GEFRAN

MK4 A (with ONDA technology)

CONTACTLESS MAGNETOSTRICTIVE LINEAR POSITION TRANSDUCER (ANALOG OUTPUT)

Main characteristics

- *ONDA technology*
- *Optimised mechanical structure*
- *Strokes from 50 to 4000mm*
- *Sliding or floating magnetic cursor*
- *Availability of several analogue outputs (voltage or current) for direct position and speed measurement or reverse measurement (only position)*
- *Single or double cursors models availability*
- *Power supply 24Vdc ±20%*
- *Resistance to vibration (DINIEC68T2/612g)*
- *IP67 protection*
- *Work temperature: -30...+75°C*

Contactless linear position transducer with ONDA magnetostrictive technology.
The absence of electrical contact on the cursor eliminates all wear and guarantees almost unlimited life.
Compact size for simple installation.
Full protection against outside agents for use in harsh environments with high contamination and presence of dust.
Excellent linearity, repeatability, resistance to mechanical vibrations and shocks.

CARATTERISTICHE TECNICHE

Model	From 50 to 4000 mm
Measurement taken	Displacement / Speed
Position read sampling time (typical)	From 0,5 ms to 3 ms (depending on stroke)
Speed measurement range	min 0 .. 0,1 m/s max 0 .. 10 m/s
Accuracy speed	< 2% (in all F.S.)
Shock test DIN IEC68T2-27	100g - 11ms - single shock
Vibrations DIN IEC68T2-6	12g / 10...2000Hz
Displacement speed	≤10 m/s
Max. acceleration	≤ 100 m/s² displacement
Resolution	16 bit (max electrical noise 5 mVpp)
Cursor (see note)	Sliding cursor Floating separate cursor
Working temperature	-30...+75°C
Storage temperature	-40...+100°C
Coefficient of temperature	0.005% F.S. / °C
Protection	IP67

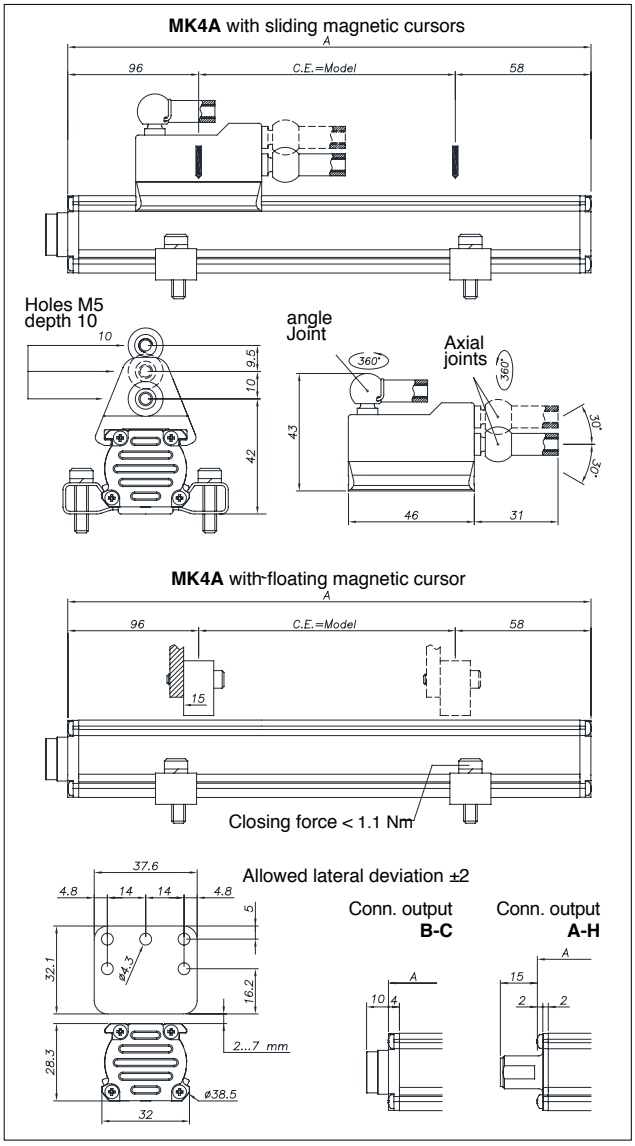
Note: 1) For strokes > 2500 mt use sliding or floating cursors with max. distance of 4mm
2) For multi-cursor versions, the cursors have to work under the same distance and temperature conditions

