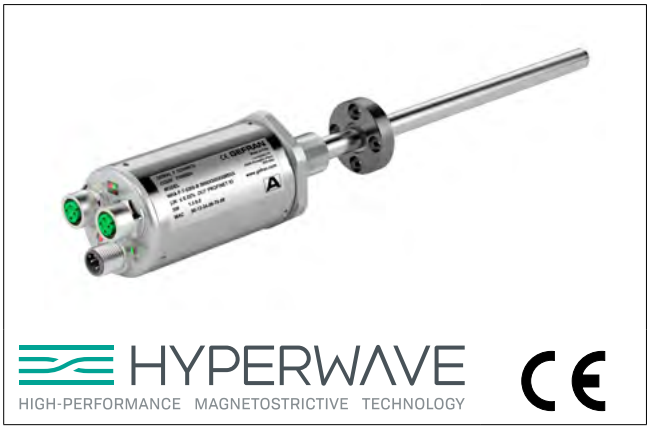
GEFRAN

WRA-F

CONTACTLESS MAGNETOSTRICTIVE LINEAR POSITION TRANSDUCER (PROFINET IO OUTPUT)



Main characteristics
- Optimized mechanical structure
- Strokes from 50 to 4000mm
- Position and velocity measurement
- Rod, nipple, exagonal flange AISI 316
- Resistance to vibrations (DIN IEC68T2/6 15g)
- Environmental protection IP67
- Working temperature: -40...+85°C
- Electromagnetic compatibility EMC 2014/30/EU
- Compliant to the directive RoHS 2011/65/EU
- Power supply 10...32 Vdc
- Profinet IO RT & IRT interface (ver. 2.3)

Contactless linear position transducer with HYPERWAVE magnetostrictive technology. The absence of electrical contact on the cursor eliminates all wear and guarantees almost unlimited life. High accuracy of the mesurement with reference to the non linearity, repeatability and hysteresis. High resistance to vibrations, mechanical shocks, wide working temperature range. High performance in terms of environmental IP protection and EMC immunity, for use in a harsh industrial environment.

With PROFINET IO process data and alarms are always transferred in real time.
WRA-F can be configured in RT (Real Time) and IRT (Isochronous Real Time).
Profinet IRT offers synchronous communication with a minimum cycle time of 250 µs.

TECHNICAL DATA

Model	50 to 4000mm
Number of magnets	1…16 General Profile
	1 Encoder Profile
Measurements	Displacement/Velocity
Measuring principle	Magnetostrictive
Position read sampling time (typical), dependent on the stroke and the number of cursors	1ms typical
Min. cycle time	250 μs
Shock test DIN IEC68T2-27	100g -11ms-single shock
Vibration DIN IEC68T2-6	15g / 10…2000Hz
Displacement speed	≤ 10m/s
Max. acceleration	≤ 100 m/s^2
Position data resolution (selectable)	0.5,1,2,5,10,20,50,100 µm
Velocity data resolution (selectable)	steps/10ms, steps/100ms, steps/1000ms, mm/s
Cursor	Floating cursor (see note)
Working temperature	-40…85°C
Storage temperature	-40…100°C
Coefficient of temperature	25 ppm FS/°C
Environmental protection	IP67
Operative pressure	350 bar (peak max. 500bar)

Note: For multi-cursor versions, the cursors have to work under the same distance and temperature conditions

