

# PMA12

SELF-SUPPORTING LINEAR POSITION TRANSDUCER WITH  
MAGNETIC PULLING

Patent pending



## Main characteristics

- Strokes from 50 to 1000 mm.
- Magnetic pulling of cursor
- Mechanical anchoring and self-aligning pulling on 2 ball joints
- Max. angle of movement up to  $\pm 26^\circ$
- Independent linearity up to  $\pm 0.05\%$
- Repeatability:  $\leq 0.08$  mm
- Hysteresis:  $\leq 0.25$  mm
- Infinite resolution
- No electrical variation of electrical output signal outside theoretical electrical stroke
- Work temperature:  $-30^\circ\text{C} \dots +100^\circ\text{C}$
- Electrical connections: cable output shielded with highly flexible polyurethane, 3-pin, 1 m
- Life:  $> 25 \times 10^6$  m strokes, or  $> 100 \times 10^6$  maneuvers, whichever is less (within U.E.S.)
- Protection level: IP67 (CEI EN 60529)

Linear potentiometric position transducer, completely sealed (IP67), designed to operate in damp/wet environments as well as in temporary immersion (CEI EN 60529).

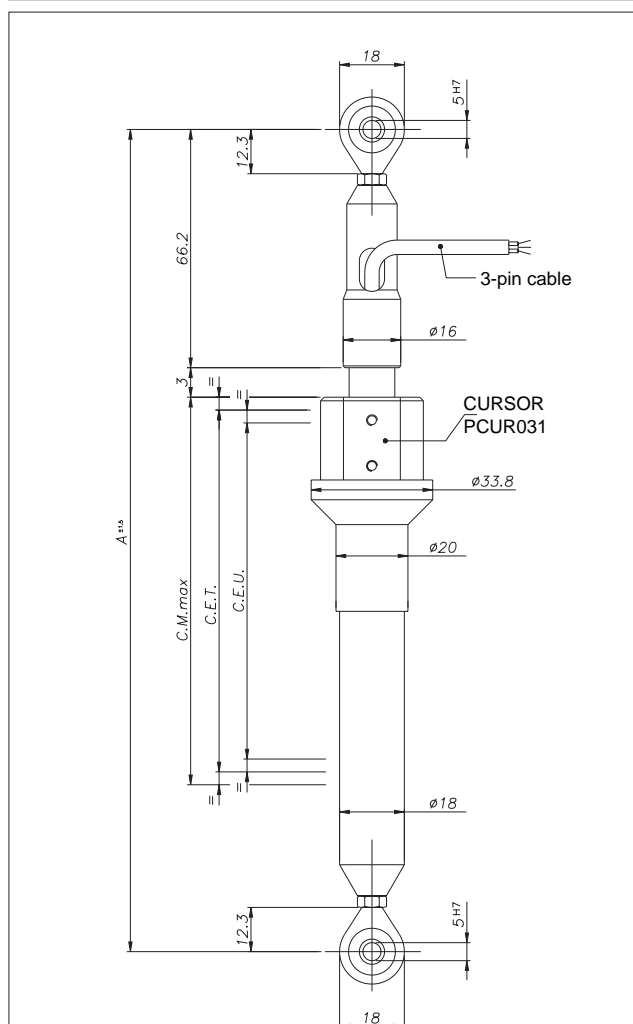
The PMA series features an external magnetic actuator coupled to an internal measurement cursor.

## TECHNICAL DATA

Useful electrical stroke (U.E.S.)	From 50 to 1000 mm
Independent linearity (within U.E.S.)	see chart
Shift speed	$\leq 5$ m/s
Max. acceleration	$\leq 10\text{m/s}^2$ shift
Vibrations DIN IEC 68T2-6	12g, 10...2000Hz
Cursor pulling force	$\leq 0.5$ N
Shock test DIN IEC68T2-27	50 g, 11ms. singolo colpo
Shift sensitivity (without hysteresis)	from 0.05 to 0.1 mm
Resistance tolerance	$\pm 20\%$
Recommended current in cursor circuit	$< 0.1 \mu\text{A}$
Max. current in cursor circuit in case of malfunction	10mA
Max. applicable voltage	See chart
Electrical isolation	$> 100\text{M}\Omega$ a 500V~, 1bar, 2s
Dielectric strength	$< 100 \mu\text{A}$ a 500V~, 50Hz, 2s, 1bar
Dissipation at 40°C (0W a 120°C)	See chart
Protection	IP 67
Real thermal coefficient of output voltage	$< 1,5\text{ppm}/^\circ\text{C}$
Work temperature	$-30 \dots +100^\circ\text{C}$
Storage temperature	$-50 \dots +120^\circ\text{C}$

**Important:** all data shown in the catalog for linearity values and temperature coefficients are valid when the sensor is used as voltage divider with maximum current of  $I_c \leq 0.1 \mu\text{A}$  in the circuit.

