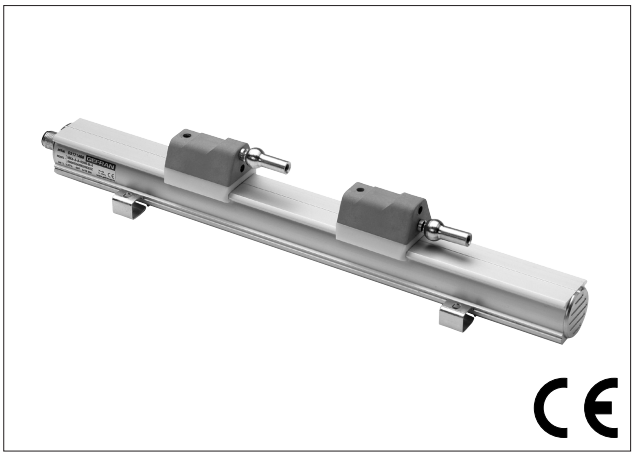
GEFRAN

MK4 A

CONTACTLESS MAGNETOSTRICTIVE LINEAR POSITION TRANSDUCER (ANALOG OUTPUT)



TECHNICAL DATA

Model	from 50 to 4000 mm
Measurement taken	Displacement / Speed
Position read sampling time (typical)	1 ms
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	INFINITE (only limited from the electrical noise)
Cursor	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

ELECTRICAL DATA

Output signal	0...10V (**N**) -10...+10V (**T**) -5...+5V (**L**)	4...20mA (**E**) 0...20mA (**B**)
Nominal power supply	24 Vdc ±20% (opt. 15V ±10%)	24 Vdc ±20% (opt. 15V ±10%)
Max. power ripple	1Vpp	1 Vpp
Max. input	70mA	90mA
Output load	2KΩ	< 500Ω
Max. output ripple	< 5 mV pp	< 5 mV pp
Max. output value	10.6 V	25 mA
Electrical isolation	500 V	500 V
Protection against polarity inversion	Yes	Yes
Protection against overvoltage	Yes	Yes
Self-resetting internal fuse	Yes	Yes

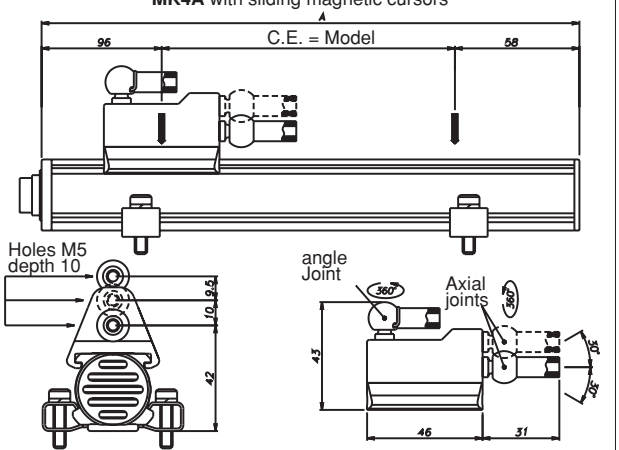
Main characteristics

- *Absolute transducer*
- *Contactless transducer for longer lifetime*
- *Strokes from 50 to 4000mm*
- *Quick plug-in throught stainless steel connectors*
- *Sliding or floating magnetic cursor*
- *Direct analog output (mA/V) for displacement and speed*
- *Cursor position: single or double (minimal distance 75mm)*
- *Work temperature: -30...+75°C*
- *Resistance to vibration (DIN IEC68T2/6 12g)*
- *IP67 protection*
- *EMI CE compatibility (EN 50081-2 50082-1)*
- *Power supply 24Vdc ±20%*

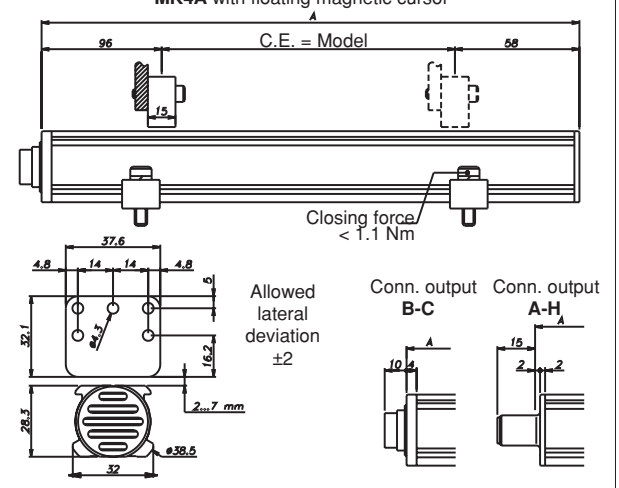
Contactless linear position transducer with magnetostrictive technology.
The absence of electrical contact on the cursor eliminates all wear and guarantees almost unlimited life.
Compact size for simple installation.
Full protection against outside agents for use in harsh environments with high contamination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