ELECTRICAL DATA

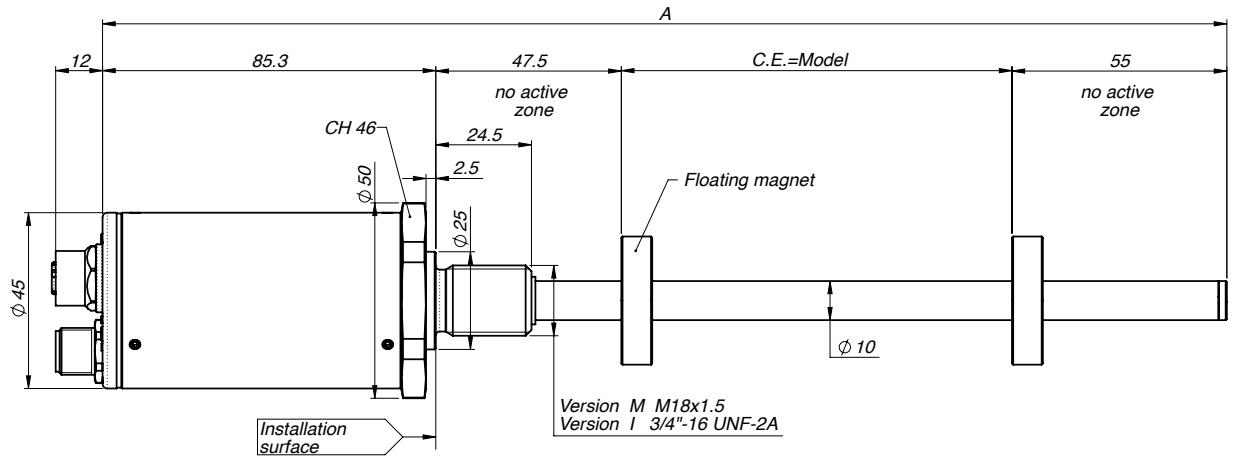
Interface	Profinet IO
Protocol	Profinet RT & IRT
Profile	Encoder V 4.2
Data Transmission rate	100 MBit/s
Position data	32 bit signed (General Profile) 32 bit unsigned or 64 bit insigned (Encoder Profile V4.2)
Velocity data	32 bit signed (General Profile) 16 bit signed or 32 bit signed (Encoder Profile V4.2)
Connection	2x M12 F D-coded (Bus) 1x M12 M A-coded (Power Supply)
Nominal power supply	10…32Vdc
Max. power ripple	1 Vpp
Max Power consumption	2 W
Electrical isolation	500 Vdc
Protection against polarity inversion	Yes (-30 Vdc)
Protection against overvoltage	Yes (36 Vdc)
EMC	EN 61326-1 EN 61326-2-3

