# **GEFRAN**

# **WRG-A**

# CONTACTLESS MAGNETOSTRICTIVE LINEAR POSITION TRANSDUCER (ANALOG OUTPUT)



#### Main characteristics

- · Magnetostrictive technology
- Strokes from 50 to 1500 mm
- Optimized mechanical structure
- Rod, nipple, exagonal flange AISI 316
- Work temperature: -20....+75°C
- Resistance to vibrations (DIN IEC68T2/6 12g)
- Power supply 24Vdc ± 20%
- Protection IP67
- Electromagnetic compatibility EMC 2014/30/EU
- Compliant to the directive RoHS 2011/65/EU

Contactless linear position transducer with magnetostrictive technology.  $\label{eq:contactless} % \begin{subarray}{ll} \end{subarray} % \begin{s$ 

The absence of electrical contact on the cursor eliminates all wear and guarantees almost unlimited life.

The analog interface, available with different voltage ranges or in current, with direct and reverse output guarantees greater flexibility of installation and adaptation to pre-existing systems.

High accuracy of the mesurement with reference to the non linearity, repeatability and hysteresis. High resistance to vibrations, mechanical shocks for use in a harsh industrial environment.

#### **TECHNICAL DATA**

Model	from 50 to 1500 mm			
Measurements	displacement			
Position read sampling time (typical)	From 1 ms to 1.5 ms (depending on stroke)			
Shock test DIN IEC68T2-27	100g - 11ms - single shock			
Vibration DIN IEC68T2-6	12g / 102000Hz			
Displacement speed	≤ 10 m/s			
Max. acceleration	≤ 100 m/s² displacement			
Resolution	Infinite			
Cursor	Floating separate cursor			
Working temperature	-20+75°C			
Storage temperature	-40+100°C			
Coefficient of temperature	≤ 0,01% F.S./°C			
Protection	IP67			
Operative pressure	350 bar (peak max. 500 bar)			

#### **ELECTRICAL DATA**

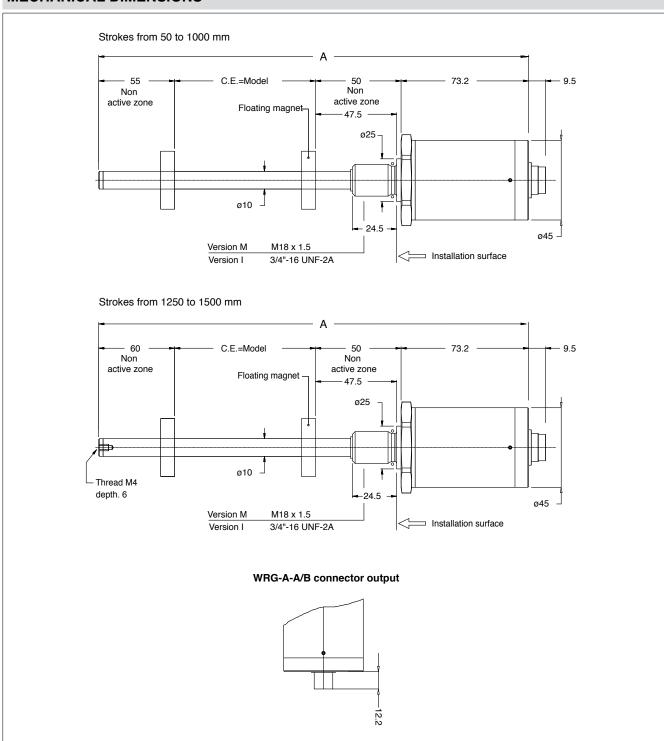
Output signal	010.V 100 V (A)	420mA 20mA4mA (E)				
Nominal power supply	24 Vdc ±20%	24 Vdc ±20%				
Max. power ripple	1Vpp	1Vpp				
Max. consumption	35mA	70mA				
Load on output	>= 10kΩ	50 500Ω				
Max. output value	12V	30mA				
Alarm output value	10.5V	21mA				
Electrical isolation (*)	500V	500V				
Protection against polarity inversion	YES	YES				
Protection against overvoltage	YES	YES				
Protection against power supply on output	YES	YES				

