GEFRAN

KHC

PRESSURE TRANSMITTER WITH DIGITAL OUTPUT

KHC pressure transmitters are based on film sensing element deposited on stainless steel diaphragm.

Thanks to the latest state of the art SMD electronics and compact all stainless steel construction, this products are extremely robust and reliable, specially suitable for mobile hydraulics applications.

In particular the KHC series combines high accuracy with temperature stability, resistance to extreme environmental conditions and CAN digital output with mobile hydraulics typical protocols.

Developed to ensure a robust and high-performance solution for applications such as agricultural machines, contruction machines and material handling equipments.

The digital signal, in addition to the pressure measurement, also contains the data related to the temperature of the device.

The instrument is delivered preconfigured and ready to be used without any further effort. Custom configurations are also possible, to be specified on order, or programmable by the user.

1) Incl. Non-Linearity, Hysteresis, Repeatability, Zero-offset and Span-offset tolerance (acc. to IEC 61298-2)
2) The operating pressure range is intended from 0.5 to 100% FS
3) Time within which the rated performance ia achieved

TECHNICAL DATA

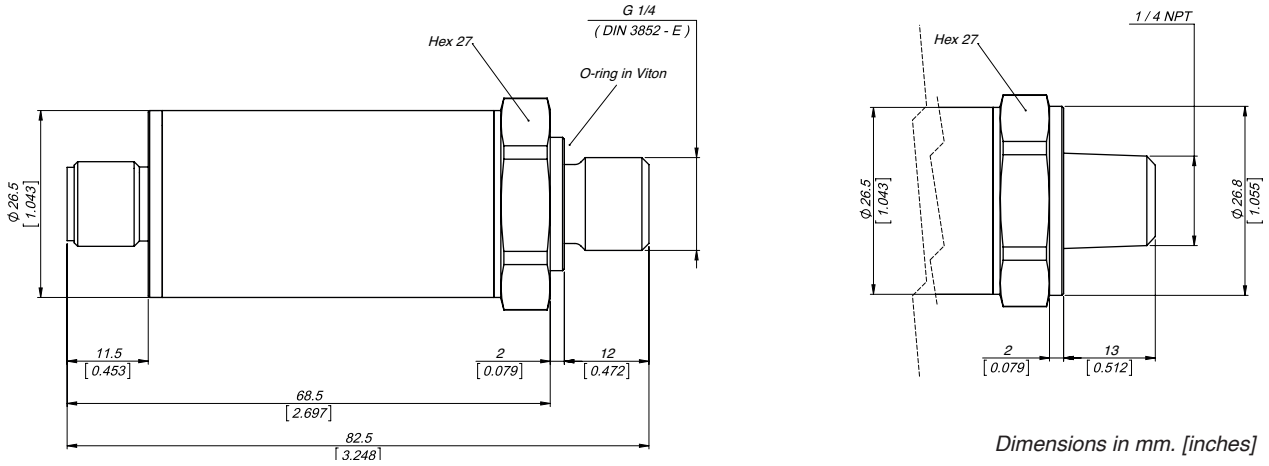
Pressure ranges (2)
from 4 to 1000 bar (see table)
Power supply
8 … 32 Vdc
Signal output
digital CANOpen device profile DS404
Non-Linearity (BFSL)
± 0.15% FS (typical) ± 0.25% FS (max)
Hysteresis
+ 0.1% FS (typical) + 0.15% FS (max)
Repeatability
± 0.025% FS (typical) ± 0.05% FS (max)
Zero & Span setting tolerance
± 0.15% FS (typical) ± 0.25% FS (max)
Accuracy at room temperature (1)
<± 0.5% FS
Overvoltage protection
40 Vdc max
Wetted parts
Stainless steel Inox AISI 430F (1.4104) and 17-4 PH (1.4542)
Housing
Stainless steel Inox AISI 304 (1.4301)
Insulation voltage
500 Vdc
Long term stability
<± 0.2% FS/per year
Operating temperature range
-40 … +125°C (process and storage) -40 … +105°C (ambient)
Compensated temperature range
-20 … +85°C
Temperature effects over compensated range (zero)
± 0.01%FS/°C typical (± 0.02%FS/°C max)
Temperature effects over compensated range (span)
± 0.01%FS/°C typical (± 0.02%FS/°C max)
Measuring rate
1 msec (1000 Hz) typical
Warm-up time (3)
<30 sec
Weight
150 gr
Mechanical Shock
100g/11 ms according to IEC 60068-2-27
Vibrations
20g at 10 Hz … 2000 Hz according to IEC 60068-2-6
Ingress protection
IP67/IP69K with appropriate mating connector plugged in
Output short circuit and reverse polarity protection
Yes
CE Conformity
According to Directive 2004/108/CE

