

Geared potentiometer GP02

Geared potentiometer for absolute position sensing with analog output. Easy handling and compact design.



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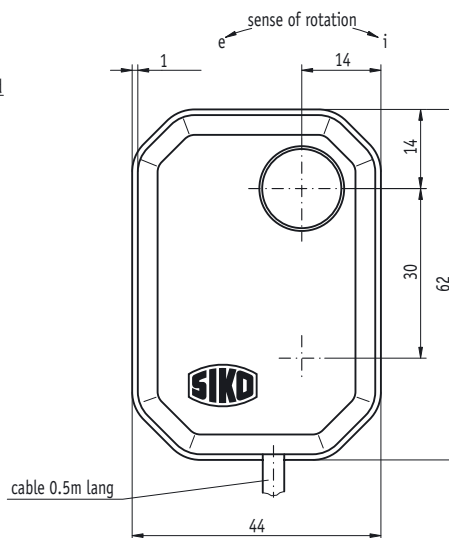
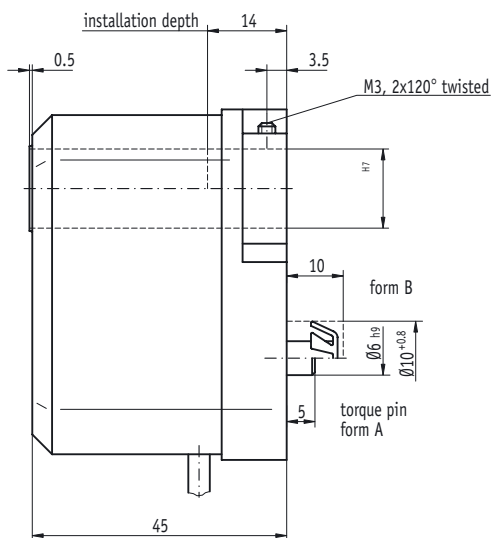
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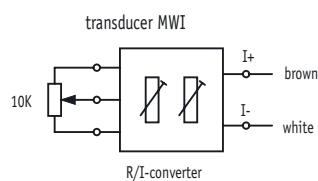
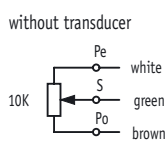


Features:

- through hollow shaft max. 20 mm
- high flexibility thanks to different gear ratios
- compact low-cost design
- optional interface: current 4... 20 mA



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Geared potentiometer GP02

Feature	Order text	Technical data	Additional information
Gear ratio		0.2... 128	
Rotational speed		max. 500 min ⁻¹	depending on gear ratio
Supply voltage		24 V DC ± 20 %	transducer MWI (at ≤ 500 Ohm)
Working temperature		- 0 °C... + 80 °C	
Condensation		not permitted	
Service life - shaft movements		1 x 10 ⁶ (2 x 10 ⁶)	
Test mark/interference prot. class		CE	3 acc. to IEC 801
Type of protection		IP52	acc. to DIN VDE 0470
Housing		plastic	
Shaft		blued steel	

Potentiometer electrical values

Resistance tolerance		± 5 %	
Linearity tolerance		± 0.25 %	
Load rating		1 W at 70 °C (potentiometer type 01,02)	2 W at 70 °C (potentiometer type 03)
Range of rotation		340° ± 5°	1 filament (mechanically straight through)
		3600° + 10°	10 filaments
Standard terminal resistor		0.5 % or 1 Ohm	(the higher value applies)

Ordering data

Gear ratio	...	A	max. 128 others on request	
Drive shaft	H/14	B	hollow shaft, ø14 mm	standard
Torque support (form)	A	C	cylindrical pin for tolerance compensation	
Potentiometer type	01	D	1 filament	
	02		10 filament/ wire	
	03		10 filament	
Resistance kOhm	1	E	1 kOhm	
	2		2 kOhm	
	5		5 kOhm	
	10		10 kOhm	
Transducer	without	F	without transducer	
	with		with transducer, 4 ... 20 mA	
Sense of rotation	i	G	see drawing	only with MWI
	e		see drawing	only with MWI
Cable length (in m)	1.0	H	0.2 - 15.0 m	standard

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Your ordering data: GP02 - A - B - C - D - E - F - G - H

