

HYPERWAVE
HIGH-PERFORMANCE MAGNETOSTRICTIVE TECHNOLOGY



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 measurement 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 μ s.

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 μ s
Shock test DIN IEC68T2-27	100g -11ms-single shock
Vibration DIN IEC68T2-6	15g / 10...2000Hz
Displacement speed	\leq 10m/s
Max. acceleration	\leq 100 m/s ²
Position data resolution (selectable)	0.5,1,2,5,10,20,50,100 μ m
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

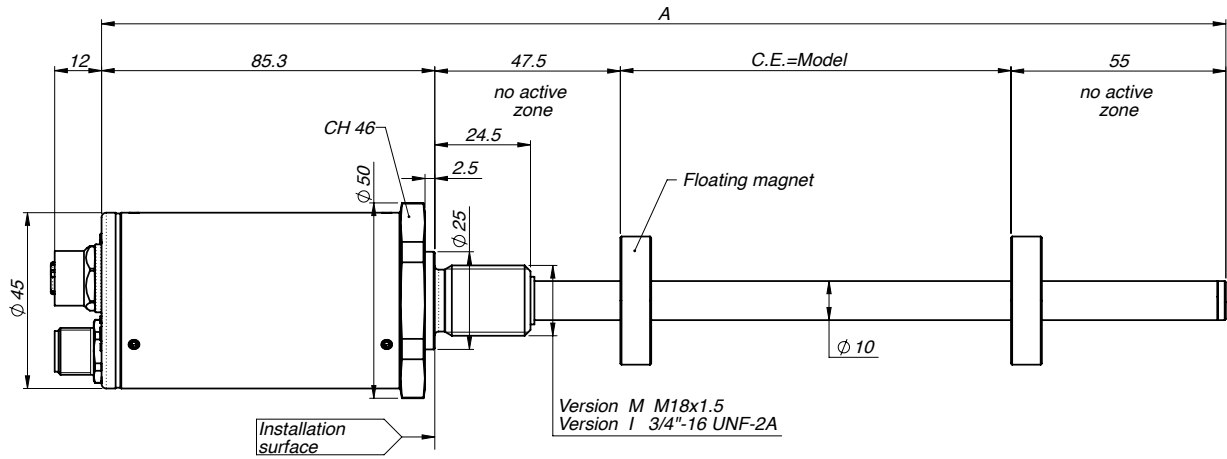
Interface	Profinet IO
Protocol	Profinet RT & IRT
Profile	Encoder V 4.2
Data Transmission rate	100 MBit/s
Position data	32 bit signed (General Profile) 32 bit unsigned or 64 bit insigned (Encoder Profile V4.2)
Velocity data	32 bit signed (General Profile) 16 bit signed or 32 bit signed (Encoder Profile 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

