

UNIK5000F

Pressure Sensors for Oxygen

Designed for Critical Oxygen Service

UNIK5000F is a high-performance pressure sensor specifically engineered for oxygen-enriched applications where safety, stability and measurement integrity are essential.

Building upon Druck's proven UNIK5000 platform, the UNIK5000F incorporates oxygen-compatible materials throughout the wetted system and utilizes Halocarbon fill fluid specifically selected for oxygen service. Wetted flow paths are optimized to facilitate effective cleaning prior to commissioning and helping reduce potential contamination risks in oxygen systems. The product is supplied in a cleanable condition and can be incorporated into customer-defined oxygen cleaning processes where required.

Typical applications include mission-critical oxygen systems within space and aerospace ground support equipment (GSE), industrial gas and clean energy.

- Liquid oxygen storage
- Transfer and loading systems
- High-pressure gas infrastructure
- Launch-pad utilities
- Rocket propulsion test facilities
- Oxygen generation plants

Combining oxygen-compatible construction with Druck's piezoresistive sensing technology, the UNIK5000F delivers high accuracy, excellent long-term stability and reliable performance in demanding critical-service applications.

Features

- Pressure ranges up to 350 bar
- High accuracy up to ±0.04% FS BSL
- Compensation temperature ranges from -40 to +80 °C
- Piezoresistive technology provide excellent stability of ±0.05% FS/year typical
- Fast response, power-up time less than 10ms
- Wetted materials compatible with oxygen systems
- Halocarbon fill fluid used
- Wetted flow path designed to avoid particle traps and sharp corners

UNIK5000F specifications

Measurement

Operating pressure ranges:

Absolute ranges

Any zero based range 3.4 bar to 350 bar (50 to 5000 psi)

Note: All psi values are approximate.

Sealed gauge ranges

Any zero based range 10 bar to 350 bar (145 to 5000 psi)

Non-zero based ranges

Non-zero based ranges are available. Please contact Druck to discuss your requirements.

Over pressure

- 4 × FS for ranges ≤ 70 bar (1000 psi) (up to 200 bar (2900 psi) maximum)
- 2 × FS for ranges ≤ 350 bar (5000 psi)

Containment pressure

- Ranges up to 70 bar (1000 psi) absolute 200 bar (2900 psi)
- Ranges above 70 bar (1000 psi) 700 bar (10000 psi)

Supply and outputs

Electronics option	Description	Supply voltage (V)	Output	Current consumption (mA)
2	mA	7 to 28**	4-20 mA	< 30
3	0 to 5 V 4-wire	7 to 16**	0 to 5 V	< 3
4	0 to 5 V 3-wire	7 to 16**	0 to 5 V*	< 3
5	Basic Configurable (3-wire)	See below~	See below	< 3
6	0 to 10 V 4-wire	12 to 16**	0 to 10 V	< 3
7	0.5 V to 4.5 V Ratiometric	5.0 ± 0.5	0.5 to 4.5 V	< 3

*0 to 5 V 3-wire output is non-true zero. At pressures below 1% of span the output will be fixed at approximately 50 mV

** 32V in non-hazardous area operation

~ Supply voltage is between [Maximum Output + 1 V] (7 V minimum) to 16**

Basic configurable (option 5)

Any pressure signal output configurations will be available, subject to the following limitations:

Output specification	Basic configurable
Minimum span	4 V
Maximum span	10 V
Maximum output limit	11 V
Maximum zero offset	Span / 2
Inverted output response	No

Output voltage range can be specified to a resolution of 0.1 V.

The output will continue to respond to 110% FS. i.e. if a 0 to 10 V output is specified, the output will continue to increase proportionally to applied pressure until at least 11 V.

Power-up time

- < 10 ms

Insulation

- 500 Vdc: >100 MΩ
- 500 Vac: < 5 mA leakage current (mA version only)

Performance specifications

There are two grades of performance specification: Improved and Premium.

