GEFRAN

MK4 C

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*

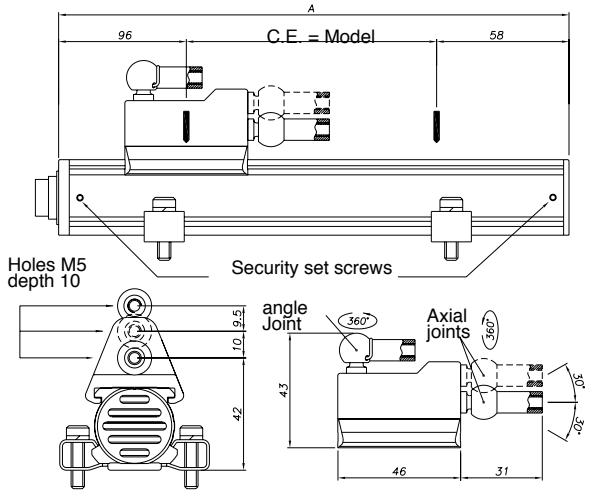
Contactless linear position transducer with magnetostrictive technology. The absence of electrical contact on the cursor eliminates all wear and guarantees almost unlimited life.
The MK4 CANopen integrates a microprocessor to process the measurement and to diagnose the transducer.
The CAN field bus communication system provides fast and safe transmission.
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

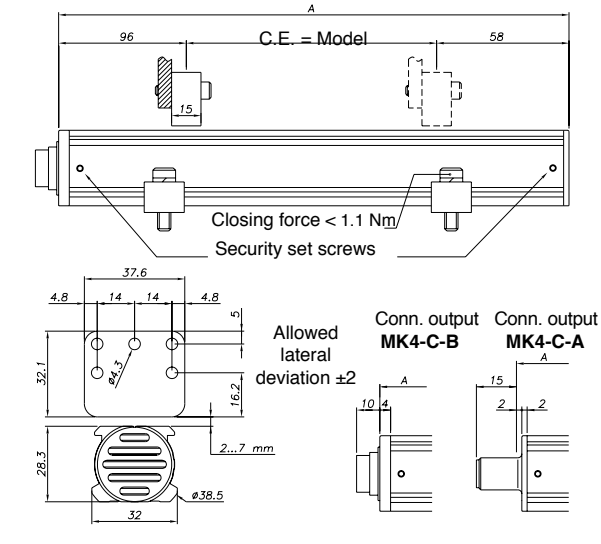
Model	from 50 to 4000 mm
Measurement taken	linear position and speed
Position read sampling time	from 1 to 4 ms (depending on length)
Shock test DIN IEC68T2-27	100g - 11ms - single blow
Vibration DIN IEC68T2-6	12g / 10...2000Hz
Sliding cursor drag force	≤ 1 N
Shift speed	≤ 10 m/s
Max. acceleration	≤ 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

MK4C with sliding magnetic cursors



MK4C with floating magnetic cursor

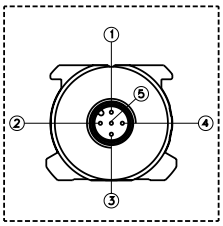


ELECTRICAL/MECHANICAL DATA

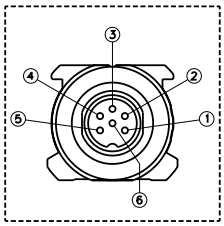
Model		50	75	100	130	150	175	200	225	250	300	350	360	400	450	500	550	600	650	700	750	800	850	900	950	1000	1100	1200	1250	1300	1400	1500
																						1750	2000	2250	2500	2750	3000	3250	3500	3750	4000	
Electrical stroke (C.E.)	mm	**Model**																														
Independent linearity	± %F.S.	typical 0,02 (Max. 0,04)																														
Max. dimensions (A)	mm	**Model + 154**																														
Repeatability	mm	< 0,01																														
Hysteresis	mm	< 0,01																														

ELECTRICAL CONNECTIONS

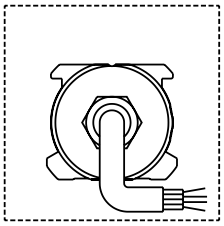
OUTPUT MK4C A



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

Position transducer **MK4** **C** ☐ ☐ ☐ ☐

CANopen interface	**C**
6-pin DIN 45322 output connector	**B**
5-pin Micro type M12 output connector	**A**
4-pin braided cable (on request)	**F**
Model	
Type (see table 1)	
Transmission speed (see table 2)	

Table 1

Type	N° Cursors	PD01 (Standard)	PD02 (Standard)
A	1	Position 4 Byte whole Speed 2 Byte whole Cams 1 Byte whole	Absence of data
B	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