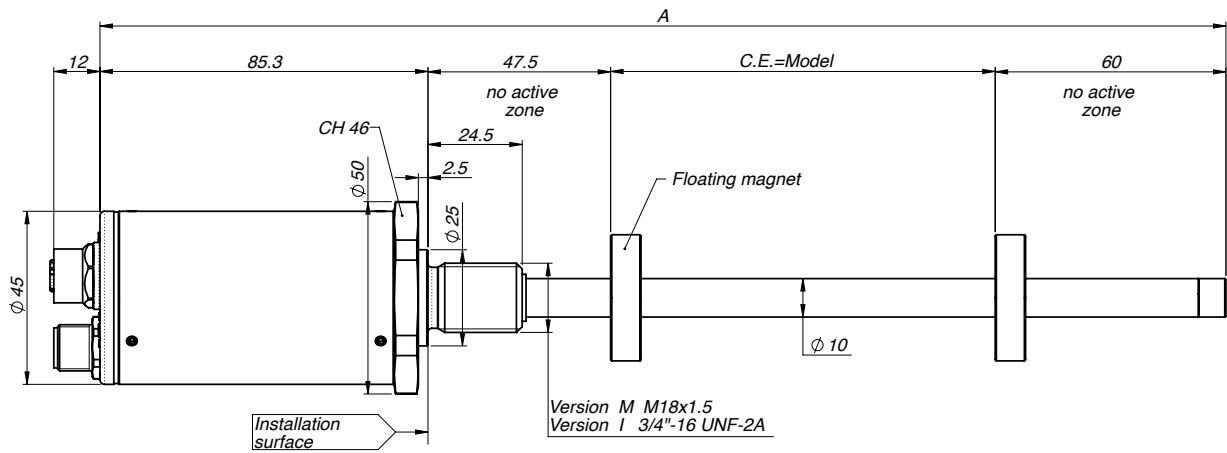
CE
EAC

MECHANICAL DIMENSIONS

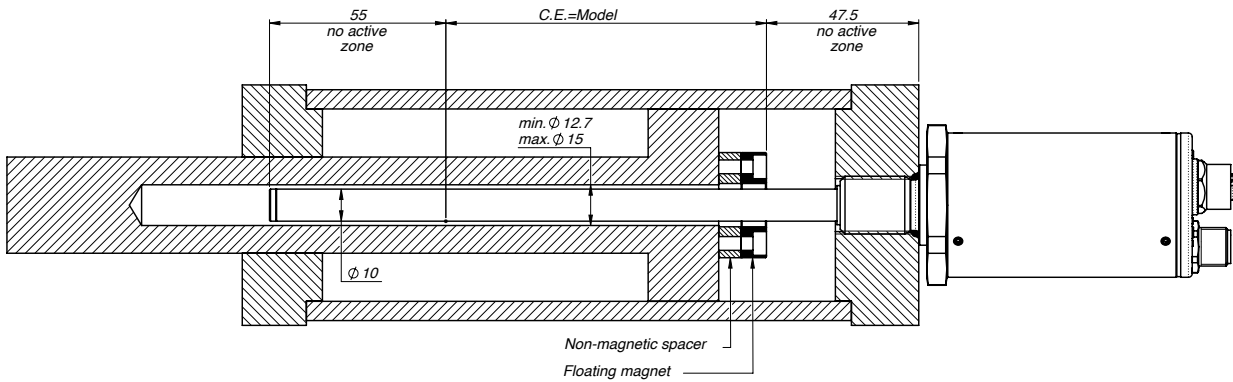
Strokes from 50 to 1000 mm

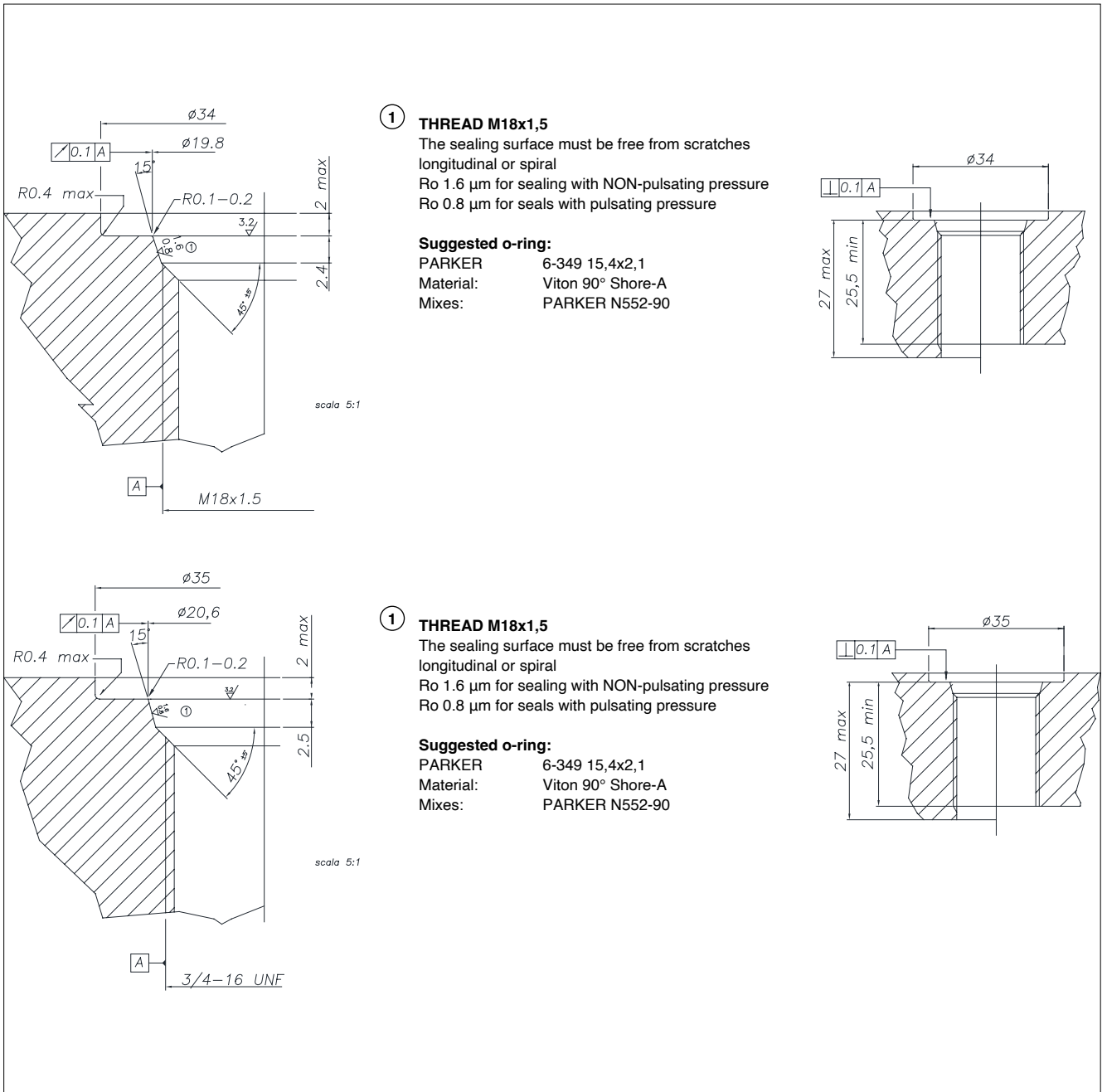


Strokes from 1100 to 4000 mm



MOUNTING INSIDE A CYLINDER





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	Typical ≤ 0,01% FS (min ± 0,060 mm)																								
Repeatability	mm	Typical ≤ 0,01 (limited by the resolution of the output value)																								
Hysteresis	mm	Typical ≤ 0,02 (limited by the resolution of the output value)																								

FLOATING CURSOR



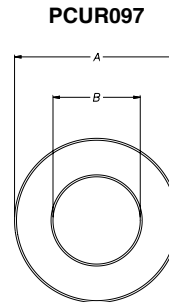
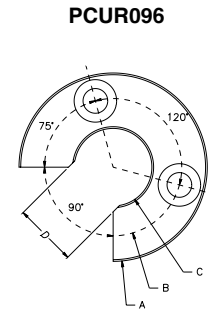
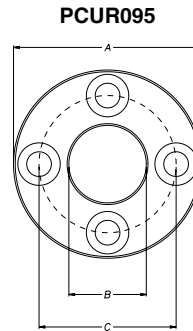
Cursors	
Cursor Diameter 32.8	095
Cursor Diameter 32.8 with 90° slit	096
Cursor Diameter 25.4	097
Floating cursor for liquids with hole diameter 12	098

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

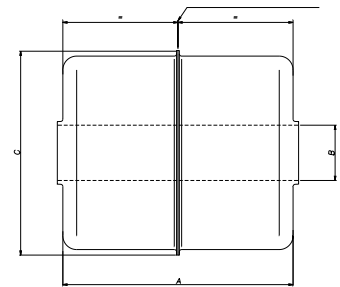
The **PCUR096** is supplied with:
 N° 4 Brass nuts M4
 N° 4 Brass washers D4
 N° 2 Brass screws M4x25

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



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
 5-pin female connector, 90° angle

CON031
CON041

Cables for power supply

Straight cable 2m
 Straight cable 5m
 Straight cable 10m
 Straight cable 15m
 Cable 90° 2m
 Cable 90° 5m
 Cable 90° 10m
 Cable 90° 15m

CAV011
CAV012
CAV013
CAV015
CAV021
CAV022
CAV023
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
 Pre-wired cable 5m M12 Male 4 poles D-coded straight RJ45 male straight
 M12 F connector protection cap

CAV815
CAV816
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
 GEFRA spa reserved the right to make aesthetic or functional changes at any time and without notice.