

Main characteristics

- Absolute transducer with remote electronics structure
- Sensor available in three different mechanical versions
- Strokes from 50 to 4000mm
- Interface:
CANopen DS-301 V4.01 Device Profile DS-406 V2.0
- Supplies cursor displacement data and shift speed (from one to four cursors, minimum distance 75 mm)
- Operating temperature: -30...+90°C
- Resistance to vibration (DIN IEC68T2/6 20g)
- IP67 protection
- EMI CE compatibility (EN 50081-2 50082-1)
- Power supply range 10...30 Vdc
- Connection to remote electronics with connector or terminal board (PUR 5 mm diameter wire)
- Max. distance between remote electronics and sensor: 50 m

Contactless linear position transducer with magnetostrictive technology with CANopen DS-301 output with Device Profile DS-406.

The separate, remote electronics (up to a maximum of 50 metres) reduces sensor size to a minimum and facilitates installation in the cylinder.

The sensing element is available in three versions for adaptation to different mechanical installation requirements.

The overall dimensions of the sensor are among the smallest available on the market.

Excellent linearity, repeatability, resistance to mechanical vibrations and shocks complete the product's specifications overview

TECHNICAL DATA

Model	from 50 to 4000 mm
Measurement taken	Displacement / Speed
Position read sampling time (typical)	See "ELECTRICAL DATA" table
Displacement resolution	5 µm (2 µm on request)
Speed resolution	Up to 0,01 mm/sec
Speed calculation time	Sampling time + 500µsec
Shock test DIN IEC68T2-27	100g, 11ms single shock
Vibrations DIN IEC68T2-6	20g, 10...2000Hz
Displacement speed	≤10 m/s
Max. acceleration	≤ 100 m/s ² displacement
Working pressure	
RK-1 and RK-3	350 bar (peak max 500 bar)
RK-2	700 bar (peak max 1000 bar)