Accuracy

Combined effects of non-linearity, hysteresis and repeatability:

- Improved: ±0.1% FS BSL
- Premium: ±0.04% FS BSL

Zero offset and span setting

- ±1.0% FS

Long term stability

±0.05% FS typical (±0.1% FS maximum) per year

Temperature effects

Three compensated temperature ranges can be chosen.

Improved and premium accuracy performance:

- -10 to +50 °C (+14 to +122 °F): ±0.5% FS TEB
- -20 to +80 °C (-4 to +176 °F): ±1.0% FS TEB
- -40 to +80 °C (-40 to +176 °F): ±1.5% FS TEB

*TEB = Temperature Error Band

Physical specifications

Environmental protection

Pressure type	IP rating
Absolute	IP67
Sealed gauge	IP67

Operating temperature range

-40 to +80 °C (-40 to +176 °F)

Pressure media

Fluids compatible with stainless steel 316L (ranges ≤ 70 bar) or Inconel 625 (ranges > 70 bar)

Unit contains Halocarbon oil and construction suitable for use with oxygen.

Calibration conducted using dry gas or de-ionised / pure water only – no oil used.

Internal contamination may be present unless specifically cleaned to recognised standards and accompanied by verification certificate.

Enclosure materials

Stainless steel (body), PTFE (vent filter), glass filled nylon (electrical connector assemblies), silicone rubber (O-ring in electrical connector assemblies)

Pressure connector

Available options are

- G1/4 female*
- G1/4 male flat
- 1/4 NPT female*
- 1/4 NPT male
- 7/16-20 UNJF Male 74° External Cone*
- 1/2 NPT male*
- 1/4 Swagelok bulkhead*
- 7/16-20 UNF long 37° flare tip*
- 7/16-20 UNJF female*
- 7/16-20 UNF male short flat
- 3/8-24 UNJF
- 7/16-20 UNF autoclave*
- 7/16-20 UNJF AS1098-04 style E*

Choose connectors marked * for pressure ranges over 70 bar.

Other pressure connectors may be available, contact Druck to discuss your requirement.

Electrical connector

Various electrical connector options are available offering different features

Connector type	Option code	Pin	Electronics option		
			4 to 20 mA	Voltage (3- wire) and basic configurable	Voltage (4- wire)
MIL-C-26482	6	A	+ve Supply	+ve Supply	+ve Supply
		B	-ve Supply	+ve Output	+ve Output
		C	-	-	-ve Output
		D	-	0V Common	-ve Supply
		E	-	-	-
		F	-	-	-
MIL-C-26482 Alternative Wiring	E	A	+ve Supply	+ve Supply	+ve Supply
		B	-	0V Common	-ve Supply
		C	-	+ve Output	+ve Output
		D	-ve Supply	-	-ve Output
		E	-	-	-
		F	-	-	-
M12 x 1 4-pin	G	1	+ve Supply	+ve Supply	+ve Supply
		2	-	+ve Output	+ve Output
		3	-ve Supply	0V Common	-ve Supply
		4	Case	Case	-ve Output
D38999/25YA35XN 6-pin	L	1	+ve Supply	-	+ve Supply
		2	-ve Supply	-	-ve Supply
		3	-	-	+ve Output
		4	-	-	-ve Output
		5	-	-	-
		6	-	-	-

Regulatory Compliance Information

- PED 2014/68/EU – compliant (> 200 bar (2900 psi)) sound engineering practice (≤ 200 bar (2900 psi))
- ATEX Directive 2014/34/EU (optional, refer to approvals)
- EMC Directive 2014/30/EU - compliant

Note: EN 61000-6-2:2005: Susceptibility – heavy industrial applies with electrical connector with cable screen connected to case.

- RoHS Directive 2011/65/EU – compliant
- WEEE 2012/19/EU - compliant
- REACH EC 1907/2006 - compliant. Refer to EU Declaration of Conformity for details of CE compliance standards.

Hazardous Area Approvals (optional)

Approval Type (Intrinsic Safety)	Ex Coding
ATEX - EU	Ex ia IIC T5 Ga, (-40°C ≤ Ta ≤ +80°C)
IECEx - Global	

Note: For full certification details, refer to the type examination certificates (or approval listings) and supplied hazardous area installation instructions.