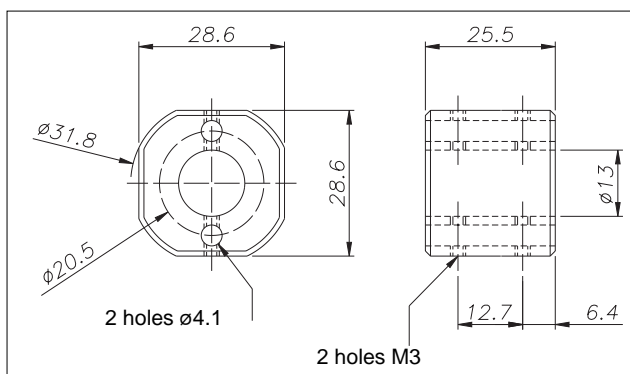
## MECHANICAL DIMENSIONS



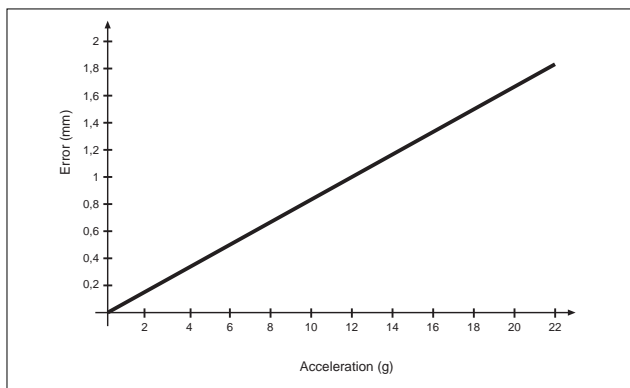
## ELECTRICAL / MECHANICAL DATA

MODEL		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Useful electrical stroke (U.E.S.) + 1 / -0	mm	Model																			
Theoretical electrical stroke (T.E.S.) ± 1	mm	U.E.S. + 1																			
Resistance (on T.E.S.)	kΩ	5						10						20							
Independent linearity (within U.E.S.)	±%	0.1		0.05																	
Dissipation at 40°C (0W at 120°C)	W	1	2	3																	
Max. applicable voltage	V	40	60																		
Mechanical stroke MC	mm	U.E.S. + 5																			
Case length (A)	mm	U.E.S. + 147.5																			

### CURSOR PCUR031



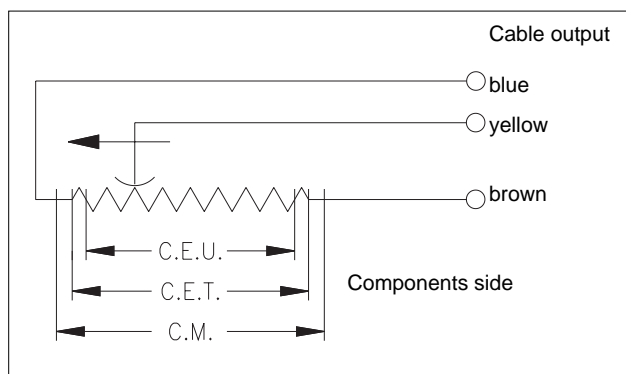
### TRACKING ERROR



#### Included in the supply

- PMA series position transducer
- 1 Magnetic cursor code: **PCUR031**

### ELECTRICAL CONNECTIONS



### ORDER CODE

Position transducer

**PMA**

12 F X

Dimensions 1/2"

Cable output

Model

Empty

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

**E.:PMA-12-F-400-X 0000-X000-XX-00-XXX**

Position transducer model PMA12, stroke 400

### CODE EXTENSION

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

**CABLE LENGTH (version F standard 1 m)**

Output F 00 = 1m 02 = 2m 03 = 3m 04 = 4m 05 = 5m  
10 = 10m 15 = 15m

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



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