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# UNIK 5000

## Pressure sensing platform

The new UNIK 5000 is a high performance configurable solution to pressure measurement. The use of micromachined silicon technology and analogue circuitry enables best in class performance for stability, low power and frequency response. The new platform enables you to easily build up your own sensor to match your own precise needs. This high performance, configurable solution to pressure measurement employs modular design and lean manufacturing techniques.

## High quality

The combination of a high technology sensor, together with advanced signal conditioning and packaging techniques, provides an ideal long term solution for reliable, accurate and economical measurements.

## 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. It is important to ensure that the sensor material and performance selected are suitable for your application.

## Features

- Ranges from 70 mbar (1 psi) to 700 bar (10000 psi)
- Accuracy to ±0.04% Full Scale (FS) Best Straight Line (BSL)
- Stainless steel construction
- Frequency response to 3.5 kHz
- High over pressure capability
- Hazardous area certifications
- mV, mA, voltage and configurable voltage outputs
- Multiple electrical and pressure connector options
- Operating temperature ranges from –55 to +125°C (-67 to +257°F)
- Online configuration tool

# UNIK 5000 specifications

## Measurement
## Operating pressure ranges:

### Gauge ranges
Any zero based range 70 mbar to 70 bar (1 to 1000 psi)

Note: All psi values are approximate.

### Sealed gauge ranges
Any zero based range 10 to 700 bar (145 to 10000 psi)

### Absolute ranges
Any zero based range 100 mbar to 700 bar (1.5 to 10000 psi)

### Differential ranges
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 (1000 psi) maximum

### 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. For non-zero based gauge ranges, please contact Druck to discuss your requirements.

### Over pressure
- 10 × FS for ranges up to 150 mbar (2 psi)
- 4 × FS for ranges <350 mbar (5 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 (1000 psi) gauge 6 x FS (200 bar (2900 psi) max)
- Ranges up to 70 bar (1000 psi) absolute 200 bar (2900 psi)
- Ranges above 70 bar (1000 psi)
- 1200 bar (17400 psi)*

Differential (-ve port) must not exceed positive port by more than 6 × FS (15 bar (200 psi) maximum.

*600 bar (8700 psi) for pressure connector options PX, RA and RF

## Supply and outputs

| Electronics option | Description | Supply voltage (V) | Output | Current consumption (mA) |
|---|---|---|---|---|
| 0 | mV Passive | 2.5 to 12 | 10 mV/V^ | <2 at 10 V |
| 1 | mV Linearised | 7 to 12 | 10 mV/V^ | <3 |
| 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 |
| 8 | Configurable (4-wire) | 7 to 36 | See below | See below |
| 9 | Configurable (3-wire) | 7 to 36 | See below | See below |

^ with a 10 V supply mV output sensors give 100 mV over the full scale pressure.

- Output is ratiometric to the supply voltage
- Output reduces pro-rata for pressure ranges below 350 mbar (5 psi)

*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

**32 V in non-hazardous area operation

~ Supply voltage is between [Maximum output + 1 V] (7 V minimum) to 16 V (32 V in non-hazardous area operation)

### Basic configurable (option 5), configurable 4-wire (option 8), configurable 3-wire (option 9)

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

| Output specification | Basic configurable (option 5) | Configurable (options 8, 9) |
|---|---|---|
| Minimum span: | 4 V | 2 V |
| Maximum span: | 10 V | 20 V |
| Maximum output limit: | 11 V | ±10 V |
| Maximum zero offset: | Span / 2 | ±Span |
| Current consumption: | < 3 mA | < 20 mA @ 7 Vdc decreasing to < 5 mA @ 32 Vdc |
| Reverse output response: | No | Yes |
| Maximum operating temperature: | +125˚C | +80˚C |

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.

Option 5: Not true zero, the output will saturate at < 50 mV.

Options 8, 9: On startup <100 mA drawn for 10 ms typically.

Options 8, 9: Shunt calibration: not available with reverse output.