Ordering information

1. Select model number

Main Product Variant

PMP Amplified Pressure Transducer

PTX 4-20 mA Pressure Transmitter

Product series

5 UNIK5000

Diameter and Material

0 25mm stainless steel

Electrical Connector

6 MIL-C-26482 (6-pin Shell Size 10) (Mating connector not supplied)

E MIL-C-26482 (6 pin Shell Size 10) Alternative Wiring (Mating connector not supplied)

G M12 x 1 4-pin male (Mating connector not supplied)

L D38999/25YA35XN (6 pin Shell Size 9) (Mating connector not supplied) (Note 1)

Electronics Option

2 4 to 20 mA 2-wire (PTX)

3 0 to 5 V 4-wire (PMP)

4 0 to 5 V 3-wire (PMP)

5 Basic Configurable 3-wire (PMP)

6 0 to 10 V 4-wire (PMP)

7 0.5 to 4.5 V Ratiometric 3-wire (PMP) (Note3)

F Halocarbon oil

Compensated Temperature Range

TA -10 to +50 °C (14 to +122 °F)

TB -20 to +80 °C (-4 to +176 °F

TC -40 to +80 °C (-40 to +176 °F)

Accuracy

A2 Improved

A3 Premium (Note 2)

Calibration

CA Zero/Span Data

CB Room Temperature

CC Full Thermal (Note 2)

Hazardous Area Approval

H0 None

H1 IECEx/ATEX IS Group IIC

Pressure Connector

PA G1/4 Female

PB G1/4 Male Flat (Note 2)

PE 1/4 NPT Female

PF 1/4 NPT Male (Note 2)

PL 7/16-20 UNJF Male 74° External Cone

PR 1/2 NPT Male via Adaptor

PS 1/4 Swagelok Bulkhead

PU 7/16-20 NF Long 37° Flare Tip

PV 7/16-20 UNJF Female

PX 7/16-20 UNF Male Short Flat (Note 2)

PY 3/8-24 UNJF (Note 2)

P58 7/16-20 UNF Female Autoclave

P69 7/16-20 UNJF AS1098-04 Style E

PTX	**5**	**0**	**G**	**2**	**F**	**-**	**TB**	**-**	**A2**	**-**	**CB**	**-**	**H0**	**-**	**PU**	**(Example Model Number)**

Ordering notes

Note 1: Only available for electronics option 2, 3 or 6.

Note 2: Not available for pressure ranges > 70 bar.

Note 3: Hazardous area certifications not available

2. State pressure range and units (e.g., 0 to 10 bar)
Pressure unit options are:

Symbol	Description
bar	bar
mbar	millibar
psi	pounds/sq. inch
Pa	Pascal
hPa	hectoPascal
kPa	kiloPascal
MPa	MegaPascal
mmH_2O	mm water
cmH_2O	cm water
mH_2O	metres water
inH_2O	inches water
ftH_2O	feet water
mmHg	mm mercury
inHg	inches mercury
kgf/cm^2	kg force/sq. cm
atm	atmosphere
Torr	torr

3. State pressure reference (e.g., absolute)
Reference options are:

- absolute
- sealed gauge

4. Output option 5

State voltage output at minimum and maximum pressure (e.g., output 1 to 9 V)

Typical order examples

PTX50G2F-TB-A2-CA-H0-PA: 0 to 10 bar, sealed gauge

PMP5065F-TC-A3-CC-H0-PE: 0 to 250 psi, absolute, output voltage 1 to 7 V

Accessories (order as separate line items)

P/N 163-009: Mating connector for MIL-C-26482 (Electrical connector options 6 and E) (Note 4)

Cable assemblies (Note 4)

A made up electrical connector with a length of cable.