Geared potentiometer GP03/1

Compact rotary encoder for absolute position



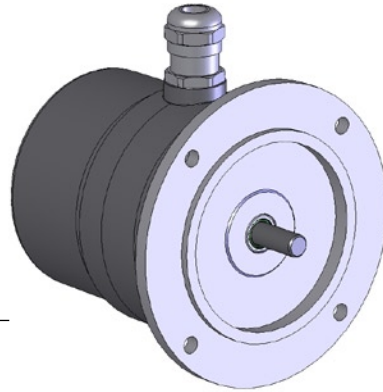
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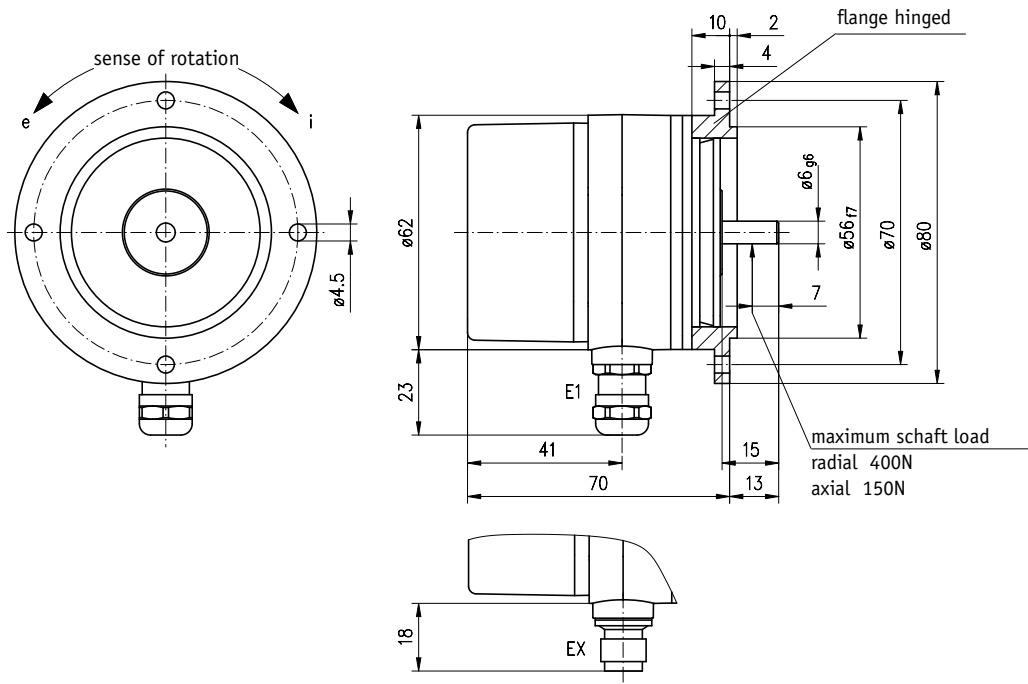
Features:

- solid shaft 6mm
- adaptation to various measurement distances thanks to the broad range of available gear ratios
- compact design
- integrated slip clutch for potentiometer protection
- high protectiontype

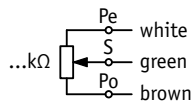
Feature	Order Text	Additional information
Gear ratio	0.2 ... 256 A	
Drive shaft	V/6 B	Solid shaft ø
Type of connection	E1 EX C	Cable gland for connector M12
Potentiometer type	01 02 03 D	1 filament 10 filament/wire 10 filament
Analog output	MWI MWU P01 P05 P10 E	Measurement transducer 4 ... 20mA Measurement transducer 0 ... 10V Potentiometer 1k0hm Potentiometer 5k0hm Potentiometer 10k0hm
Counting direction	i e F	right rising left rising (only with MWI oder MWU) (only with MWI oder MWU)

Your ordering: - - - - - -

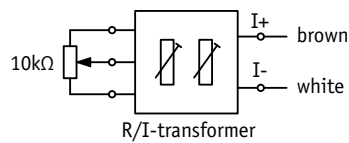
Geared Potentiometer GP03/1



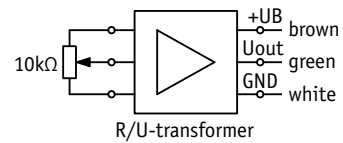
without Measurement transducer



Measurement transducer MWI



Measurement transducer MWU



Technical data

Gear ratio	0.2 ... 256
Speed	max.500 min ⁻¹
Power supply	24 VDC ±20%
Working temperature	-20°C ... +80°C
Condensation	not permitted
Service life-operations	1 x 10 ⁶ (2 x 10 ⁶)
Certification/rotection class	CE
Protection	IP65
Housing	reinforced plastic / aluminium
Shaft	special steel

