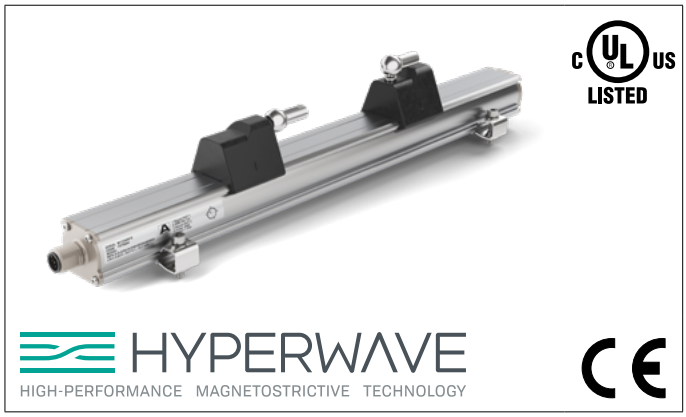
GEFRAN

WPA-A

CONTACTLESS MAGNETOSTRICTIVE LINEAR POSITION TRANSDUCER
(ANALOG OUTPUT)



Main characteristics

- *Optimised mechanical structure*
- *Strokes from 50 to 4000mm*
- *Sliding or floating magnetic cursor*
- *Availability of several analogue outputs (voltage or current) for direct position and speed measurement or reverse measurement (only position)*
- *Single or double cursors models availability*
- *Power supply 24Vdc ±20%*
- *Resistance to vibration (DIN IEC68T2/6 15g)*
- *IP67 protection*
- *Work temperature: -30...+85°C*
- *Electromagnetic compatibility EMC 2014/30/EU*
- *Compliant to the directive RoHS 2011/65/EU*

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 performance in terms of environmental IP protection and EMC immunity.

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.

This symbol present on the product label stands for further indications on product manual. For correct and safe installation, follow the instructions and observe the warnings contained in this manual. No hazards shall arise by any reasonably foreseeable misuse in a way not intended, and not described in this manual.
The complete manual is available for download from the website www.gefran.com
UL fle number E216851

TECHNICAL DATA

Model	From 50 to 4000 mm
Measurement taken	Displacement / Speed
Position read sampling time (typical)	From 0,5 ms to 3 ms (depending on stroke)
Speed measurement range	min 0 .. 0,1 m/s max 0 .. 10 m/s
Accuracy speed	< 2% (in all FS)
Shock test DIN IEC68T2-27	100g - 11ms - single shock
Vibrations DIN IEC68T2-6	15g / 10...2000Hz
Displacement speed	≤10 m/s
Max. acceleration	≤ 100 m/s² displacement
Resolution	16 bit (max electrical noise 5 mVpp)
Cursor (see note)	Sliding cursor Floating separate cursor
Working temperature (*)	-30...+85°C
Storage temperature	-40...+100°C
Coefficient of temperature	0.005% FS / °C
Protection	IP67

(*) See possible restrictions in the paragraphs “Electrical connections” and “Accessories on request”.