0 0 0 0 ☐ **X X X X** ☐ ☐ **X 0 X X**

System resolution
1 = 0.002 mm
2 = 0.005 mm (standard)
3 = 0.010 mm
4 = 0.020 mm
5 = 0.040 mm

Node number programmer
XXX = standard; node = 127
nnn = Node number specified in order (001...126)

Cable length
Output **F 00** = 1mt **02** = 2mt **03** = 3mt **04** = 4mt **05** = 5mt
Output **B 00** **06** = 6mt
Output **A 00**

Termination load
0 = without termination load
1 = 120Ω termination load

Transmission speed as function ofcable 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

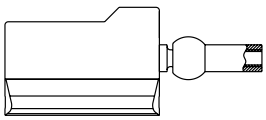
SOF	Arbitration		Control	Data Field	CRC	ACK			EOF	Interframe Space
1	11	1	6	0 - 8 Bytes	15	1	1	1	7	≥ 3 Bits

CURSORS ON REQUEST

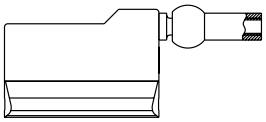
P C U R □ □ □

Cursors	
Sliding cursor , axial joint (low) (STANDARD)	**035**
Sliding cursor, axial joint (high)	**036**
Sliding cursor, angled joint	**037**
Floating cursor	**039**

PCUR035

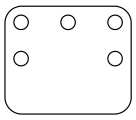


PCUR036



PCUR037

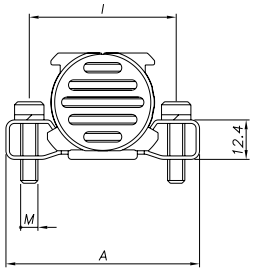
PCUR039

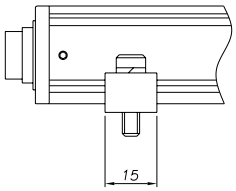


BRACKET S ON REQUEST

P K I T □ □ □

Brackets (2 brackets for every kit)	
Bracket in steel, interaxis 42.5mm	**090**
Bracket in steel, interaxis 50mm	**091**





Brackets code	Interaxis (i)	Screw (V)	Dimension (A)
PKIT090	42.5	**M4**	**56**
PKIT091	50	**M5**	**63.5**

OPTIONAL FEMALE CONNECTORS

For A outputs, M12 thread connector

Codes: **CON031** for 5-pin output (MK4C A)

CON041 for 5-pin output (MK4C A)

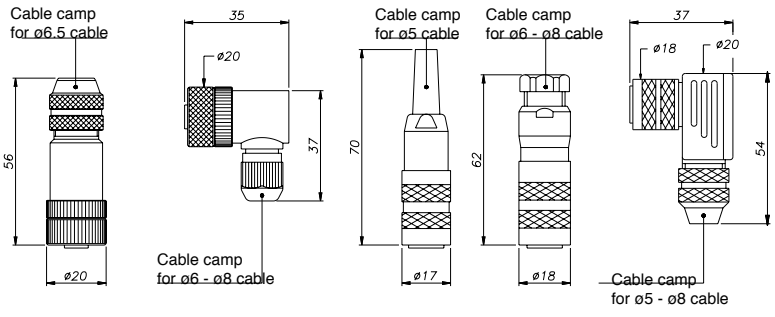
For B outputs, M16 thread connector

Codes: **CON021** for 6-pin output (MK4C B)

CON022 for 6-pin output (MK4C B)

CON023 for 6-pin output (MK4C B)

Connector extraction length: 10mm



CON031 IP67 - IEC 48B

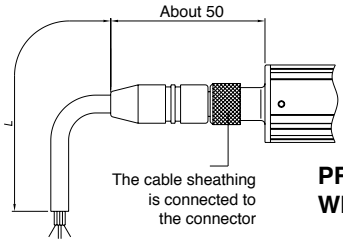
CON041 IP67

CON021 IP40 - EMC

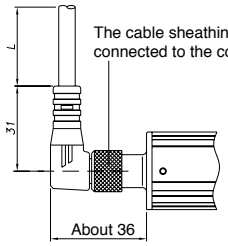
CON022 IP67 - EMC

CON023 IP67 - EMC

OPTIONAL CABLES OUTPUT A



PRE-ASSEMBLED CABLE WITH STRAIGHT CONNECTOR



PRE-ASSEMBLED CABLE WITH 90° CONNECTOR

5-pin cable code	**MK4C - A**		
Lenght "L"		CODE	
		straight cable	Cable to 90°
2	mt	**CAV011**	**CAV021**
5	mt	**CAV012**	**CAV022**
10	mt	**CAV013**	**CAV023**
15	mt	**CAV015**	**CAV024**

Sensors are manufactured in compliance with:
- EMC 2014/30/EU compatibility directive
- RoHS 2011/65/EU directive

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

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