Additional information

depending on gear ration

3 corresponding to IEC 801 according to DIN VDE 0470

Electrical data Potentiometer:

Resistance tolerance	±5%	
Linearity tolerance	±0.25% (Potentiometer Typ 01, 02, 03)	
Load capacity	1W bei 70°C (Potentiometer Typ 01) 2W bei 70°C (Potentiometer Typ 02, 03)	
Range of rotation	340° ±5° 3600° ±10°	Potentiometer Typ 01 (mechanically racing) Potentiometer Typ 02, 03
Standard residual end pont resistance	0.5% oder 1 Ohm	(whichever value is higher)

Geared potentiometer GP04

Robust rotary encoder for absolute position sensing, optionally with solid or hollow shaft, potentiometer or current output.



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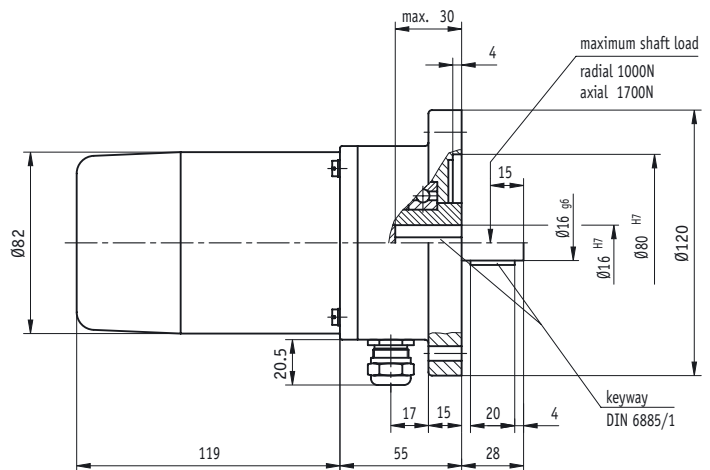
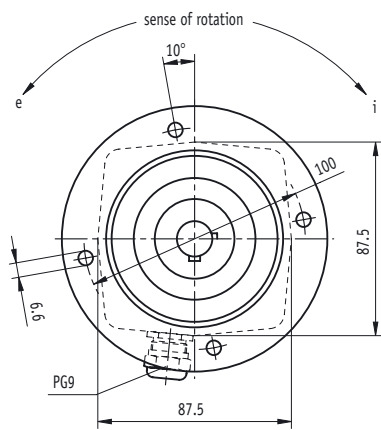
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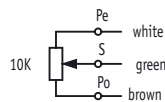


Features:

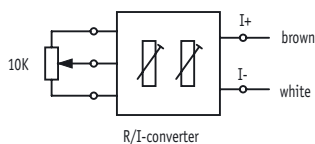
- solid / blind-hole hollow shaft max. 20 mm
- adaptation to various measurement distances thanks to the broad range of available gear ratios
- very robust design
- integrated slip clutch for potentiometer protection
- optional current interface 4... 20 mA
- optional IP65 type of protection for critical environmental conditions



without transducer



transducer MWI



Geared potentiometer GP04

Feature	Order text	Technical data	Additional information
Gear ratio		0.2... 256	
Rotational speed		max. 500 min ⁻¹	depending on gear ratio
Supply voltage		24 V DC ± 20 %	transducer MWI (at ≤ 500 Ohm)
Working temperature		- 20 °C... + 80 °C	
Condensation		not permitted	
Service life - shaft movements		1 x 10 ⁶ (2 x 10 ⁶)	
Test mark/interference prot. class		CE	3 acc. to IEC 801
Type of protection		IP52, IP65	acc. to DIN VDE 0470
Housing		aluminium	
Shaft		Nirosta stainless steel	

Potentiometer electrical values

Resistance tolerance		± 5 %	
Linearity tolerance		± 0.25 %	
Load rating		1 W at 70 °C (potentiometer type 01,02)	2 W at 70 °C (potentiometer type 03)
Range of rotation		340° ± 5°	1 filament (mechanically straight through)
		3600° + 10°	10 filaments
Standard terminal resistor		0.5 % or 1 Ohm	(the higher value applies)