ELECTRICAL DATA

Output signal	0...10V (**N/P/Y**)	4...20mA (**E/F/H**) 0...20mA (**B/C/D**)
Nominal power supply	24 Vdc ±20%	24 Vdc ±20%
Max. power ripple	1Vpp	1Vpp
Max. consumption	70mA	90mA
Max. output load	5kΩ	< 500Ω
Max. output noise	< 5mVpp	< 5mVpp
Max. output value	12V	30mA
Alarm output value	10.5V	21mA
Electrical isolation	500V (*)	500V (*)
Protection against polarity inversion	Yes	Yes
Protection against overvoltage	Yes	Yes
Protection against power supply in output	Yes	Yes

(*) It includes a 30V 0,4J voltage suppressor

MECHANICAL DIMENSIONS

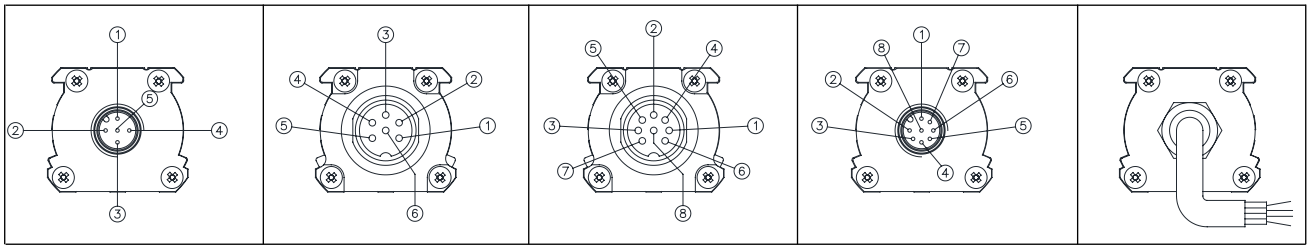


ELECTRICAL / MECHANICAL DATA

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
Sampling time	ms	0,5	1	1,5	2	3
Electrical stroke	mm	Model				
Independent linearity	±%F.S.	Typical : ≤ ± 0,01 % FS (min ± 0,060 mm) with sliding cursor max : ≤ ± 0,02 % FS with floating cursor at a distance between 2 and 5 mm max : ≤ ± 0,04 % FS with floating cursor at a distance between 5 and 7 mm				
Max.dimensions (A)	mm	Modell +154				
Repeatability	mm	<0,01 (limited by the resolution of the output value)				
Hysteresis	mm	<0,01 (limited by the resolution of the output value)				

ELECTRICAL CONNECTIONS

OUTPUT MK4A A **OUTPUT MK4A B** **OUTPUT MK4A C** **OUTPUT MK4A H** **OUTPUT MK4A F**



	CONNECTORS				CABLES	OPTIONAL CABLES FOR	
Function	**MK4A-A**	**MK4A-B**	**MK4A-C**	**MK4A-H**	**MK4A-F**	**MK4A-A**	**MK4A-H**
	5 pin M12	*6 pin M16*	*8 pin M16*	*8 pin M12*	*Standard cable*	*pre-assembled 5 pin*	*pre-assembled 8 pin*
Output cursor 1 0...10V 4...20mA 0...20mA	1	1	5 (1*)	5	Grey	Brown	Green
GND ***Output cursor 1*** (0V)	2	2	2	1	Pink	White	Yellow
Inverse output cursor 1 ***Output cursor 2*** ***Output speed*** 0...10V 4...20mA 0...20mA	3	3	3	3	Yellow	Blue	Pink
GND ***Output cursor 1*** ***Output cursor 2*** ***Output speed*** (0V)	2	4	6	2	Pink	White	Grey
Power supply+	5	5	7	7	Brown	Grey	Brown
Power supply GND	4	6	8	6	White	Black	Blue
n.c.	-	-	4	4	-	-	Red
n.c.	-	-	1(5*)	8	-	-	White

(*) = for version 4...20mA / 0...20mA

The transducer case must be grounded with the cable sheathing on the control system side only.

ORDER CODE

Position transducer M K 4 A □ □ □ □ □ □

Analog output	A

Connector	
M12 5-pin connector output	A
Available on request	
DIN45322 6-pin connector output	B
DIN45326 8-pin connector output	C
M12 8-pin connector output	H
PVC cable output	F

Model

Output		
0...10Vdc	1 cursor	N
0...10Vdc	1 cursor, position and speed	P
0...10Vdc	2 cursors (min. stroke 360mm)	Y
4...20mA	1 cursor	E
4...20mA	1 cursor, position and speed	F
4...20mA	2 cursors (min. stroke 360mm)	H
Available on request		
0...20mA	1 cursor	B
0...20mA	1 cursor, position and speed	C
0...20mA	2 cursors (min. stroke 360mm)	D
0...+5Vdc	1 cursor	K

0 0 0 0 X 0 0 0 X 0 0 X 0 X X

Output of speed
Only for analogic output option C, F, P
Maximum measurable speed: 0.1...10.0 m/s
00.0 Function not required

00	B, A, C, H Outputs
Output F cable length	
00	1 m
05	5 m
10	10 m
15	15 m

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

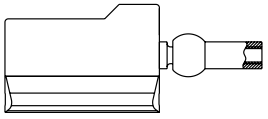
Es.: MK4-A-B-0400-N, PKIT090, PCUR035
Transducer model MK4, analog output, 6-pin connector, model 400, 0...10Vdc output, PKIT090 brackets, PCUR035 standard cursor.

