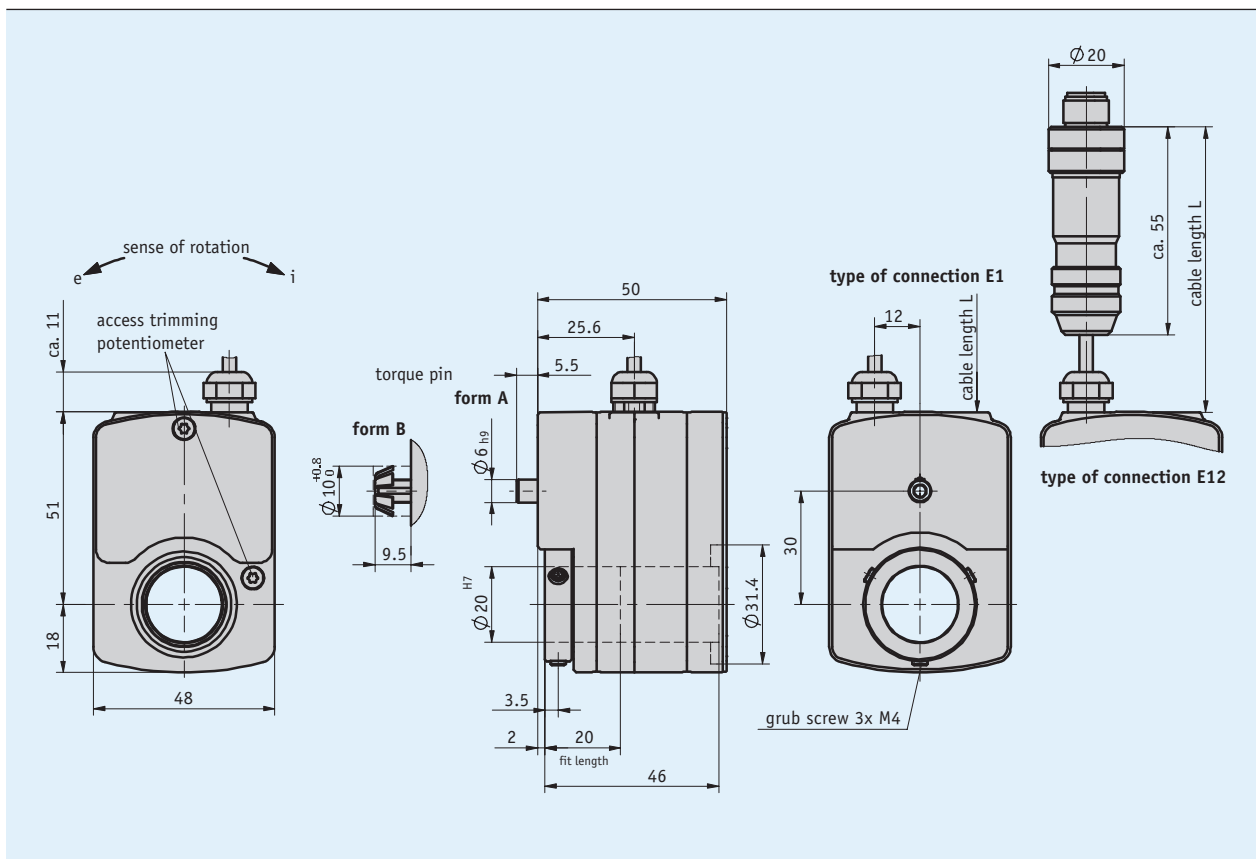


Profile

- Resistant to external influences
- Through hollow shafts up to $\varnothing 20$ mm
- Adaptation to various measurement distances owing to a wide range of gear ratios
- Integrated slip clutch to protect the potentiometer
- Compact design
- Potentiometer, power or voltage output
- IP68 protection category with oil filling possible
- Easy mounting



Mechanical data

Feature	Technical data	Additional information
Shaft	stainless steel	
Housing	zinc die-cast	
Gear ratio	0.2 ... 244	
Speed	≤ 500 rpm	depending on transmission
Shaft load rating	≤ 400 N	radial
	≤ 150 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	1, 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	0.2 %	
Linearity tolerance	±0.25 %	
Design	wire	