Ordering data

Gear ratio	...	A	max. 256	others on request
Drive shaft	H/16	B	hollow shaft ø 16 mm	standard
	V/16		solid shaft ø 16 mm	standard
	H/20		hollow shaft ø 20 mm	
	V/10		solid shaft ø 10 mm	
	V/11		solid shaft ø 11 mm	
	V/12		solid shaft ø 12 mm	
	V/20		solid shaft ø 20 mm	
Potentiometer type	01	C	1 filament	
	02		10 filaments/ wire	
	03		10 filaments	
Resistance kOhm	1	D	1 kOhm	
	2		2 kOhm	
	5		5 kOhm	
	10		10 kOhm	
Transducer	OMW	E	without	standard
	MMW		with	current interface 4... 20mA
Sense of rotation	i	F	see drawing	only with transducer
	e		see drawing	only with transducer
Type of protection	IP52	G		standard
	IP65			

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Your ordering data: GP04 - A - B - C - D - E - F - G

Geared Potentiometer GP09

Geared Potentiometer as an absolute encoder with analog output. Compact dimensions and easy handling with a 20mm hollow shaft.



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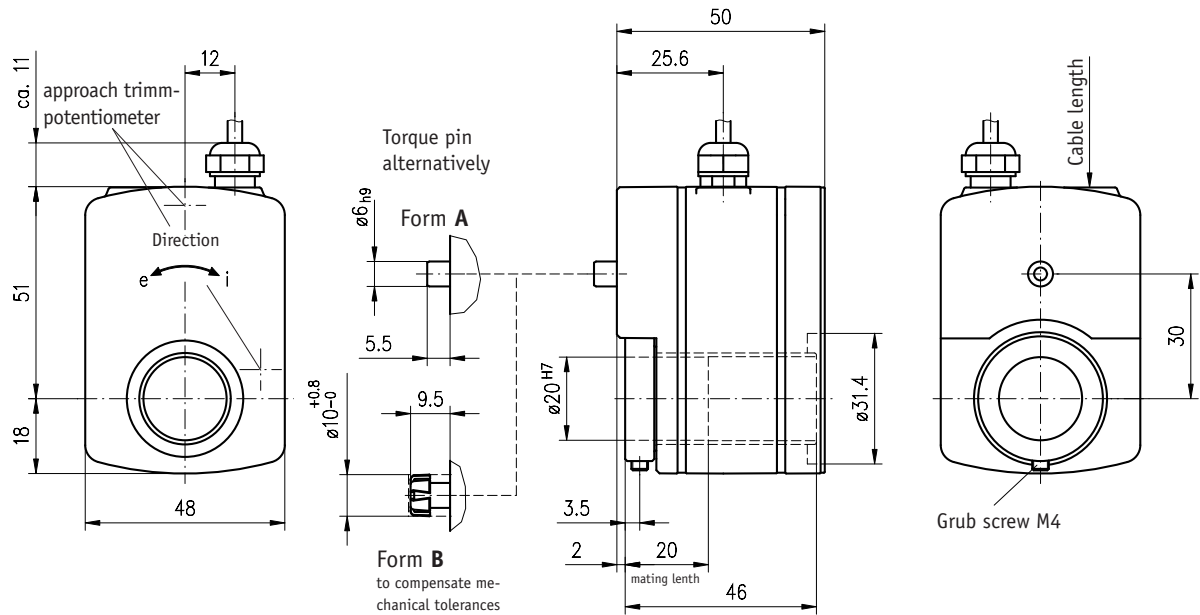
Features:

- Through-going hollow shaft max. 20mm
- High flexibility with several gear ratios
- Compact dimensions
- With integral sliding clutch to protect the potentiometer
- 4...20mA output as an option
- Protection class IP68 with oil-filled version for critical applications as an option