Note:
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

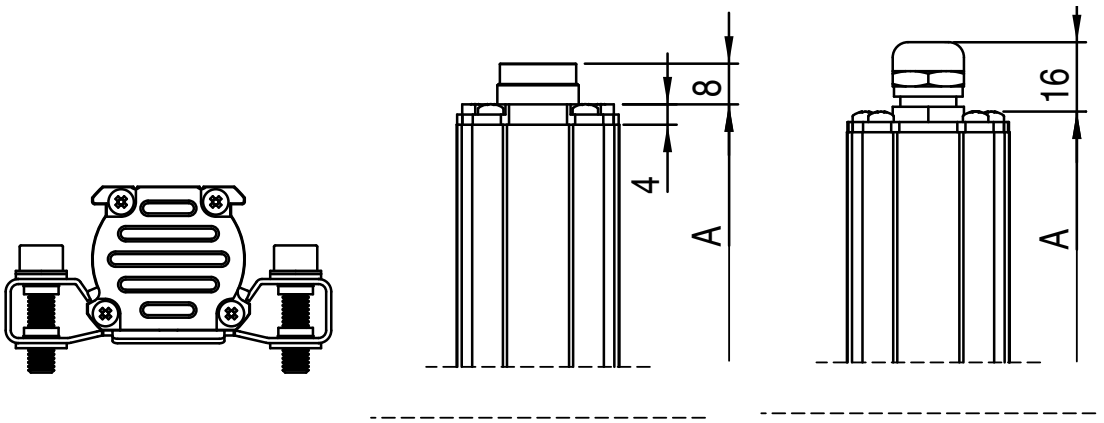
ELECTRICAL DATA

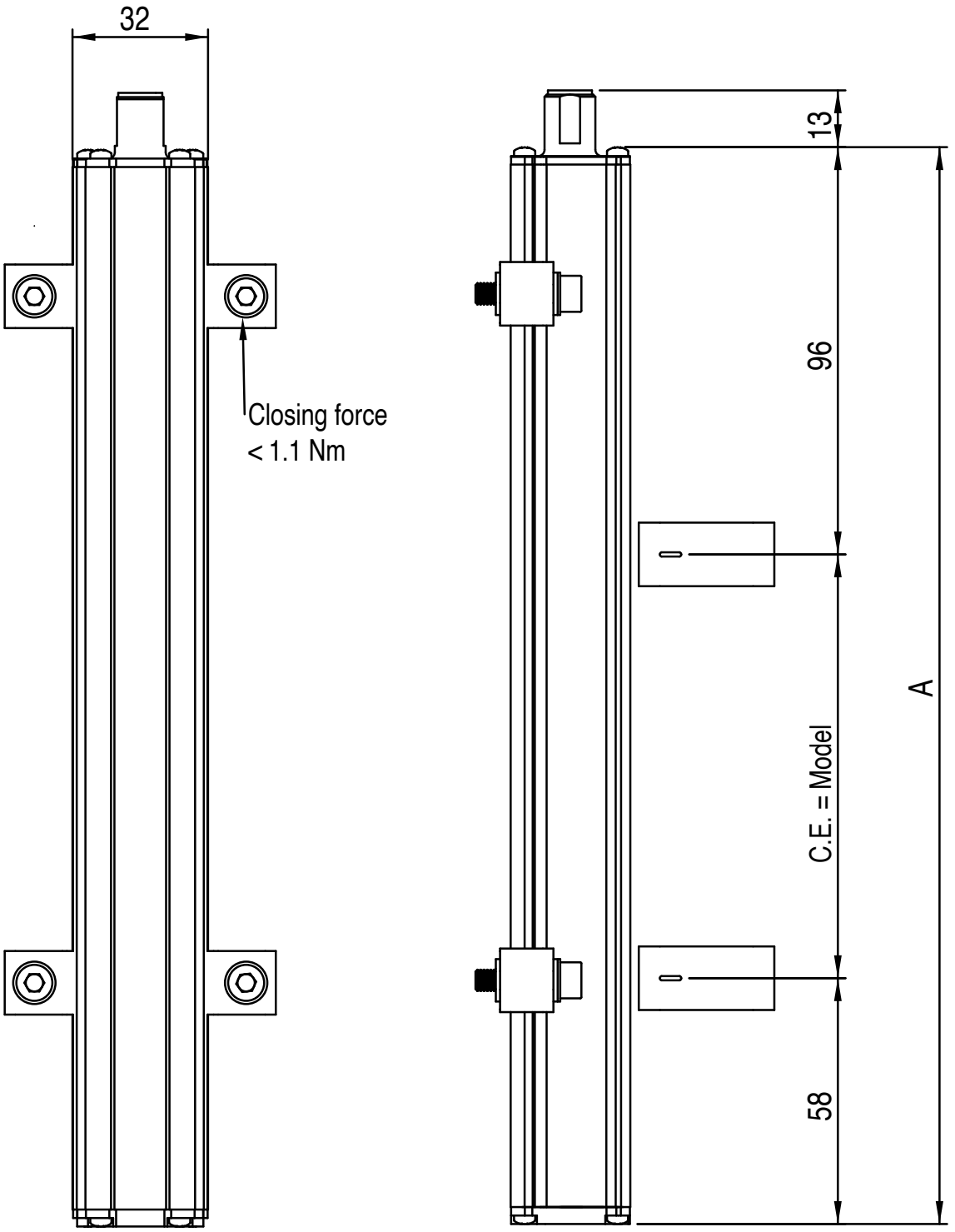
Output signal	0...10V (**N/P/Y**)	4...20mA (**E/F/H**) 0...20mA (**B/C/D**)
Nominal power supply	24 Vdc ±20%	24 Vdc ±20%
Max. power ripple	1Vpp	1Vpp
Max. consumption (**)	70mA	90mA
Max. output load	5kΩ	< 500Ω
Max. output noise	< 5mVpp	< 5mVpp
Max. output value	12V	30mA
Alarm output value	10.5V	21mA
Electrical isolation	500V (*)	500V (*)
Protection against polarity inversion	Yes	Yes
Protection against overvoltage	Yes	Yes
Protection against power supply in output	Yes	Yes

