GE
Measurement & Control

UNIK 5600/5700

Marine Certified
Pressure Sensing Platform

The new UNIK 5600/5700 carries marine certification for most zones on-board ship, as well as Intrinsically Safe certifications. Marine approval means UNIK 5000 complies with International standards, regulations and Marine Law. The use of Druck silicon technology and analogue circuitry enables best in class performance for stability, low power and high frequency response. The platform enables you to build up your own sensor to match your precise needs. This high performance, configurable solution to pressure measurement employs modular design and lean manufacturing techniques to offer:

High Quality

With 40 years of pressure measurement experience, our field-proven Druck silicon technology is at the heart of the new platform, resulting in a range of high quality, high stability pressure sensors.

Bespoke as Standard

Custom-built from standard components, manufacturing sensors to your requirement is fast and simple; each UNIK 5000 is a “bespoke” pressure sensing solution, but with the short lead times and competitive pricing you would expect from standard products.

Expertise

We have the people and the knowledge to support your needs for accurate and reliable product performance; our team of experts can help you make the right sensor selection, guiding you and providing the help and tools you need.

Features

- Ranges from 70 mbar (1 psi) to 700 bar (10,000 psi) (Depending on material option)
- Accuracy to ±0.04% Full Scale (FS) Best Straight Line (BSL)
- Stainless Steel 316L and Titanium construction options
- Frequency response to 3.5 kHz
- High over pressure capability
- Intrinsically Safe Hazardous Area certification
- 4-20 mA output
- Multiple pressure connector options
- DIN 43650 or fully submersible electrical connection
- Operating temperature ranges from –40 to 80°C (-40 to 176°F)

5600/5700 Specifications

Measurement

Operating Pressure Ranges

Gauge ranges
Any zero based range between 70 mbar and 70 bar (1 to 1,000 psi) (values in psi are approximate)

Sealed Gauge Ranges
Any zero based range between 10 and 700 bar (145 to 10,000 psi) (Titanium option limited to 70 bar)

Absolute Ranges
Any zero based range between 100 mbar and 700 bar (1.5 to 10,000 psi)
(Titanium option limited to 70 bar)

Differential Ranges (Stainless Steel option only)
Wet/Dry
Uni-directional or bi-directional 70 mbar to 35 bar (1 to 500 psi)
Wet/Wet
Uni-directional or bi-directional 350 mbar to 35 bar (5 to 500 psi)
Line pressure: 70 bar max (1000 psi)

Barometric Ranges
Barometric ranges are available with a minimum span of 350 mbar (5.1 psi)

Non Zero Based Ranges
Non zero based ranges are available. Please contact GE to discuss your requirements

Over Pressure
- 10 × FS for ranges up to 150 mbar (2 psi)
- 6 × FS for ranges up to 700 mbar (10 psi)
- 2 × FS for barometric ranges
- 4 × FS for all other ranges (up to 200 bar for ranges ≤70 bar and up to 1200 bar for ranges >70 bar)

For differential versions the negative side must not exceed the positive side by more than:
- 6 × FS for ranges up to 150 mbar (2 psi)
- 4 × FS for ranges up to 700 mbar (10 psi)
- 2 × FS for all other ranges up to a maximum of 15 bar (200 psi)

Containment Pressure
Ranges up to 150 mbar (2 psi) gauge 10 x FS
Ranges up to 70 bar (1,000 psi) gauge 6 x FS
200 bar (2,900 psi) max)
Ranges up to 70 bar (1,000 psi) absolute
200 bar (2,900 psi)
Ranges above 70 bar (1,000 psi)
1,200 bar (17,400 psi)
Differential (-ve port) must not exceed positive port by more than 6 × FS (15 bar (200 psi) maximum)

Supply Voltage
7 to 32 Vdc (7 to 28 Vdc in hazardous area operation)

Output
4-20 mA

Power-Up Time
10 ms

Insulation
- 500 Vdc: 100 MΩ
- 500 Vac: ≤ 5 mA leakage current

Performance Specifications

There are two grades of performance specification: Improved and Premium

Accuracy
Voltage, Current and mV Linearised
Combined effects of non-linearity, hysteresis and repeatability:
Improved: ±0.1% FS BSL
Premium: ±0.04% FS BSL

Note: For the barometric pressure range, accuracy is of span, not full scale.