Encoder potentiometer type 03/0.1, 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	0.2 %	
Linearity tolerance	±0.1 %	
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, 03/0.1

Ambient conditions

Feature	Technical data	Additional information
Ambient temperature	-20 ... 80 °C	without oil fill
	-10 ... 80 °C	with oil fill
Relative humidity		condensation inadmissible
EMC	EN 61000-6-2	interference resistance / immission
	EN 61000-6-4	emitted interference / emission
Protection category	IP52, IP65, IP68	EN 60529

Pin assignment

Without transducer

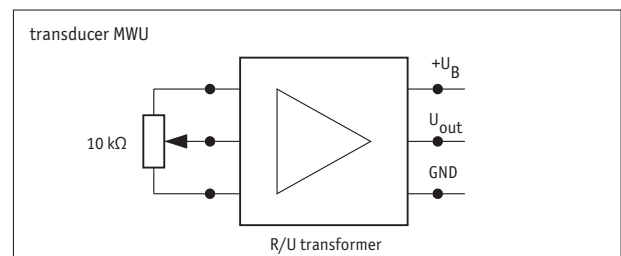
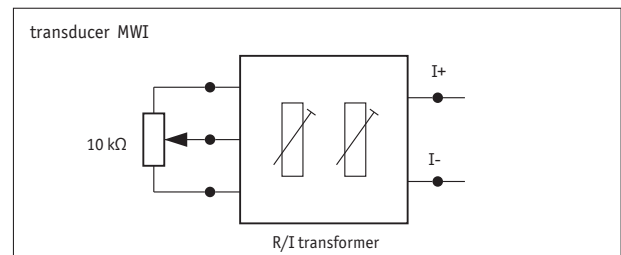
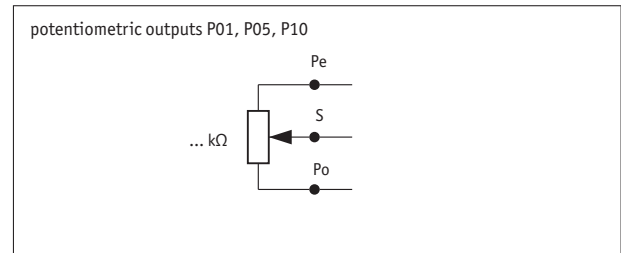
Signal	Cable color E1	PIN E12
Po	white	1
S	green	2
Pe	brown	3
nc	-	4

MWI transducer

Signal	Cable color E1	PIN E12
I-	white	1
nc	-	2
I+	brown	3
nc	-	4

MWU transducer

Signal	Cable color	PIN E12
GND	white	1
Uout	green	2
+24 V DC	brown	3
nc	-	4



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	0.184, 0.27, 0.361, 0.740, 1, 2, 2.503, 3.048, 4, 5.213, 6, 8.003, 10, 12, 15.238, 20, 24.167, 40.034, 45.494, 53.333, 58.333, 76.190, 100.392, 150.036 others on request	
Torque pin/form	A B	form A, cylindrical pin form B, for tolerance compensation	
Potentiometer type	01 02 03/0.1	C 1 helix, hybrid 10 helices, wire 10 helices, hybrid, linear tolerance ±0.1 %	
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 e i	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
Type of connection	E1 E12	F open cable ends connector, M12	
Cable length	... G	00.3 ... 20.0 m, in intervals of 0.1 m	
Protection category	IP52 IP65 IP68	H IP52 IP65 IP68	with oil filling, against condensation
Number of revolutions	... I	no information required, adjustable by customer 0.17, 0.25, 0.333, 0.6, 1, 2.5, 4, 5, 10, 12, 20, 24, 40, 60, 75, 100 others on request	except with IP68 only with IP68 type of protection and analog output MWI, MWU only with IP68 type of protection and analog output MWI, MWU

■ Order key



Scope of delivery: GP09, Mounting instructions

Accessories:

Electronic display MA50
 Mating Connector Overview
 Mating connector, 4-pole, socket

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