(*) It includes a 30V 0,4J voltage suppressor

(**) The devices must be supplied with a Class 2 Power Supply (as for NEC) or LPS Power Supply (as for EN 60950). If devices are permanently connected to the machine it’s requested an external switch or circuit breaker and external overcurrent protection.

MECHANICAL DIMENSIONS

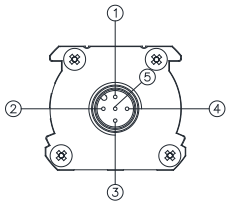
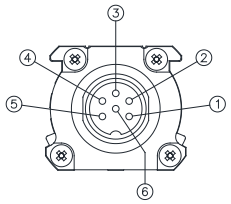
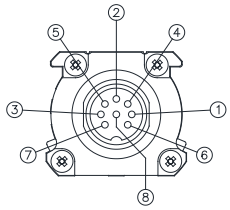
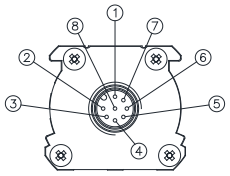
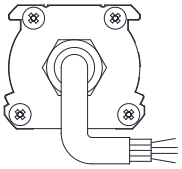




ELECTRICAL / MECHANICAL DATA

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
Sampling time	ms	0,5	1	1,5	2	3
Electrical stroke	mm	**Model**				
Independent linearity	%FS	Typical: ≤ 0,01 % FS (min ± 0,060 mm) with sliding cursor max: ≤ 0,02 % FS with floating cursor at a distance between 2 and 5 mm max: ≤ 0,04 % FS with floating cursor at a distance between 5 and 7 mm				
Max.dimensions (A)	mm	**Model + 154**				
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)				

ELECTRICAL CONNECTIONS

OUTPUT WPA-A-A	OUTPUT WPA-A-B	OUTPUT WPA-A-C	OUTPUT WPA-A-H	OUTPUT WPA-A-F/R
				

	CONNECTORS				CABLES	OPTIONAL CABLES FOR			
Function	**WPA-A-A**	**WPA-A-B**	**WPA-A-C(***)**	**WPA-A-H**	**WPA-A-F/R**	**WPA-A-A**	**WPA-A-H**	**WPA-A-B**	**WPA-A-C**
	5 pin M12	*6 pin M16*	*8 pin M16*	*8 pin M12*	*Standard cable*	*Pre-assembled 5 pin*	*Pre-assembled 8 pin*	*Pre-assembled 6 pin*	*Pre-assembled 8 pin*
Output cursor 1 0...10V 4...20mA 0...20mA	1	1	5 (1*)	5	Grey	Brown	Green	Grey	Brown
GND ***Output cursor 1*** (0V)	2	2	2	1	Pink	White	Yellow	Pink	Pink
Inverse output cursor 1 ***Output cursor 2*** ***Output speed*** 0...10V 4...20mA 0...20mA	3	3	3	3	Yellow	Blue	Pink	Yellow	Yellow
GND ***Output cursor 1*** ***Output cursor 2*** ***Output speed*** (0V)	2	4	6	2	Pink	White	Grey	Green	White
Power supply+	5	5	7	7	Brown	Grey	Brown	Brown	Green
Power supply GND	4	6	8	6	White	Black	Blue	White	Grey
n.c.	-	-	4	4	-	-	Red	-	-
n.c.	-	-	1(5*)	8	-	-	White	-	-
Temperature ratings	-25+80 °C	-30+85 °C	-30+85 °C	-30+85 °C	-30+80 °C / -30+75 °C	-25+80 °C	-25+80 °C	-20+85 °C	-20+85 °C

