GEFRAN

MK4 CANopen

CONTACTLESS MAGNETOSTRICTIVE LINEAR POSITION TRANSDUCER (CANopen OUTPUT)



Main characteristics

- Absolute measurement of position and speed
- Possibility of one or two cursors simultaneously
- Local intelligence
- Interface: CANopen DS-301 V4.01 Device Profile DS-406 V2.0
- Strokes from 50 to 4000 mm
- Position resolution up to 2μm
- Speed resolution up to 0,01mm/sec
- Linearity error 0.02%
- Repeatability error 0.01mm
- Resistance to vibrations (DIN IEC68T2/6 12g)
- IP67 protection

Contactless linear position transducer with magnetostrictive technology. The absence of electrical contact on the cursor eliminates all wear and guarantees almost unlimited life. The MK4 CANopen integrates a microprocessor to process the measurement and to diagnose the transducer.

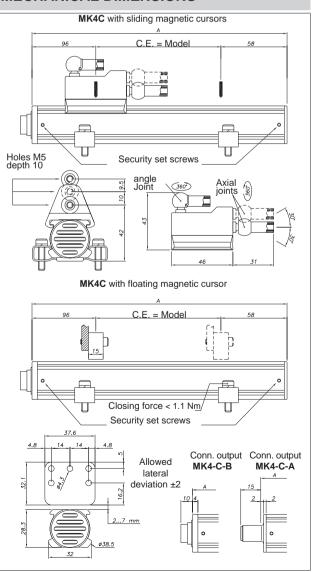
The CAN field bus communication system provides fast and safe

The use of CANopen DS-301 protocol and Device Profile DS-406 provides quick and easy integration of the transducer in the control and automation system.

TECHNICAL DATA

Model	from 50 to 4000 mm
Measurement taken	linear position and speed
Position read sampling time	from 1 to 4 ms (depending on length)
Shock test DIN IEC68T2-27	100g - 11ms - single blow
Vibration DIN IEC68T2-6	12g / 102000Hz
Sliding cursor drag force	≤ 1 N
Shift speed	≤ 10 m/s
Max. acceleration	≤ 100 m/s² shift
Resolution	5 μm (2 μm on request)
Cursor	Floating ring with integrated magnets
Rated power supply	24Vdc ± 20%
Max. power ripple	1 Vpp
Max. input	90mA max
Output signal	CAN bus digital communication
Electrical isolation	500V (D.C. power/ground)
Reverse polarity protection	YES
Overvoltage protection	Varistors on power line
Overcurrent protection	PTC (self-resettable fuse on power line)
Environmental protection	IP67
Work temperature	-30+75°C
Storage temperature	-40+100°C
Coefficient of temperature	Typical 20 ppm/°C

MECHANICAL DIMENSIONS



ELECTRICAL/MECHANICAL DATA

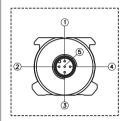
Model		50	75	10	0 13	0 15	50	75	200	225	250	0 3	00 35	0 3	60	400	450	500	550	600	0 65	0 70	00 75	8 0	00 85	90	950	1000	1100	1200	1250	1300	1400	1500
																								1	1750	2000	2250	2500	2750	3000	3250	3500	3750	4000
Electrical stroke (C.E.)	mm																		N	/lod	el													
Independent linearity	± %F.S.		typical 0,02 (Max. 0,04)																															
Max. dimensions (A)	mm																		Mod	del -	+ 15 ₄	4												
Repeatability	mm																		<	< 0,0)1													
Hysteresis	mm																		<	< 0,0	01													

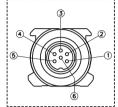
ELECTRICAL CONNECTIONS

OUTPUT MK4C A

OUTPUT MK4C B

OUTPUT MK4C F







Function	Connect. (B) Pin°	Connect. (A) Pin°	Cable (Wire Color)
CAN L	1	5	Blue
CAN H	2	4	White
n.c.	3	1	-
n.c.	4	-	-
Power + Vdc	5	2	Red
DC Ground	6	3	Black

ATTENTION! Do not connect the DC Ground to the ground or to the cable sheathing.

