

Special Encoders & Sensors

Magnetic field sensor with magnetic strip

Linear applications

GCI0L



Features

- Magnetic field sensor linear
- Touchless positioning by magnetic strip
- Measuring accuracy 0.0156 mm
- Max. speed of displacement 40 resp. 80 m/s
- 2 channels A 90° B + inverted

Technical data

Features	GCI0L.0600201 Push-pull	GCI0L.0600202 Push-pull	GCI0L.0220201 RS422	GCI0L.0220202 RS422
Supply voltage range	8...30 VDC	8...28 VDC	5 VDC ±5 %	5 VDC ±5 %
Consumption max.	35 mA	30 mA	55 mA	20 mA
Circuit current max.	30 mA	50 mA	RS422 specific	RS422 specific
Output frequency max.	160 kHz	3.2 MHz	160 kHz	3.2 MHz
Voltage drops	<4 VDC ($I_{OUT} = 20$ mA)	<2 VDC ($I_{OUT} = 20$ mA)	RS422 specific	RS422 specific
Output levels	Push-pull	Push-pull	TTL (RS422)	TTL (RS422)
Output signal, 90° shift	Track A/B	Track A/B	Track A/ $\bar{A}$ /B/ $\bar{B}$	Track A/ $\bar{A}$ /B/ $\bar{B}$
Short-circuit protected	Yes	Yes	Yes	Yes
Reverse polarity protected	Yes, against GND	Yes, against GND	No	No
Resolution, sensor	0.25 mm	0.0625 mm	0.25 mm	0.0625 mm
Resolution, x4 evaluation	0.0625 mm	0.015625 mm	0.0625 mm	0.015625 mm
Interpolation	8 times *	16 times *	8 times *	16 times *
Operating gap max.	1.0 mm	0.3 mm	1.0 mm	0.3 mm
Temperature range	-25...+85 °C	-25...+85 °C	-25...+85 °C	-25...+85 °C
Materials	Housing: PC	Housing: PC	Housing: PC	Housing: PC
Protection	IP 67	IP 67	IP 67	IP 67
Connection cable PUR	4 x 0.25 mm ² , 2 m	4 x 0.25 mm ² , 2 m	6 x 0.14 mm ² , 2 m	6 x 0.14 mm ² , 2m
Max. speed of displacem.	40 m/s	40 m/s	40 m/s	80 m/s
Magnetic strip	2 mm pole width Z 177.A ...	1 mm pole width Z 177.B ...	2 mm pole width Z 177.A ...	1 mm pole width Z 177.B ...

* inferior interpolation factors upon request

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Ordering part number

GCI0L.0600201	Push-pull, 8...30 VDC, cable 2 m
GCI0L.0600202	Push-pull, 8...28 VDC (highly resolving) cable 2 m

GCI0L.0220201	RS422, 5 VDC $\pm 5\%$, cable 2 m
GCI0L.0220202	RS422, 5 VDC $\pm 5\%$ (highly resolving) cable 2 m

Accessories

Magnetic strip with 2 mm pole width

Operating temperature -10...65 °C (higher on request),
Width 10 mm, height 1.3 +0.1/-0.2 mm
for GCI0L.0600201 and GCI0L.0220201

Z 177.A01	Length 0.3 m
Z 177.A02	Length 1.5 m
Z 177.A03	Length 1 m
Z 177.A04	Length 2 m
Z 177.A05	Length 3 m
Z 177.A06	Length 5 m
Z 177.A07	Length 8 m
Z 177.A08	Length 10 m
Z 177.A09	Length 15 m
Z 177.A10	Length 20 m

Magnetic strip with 1 mm pole width

Operating temperature -10...65 °C (higher on request),
Width 10 mm, height 1.3 +0.1/-0.2 mm,
for GCI0L.0600202 and GCI0L.0220202

Z 177.B01	Length 0.3 m
Z 177.B02	Length 1.5 m
Z 177.B03	Length 1 m
Z 177.B04	Length 2 m
Z 177.B05	Length 3 m
Z 177.B06	Length 5 m
Z 177.B07	Length 8 m
Z 177.B08	Length 10 m
Z 177.B09	Length 15 m
Z 177.B10	Length 20 m

Other lengths available upon request.

