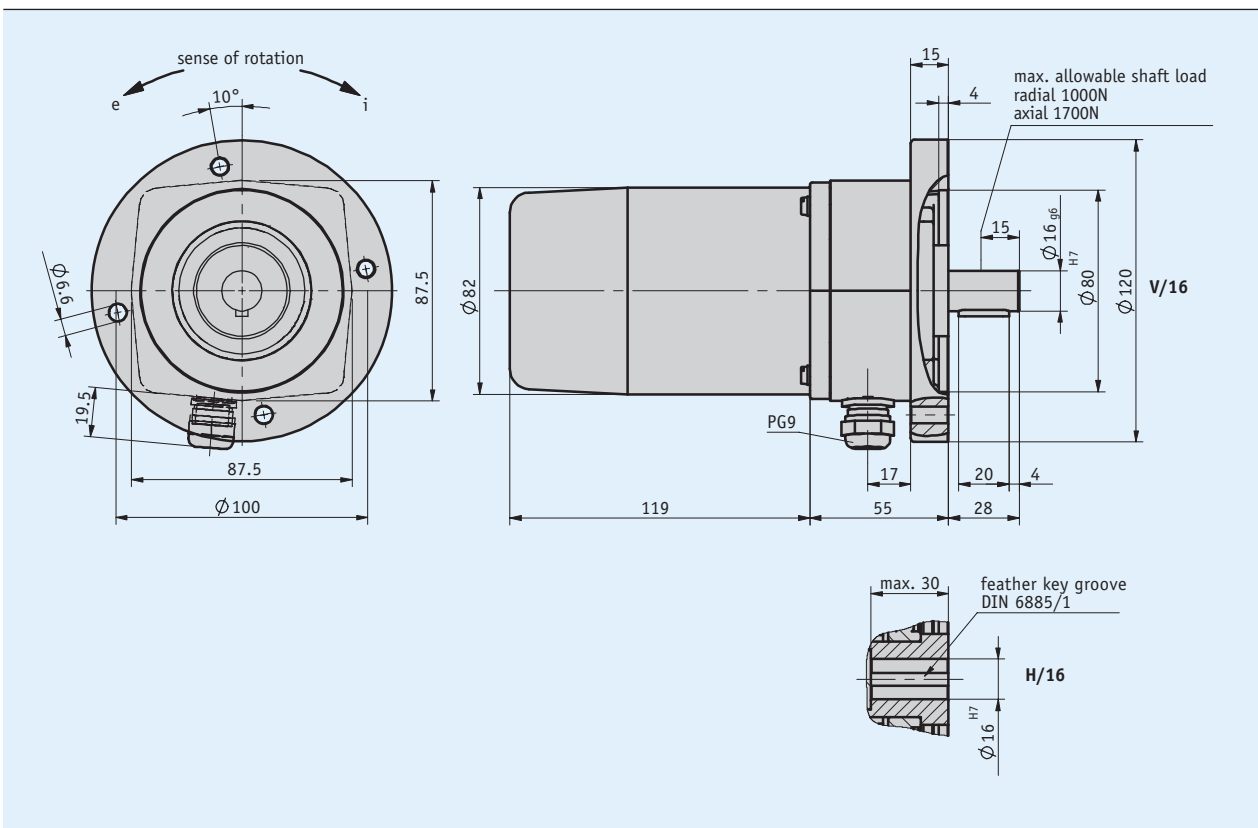
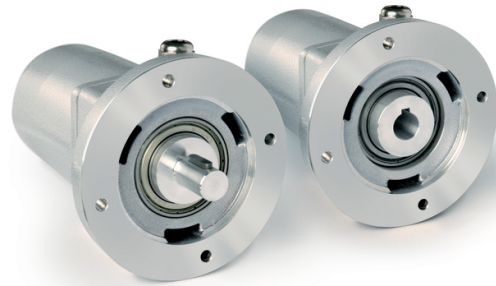


Profile

- Extremely resistant to external influences
- Solid or blind-hole hollow shaft, max. \varnothing 20 mm
- Adaptation to various measurement distances owing to a wide range of gear ratios
- Integrated slip clutch to protect the potentiometer
- Potentiometer, power or voltage output
- IP65 protection category



Mechanical data

Feature	Technical data	Additional information
Shaft	aluminum	IP52
	black-finished steel	IP65
Housing	aluminum	
Gear ratio	0.2 ... 256	
Speed	≤ 500 rpm	depending on the transmission
Shaft load rating	≤ 10000 N	radial
	≤ 17000 N	axial
Potentiometer service life	1×10^6 revolution(s)	

Electrical data

Encoder potentiometer type 01, 1 helix

Feature	Technical data	Additional information
Power rating	1 W at 70 °C	≤30 V
Resistance	5, 10 kΩ	
Resistance tolerance	±10 %	
Standard terminal resistance	0.5 %	
Linearity tolerance	±1 %	
Design	hybride	