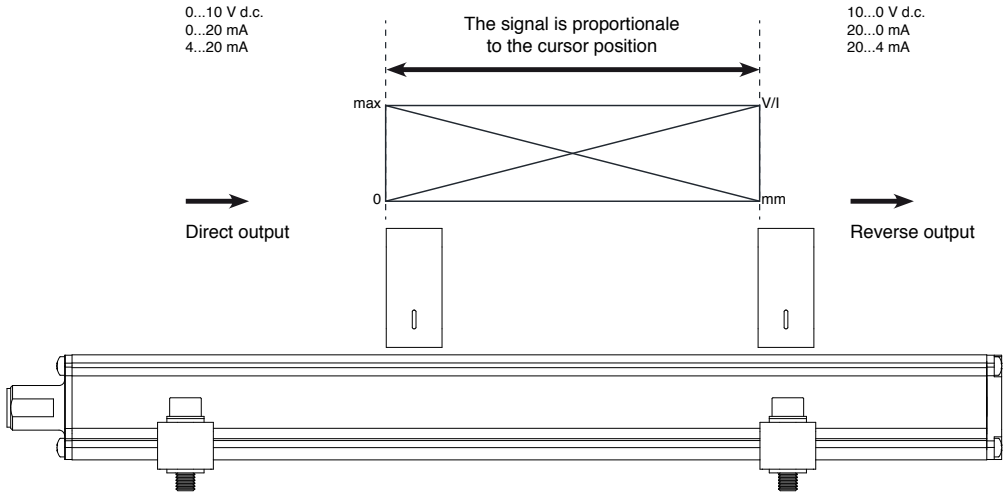
(*) = for version 4...20mA / 0...20mA

(**) The operating temperature ranges, except where expressly indicated, are also applicable in the UL scope.
The transducer case must be grounded with the cable sheathing on the control system side only.

(***) Not available with UL certification.

ANALOG OUTPUT

The WPA-A magnetostrictive transducers provide a direct and reverse voltage or current analogue output proportional to the magnetic cursor's position. Since the output is direct, no signal electronic processing is required if interfaced with controllers or measurement instruments.



ORDER CODE

Position transducer

W	P	A	A						

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

Analog output	**A**

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

Model

Output		
0...10Vdc	1 cursor	**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 ccursor, 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**

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	**A, B, C, H Outputs**
Output F cable length	
00	1 m
05	5 m
10	10 m
15	15 m

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

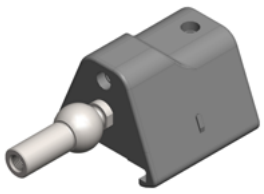
Es.: WPA-A-B-0400-N, PKIT090, PCUR210
Transducer model WPA, analog output, 6-pin connector, model 400, 0...10Vdc output, PKIT090 brackets, PCUR210 standard cursor.