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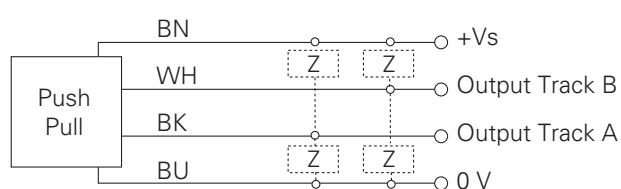
Linear applications

GCIOL

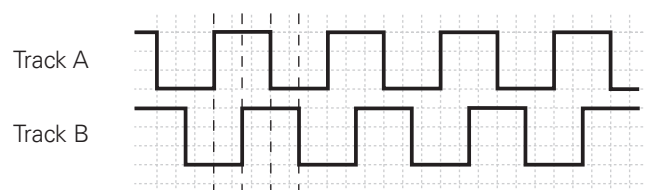
Terminal assignment 2 channels push-pull

Core colour		Assignment
brown	BN	+Vs
blue	BU	GND
black	BK	Track A
white	WH	Track B

2 channels push-pull



Output signals push-pull



2 channels without zero impulse

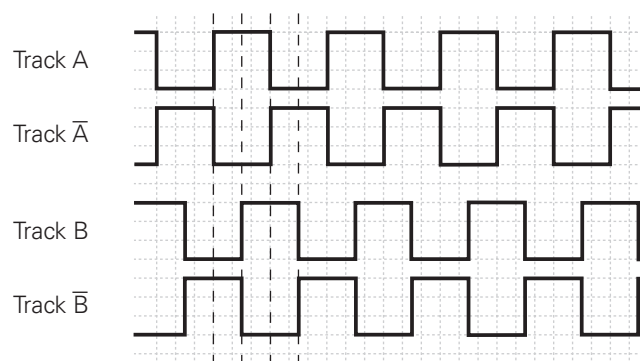
Terminal assignment 2 channels RS422

Core colour		Assignment
brown	BN	+Vs
green	GN	Track A
pink	PK	Track A inv.
yellow	YE	Track B
grey	GY	Track B inv.
white	WH	GND

2 channels RS422



Output signals RS422



2 channels without zero impulse

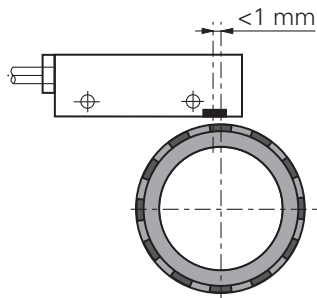
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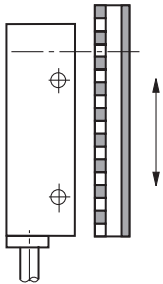
Dimensions



Sensor assembly
also optionally by
special screws (M3).

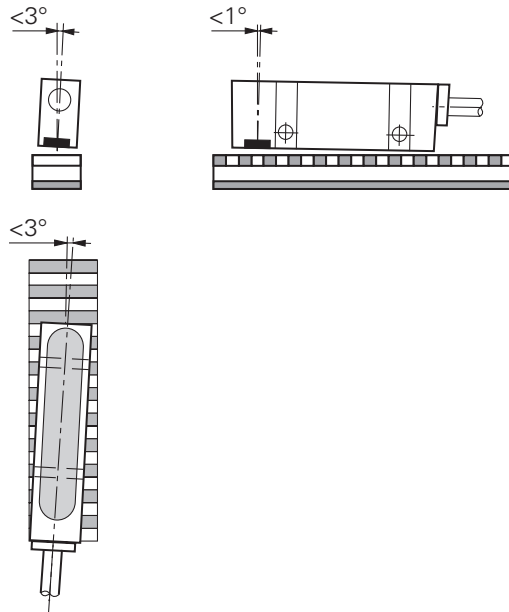
Other cable lengths
on request

Assembling and moving direction



Recommendation for assembly

Angular shift



Operating gap

see technical data (operating gap)