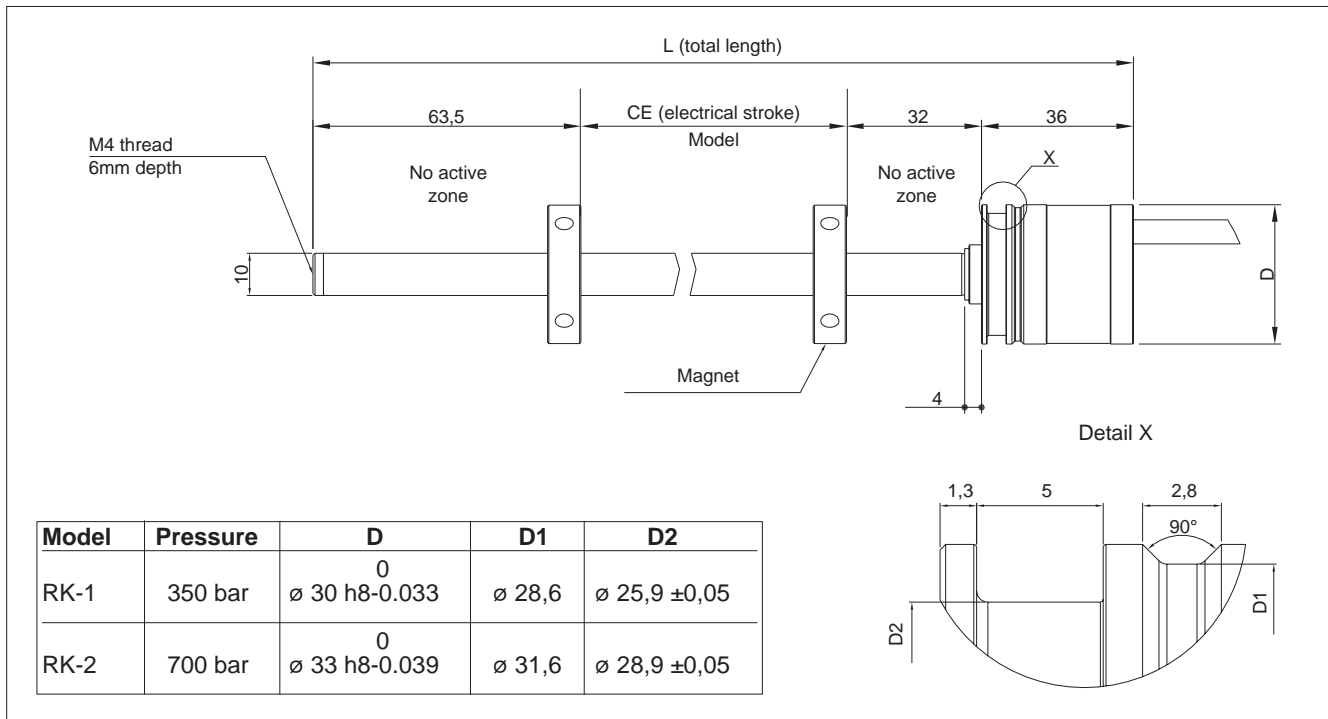
ELECTRICAL DATA

Output signal	CANopen digital communication
Nominal power supply	10...30Vdc
Max. power ripple	1Vpp
Input	Depends on power supply voltage: max 70mA with power supply of 30Vdc * max 85mA with power supply of 24Vdc * max 110mA with power supply of 18Vdc ** max 200mA with power supply of 10Vdc **
	* peak 0,2A at power-up ** peak 0,4A at power-up
Electrical isolation	500V
Protection against polarity inversion	Yes
Protection against overvoltage	Varistors on power supply line
Overcurrent protection	PTC (internal self-resetting fuse on power supply line)

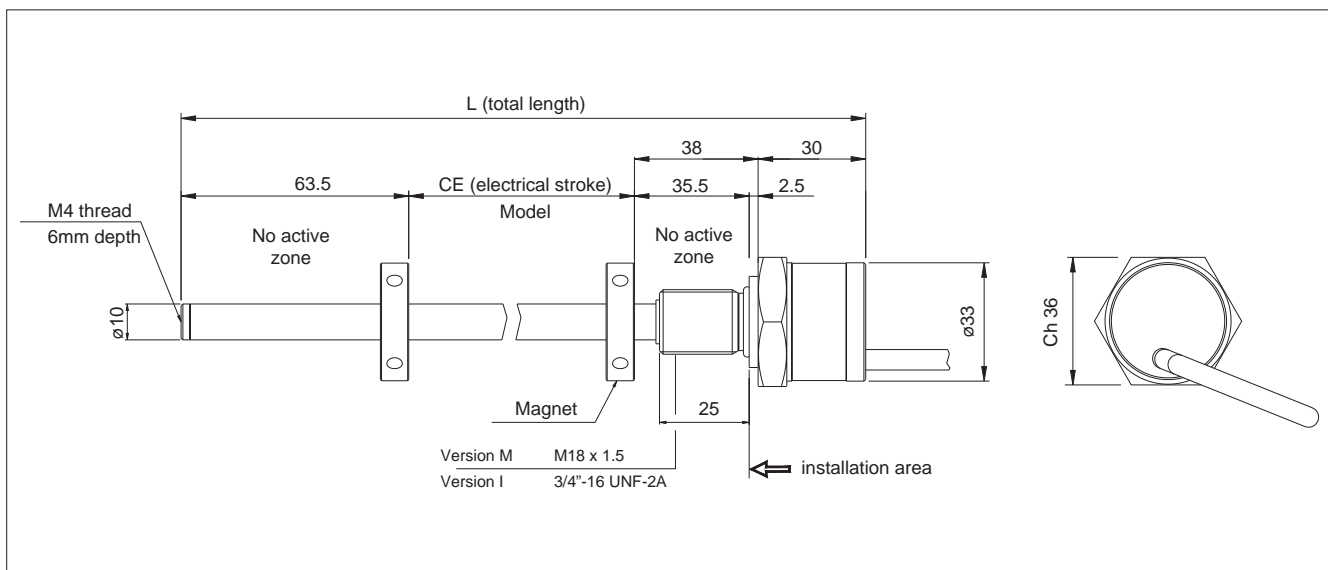
ENVIRONMENTAL DATA

Protection	IP 67
Operating temperature	-30°...+90°C
Storage temperature	-40°...+100°C
Coefficient temperature	0.005% F.S. / °C

