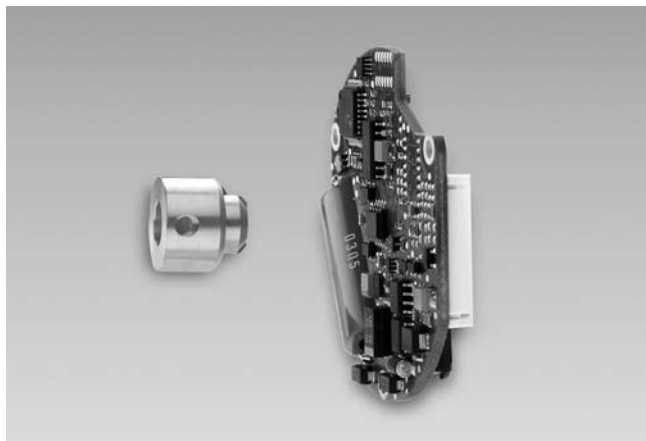


Special Encoders & Sensors

Absolute encoder KIT - SSI

Magnetic multiturn encoder 12 bit ST / 12 bit MT

GCM2K



GCM2K as KIT

Features

- Encoder multiturn / SSI
- Magnetic sensing
- Resolution: singleturn 12 bit, multiturn 12 bit
- Kit for integrating applications
- Cast-capable electronics component
- Support with magnet for shaft assembly
- Electronic setting of zero point
- Extreme compact design

Technical data - electrical ratings

Voltage supply	10...30 VDC
Reverse polarity protection	Yes
Consumption w/o load	≤60 mA (24 VDC)
Initializing time (typ.)	200 ms after power on
Interface	SSI
Steps per turn	4096 / 12 bit
Number of turns	4096 / 12 bit
Absolute accuracy	±1°
Sensing method	Magnetic
Code	Gray or binary
Code sequence	CW/CCW coded by connection
Inputs	SSI clock Control signals UP/ $\overline{\text{DOWN}}$ and zero
Output circuit	SSI data linedriver RS485
Diagnostic functions	Self-diagnosis Code continuity check Multiturn sensing

Technical data - mechanical design

Shaft	Customer-specific
Operating speed	≤6000 rpm (electric)
Operating temperature	-25...+85 °C -40...+85 °C (optional)
Relative humidity	95 % non-condensing
Weight approx.	50 g
E-connection	PCB connector ZHR-12

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Part number

GCM2K. 0 00 01

			E-connection
		00	PCB connector ZHR-12
			Voltage supply / signals
10	10...30 VDC		gray code 22 bit
12	10...30 VDC		binary code 22 bit
20	10...30 VDC		gray code 24 bit
22	10...30 VDC		binary code 24 bit
			Design
0			Circuit board with magnet support

Terminal assignment

Connector	Core colour	Assignment
Pin 1	pink	UP/DOWN
Pin 2	green/grey	Zero setting
Pin 3	white/yellow	internally reserved
Pin 4	violet	Clock-
Pin 5	blue	Clock+
Pin 6	yellow	Data-
Pin 7	white/grey	Data+
Pin 8	brown	UB
Pin 9	brown/green	UB
Pin 10	black/white	GND
Pin 11	red	DATAVALID MT
Pin 12	green/white	GND

Trigger level

SSI	Circuit
SSI-Clock	Optocoupler
SSI-Data	Linedriver RS485

Control inputs	Input circuit
Input level High	>0.7 UB
Input level Low	<0.3 UB
Input resistance	10 kΩ

Diagnostic outputs	Output circuit
	Push-pull circuit-proof
Output level High	>UB -3.5 V (I = -20 mA)
Output level Low	<0.7 V (I = 20 mA)
Load High	<20 mA
Load Low	<20 mA

Accessories

Edgeboard connector (page %S)
Z 186.001 Edgeboard connector, 12-pin with litz 300 mm

Terminal significance

UB	Encoder voltage supply.
GND	Encoder ground connection relating to UB.
Data+	Positive, serial data output of differential linedriver.
Data-	Negative, serial data output of differential linedriver.
Clock+	Positive SSI clock input. Clock+ together with clock- forms a current loop. A current of approx. 7 mA towards clock+ input means logic 1 in positive logic.
Clock-	Negative SSI clock input. Clock- together with clock+ forms a current loop. A current of approx. 7 mA towards clock- input means logic 0 in positive logic.
Zero setting	Input for setting a zero point anywhere within the programmed encoder resolution. The zero setting operation is triggered by a High impulse and has to be in line with the selected direction of rotation (UP/DOWN). Connect to GND after setting operation for maximum interference immunity. Impulse duration ≥ 100 ms.
DATAVALID MT	Diagnostic output. Multiturn sensor supply control. Upon dropping below a defined voltage level the DV MT output is switched to Low.
UP/DOWN	UP/DOWN counting direction input. This input is standard on High. UP/DOWN means ascending output data with clockwise shaft rotation when looking at flange. UP/DOWN-Low means ascending values with counterclockwise shaft rotation.

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GCM2K

Dimensions