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### Examples

| Configuration | Allowed | Not Allowed |
|---|---|---|
| Basic Configurable (Option 5) | 0 to 5 V | 1 to 4 V (span too small) |
| | 0.5 to 4.5 V | 4 to 11 V (offset too big) |
| | 1 to 6 V | |
| | 1 to 11 V | |
| Configurable (Options 8, 9) | -10 to 0 V | 0 to 12 V (outside ±10 V limits) |
| | 0 to 5 V | 6 to 10 V (offset too big) |
| | -5 to 5 V | 0 to 0.5 V (span too small) |
| | -2 to 10 V | |
| | 1 to 6 V | |
| | 10 to 0 V | |

### Power-up time

- mV, Voltage and current versions: 10 ms
- Configurable 3-wire and 4-wire versions: 500 ms

### Insulation

- 500 Vdc: 100 MΩ
- 500 Vac: < 5 mA leakage current (mV and mA versions only)

### Shunt calibration

Shunt calibration provides a customer accessible connection which, when applied, causes a shift in output of 80% FS in order to simulate applied pressure. It is fitted to the mV, configurable 4-wire and configurable 3-wire versions as standard. It is not available with DIN, M12 x 1 or M20 x 1.5 electrical connectors (options 7, D, G and R).

Shunt calibration is activated in different ways depending on the electrical connector and version:

- mV versions: connect shunt cal to -ve supply or where available, connect both shunt cal connections together.
- Configurable 4-wire and configurable 3-wire versions: connect Shunt cal to -ve output or, where available, connect both shunt cal connections together.

Note: Not available with reverse output.

# Performance specifications

There are three grades of performance specification: Industrial, Improved and Premium.

## Accuracy

### Voltage, current and mV linearized

Combined effects of non-linearity, hysteresis and repeatability:

- Industrial: ±0.2% FS BSL
- Improved: ±0.1% FS BSL
- Premium: ±0.04% FS BSL

### mV passive

≤ 70 bar
Industrial/Improved: ±0.25% FS BSL
Premium not available

> 70 bar
Industrial/Improved: ±0.5% FS BSL
Premium not available

Note 1: For the barometric pressure range, accuracy is of span, not full scale.

Note 2: For bi-directional ranges, accuracy is specified for each direction separately.

## Zero offset and span setting

Demountable electrical connector options allow access to potentiometers that give at least ±5% FS adjustment (see Electrical connector section).

### Factory set to:

| Product Description | Industrial | Improved and Premium |
|---|---|---|
| Current and voltage versions (Demountable electrical connections and cable gland) | ±0.5% FS | ±0.2% FS |
| Current and voltage versions (All other electrical connections) | ±1.0% FS | ±1.0% FS |
| mV versions | ±3.0 mV | ±3.0 mV |

### Long term stability

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

### Temperature effects

Four compensated temperature ranges can be chosen.

Industrial accuracy performance:

- -10 to +50°C (+14 to +122°F): ±0.75% FS TEB*
- -20 to +80°C (-4 to +176°F): ±1.5% FS TEB
- -40 to +80°C (-40 to +176°F): ±2.25% FS TEB
- -40 to +125°C (-40 to +257°F): ±2.25% FS TEB

*TEB = Temperature Error Band

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
- -40 to +125°C (-40 to +257°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

See Electrical connector section

### Pressure media

Fluids compatible with stainless steel 316L and Hastelloy C276

Do not use with media that has an oxygen concentration >21% or other strong oxidising agents.

For the wet/dry differential version, negative pressure port: Fluids compatible with stainless steel 316L, stainless steel 304, Pyrex, silicon and structural adhesive.

### Enclosure materials

Stainless steel (body), nitrile- or silicone-rubber (o-rings, gaskets), EPDM (gaskets), PVDF (depth cone), PTFE (vent filter), nickel plated brass (lock rings), glass filled nylon (electrical connector assemblies), delrin (depth cone). Cable sheaths as specified (see Electrical connector).