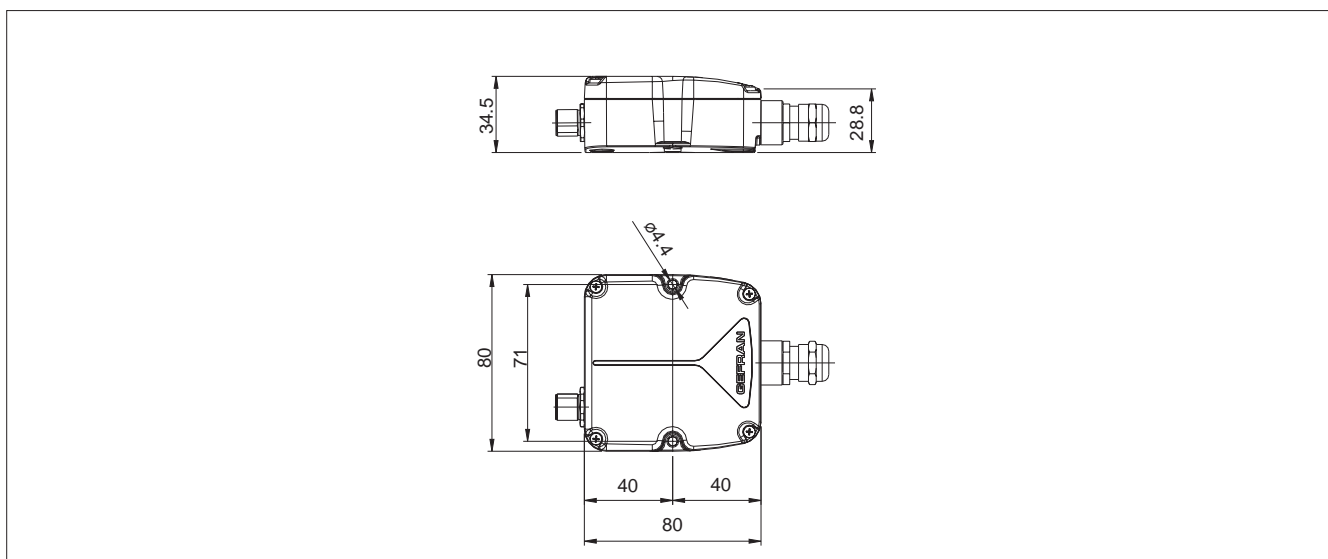
MECHANICAL DIMENSIONS (RK-1 and RK-2)



MECHANICAL DIMENSIONS (RK-3)