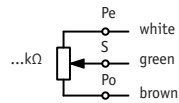
Feature	Order Text	Additional information
Gear ratio	max. 244 A	
Hollow shaft diam. (mm)	20 B	Standard
Torque support (form)	A C 6mm Pin	
	B C Compensation of mechanical tolerances	
Potentiometer type	01 D 1-turn	
	02 D 10-turn	
	03/0,1 D 10-turn lin. tol. ±0.1	
Analog output	MWI E with transducer 4...20mA	
	MWU E with transducer 0...10V	
	P01 E 0 ... 1kΩ	Potentiometer's resistance
	P05 E 0 ... 5kΩ	Potentiometer's resistance
	P10 E 0 ... 10kΩ	Potentiometer's resistance
Counting direction	i F	(only MWI or MWU)
	e F	(only MWI or MWU)
	/ F	(only P01, P05 ...)
Cable length (m)	1.0 G 0.5–20.0 m	Standard
Type of protection	IP52 H	Standard
	IP65 H	
	IP68 H Oil-filled version against condensation	
Revolution max/min.	... I	(only IP68 with transducer)

Your ordering: GP09 - A - B - C - D - E - F - G - H - I

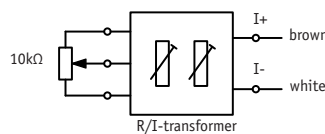
Geared Potentiometer GP09



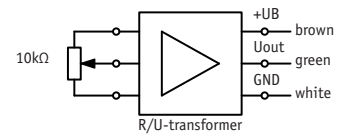
without Measurement transducer



Measurement transducer MWI



Measurement transducer MWU



Technical data

Gear ratio	0,2 ... 244	
Speed	max. 500 min ⁻¹	depending on gear ratio
Power supply	24 VDC $\pm 20\%$	
Working temperature	24 VDC $\pm 20\%$ -20°C ... +80°C -10°C ... +80°C	Transducer MWI (with working resistance $\leq 500\Omega$) without oil-filling with oil-filling
Condensation	not permitted	
Service life-operations	1×10^6 (2×10^6)	
Certification/protection class	CE	3 corresponding to IEC 801 according to DIN VDE 0470
Protection	IP52, IP65, IP68	
Housing	Zinc die-casting	
Shaft	stainless steel	
Electrical data Potentiometer:		
Resistance tolerance	$\pm 5\%$	
Linearity tolerance	$\pm 0,25\%$ (Type 01, 02); $\pm 0,1\%$ (Type 03/0,1)	
Load capacity	1W at 70°C	
Range of rotation	340° $\pm 5^\circ$ 3600° $\pm 10^\circ$	1-turn (mechanically razing) 10-turn
Standard residual end point resistance (whichever value is higher)	0,5% or 1 Ω	

Additional information

Geared potentiometer GP43

Compact rotary encoder for absolute position sensing with integrated camshaft gear. Versions with potentiometer or current output are available.



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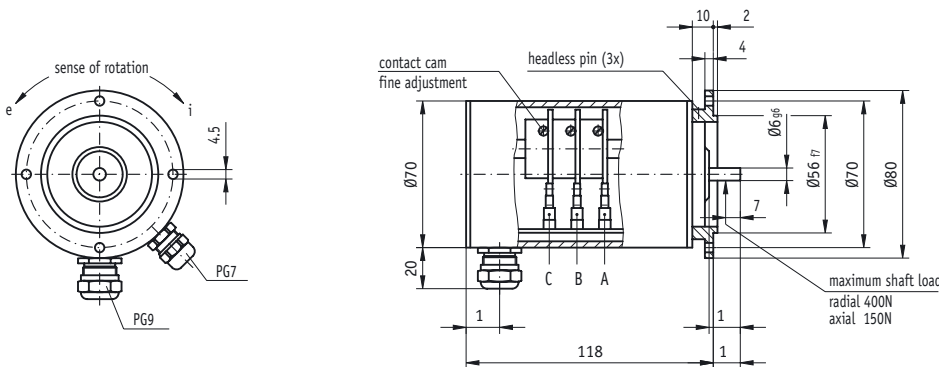
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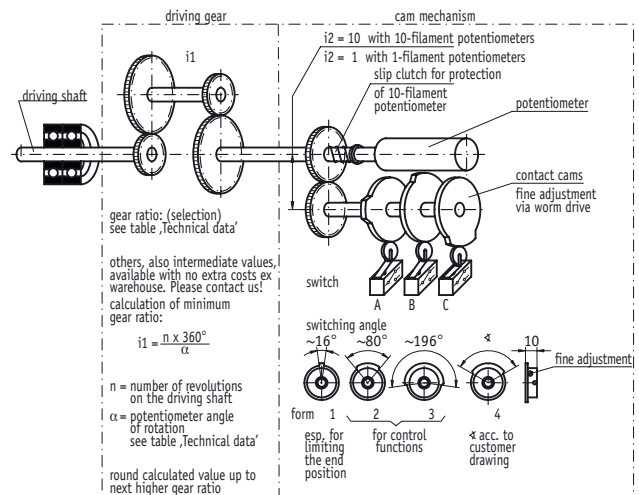
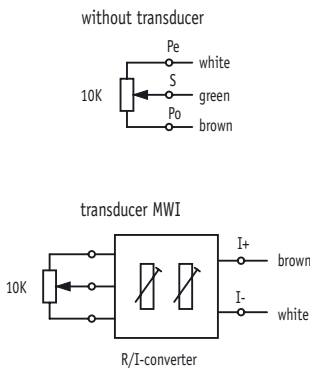