Zero Offset and Span Setting
Demountable electrical connector allows access to potentiometers that give at least ±5% FS adjustment (DIN connector only)

Factory set to:
DIN Connector ±0.2% FS
Depth Cable ±1.0% FS

Long Term Stability
±0.05% FS typical (±0.1% FS maximum) per year increasing pro-rata for pressure ranges below 350 mbar

Temperature Effects
-10 to +50 °C (14 to +122 °F): ±0.5% FS
Temperature error band (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

Temperature effects increase pro-rata for pressure ranges below 350 mbar (5 psi) and are doubled for barometric ranges.

Line Pressure Effects (Differential Version Only)
Zero shift: <±0.03% span/bar of line pressure
Span shift: <±0.03% span/bar of line pressure
Effects increase pro-rata for differential pressure ranges below 700 mbar (10 psi).

Physical Specifications

Environmental Protection
- See Electrical Connector section
- Hyperbaric Pressure: 20 bar (300 psi) maximum

Operating Temperature Range
-40 to 80°C (-40 to 176°F)
DNV Approval Temperature Class
-25 to 70°C (-13 to 158°F)

Pressure Media
(Stainless Steel 316L Option)
Fluids compatible with Stainless Steel 316L and Hastelloy C276.
For the wet/dry differential version, negative pressure port: fluid compatible with stainless steel 316L, stainless steel 304, pyrex, silicon and structural adhesive.
(Titanium Option)
Fluids compatible with Grade 2 and 4 Titanium.

Enclosure Materials
Stainless steel or titanium (body – material option), glass filled nylon (DIN connector assembly) with rubber seals (nitrile o-rings and silicone gaskets). PTFE (depth cone, vent filter), PVDF (cable sheath and depth cone -- depth cable assembly).

Pressure Connector
Available options are
- G1/4 Female*
- G1/4 Male Flat
- G1/2 Male via Adaptor*
- 1/4 NPT Male
- 1/2 NPT Male via Adaptor*
- M20 X 1.5 Male
- Depth Cone (G1/4 female open face)

Choose connectors marked * for pressure ranges over 70 bar.
Other pressure connectors may be available.
Contact GE to discuss your requirement.

Electrical Connector

Code Number	Description	Max Operating temp range °C	Max Operating temp range °F	IP rating	Zero span Adjust
7	DIN 43650 Form A Demountable	-40 to +80	-40 to +176	65	Y
N	Depth Cable	-40 to +80	-40 to +176	68	N

Wiring Details

Connector Type	Option code		Electronics Option
DIN 43650 Form A	7	1	+ve Supply
		2	-ve Supply
		3	-
		E	Case
Depth Cable	N	Red	+ve supply
		White	-ve supply

General Certifications
RoHS 2002/95/EC

CE Conformity
Pressure Equipment Directive 97/23/EC
ATEX 94/9/EC (Optional)
EMC Directive 2004/108/EC

BS EN 61000-6-1: 2007	Susceptibility - Light Industrial
BS EN 61000-6-2: 2005	Susceptibility - Heavy Industrial
BS EN 61000-6-3: 2007	Emissions - Light Industrial
BS EN 61000-6-4: 2007	Emissions - Heavy Industrial
BS EN 61326-1: 2006	Electrical Equipment for Measurement, Control and Laboratory Use
BS EN 61326-2-3: 2006	Particular requirements for pressure transducers

Hazardous Area Approvals (optional)
IECEx/ATEX Intrinsically Safe 'ia' Group IIC
For full certification details, refer to the type-examination certificates (or approval listings) and Hazardous Area Installation Instructions.

Marine Approvals

Det Norske Veritas (DNV) Approvals: A-13018

Location	Class
Temperature	D
Humidity	B
Vibration	B
EMC	B
Enclosure (DIN Plug)	C (IP56)
(Depth Cable)	D (IP68 -200 mH_2O)

Ordering Information

See the online configuration tool at www.unik5000.com

(1) Select model number

Main Product Variant

PTX 4-20 mA Pressure Transmitter

Product Series

5 UNIK 5000

Diameter and Material

6 25 mm Stainless Steel 316L Fluid-Isolated (Marine Approved)

7 25 mm Titanium Fluid-Isolated (Marine Approved)