CURSORS ON REQUEST

PCUR202/PCUR230

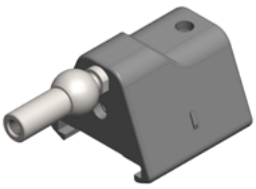
Floating Cursor

PCUR210



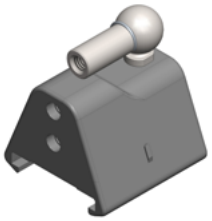
Sliding cursor,
axial joint low

PCUR211

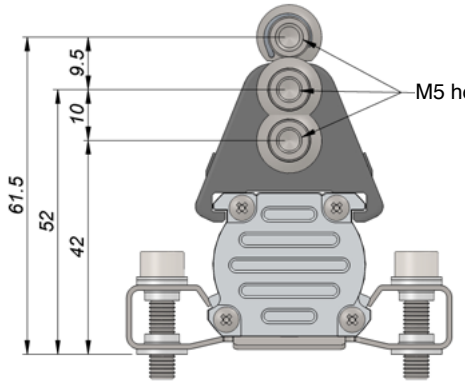


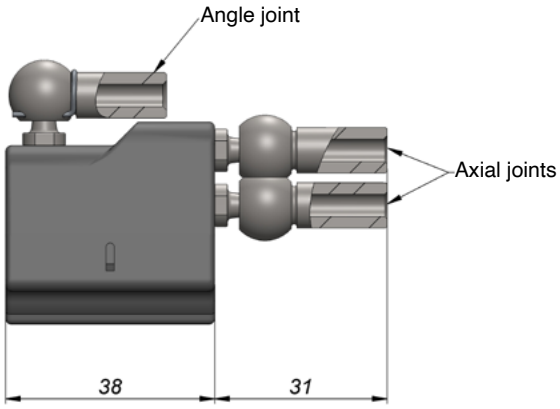
Sliding cursor,
axial joint high

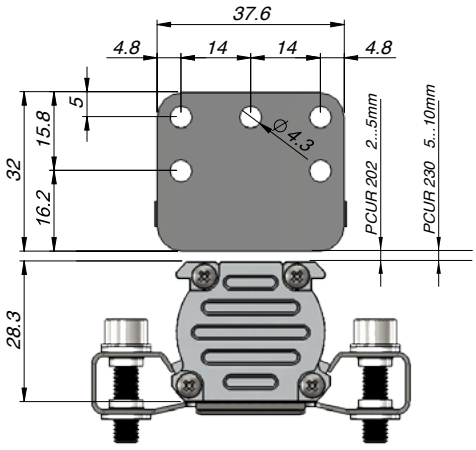
PCUR212



Sliding cursor,
axial joint angle



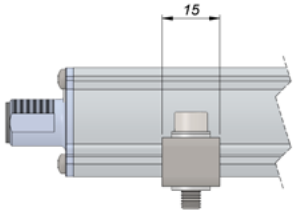




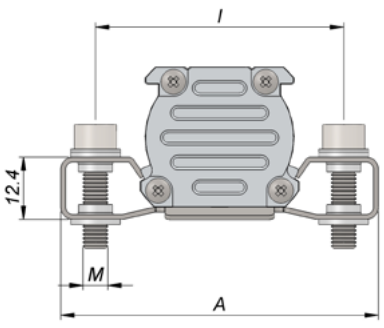
BRACKETS ON REQUEST

P K I T □ □ □

Brackets (2 brackets for every kit)	
Steel brackets, interaxis 42.5mm	**090**
Steel brackets, interaxis 50mm	**091**



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



OPTIONAL FEMALE CONNECTORS

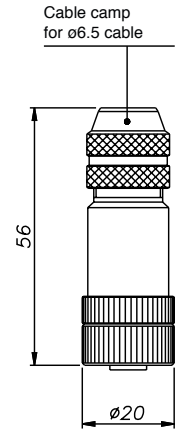
For A-H outputs, M12 thread connector

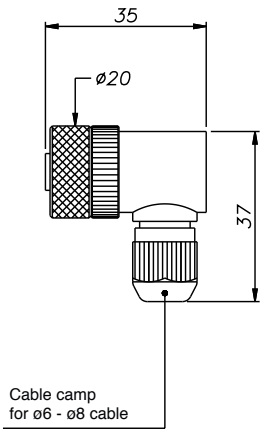
Code:
CON031 for 5-pin output (WPA-A-A)
CON041 for 5-pin output (WPA-A-A)
CON125 for 5-pin output (WPA-A-A)**
CON035 for 8-pin output (WPA-A-H)**
CON042 for 8-pin output (WPA-A-H)*
CON117 for 8-pin output (WPA-A-H)
CON126 for 8-pin output (WPA-A-H)**

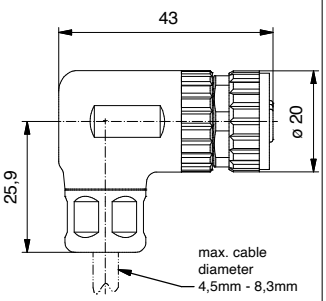
For B-C outputs, M16 thread connector

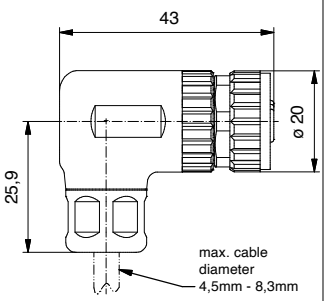
Code:
CON021 for 6-pin output (WPA-A-B)
CON022 for 6-pin output (WPA-A-B)*
CON023 for 6-pin output (WPA-A-B)
CON026 for 8-pin output (WPA-A-C)
CON027 for 8-pin output (WPA-A-C)
CON028 for 8-pin output (WPA-A-C)
CON118 for 6-pin output (WPA-A-B)