Features:

- solid shaft 6 mm
- adaptation to various measurement distances thanks to the broad range of available gear ratios
- compact design
- integrated slip clutch for potentiometer protection
- optional current interface 4... 20 mA
- optional IP65 type of protection for critical environmental conditions
- up to 3 cam switch outputs freely adjustable



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Geared potentiometer GP43

Feature	Order text	Technical data	Additional information
Gear ratio		0.2... 256	
Rotational speed		max. 500 min ⁻¹	depending on gear ratio
Supply voltage		24 V DC ± 20 %	transducer MWI (at ≤ 500 Ohm)
Working temperature		- 20 °C... + 80 °C	
Condensation		not permitted	
Service life - shaft movements		1 x 10 ⁶ (2 x 10 ⁶)	
Test mark/interference prot. class		CE	3 acc. to IEC 801
Type of protection		IP52, IP65	acc. to DIN VDE 0470
Housing		aluminium	
Shaft		blued steel	

Potentiometer electrical values

Resistance tolerance		± 5 %	
Linearity tolerance		± 0.25 %	
Load rating		1 W at 70 °C (potentiometer type 01,02)	2 W at 70 °C (potentiometer type 03)
Range of rotation		340° ± 5°	1 filament (mechanically straight through)
		3600° + 10°	10 filaments
Standard terminal resistor		0.5 % or 1 Ohm	(the higher value applies)

Ordering data

Gear ratio	...	A	max. 256	others on request
Drive shaft	V/6	B	solid shaft ø	standard
Potentiometer type	01	C	1 filament	
	02		10 filaments/ wire	
	03		10 filaments	
Resistance kOhm	1	D	1 kOhm	
	2		2 kOhm	
	5		5 kOhm	
	10		10 kOhm	
Transducer	OMW	E	without	standard
	MMW		with	current interface 4... 20 mA
Sense of rotation	i	F	see drawing	only with transducer
	e		see drawing	only with transducer
Contact cams/ form (A B C)	...	G	e.g., 1 2 3	1 = switch, angle 16°; 2 = switch, angle 80°; 3 = switch, angle 196° see drawing
Operating voltage of the contact cam	1	H	over 48 Volt	max. voltage of cam switch
	2		up to 48 Volt	

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Your ordering data: - - - - - - - -

Geared potentiometer GP44

Robust rotary encoder for absolute position sensing, optionally with solid or hollow shaft and integrated camshaft gear, potentiometer or current interface.



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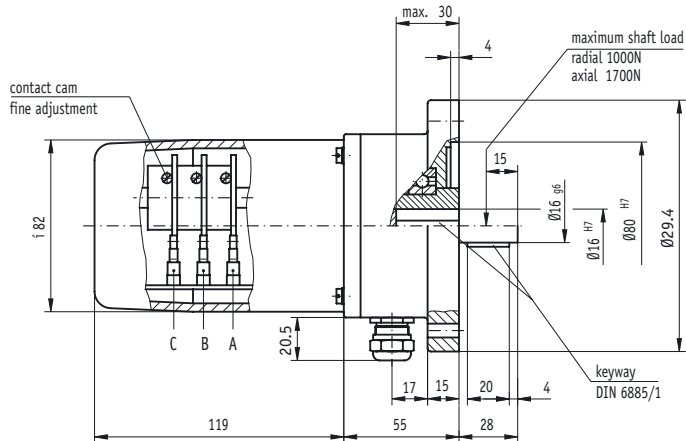
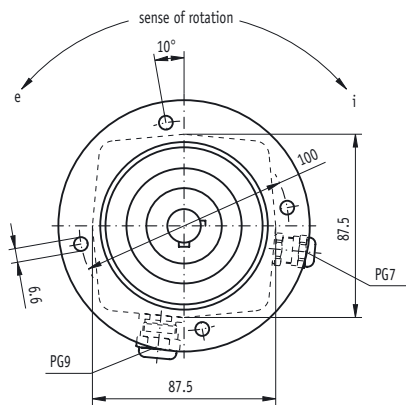
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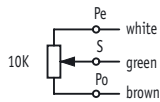