CERTIFICATIONS

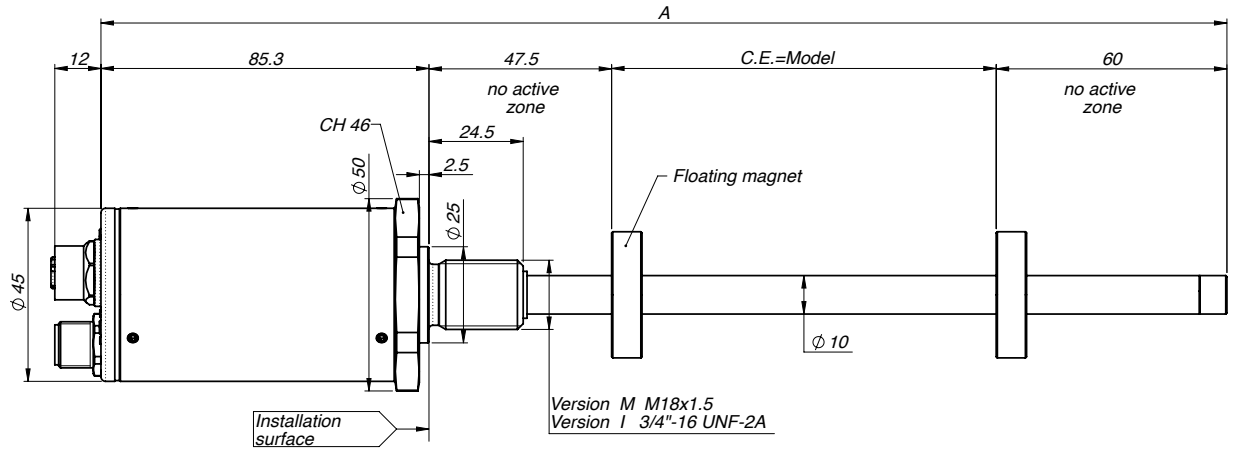
CE
EAC

MECHANICAL DIMENSIONS

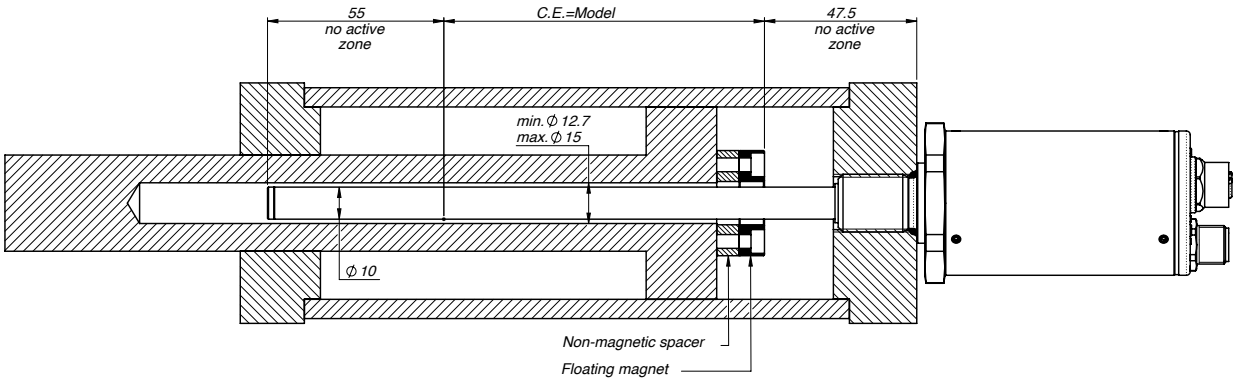
Strokes from 50 to 1000 mm

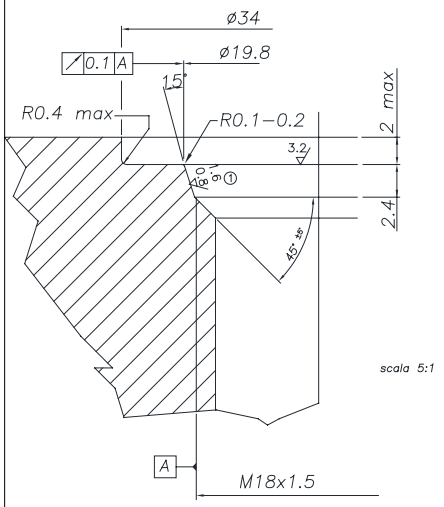


Strokes from 1100 to 4000 mm



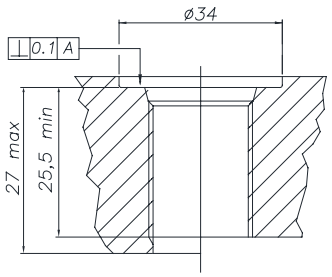
MOUNTING INSIDE A CYLINDER

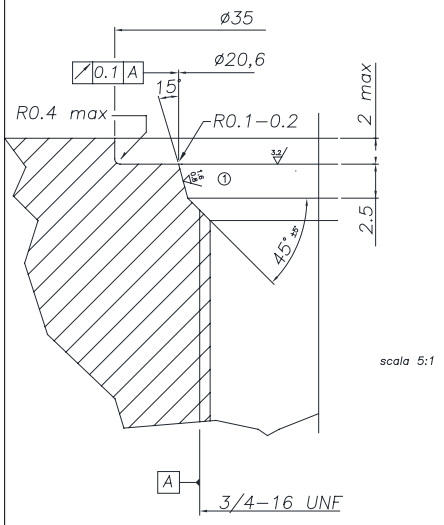




① **THREAD M18x1,5**
The sealing surface must be free from scratches longitudinal or spiral
Ro 1.6 µm for sealing with NON-pulsating pressure
Ro 0.8 µm for seals with pulsating pressure

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





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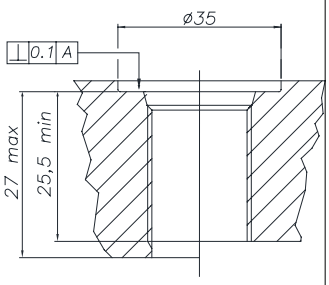
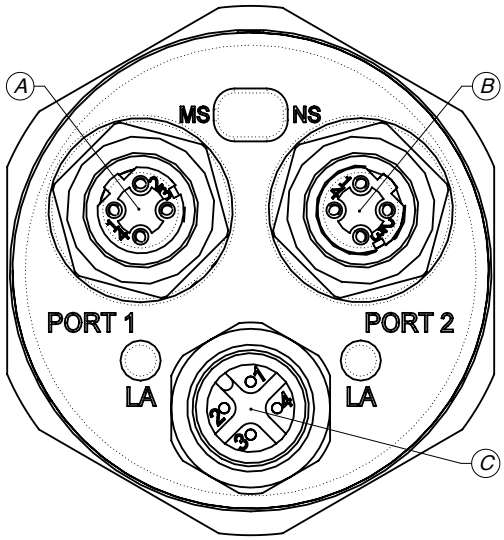


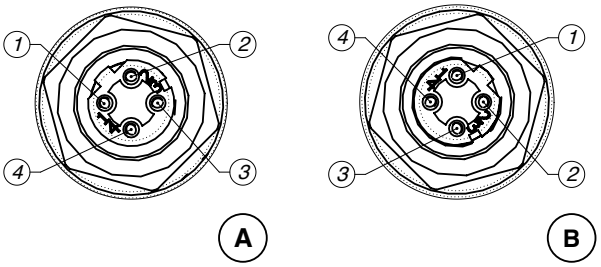
ELECTRICAL / MECHANICAL DATA

Model		50	75	100	130	150	350	360	400	450	500	550	600	650	1200	1250	1300	1400	2250	2500	2750	3000	3250	3500	3750	4000
		175	200	225	250	300	700	750	800	850	900	950	1000	1100	1500	1750	2000										
Sampling time	ms	0,5					1								1,5				2				3			
Max. dimensions (A)	mm	**Model + 187,8**													**Model + 192,8**											
Electrical stroke	mm	**Model**																								
Independent linearity	± %/FS	≤ ± 0,01% FS (min ± 0,060 mm)																								
Repeatability	mm	< 0,01																								
Hysteresis	mm	< 0,01																								