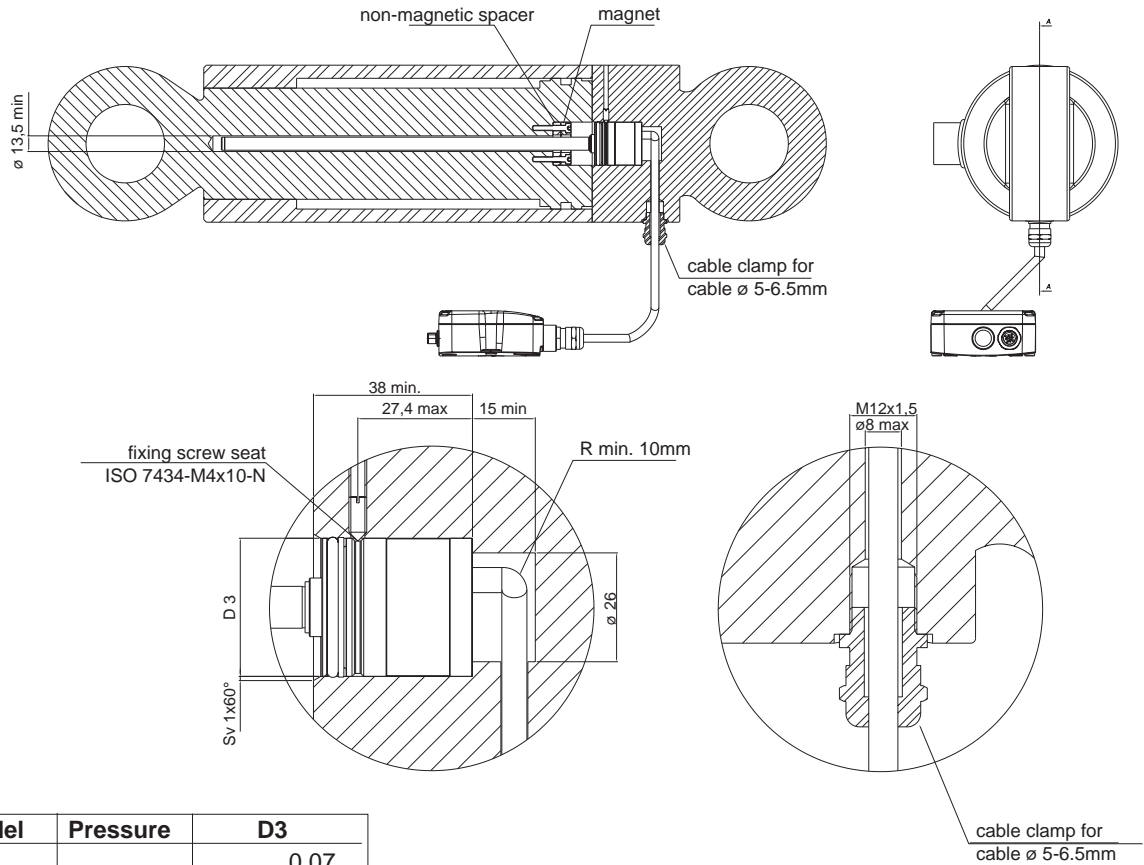


MECHANICAL DIMENSIONS (EKC)



MOUNTING INSIDE A CYLINDER (RK-1 and RK-2)

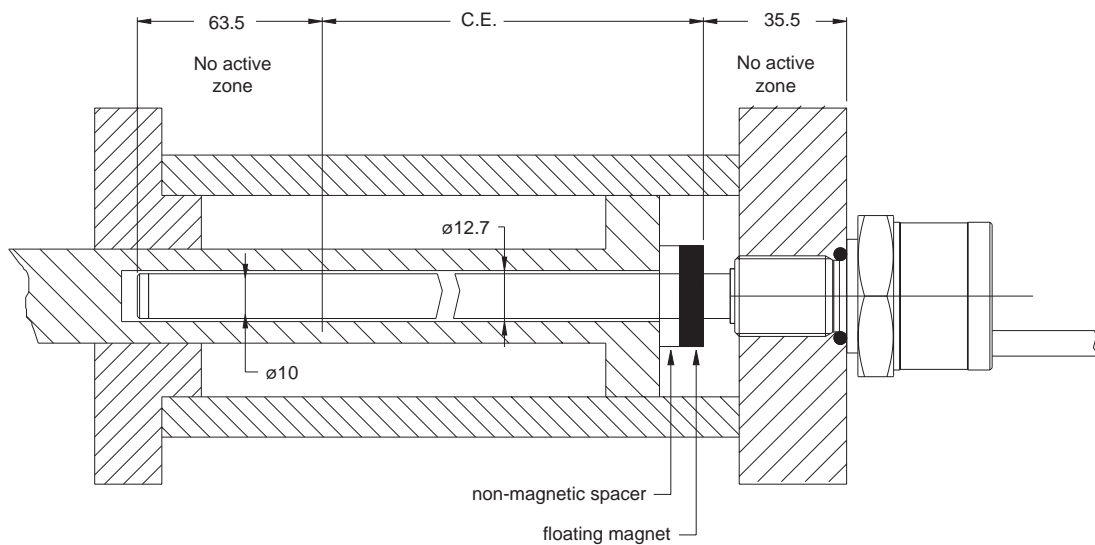
RK-1 / RK-2: versions with internal flange, installation completely inside cylinder



Model	Pressure	D3
RK-1	350 bar	0.07 \varnothing 30 h8-0.04
RK-2	700 bar	0.09 \varnothing 33 h8-0.05

MOUNTING INSIDE A CYLINDER (RK-3)

RK-3: version with threaded external flange, installation partially inside cylinder

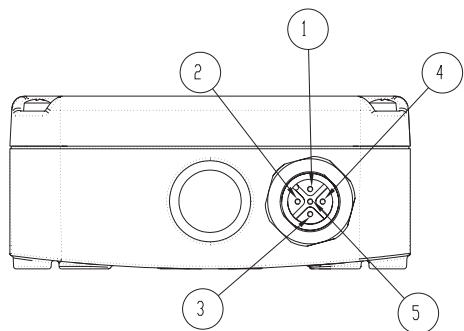


ELECTRICAL / MECHANICAL DATA

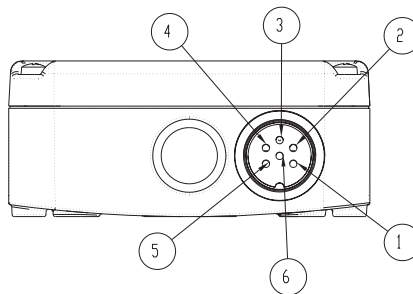
Model	50	100	130	150	200	225	300	400	450	500	600	700	750	800	900	1000	1250	1500	1750	2000	2250	2500	2750	3000	3250	3500	3750	4000	
Electrical stroke (C.E.)	mm																												
Independent linearity	± %F.S.																												
Max. dimensions (L)	mm																												
Repeatability	mm																												
Hysteresis	mm																												
Sampling time	mm																												
	Model typical 0,02 (Max. 0,04) Model + 131,5 (excluding cable) 0,001 of the FS < 0.01 1 (1.5 for stroke from 1100 to 2000) (2 for stroke from ≥2000)																												