(\*) It includes 31V 1,7J voltage suppressor

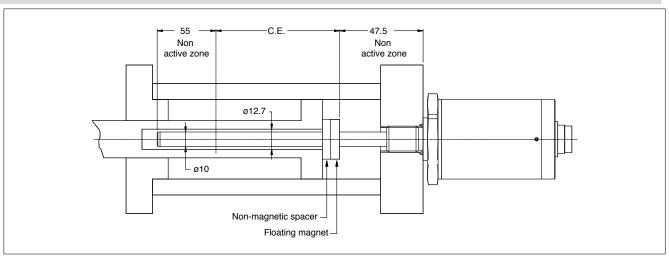
# **ELECTRICAL / MECHANICAL DATA**

Model		50	100	130	150	200	400	450	500	600	700	750	800	900	1250	1500					
Iviodei		225	300				1000														
Sampling time	ms		1							1,	,5										
Dimensions Max. (A)	mm		Model +178.2									Model	+183.	2							
Electrical stroke	mm		Model																		
Independent linearity			stroke > 250 mm with sliding cursors $\leq \pm 0.04\%$ F.S. (Min. $\pm 0.090$ mm) stroke 50250 mm with sliding cursors $\leq \pm 0.150$ mm																		
Repeatibility	mm		< 0.02																		
Hysteresis	mm		< 0.01																		

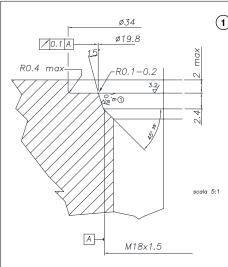
# **MECHANICAL DIMENSIONS**



# **MOUNTING INSIDE A CYLINDER**



## **INSTALLATION INSIDE A CYLINDER**

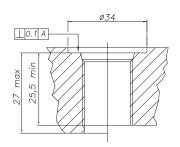


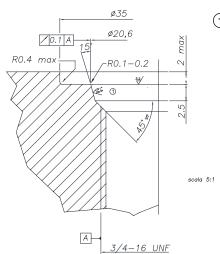
# 1 THREAD M18x1,5

The sealing surface must be free from scratches longitudinal or spiral Ro 1.6 µm for sealing with NON-pulsating pressure

Ro 0.8 µm for seals with pulsating pressure

Suggested o-ring: PARKER 6-34 6-349 15,4x2,1 Viton 90° Shore-A PARKER N552-90 Material: Mixes:





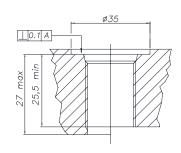
# 1 THREAD 3/4"-16UNF

The sealing surface must be free from scratches longitudinal or spiral

Ro 1.6 µm for sealing with NON-pulsating pressure Ro 0.8 µm for seals with pulsating pressure

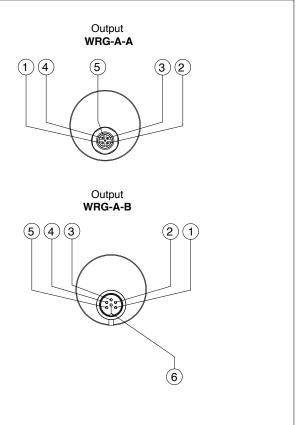
#### Suggested o-ring:

PARKER 3-908 16,36x2,21 Material: Viton 90° Shore-A Mixes: PARKER N552-90

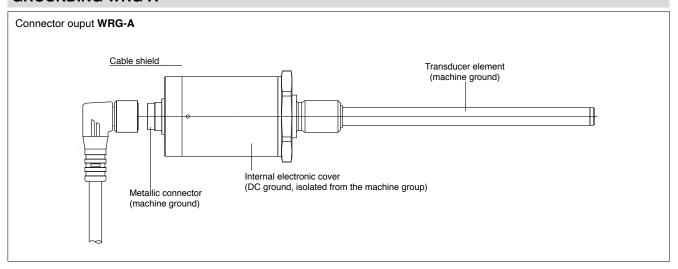


# **ELECTRICAL CONNECTIONS**

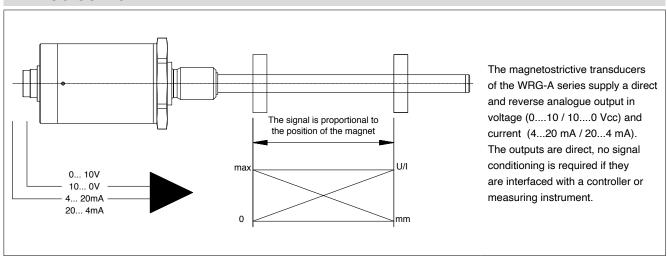
	CONNE	ECTORS			
Function	WRG-A-A	WRG-A-B			
	5 pin M12	6 pin M16			
Output 1 (position) 010V 420mA	1	1			
GND Output 1 (0V)	2	2			
Output 2 (inverse position) 100V 204mA	3	3			
GND Output 2 (0V)	2	4			
Power supply +	5	5			
Power supply GND	4	6			
n.c.	-	-			
n.c.	-	-			