MECHANICAL DIMENSIONS

MK4A with sliding magnetic cursors



MK4A with floating magnetic cursor



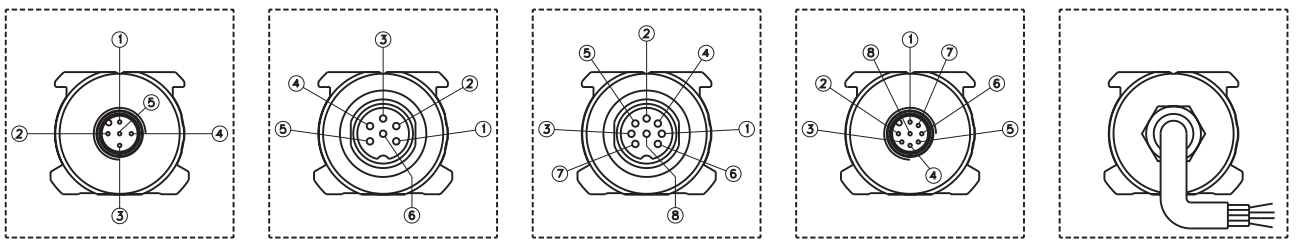
1) For strokes > 2500 mt use sliding or floating cursors with max. distance of 4mm
2) For multi-cursor versions, the cursors have to work under the same distance and temperature conditions

ELECTRICAL / 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 (E.S.)	mm	**Model**																														
Independent linearity	± % FS	typical 0,02 (Max. 0,04)																														
Max. dimensions (A)	mm	**Model + 152**																														
Repeatability	mm	< 0,01																														
Hysteresis	mm	< 0,01																														
Sampling time	ms	**0,5** (**1** for stroke from 300 to 1100) (**1,5** for stroke from 1100 to 2000) (**2** for stroke >2000) (**3** for stroke >3000)																														

ELECTRICAL CONNECTIONS

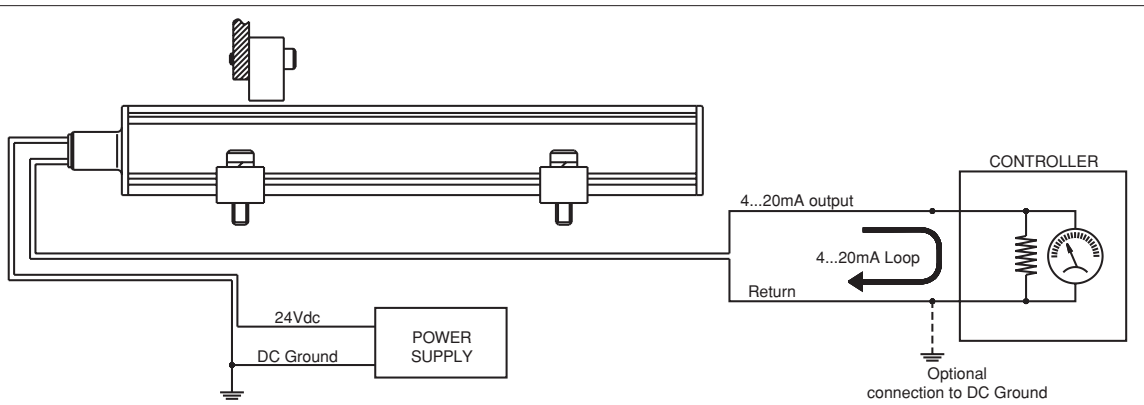
OUTPUT MK4A A **OUTPUT MK4A B** **OUTPUT MK4A C** **OUTPUT MK4A H** **OUTPUT MK4A F**



	CONNECTORS				**CABLES**	**OPTIONAL CABLES**	
Function	**MK4A**	**MK4B**	**MK4C**	**MK4H**	**MK4F**	**MK4A**	**MK4H**
	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 -10...+10V -5...+5V	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 -10...+10V -5...+5V	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

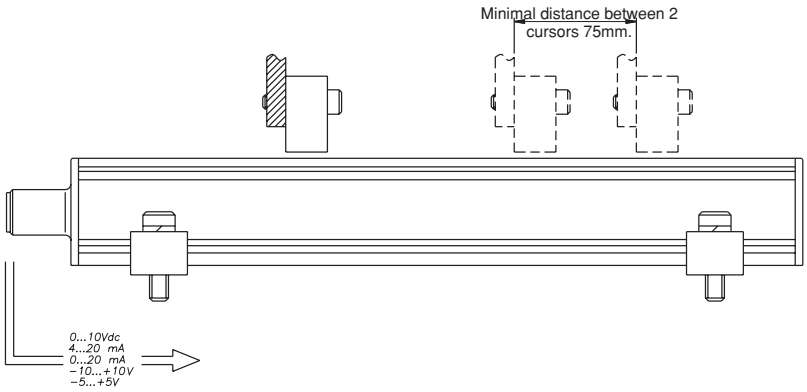
(*) = for versionl 4...20mA / 0...20mA
The transducer case must be grounded with the cable sheathing on the control system side only.

