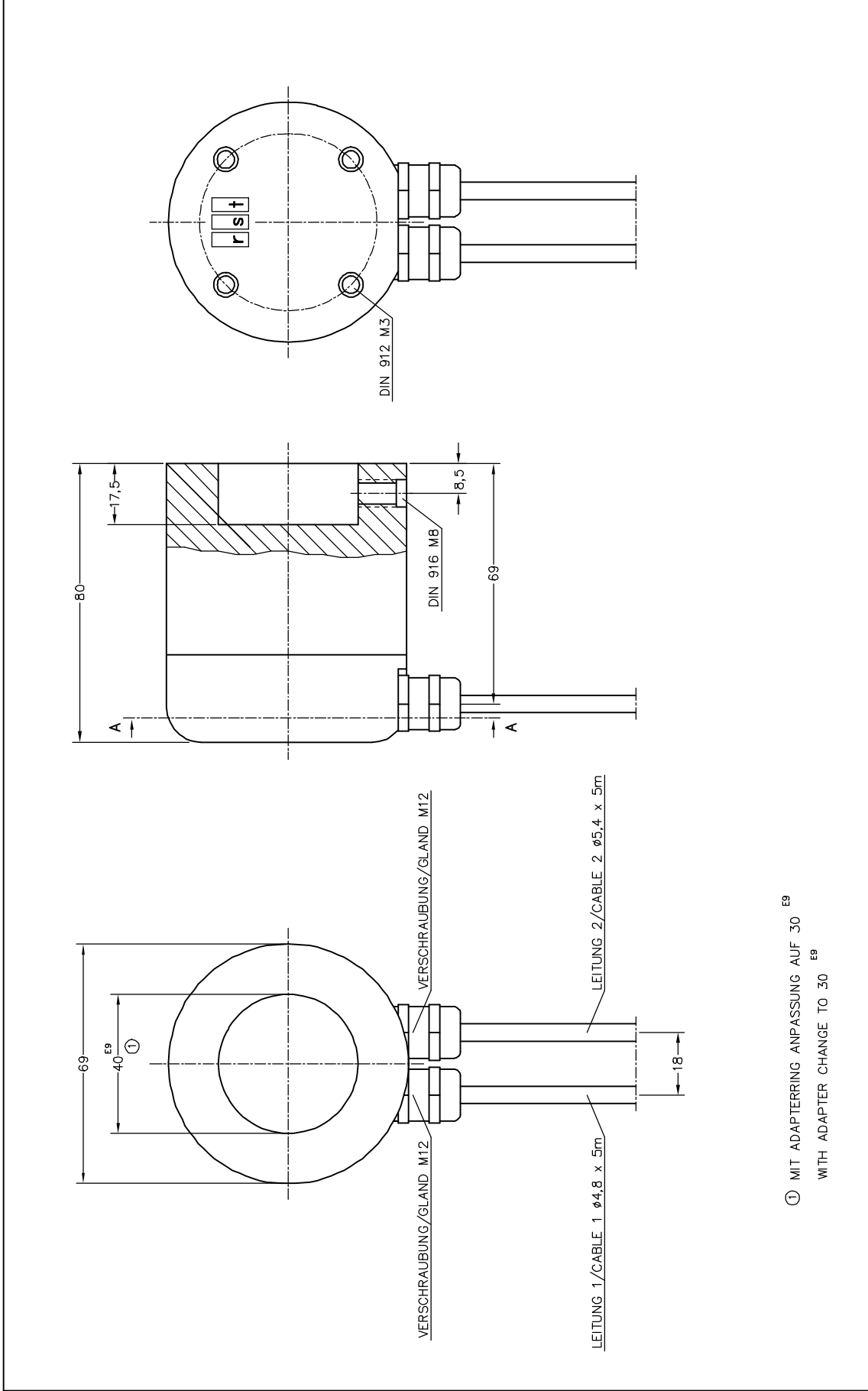
The output signal is thus proportional to the input signal and the deflection, i.e. to the rotation angle, and ranges maximum from - 10 ... to + 10 V.

The response thresholds for the extreme positions are adjusted by two separate trimming potentiometers (potentiometers 6 + 7). Please note that depending on the mounting position, the upper and lower stop positions swap places. One of the two red LEDs (LED 1 + 3) illuminates when reaching the relevant stop position. A green LED (LED 2) displays, that the magnetoresistive hollow shaft potentiometer has voltage. This LED extinguishes once the central position of the hollow shaft potentiometer has been reached.