ORDER CODE

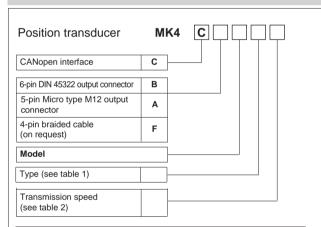


Table 1	Table 1										
Туре	N° Cursors	PD01 (Standard)	PD02 (Standard)								
Α	1	Position 4 Byte whole Speed 2 Byte whole Cams 1 Byte whole	Absence of data								
В	2	Position 1, 4 Byte whole Speed 2 Byte whole Cams 1 Byte whole	Position 2, 4 Byte whole Speed 2 Byte whole Cams 1 Byte whole								

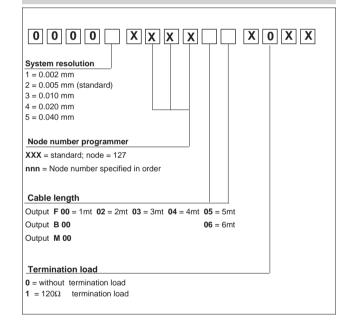
Table 2 - Transmission speed							
1 = 1MBaud	4 = 250 kBaud	7 = 50 kBaud					
2 = 800 kBaud	5 = 125 kBaud	8 = 20 kBaud					
3 = 500 kBaud	6 = 100 kBaud	9 = 10 kBaud					

Mechanical and/or electrical characteristics differing from those in the standard version may be arranged on request

Ex.: MK4-C-B-0400-A-3 0000-2-XXXX-00-X-0-XX

Transducer model MK4, CANopen output, connector B, model 400, type A (one cursor), transmission speed 500 Kbaud

CODE EXTENSION



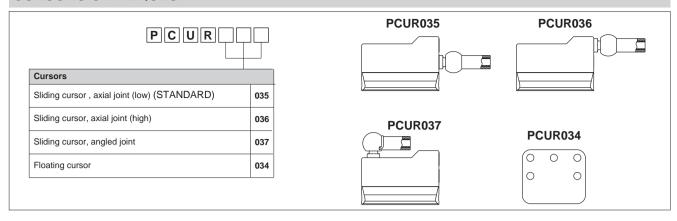
Transmission speed as function of cable length

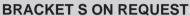
Cable length	Baud Rate (KBaud)	Cable length	Baud Rate (KBaud)				
< 25 m	1000	< 500 m	125				
< 50 m	800	< 1000 m	100				
< 100 m	500	< 1250 m	50				
< 250 m	250	< 2500 m	20 / 10				

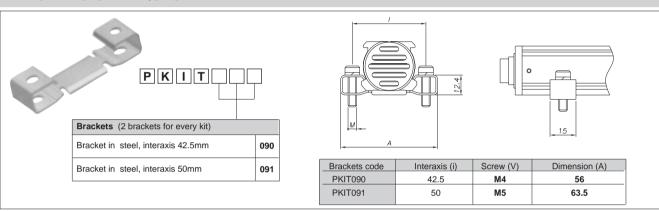
Can Open Data Protocol

SOF	Arbi	Arbitration Control		Data Field	CRC ACK			K	EOF	Interframe Space		
1	11	1	6	0 - 8 Bytes	15	1	1	1	7	≥ 3 Bits		

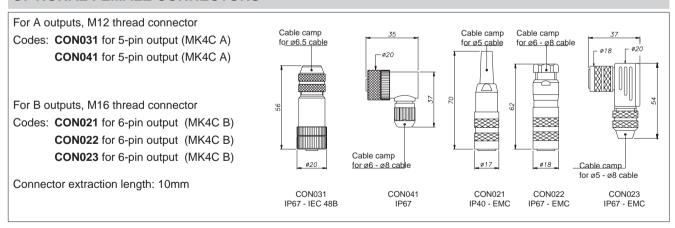
CURSORS ON REQUEST



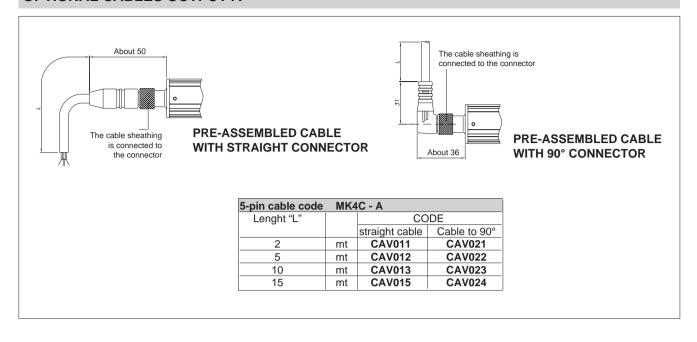




OPTIONAL FEMALE CONNECTORS



OPTIONAL CABLES OUTPUT A



Sensors are manufactured in compliance with:

- EMC 2004/108/CE compatibility directive
- RoHS 2002/95/CE directive

Electrical installation requirements and Conformity certificate are available on our web site: www.gefran.com

GEFRAN spa reserved the right to make aesthetic or functional changes at any time and without notice.