ELECTRICAL CONNECTIONS

RK- _ _ _ _ -S-EKC- _ -M- _ _ _ _



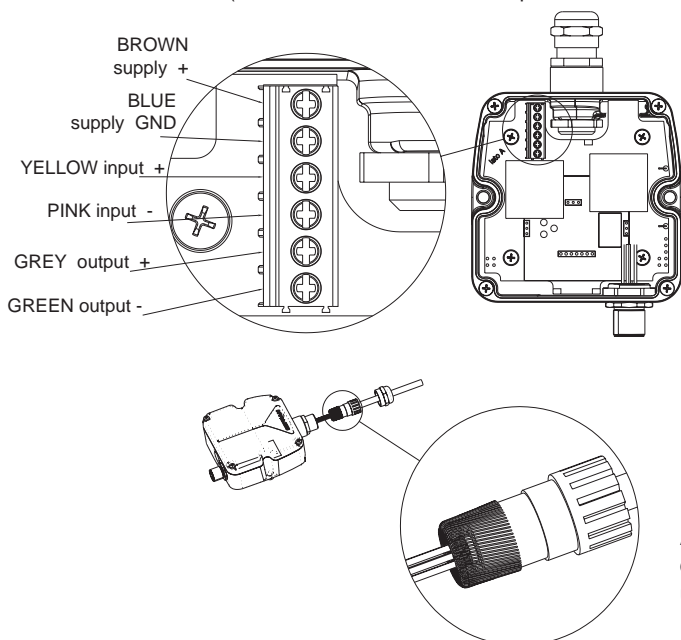
RK- _ _ _ _ -S-EKC- _ -B- _ _ _ _



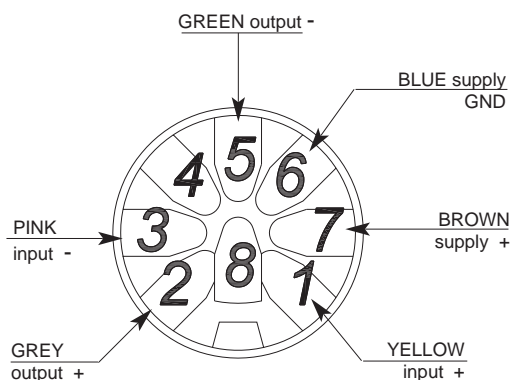
Function	EKC- _M- _ _ _ _ M12 5-pin	EKC- _B- _ _ _ _ M16 6-pin DIN 45322	Optional cable for M12
CAN L	5	1	Grey
CAN H	4	2	Black
n.c.	1	3	Brown
n.c.	-	4	-
Power supply +	2	5	White
Power supply -	3	6	Blue

INTERCONNECTION BETWEEN PRIMARY SENSOR AND REMOTE ELECTRONICS

RK- _ _ _ _ -S-EKC- _ _ -R- _ _ _ _
(interconnection with wire clamp and screw terminals)



RK- _ _ _ _ -S-EKC- _ _ -M- _ _ _ _
(interconnection with M12 8-pin connector)



Attention:
do all wiring BEFORE powering the electronics (i.e., with unit off).

ORDER CODE

Position transducer

R K [] [] [] [] S - E K C A [] [] [] []

0 0 0 0 [] [] [] [] [] [] [] [] 0 X X

Head type	
Internal flange, max 350 bar	1
Internal flange, max 700 bar	2
Threaded external flange	3

Model

Output connector type	
M12 5-pin connector output	M
DIN45322 6 pin connector output	B

Type of connection to the primary sensor	
Internal screw terminal	R
M12 - 8 pin connector	M

Type (see table 1)

Transmission speed (see table 2)

System resolution	
1	0,002 mm
2	0,005 mm (standard)
3	0,010 mm
4	0,020 mm
5	0,040 mm

Programming node number	
XXX	Standard; node = 127
nnn	Node specified by customer

Power supply	
S	10...30 V (Standard)

Connection cable to remote element	
00	= 1 mt
02	= 2 mt
03	= 3 mt
04	= 4 mt
05	= 5 mt
10	= 10 mt
15	= 15 mt