ELECTRICAL CONNECTIONS

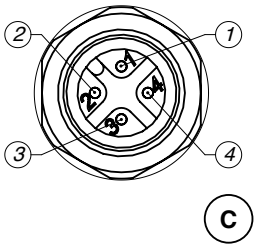


Port1 - Port 2 M12 4P Female D-coded connector connection



M12 Female 4 poles D coded connector (Port1 – Port 2)	Pinout
1	Tx+
2	Rx+
3	Tx-
4	Rx-

Power Supply M12 4P Male A-coded connector connection



M12 Male 4 poles A coded connector (Power Supply)	Pinout
1	V+
2	NC
3	0V
4	NC

ORDER CODE

Position transducer

W	R	A	F						A

L	0	0	0	X	0	0	0	X	0	0		0	X	X

Interface	
Profinet	**F**

Output Connector	
2x M12 F 1x M12 M	**T**

MODEL

Output	
Encoder Profile	**A**
General Profile	**B**

▶ **Magnetic cursors must be ordered separately**

Calibration report	
0	no report
L	with report

Threading	
M 18x1.5 (standard)	**M**
3/4" - 16UNF	**I**

▶ **Included in the supply**
- Series WR position transducer
- OR 15.4 x 2.1 thread M18 x 1.5 cod: **GUA064**
- OR 16.36 x 2.21 thread 3/4" -16 UNF cod: **GUA065**

Es.: WRA-F-T- 0400-A 0-0-0-0-X-0-0-0-X-0-0-X-0-XX
Transducer model WRA-F, Profinet output, encoder profile, 400 mm model

FLOATING CURSOR

P C U R □ □ □

Cursors	
Cursor Diameter 32.8	**095**
Cursor Diameter 32.8 with 90° slit	**096**
Cursor Diameter 25.4	**097**
Floating cursor for liquids with hole diameter 12	**098**

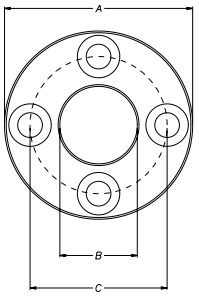
The **PCUR095** is supplied with:
N° 8 Brass nuts M4
N° 8 Brass washers D4
N° 4 Brass screws M4x25

The **PCUR096** is supplied with:
N° 4 Brass nuts M4
N° 4 Brass washers D4
N° 2 Brass screws M4x25

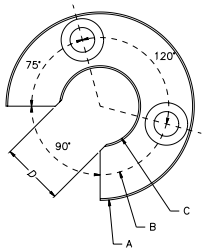
Dimensions	A	B	C	D	Thickness
PCUR095	32.8	13.5	23.9	-	7.9
PCUR096				11	
PCUR097	25.4	13.5		-	

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

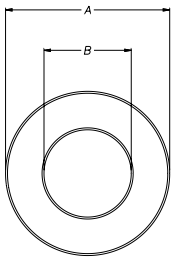
PCUR095



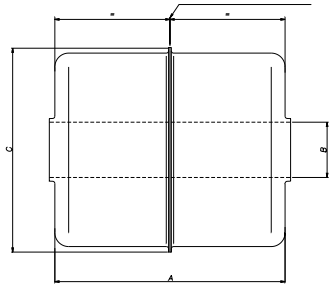
PCUR096



PCUR097



HEIGHT DETECTION POSITION



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

CABLE and CONNECTORS (on request)

Connectors for power supply	
5 pin female connector	**CON031**
5-pin female connector, 90° angle	**CON041**
Cables for power supply	
Straight cable 2m	**CAV011**
Straight cable 5m	**CAV012**
Straight cable 10m	**CAV013**
Straight cable 15m	**CAV015**
Cable 90° 2m	**CAV021**
Cable 90° 5m	**CAV022**
Cable 90° 10m	**CAV023**
Cable 90° 15m	**CAV024/CAV280**
Profinet connection connectors	
Connector M12 Male 4 poles D-coded straight	**CON089**
Profinet connection cables	
Pre-wired cable 5m 2x M12 Male 4 poles D-coded straight	**CAV815**
Pre-wired cable 5m M12 Male 4 poles D-coded straight RJ45 male straight	**CAV816**
M12 F connector protection cap	**TAP1001**

Note: *For further information (order codes, technical specifications, etc.) please contact Gefran or write to: info@gefran.com.*

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.

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