CURSORS ON REQUEST

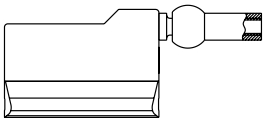
P C U R □ □ □

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

PCUR035

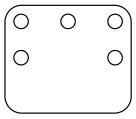


PCUR036



PCUR037

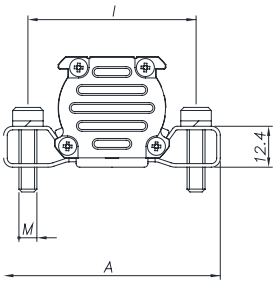
PCUR039

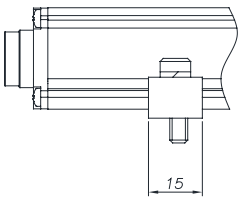


BRACKET S ON REQUEST

P K I T ☐ ☐ ☐

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





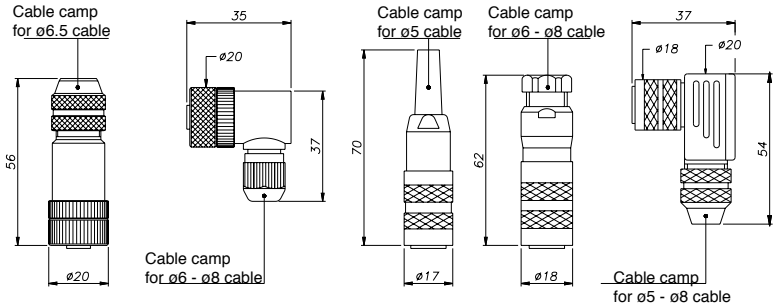
Brackets code	Interaxis (i)	Screw (V)	Dimension (A)
PKIT090	42.5	**M4**	**56**
PKIT091	50	**M5**	**63.5**

OPTIONAL FEMALE CONNECTORS

For A-H outputs, M12 thread connector
Code: **CON031** for 5-pin output (MK4A A)
CON041 for 5-pin output (MK4A A)
CON035 for 8-pin output (MK4A H)
CON042 for 8-pin output (MK4A H)

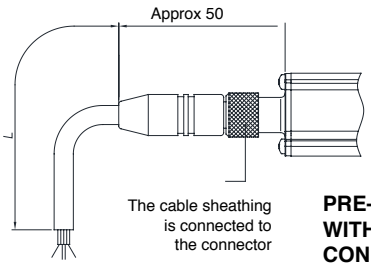
For B-C outputs, M16 thread connector
Code: **CON021** for 6-pin output (MK4A B)
CON022 for 6-pin output (MK4A B)
CON023 for 6-pin output (MK4A B)
CON026 for 8-pin output (MK4A C)
CON027 for 8-pin output (MK4A C)
CON028 for 8-pin output (MK4A C)

Connector extraction length: 10mm

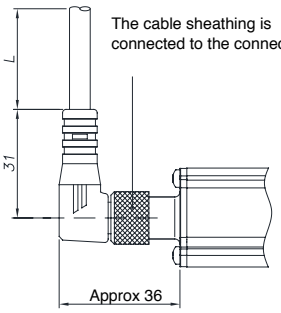


CON031 CON035 IP67 - IEC 48B | CON041 CON042 IP67 | CON021 CON026 IP40 - EMC | CON022 CON027 IP67 - EMC | CON023 CON028 IP67 - EMC

OPTIONAL CABLES OUTPUT



PRE-ASSEMBLED CABLE WITH STRAIGHT CONNECTOR



PRE-ASSEMBLED CABLE WITH 90° CONNECTOR

5-pin cable code		**MK4A - 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**

8-pin cable code		**MK4A - H**	
Lenght "L"		CODE	
		straight cable	Cable to 90°
2	mt	**CAV002**	**CAV005**
5	mt	**CAV003**	**CAV006**
10	mt	**CAV004**	**CAV007**
15	mt	**CAV009**	**CAV008**

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
via Sebina, 74
25050 PROVAGLIO D'ISEO (BS) - ITALIA
ph. 0309888.1 - fax. 0309839063
Internet: http://www.gefran.com