Encoder potentiometer type 02, 10 helices

Feature	Technical data	Additional information
Power rating	2 W at 70 °C	≤30 V
Resistance	1, 5, 10 kΩ	
Resistance tolerance	±5 %	
Standard terminal resistance	0.5 %	
Linearity tolerance	±0.25 %	
Design	wire	

Encoder potentiometer type 03, 10 helices

Feature	Technical data	Additional information
Power rating	2 W at 70 °C	≤30 V
Resistance	1, 5 W, 10 kΩ	
Resistance tolerance	±5 %	
Standard terminal resistance	0.5 %	
Linearity tolerance	±0.25 %	
Design	hybride	

Transducer, power output

Feature	Technical data	Additional information
Operating voltage	24 V DC ±20 %	
Output current	4 ... 20 mA	at ≤500 Ω load

Transducer, voltage output

Feature	Technical data	Additional information
Operating voltage	24 V DC ±20 %	
Output voltage	0 ... 10 V	

System data

Feature	Technical data	Additional information
Measuring range	340° ±5° (mechanical full-length)	potentiometer type 01
	3600° +10°	potentiometer types 02, 03

Ambient conditions

Feature	Technical data	Additional information
Ambient temperature	-20 ... 80 °C	
Relative humidity		condensation inadmissible
EMC	EN 61000-6-2	interference resistance / immission
	EN 61000-6-4	emitted interference / emission
Protection category	IP52, IP65	EN 60529

Pin assignment

Without transducer

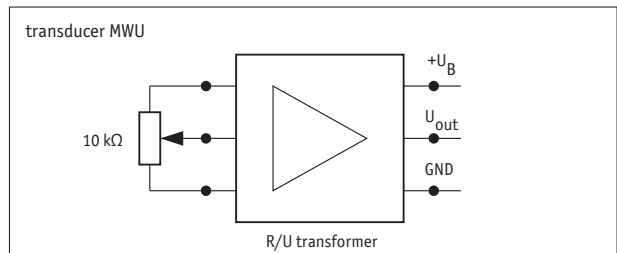
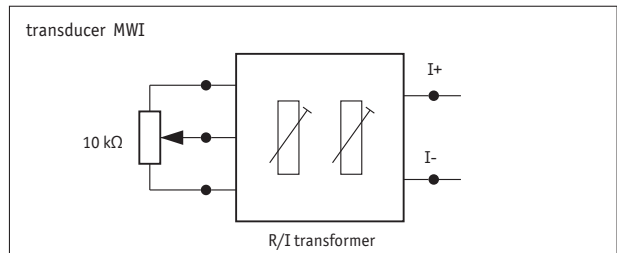
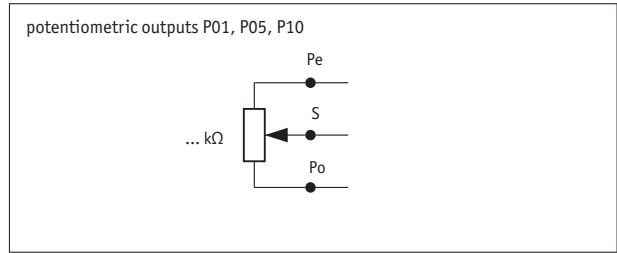
Signal	Terminal
Po	1
Pe	2
S	3

MWI transducer

Signal	Terminal
I+	1
I-	2
nc	3

MWU transducer

Signal	Terminal
+24 V DC	1
GND	2
Uout	3



Order

■ Gear ratio calculation

$$\text{Formula: } i_1 = \frac{n \times 360^\circ}{\alpha}$$

n = number of revolutions on the driving shaft
 α = potentiometer angle of rotation
 340° with 1-coil potentiometer
 3600° with 10-coil potentiometer
 i1 = order feature for gear ratio

If the calculated ratio "i1" is the same as a value in the ordering table for the "ratio" feature, but this is not available, select the next highest ratio.

■ Ordering table

Feature	Ordering data	Specification	Additional information
Gear ratio	... A	0.1, 0.166, 0.25, 0.333, 0.5, 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 24, 30, 40, 55 others on request	
Drive shaft	H/20 H/16 V/20 V/16 B	hollow shaft ø20 mm hollow shaft ø16 mm solid shaft ø20 mm solid shaft ø16 mm	
Potentiometer type	01 02 03 C	1 helix, hybrid 10 helices, wire 10 helices, hybrid	only for P05 or P10 analog output
Analog output	MWI MWU P01 P05 P10 D	transducer 4 ... 20 mA transducer 0 ... 10 V potentiometer 1 kΩ potentiometer 5 kΩ potentiometer 10 kΩ	
Sense of rotation	e i E	no information required counter-clockwise ascending values clockwise ascending values	only for P01, P05, or P10 analog output only for MWI or MWU analog output only for MWI or MWU analog output
Protection category	52 65 F	IP52 IP65	

■ Order key

GP04/1 - - - - - -

A B C D E F

Scope of delivery: GP04/1, Mounting instructions

Accessories:
Electronic display MA50

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