CURRENT OUTPUT CONNECTION



ANALOG OUTPUT MK4A

Series MK4A magnetostrictive transducers supply a direct analog voltage or current output proportional to 1 or 2 magnetic cursors position and displacement speed.
The output is also provided in reverse action.
Since the outputs are direct, no electronic processing of the signal is required if interfaced with controllers or measurement instruments.



ORDER CODE

Position transducer M K 4 A B □ □ □ □ N

Analog output	A

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

Modello

Output		
0...10Vdc	1 cursor (STANDARD)	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
-5...+5Vdc	1 cursor, position	L
-10...+10Vdc	1 cursor, position	T

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

Ex.: MK4-A-B-0400-N, PKIT090-02, PCUR035-01
Transducer model MK4, analog output, 6-pin connector, model 400, 0...10Vdc output, n° 2 PKIT090 brackets, n°1 PCUR035 standard cursor.

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

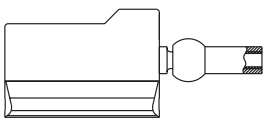
CURSORS ON REQUEST

P C U R [ ] [ ] [ ] 0 1

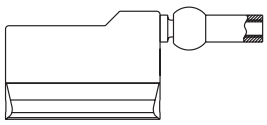
Cursors	
Sliding cursor , axial joint (low) (STANDARD)	035
Sliding cursor, axial joint (high)	036
Sliding cursor, angled joint	037
Floating Cursor	034

Number of cursors

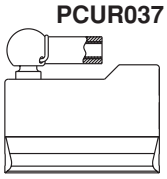
PCUR035



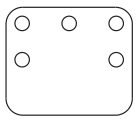
PCUR036



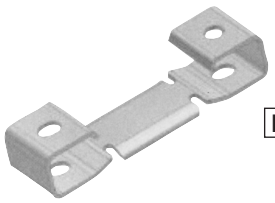
PCUR037



PCUR034



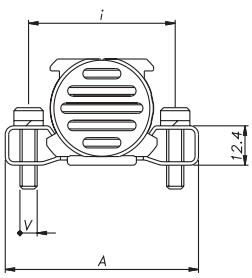
BRACKET S ON REQUEST

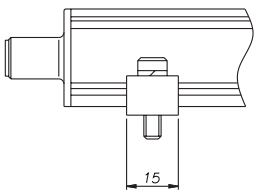


P K I T [ ] [ ] [ ] 0 1

Brackets	
Bracket in stainless steel, interaxis 42.5mm	090
Bracket in stainless steel, interaxis 50mm	091

Number of brackets





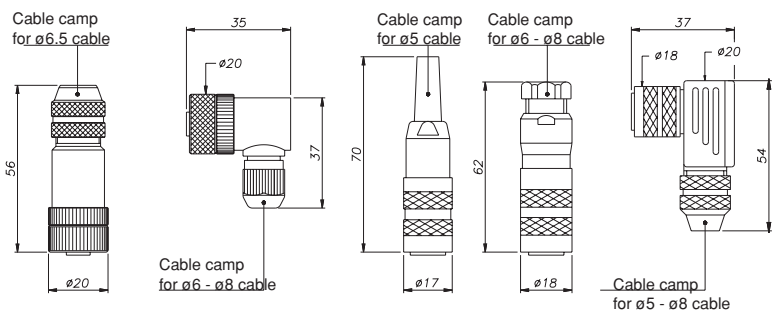
Brackets code	Interaxis (i)	Screw (V)	Dimension (A)
PKIT090	42.5	**M4**	**56**
PKIT091	50	**M5**	**63.5**

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)

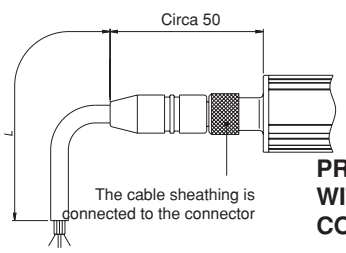
For B-C outputs, M16 thread connector
Code: **CON021** for 6-pin output (MK4A B)
CON022 for 6-pin output (MK4A B)
CON023 for 6-pin output (MK4A B)
CON026 for 8-pin output (MK4A C)
CON027 for 8-pin output (MK4A C)
CON028 for 8-pin output (MK4A C)

Connector extraction length: 10mm



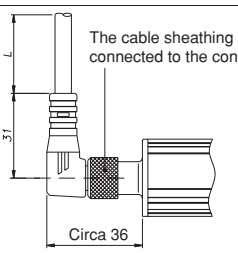
CON031 CON035 IP67 - IEC 48B | CON041 CON042 IP67 | CON021 CON026 IP40 - EMC | CON022 CON027 IP67 - EMC | CON023 CON028 IP67 - EMC

OPTIONAL CABLES OUTPUT



PRE-ASSEMBLED CABLE WITH STRAIGHT CONNECTOR

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**



PRE-ASSEMBLED CABLE WITH 90° CONNECTOR

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**

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