Connector extraction length: 10mm

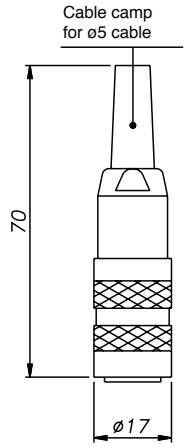


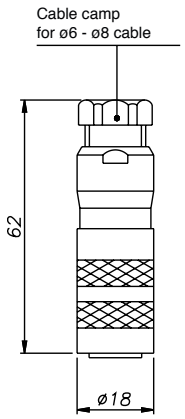


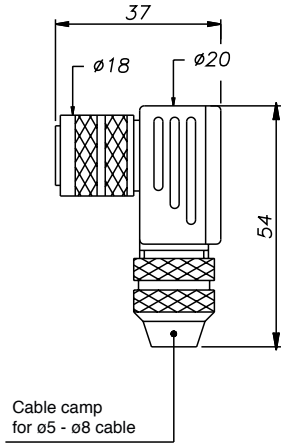




CON031/CON035	CON041	CON042/ CON117	CON125	CON126
IP67 - IEC 48B	IP67		IP67	IP67
-30+85 °C	-25+85 °C	-30+85 °C	-30+85 °C	-30+85 °C







CON021/CON026	CON022/CON118/CON027	CON023/CON028
IP40 - EMC	IP67 - EMC	IP67 - EMC
-30+85 °C	-30+85 °C	-30+85 °C

* Not available with UL certification.

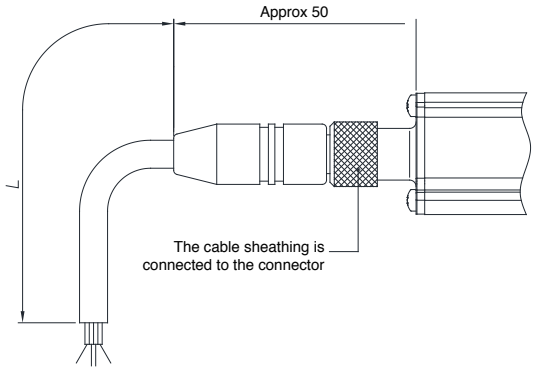
**Shielded connector

Note

1. The IP protection class specified in this document is valid with the use of the proper female connector that has to be correctly installed and wired with theappropriate protections.
2. The operating temperature ranges, except where expressly indicated, are also applicable in the UL scope.
3. For cULus applications extension cables, a 6 pole 26AWG Style 2464 cable is advised

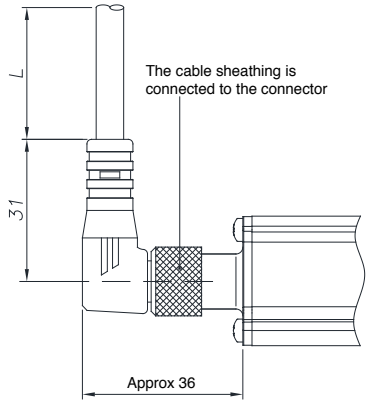
OPTIONAL CABLES OUTPUT

PRE-ASSEMBLED CABLE WITH STRAIGHT CONNECTOR



5-pin cable code		WPA-A-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*/CAV280**

PRE-ASSEMBLED CABLE WITH 90° CONNECTOR



8-pin cable code		WPA-A-H	
Lenght “L”		CODE	
		Straight cable	Cable to 90°
2	mt	**CAV002**	**CAV005**
5	mt	**CAV003**	**CAV006**
10	mt	**CAV004*/CAV281**	**CAV007**
15	mt	**CAV009*/CAV282**	**CAV008**

* Not available with UL certification.

Electrical installation requirements and Conformity certificate are available on our web site: www.gefran.com
GEFRAN spa reserves the right to make aesthetic or functional changes at any time and without notice

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