### Pressure connector

Available options are:

- G1/4 female*
- G1/4 male flat
- G1/4 male 60° internal cone
- G1/4 male flat long
- G1/4 male flat with snubber
- G1/4 male flat with cross bore protection
- G1/4 male with nipple
- G1/4 quick connect
- G1/8 male 60° internal cone
- G1/2 male via adaptor*
- 1/4 NPT female*
- 1/4 NPT male
- 1/8 NPT male
- 1/8-27 NPT female
- 1/2 NPT male via adaptor
- 7/16-20 UNJF female*
- 7/16-20 UNF male short flat*
- 7/16 UNF long 37° flare tip*
- 7/16-20 UNJF male 74° external cone
- 3/8-24 UNJF
- 1/4 swagelok bulkhead
- M10 x 1 80° internal cone
- M12 x 1 60° internal cone
- M14 x 1.5 60° internal cone
- M20 x 1.5 male (3 mm bore)
- M20 x 1.5 male (8 mm bore)
- Depth cone (G1/4 female open face)
- M12 x 1.0 74° external cone
- Quick release male
- VCR female*
- VCR male*
- NW16 flange
- R3/8 male
- R1/4 male

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:

| Code No. | Description | Maximum operating temperature range | | IP rating | Zero/ span adjust |
|---|---|---|---|---|---|
| | | °C | °F | | |
| 0 | No connector | -55 to +125 | -67 to +257 | - | Y |
| 1 | Cable Gland | -40 to +80 | -40 to +176 | 65 | N |
| 2 | Raychem Cable | -55 to +125 | -67 to +257 | 65 | N |
| 3 | Polyurethane Depth | -40 to +80 | -40 to +176 | 68 | N |
| 4 | Hytrel Depth | -40 to +80 | -40 to +176 | 68 | N |
| 6/E | Bayonet MIL-C-26482 | -55 to +125 | -67 to +257 | 67 | N |
| 7 | DIN 43650 Form A Demountable | -40 to +80 | -40 to +176 | 65 | Y |
| A/F | Bayonet MIL-C-26482 Demountable | -55 to +125 | -67 to +257 | 65 | Y |
| C | 1/2 NPT Conduit | -40 to +80 | -40 to +176 | 65 | N |
| D | Micro DIN (9.4 mm pitch) | -40 to +80 | -40 to +176 | 65 | N |
| G | M12 x 1 4-pin | -55 to +125 | -67 to +257 | 67 | N |
| K | Zero Halogen Cable Demountable | -40 to +80 | -40 to +176 | 65 | Y |
| N | Kynar Depth | -40 to +80 | -40 to +176 | 68 | N |
| R | M20 x 1.5 Inline Conduit | -40 to +80 | -40 to +176 | 65 | Y |

Note 1: Electronics output options 8 and 9 are restricted to a maximum operating temperature of 80°C (176°F).

Note 2: Hazardous area approved versions are restricted to a maximum operating temperature range of -40°C to +80°C (-40°F to +176°F).

Note 3: Electrical connector option R IP65 rating only with suitable conduit/ cable fitting.

Note 4: IP67 rating on options 6/E and G applies to absolute, differential and sealed gauge reference sensors only. Gauge reference sensors are rated IP65.

# Regulatory Compliance Information

### Australia/New Zealand

- EMC (RCM) – compliant
- IECEx - Hazardous area (optional, refer to approvals)

Note: RCM mark is placed on H0 and IECEx approved options H1, H2 and HA

### Brazil

- Hazardous area (optional, refer to approvals)

### Canada

- CRN registered, OF18611.513467890YTN-Rev1 & OF18611.52 New design for Alberta, for operating pressures <= 350 bar (5076 psi)

### Canada & USA

- Hazardous locations (optional, refer to approvals)

### China

- RoHS – compliant
- Hazardous Area (optional, refer to approvals)

### Eurasian Economic Union

- EMC CU TR 020/2011 - exempt
- Hazardous area CU TR 012/2011 (optional, refer to approvals)
- Kazakhstan metrology - approved

### European Union: CE Marked

- PED 2014/68/EU - Sound Engineering Practice
- 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 to PMP/PTX models with electrical connector options 6, A, C, E, F, G, N and R 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 on CE compliance standards

### India

Hazardous area (optional, refer to approvals)

Note: India CCOE approval is added on H1 apparatus approval option.