Electrical Connector

7 DIN 43650 Form A Demountable (Mating connector supplied)

N Depth Cable

Electronics Option

2 4 to 20 mA 2-wire (PTX)

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

Calibration

CA Zero/Span Data

Hazardous Area Approval

H0 None

H1 IECEx/ATEX Intrinsically Safe 'ia' Group IIC

Pressure Connector

PA G1/4 Female **Note 1**

PB G1/4 Male Flat

PF 1/4 NPT Male

PH M20x1.5

PN G1/2 Male via adaptor **Note 1**

PR 1/2 NPT Male via adaptor **Note 1**

PW Depth Cone (G1/4 Female open face)

PTX	**5**	**6**	**7**	**2**	**-**	**TA**	**-**	**A2**	**-**	**CA**	**-**	**H0**	**-**	**PA**	**Typical Model Number**

Ordering Notes:
Note 1: Select one of these pressure connectors for pressure ranges over 70 bar.

2) State pressure range and units: e.g. 0 to 10 bar, -5 to + 5 psi

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. gauge

Reference options are:

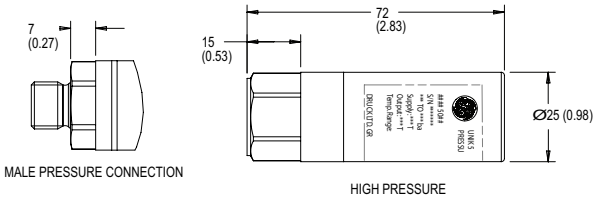
- gauge
- absolute
- barometric
- sealed gauge
- wet/dry differential
- wet/wet differential

4) State cable length and units: Integer values only, e.g.,1 m cable, 8 ft. cable. Minimum length 1 m (3 ft.) (only required on certain electrical connections). Maximum cable length 100 m (300 ft.).

Typical order examples:

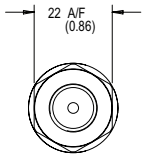
PTX5672-TA-A2-CA-H0-PA, 0 to 3500 psi, absolute
PTX57N2-TA-A2-CA-H0-PA, 0-20 mH_2O, gauge, 30 m cable

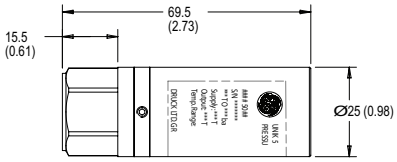
Mechanical Drawings



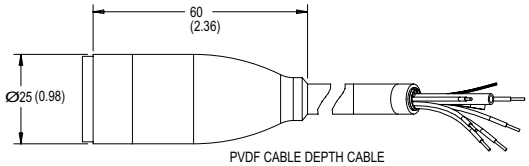
MALE PRESSURE CONNECTION

HIGH PRESSURE CONSTRUCTION

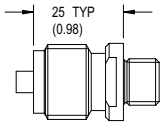




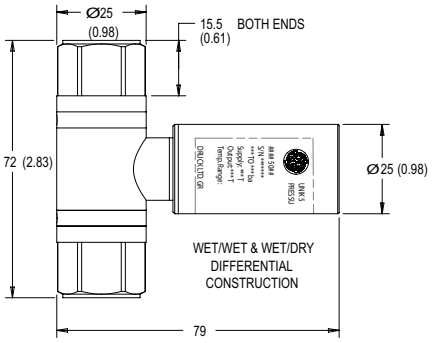
LOW PRESSURE CONSTRUCTION



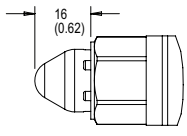
PVDF CABLE DEPTH CABLE



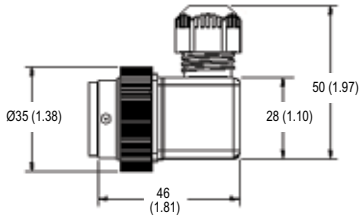
OPTIONAL PRESSURE ADAPTOR



WET/WET & WET/DRY DIFFERENTIAL CONSTRUCTION



DEPTH CONE PRESSURE ADAPTOR



MARINE DIN

NOTES:
[1] ALL DIMENSIONS ARE IN MILLIMETRES (INCHES)

[2] HIGH PRESSURE IS >70 BAR

www.ge-mcs.com

920-597B