PRESSURE RANGES

RANGES (Bar)	4	6	10	16	20	25	40	60	100	160	200	250	400	600	1000
Overpressure (Bar)	8	12	20	32	40	50	80	120	200	320	400	500	800	1200	1200
Burst pressure (Bar)	16	24	40	64	80	100	160	240	400	640	800	1000	1500	1500	1500

MECHANICAL DIMENSIONS

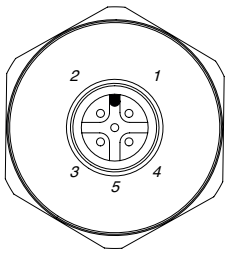
A - M12x1 connector



Dimensions in mm. [inches]

ELECTRICAL CONNECTION - Connectors

A – M12x1 (5 pin)

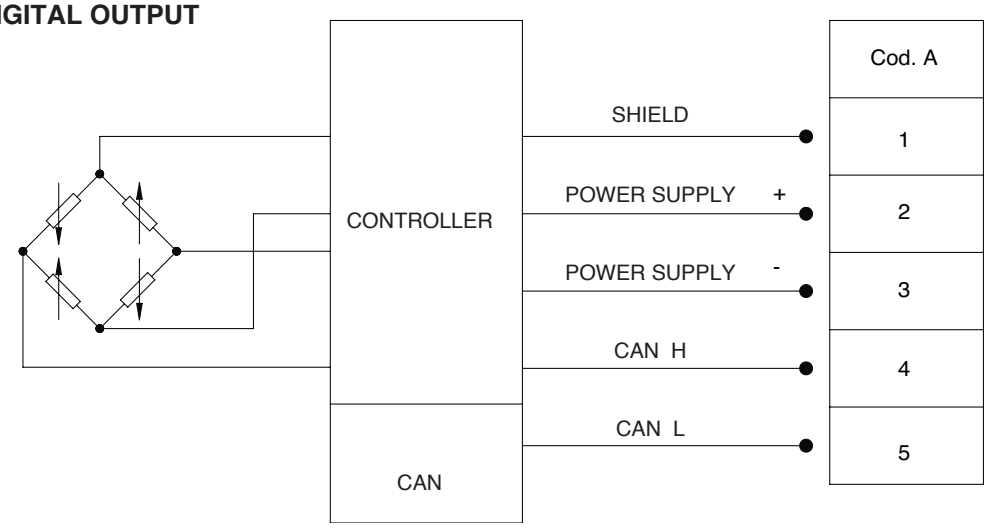


Protection rating IP67/69K

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

ELECTRICAL CONNECTION - Connection diagrams

C – CAN BUS DIGITAL OUTPUT



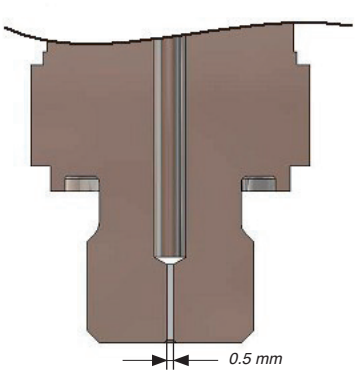
Pin 1 connection is not mandatory, but is available according to user needs.

PRESSURE PEAKS PROTECTION

Many industrial applications, especially in hydraulics, could present dangerous phenomena like cavitation, liquid hammer or pressure peaks, due for example to pumps start and stop or fast closing of a valve.
These phenomena can be harmful to the transducer.

The KHC series, upon request, is available with an integrated pressure snubber which, thanks to a 0.5 mm diameter through hole, eliminates these harmful peaks, to protect the transducer.

Contact Gefran to request the version with pressure snubber.



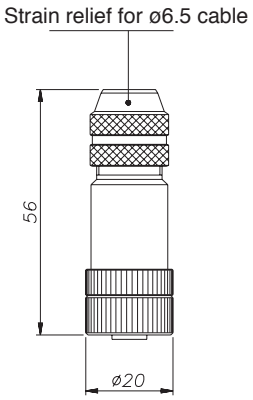
ACCESSORIES ON REQUEST

Connector Plugs

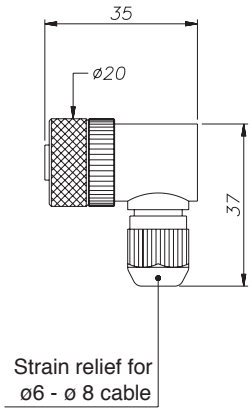
Connection A

5 pin connector M12x1 - straight
Prot. IP67 **CON 031**

5 pin connector M12x1 - 90°
Prot. IP67 **CON 041**



CON031



CON041

EXTENSION CABLES

Extension cable with female connector, 5 pin M12x1, protection IP67

Length		CODE	
		Straight Connecor	90° Connector
2	mt	**CAV011**	**CAV021**
5	mt	**CAV012**	**CAV022**
10	mt	**CAV013**	**CAV023**
15	mt	**CAV015**	**CAV024**