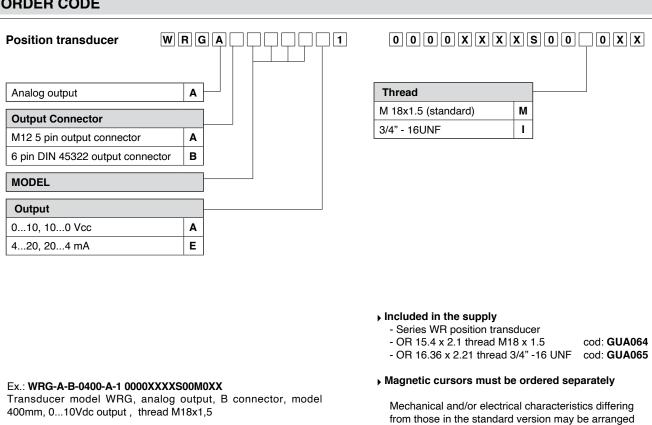
#### **GROUNDING WRG-A**



## **ANALOG OUTPUT**

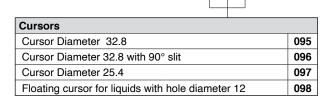


#### ORDER CODE



on request.

#### **FLOATING CURSOR**



PCUR

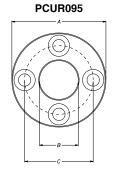
The PCUR095 is supplied with: The PCUR096 is supplied with:

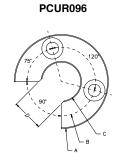
Nº 8 Brass nuts M4 N° 8 Brass washers D4 N° 4 Brass screws M4x25

Nº 4 Brass nuts M4 N° 4 Brass washers D4 N° 2 Brass screws M4x25

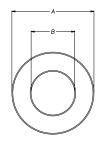
Dimensions	Α	В	С	D	Thickness
PCUR095	32.8	13.5	23.9	-	
PCUR096	32.0	13.5	23.9	11	7.9
PCUR097	25.4	13.5		-	

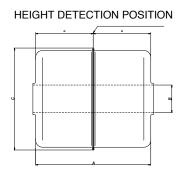
Model		PCUR098
Length A	mm	52.4
Diameter B (hole)	mm	12
Diameter C	mm	44
Material		AISI 316





PCUR097



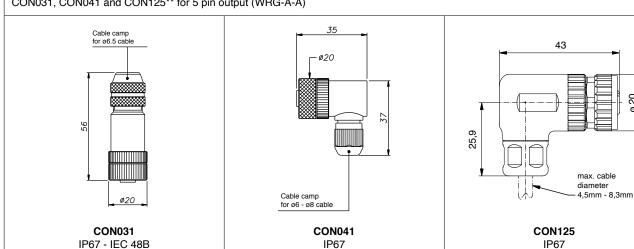


ø 20

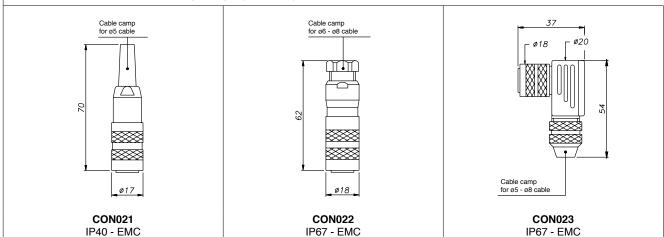
Note: PCUR098 is supplied with kit PKIT036 for floating cursor for liquids.

# **OPTIONAL CONNECTORS** (to order separately)

For **WRG-A-A**, M12 thread connector CON031, CON041 and CON125\*\* for 5 pin output (WRG-A-A)



For **WRG-A-B**, M16 thread connector CON021, CON022 and CON023 for 6 pin output (WRG-A-B)



<sup>1.</sup> The IP rating specified in this document normally applies with the suitable female connector plugged-in and properly wired.

# **OPTIONAL OUTPUT CABLES (to order separately)**

For WRG-A-A, cable with connector (straight or 90°) with M12 thread 5 pin

Longht	··· "	CODE					
Lenght '	L	Straight cable	Cable to 90°				
2	mt	CAV011	CAV021				
5	mt	CAV012	CAV022				
10	mt	CAV013	CAV023				
15	mt	CAV015	CAV024				

## **ACCESSORIES** (to order separately)

Non-magnetic spacer for mounting PCUR022 cursor

**CUR022** 

Sensors are manufactured in compliance with:

- EMC 2014/30/EU compatibility directive
- RoHS 2011/65/EU

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.