Threading	
None (RK-1 and RK-2)	X
M18 x 1,5 (RK-3 standard)	M
3/4"-16UNF (RK-3 option)	I

Termination resistance	
0	Without resistance
1	Resistance = 120 Ω

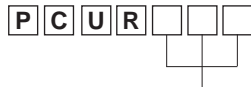
Table 1					
Type	N. cursors	PD01	PD02	PD03	PD04
A	1	Displacement Speed Cams	No data	No data	No data
B	2	Displacement 1 Speed 1 Cams 1	Displacement 2 Speed 2 Cams 2	No data	No data

Displacement = 4 Byte - Speed = 2 Byte - Cams = 1 Byte

Table 2 - transmission speed	
1	= 1 Mbaud
2	= 800 kBaud
3	= 500 kBaud
4	= 250 kBaud
5	= 125 kBaud
6	= 100 kBaud
7	= 50 kBaud
8	= 20 kBaud
9	= 10kBaud

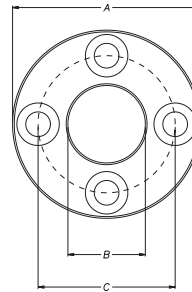
Mechanical and/or electrical characteristics differing from those in the standard version may be arranged on request.

FLOATING CURSOR (to order separately)

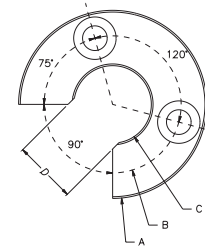


Cursors	
Cursor Diameter 32.8	022
Cursor Diameter 32.8 with 90° slit	023
Cursor Diameter 25.4	024

PCUR022

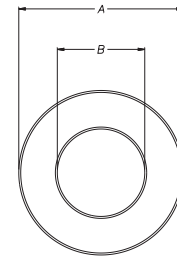


PCUR023



Dimensions	A	B	C	Thickness
PCUR022	32.8	13.5	23.9	7.9
PCUR023				
PCUR024	25.4	13.5	-	

PCUR024



The **PCUR022** is supplied with:

N° 8 Brass nuts M4
N° 8 Brass washers D4
N° 4 Brass screws M4x25

The **PCUR023** is supplied with:

N° 4 Brass nuts M4
N° 4 Brass washers D4
N° 2 Brass screws M4x25

OPTIONAL FEMALE CONNECTORS (to order separately)

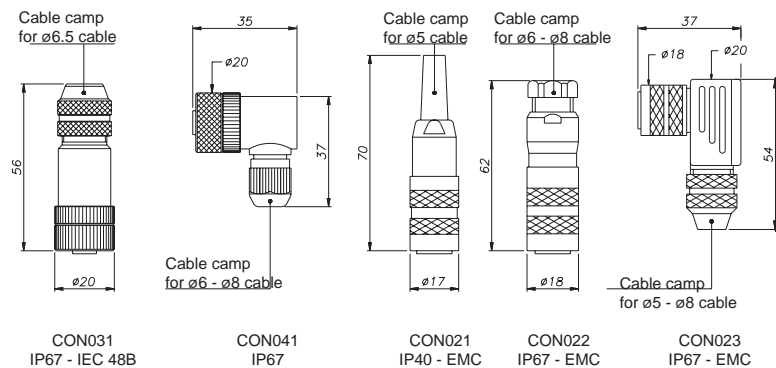
For M outputs, M12 thread connector
(for RK-_-_-_-S-EKC-_-M-_-_-)

Code: **CON031** 5-pin
CON041 5-pin

For B outputs, M12 thread connector
(for RK-_-_-_-S-EKC-_-B-_-_-)

Code: **CON021** 6-pin
CON022 6-pin
CON023 6-pin

Connector extraction length: 10mm



OPTIONAL CABLES OUTPUT (to order separately)

Cable code (for RK-_-_-_-S-EKC-_-M-_-_-)			
Length "L"		CODE	
		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)

RK sensor (see Order Code details)
RK-C electronics (see Order Code details)
M12, 8-pin axial male connector for interconnection
Magnetic pen to calibrate remote electronic (model EK-C-D)
on-magnetic spacer for mounting PCUR022 cursor
Cable clamp
The EDS file can be downloaded from www.gefran.com

RK-_-_-_-S 0000X000X__X0XX
EKC-_-_-_- 0000X__S00X0XX
CON460
PKIT312
available soon
PRE060