



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 digital outputs with mobile hydraulics typical protocols. The model KHC is available with either CANopen® or J1939 protocol.

Developed to ensure a robust and high-performance solution for applications such as agricultural machines, construction 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 is achieved

TECHNICAL DATA

Pressure ranges (2)

from 4 to 1000 bar (see table)

Power supply

8 ... 32 Vdc

Signal output

Digital CANopen® DS404 profile
Digital J1939

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

EC Conformity

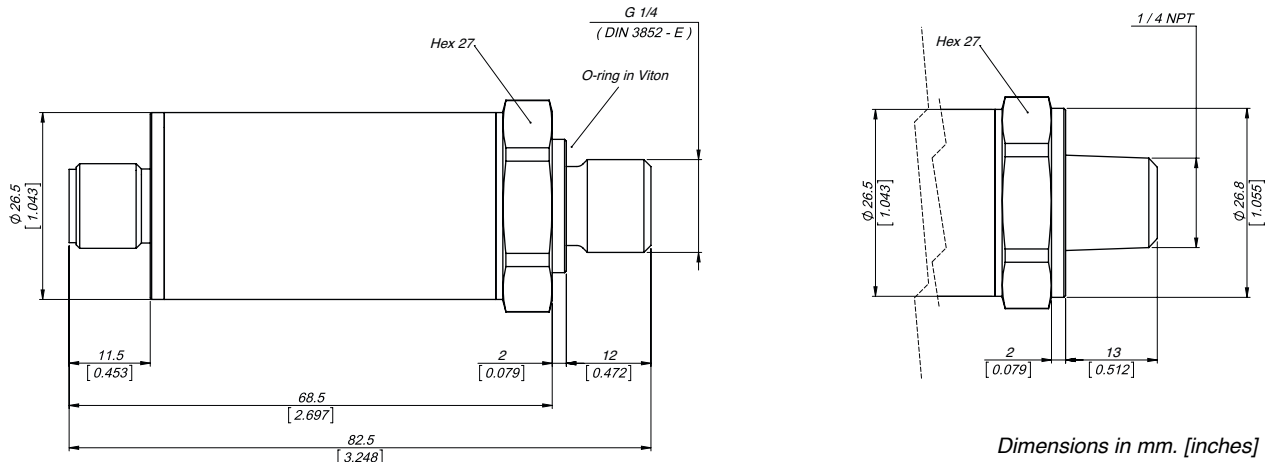
According to Directive 2014/30/EU

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

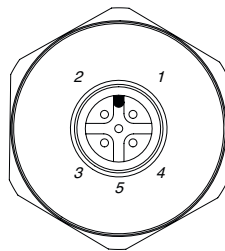
MECHANICAL DIMENSIONS

A - M12x1 connector



ELECTRICAL CONNECTION - Connectors

A - M12x1 (5 pin)

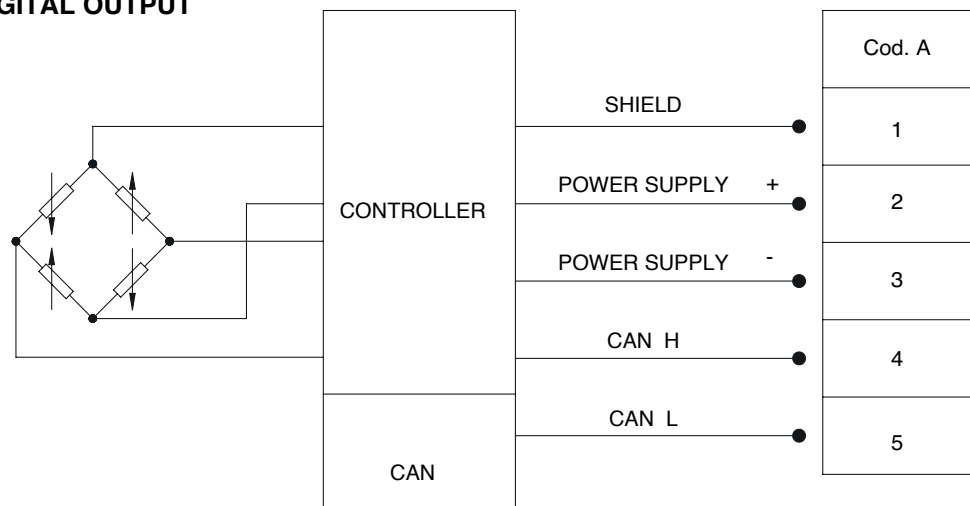


Protection rating IP67/69K

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



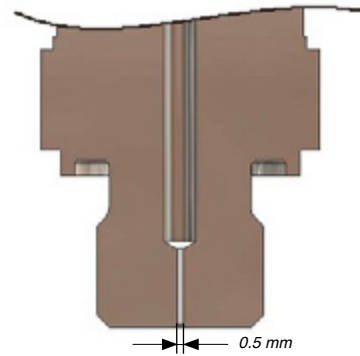
Pin 1 connection is not mandatory, but is available according to user needs.

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

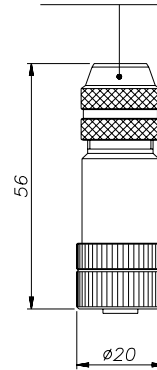
5 pin connector M12x1 - straight
Prot. IP67

CON 031

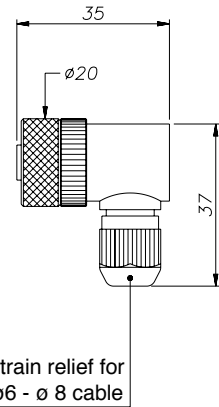
5 pin connector M12x1 - 90°
Prot. IP67

CON 041

Strain relief for $\phi 6.5$ cable



CON031



Strain relief for $\phi 6 - \phi 8$ cable

CON041

EXTENSION CABLES

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

Length		CODE	
		Straight Connector	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

ORDERING INFORMATION

OUTPUT PROTOCOL	
CANopen® DS404	C
J1939	J

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

* Only opt.3 available for J1939

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)
X	J1939

ADDRESS	
001	Node ID (001 standard) CANopen® and J1939
...	
127	
248	Node ID (J1939 only)
...	
253	

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 which is traceable to International Standards.	

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

KHC	C	E	A	B04C	M	3	7	213	I	001	0	1	00
CANOpen® DS404		Press. conn. G ¼ E	Conn. M12x1	Measurement range 0-400 bar	Non-Linearity ±0.25%FS	Baudrate 250 kbit/s	Hex 27	Special exec. standard	PDO mapp. Integer	Address Node ID 001	No Resistor	Access. CON 031	Particulars None

Sensors are manufactured in compliance with: - EMC 2014/30/EU Compatibility Directive
- RoHS 2011/65/EU Directive
- 2006/42/EC Machinery Directive

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