1. Select part number

UNIKCABLE — Cable assembly

Electrical connector

- 6 — MIL-C-26482
- G — M12 x 1 4-pin

Cable

- 1 — Polyurethane cable
- 2 — Raychem cable

UNIKCABLE - 6 - 2 (Example part number)

2. State cable length and units (Integer value only)

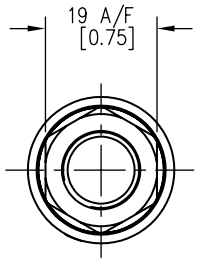
Minimum length 1 m (3 ft)

Maximum length 200 m (600 ft)

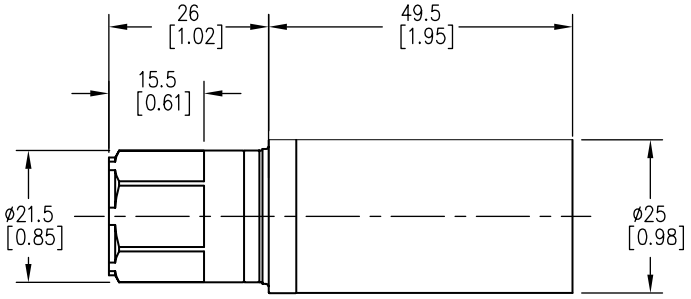
Example: UNIKCABLE-6-2 5 m

Note 4: Not considered suitable for use in hazardous areas.

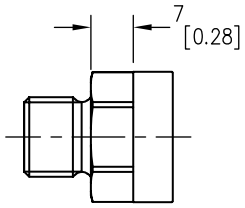
Mechanical drawings



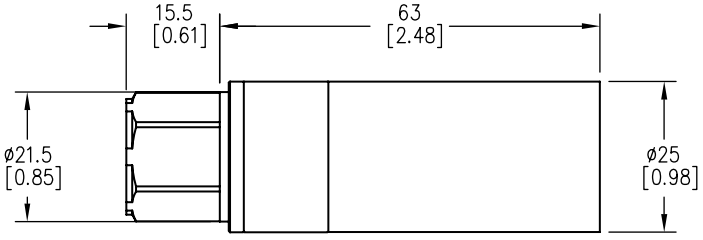
GENERAL FEMALE PRESSURE CONNECTION



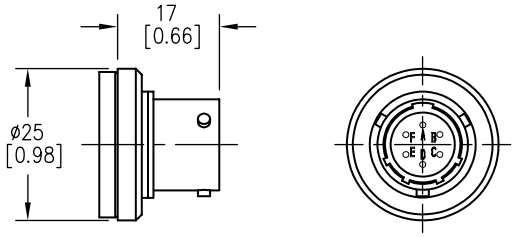
ABSOLUTE PRESSURE RANGE <= 70 bar



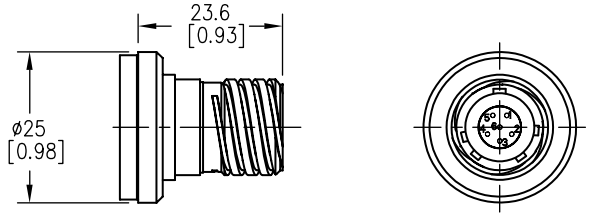
GENERAL MALE PRESSURE CONNECTION



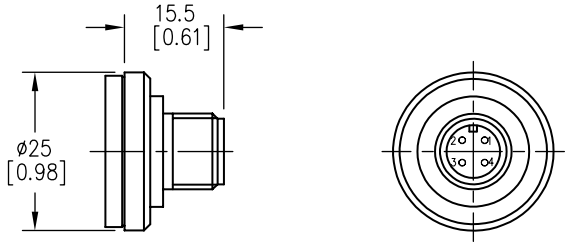
PRESSURE RANGE > 70 bar



BAYONET MIL-C-26482 NON-DEMOUNTABLE



D38999/25YA35XN 6-PIN



M12 x 1 4-PIN

[1] DIMENSIONS SHOWN ARE FOR STANDARD LENGTH PRODUCTS

[2] REFER TO PAGE 3 FOR LIST OF PRESSURE CONNECTION OPTIONS (ORIENTATION NOT CRITICAL)

[3] ALL DIMENSIONS ARE IN MILLIMETRES [INCHES]

2026 Copyright by Druck Limited. All rights reserved.