3 Technical data

| | |
|--|---|
| Protection class | IP 65 |
| Weight | 1.85 kg |
| Ambient air temperature | 0 - 80 °C |
| Power supply | ± 15 V DC ± 5 %, the supply inputs are reverse polarity protected + 24 V DC ± 5 % for the optoelectronic outputs |
| Rated input voltage | 0 ... +15 V DC |
| Max. input voltage | 50 V |
| Input resistance | 25 kΩ |
| Charging rate | + 15 V 52 mA, - 15 V 25 mA |
| Max. output voltage | -10 ... +10 V DC |
| Output current | 5 mA for each system |
| Short-circuit duration of the analogue outputs | infinite |
| Output current of the optoelectronic outputs | 100 mA |

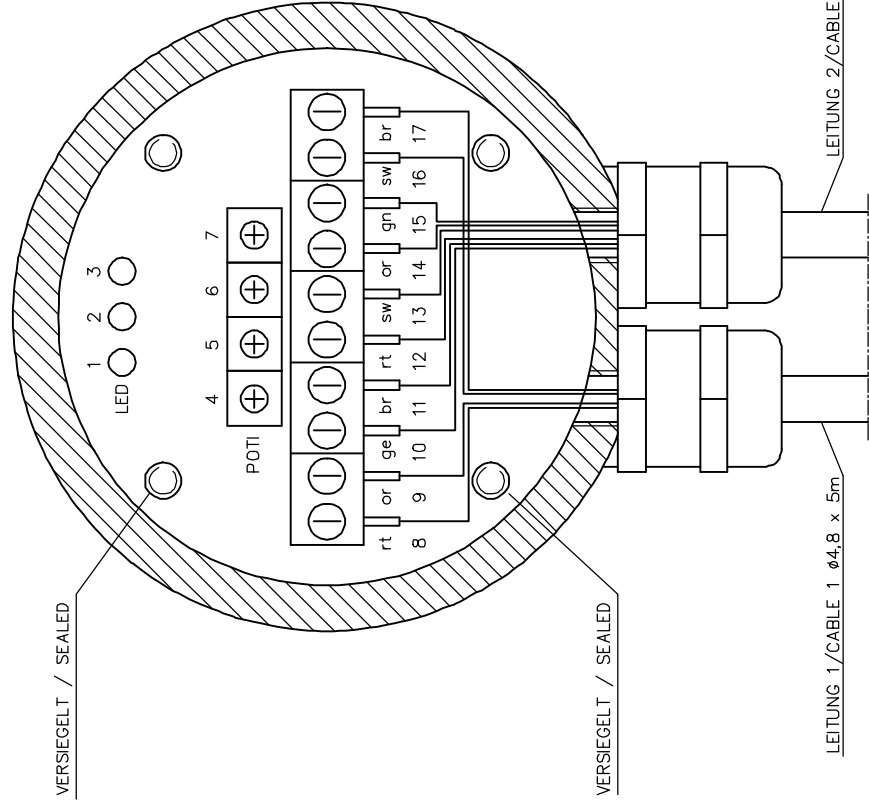
Attention: A safety fuse 0.2 Amp. SF is to be provided as a short circuit protection for the optoelectronic outputs.



① MIT ADAPTING ANPASSUNG AUF 30 E9
 WITH ADAPTER CHANGE TO 30 E9

| | | | | | |
|-------|-------|-------|-------|-----------------------------------|--|
| Kunde | | Kunde | | M1:10 | |
| Ind. | Datum | Ind. | Datum | FELDPLATTENPOTENTIOMETER | |
| | | | | VFP 3-40 Alu | |
| | | | | Kennr. | |
| | | | | Regel- und Steuerungsanlagen GmbH | |
| | | | | D-46499 Hamminkeln | |
| | | | | rst | |
| | | | | Blatt 6 von 7 | |

A-A



LED

- 1 UNTERE ENDLAGE / LOWER LIMIT
- 2 SPANNUNG EIN (LED AUS IN MITTELLAGE) / POWER ON (LED OFF IN MIDDLE POSITION)
- 3 OBERE ENDLAGE / UPPER LIMIT

POTI

- 4 MITTELLAGE (VERSIEGELT) / MIDDLE POSITION (SEALED)
- 5 WINKELBEREICH (VERSIEGELT) / GAIN (SEALED)
- 6 UNTERE ENDLAGE / LOWER LIMIT
- 7 OBERE ENDLAGE / UPPER LIMIT

KLEMMLEISTE / TERMINAL STRIP

- 8 UNTERE ENDLAGE / LOWER LIMIT +24V DC
- 9 UNTERE ENDLAGE / LOWER LIMIT
- 10 0V
- 11 AUSGANG / OUTPUT
- 12 INVERTIERTER AUSGANG / INVERS OUTPUT
- 13 EINGANG / INPUT
- 14 VERSORGUNGSSPANNUNG / POWER SUPPLY +15V
- 15 VERSORGUNGSSPANNUNG / POWER SUPPLY -15V
- 16 OBERE ENDLAGE / UPPER LIMIT +24V DC
- 17 OBERE ENDLAGE / UPPER LIMIT

BEI BESCHÄDIGTER VERSIEGELUNG ERLISCHT DIE GARANTIE
 THE WARRANTY EXPIRES IF THE PAINT-SEAL IS BROKEN

| Kunden. Revision | RST Revision | Datum | Name | Kunde |
|---|-----------------------|-------------------|------|---|
| Ind. / Bearb. / Gepr. | Ind. / Bearb. / Gepr. | Bearb. / 17.08.05 | Sh. | Kunden-Nr. |
| | | Gepr. / 17.08.05 | Ter. | Auftr.-Nr. |
| | | Norm. | | |
| r s t Regal- und Steueranlagen GmbH D-46499 Hamminkeln | | | | Benennung FELDPLATTENPOTENTIOMETER VFP 3-40 Alu Kennr. |
| | | | | M1:5 |
| | | | | Blatt 7 von 7 |