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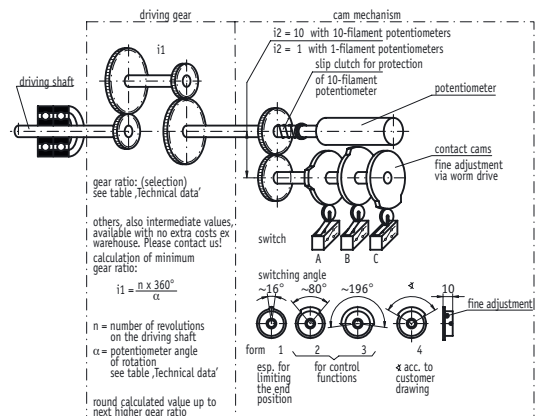
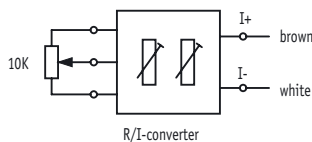
- solid / blind-hole hollow shaft max. 20 mm
- adaptation to various measurement distances thanks to the broad range of available gear ratios
- compact design
- integrated slip clutch for potentiometer protection
- optional current interface 4... 20 mA
- optional IP65 type of protection for critical environmental conditions
- up to 3 cam switch outputs freely adjustable



without transducer



transducer MWI



Geared potentiometer GP44

Feature	Order text	Technical data	Additional information
Gear ratio		0.2... 244	
Rotational speed		max. 500 min ⁻¹	depending on gear ratio
Supply voltage		24 V DC ± 20 %	transducer MWI (bei Bürde ≤ 500 Ohm)
Working temperature		- 20 °C... + 80 °C	
Condensation		not permitted	
Service life - shaft movements		1 x 10 ⁶ (2 x 10 ⁶)	
Test mark/interference prot. class		CE	3 acc. to IEC 801
Type of protection		IP52, IP65	acc. to DIN VDE 0470
Housing		aluminium and plastic	
Shaft		Nirosta stainless steel	

Potentiometer electrical values

Resistance tolerance		± 5 %	
Linearity tolerance		± 0.25 %	
Load rating		1 W at 70 °C (potentiometer type 01,02)	2 W at 70 °C (potentiometer type 03)
Range of rotation		340° ± 5°	1 filament (mechanically straight through)
		3600° + 10°	10 filaments
Standard terminal resistor		0.5 % or 1 kOhm	(the higher value applies)

Ordering data

Gear ratio	...	A	max. 256	others on request
Drive shaft	V/16	B	Solid shaft ø 16 mm	standard
	H/16		hollow shaft ø 16 mm	standard
	H/14		hollow shaft ø 14 mm	
	H/20		hollow shaft ø 20 mm	
Potentiometer type	01	C	1 filament	
	02		10 filaments/ wire	
	03		10 filaments	
Resistance kOhm	1	D	1 kOhm	
	2		2 kOhm	
	5		5 kOhm	
	10		10 kOhm	
Transducer	OMW	E	without	standard
	MMW		with	current interface 4... 20 mA
Sense of rotation	i	F	see drawing	only with transducer
	e		see drawing	only with transducer
Contact cams/ form (A B C)	...	G	e.g., 1 2 3	1 = switch. angle 16°; 2 = switch. angle 80°; 2 = switch. angle 196° see drawing
Operating voltage of the contact cam	1	H	over 48 Volt	max. voltage cam switches
	2		up to 48 Volt	

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Your ordering data: GP44 - A - B - C - D - E - F - G - H