Cable color code	
Pin	**Wire**
1	Brown
2	White
3	Blue
4	Black
5	Grey

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ORDERING INFORMATION

OUTPUT PROTOCOL	
Canopen DS404	**M**

PRESSURE CONNECTION	
G¼ gas male (DIN 3852-E)	**E**
¼ -18 NPT male	**7**

ELECTRICAL CONNECTION	
M12 x 1 (5 pin)	**A**

MEASUREMENT RANGE					
	bar		**bar**		**bar**
B04U	**4**	B25U	**25**	B02C	**200**
B06U	**6**	B04D	**40**	B25D	**250**
B01D	**10**	B06D	**60**	B04C	**400**
B16U	**16**	B01C	**100**	B06C	**600**
B02D	**20**	B16D	**160**	B01M	**1000**

NON-LINEARITY	
±0.25%FS BFSL	**M**

BAUDRATE	
1 Mbit/s	**0**
800 kbit/s	**1**
500 kbit/s	**2**
250 kbit/s (standard)	**3**
125 kbit/s	**4**
100 kbit/s	**5**
50 kbit/s	**6**
20 kbit/s	**7**

HEX WRENCH SIZE	
Hex 27 mm	**7**

SPECIAL EXECUTION	
213	Standard

PDO Mapping	
I	**Integer PDO data (32 bit) standard**
F	Float PDO data (IEEE754 floating point)

ADDRESS	
001 … 127	Node ID **(001 standard)**

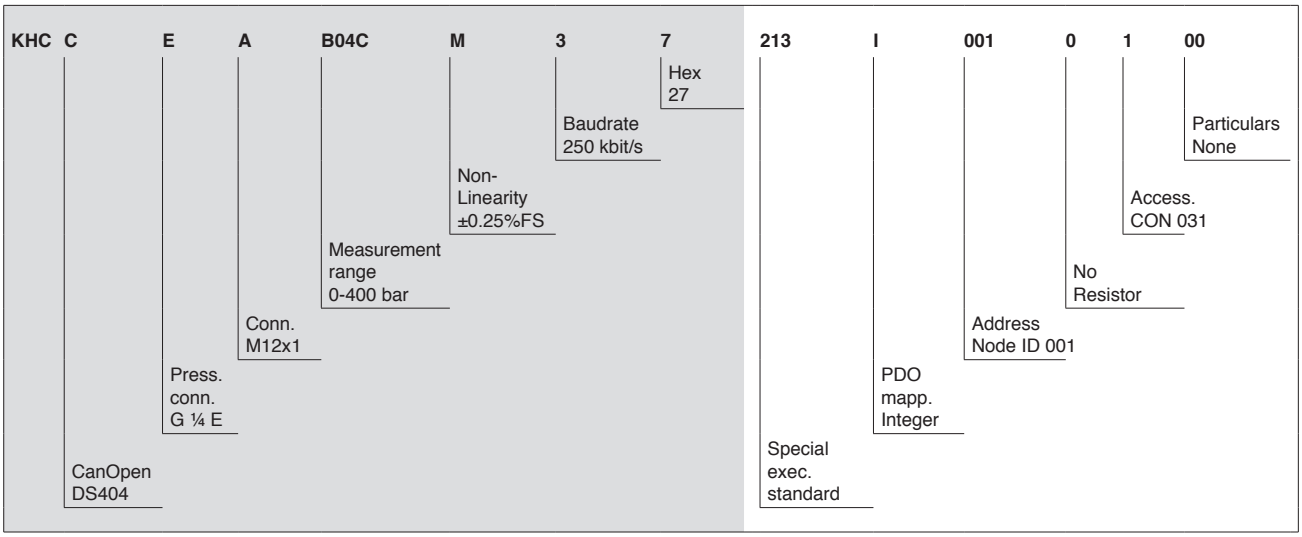
TERMINATION RESISTOR	
0	**No resistor (standard)**
1	Resistor 120 Ω

ACCESORIES	
X	**None (standard)**
1	CON 031 connector inclusive
2	CON 041 connector inclusive

PARTICULARS	
00	None (standard)

CALIBRATION STANDARDS
Instruments manufactured by Gefran are calibrated against precision pressure calibration equipment wich is traceable to International Standards.

Description example: KHC-C-E-A-B04C-M-3-7 213-I-001-0-1-00



Sensors are manufactured in compliance with: - EMC 2004/108/CE Compatibility Directive
- RoHS 2002/95/CE Directive
- 2006/42/CE Machinery Directive

Electrical installation requirements and Conformity certificate are available on our website: www.gefran.com

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