### Japan

Hazardous area (optional, refer to approvals)

### South Korea

EMC approved

### UAE

Hazardous Area (optional, refer to approvals)

### South Africa

Hazardous Area (optional, refer to approvals)

Note: This approval is added on H1, H2 and HA apparatus approval options.

# Hazardous Area Approvals (optional)

| Approval Type (Intrinsic Safety) | Ex Coding | |
|---|---|---|
| | Apparatus | Component |
| ATEX - EU<br>IECEx - Global | Ex ia IIC T5 Ga,<br>Ex ia I Ma (mining)<br>(-40°C ≤ Ta ≤ +80°C) | Ex ia IIC Ga,<br>Ex ia I Ma (mining) |
| FM - USA<br>FM - Canada | CL I DIV 1 GP ABCD T5 Ex ia, CL I, ZN 0, AEx/Ex ia IIC T5<br>(-40°C ≤ Ta ≤ +80°C),<br>IP64<br>SINGLE SEAL<br>(-40°C to +125°C) | CL I DIV 1 GP ABCD T5 Ex ia, CL I, ZN 0, AEx/Ex ia IIC T5<br>(-40°C ≤ Ta ≤ +80°C)<br>IP20<br>SINGLE SEAL<br>(-40°C to +125°C) |
| INMETRO - Brazil | Ex ia IIC T5 Ga,<br>Ex ia I Ma (mining)<br>(-40°C ≤ Ta ≤ +80°C) | Not available |
| CU TR 012 - Kazakhstan | 0Ex ia IIC T5 Ga X,<br>PO Ex ia I Ma X (mining)<br>(-40°C ≤ Ta ≤ +80°C) | Not available |
| CCOE (PESO) - India | Ex ia IIC T5 Ga<br>(-40°C ≤ Ta ≤ +80°C) | Not available |
| NEPSI – China | Ex ia IIC T5 Ga<br>(-40°C ≤ Ta ≤ +80°C) | Ex ia IIC Ga |
| ECASEx – UAE | Ex ia IIC T5 Ga<br>(-40°C ≤ Ta ≤ +80°C) | Not available |
| Japan | Ex ia IIC T5 Ga<br>(-40°C ≤ Ta ≤ +80°C) | Not available |
| South Africa-IA | Ex ia IIC T5 Ga<br>Ex ia I Ma (mining)<br>(-40°C ≤ Ta ≤ +80°C) | Not available |

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

# Electrical connector

| Connector type | Option code | | Electronics option | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 4 to 20 mA | Voltage (3-wire) and basic configurable | Voltage (4-wire) | Configurable voltage (4-wire) | Configurable voltage (3-wire) | mV |
| Molex | 0 | 1 Red | +ve Supply | +ve Supply | +ve Supply | +ve Supply | +ve Supply | +ve Supply |
| | | 2 Yellow | - | +ve Output | +ve Output | +ve Output | +ve Output | +ve Output |
| | | 3 Green | - | - | -ve Output | -ve Output | 0V Common | -ve Output |
| | | 4 Blue | -ve Supply | 0V Common | -ve Supply | -ve Supply | 0V Common | -ve Supply |
| | | 5 Orange | - | - | - | Shunt Cal | Shunt Cal | Shunt Cal |
| | | 6 Black | Case | Case | Case | Case | Case | - |
| Cable (Not Raychem) | 1, 3, 4, C, N | Red | +ve Supply | +ve Supply | +ve Supply | +ve Supply | +ve Supply | +ve Supply |
| | | Yellow | - | +ve Output | +ve Output | +ve Output | +ve Output | +ve Output |
| | | Blue | - | - | -ve Output | -ve Output | 0V Common | -ve Output |
| | | White | -ve Supply | 0V Common | -ve Supply | -ve Supply | 0V Common | -ve Supply |
| | | Orange | - | - | - | Shunt Cal | Shunt Cal | Shunt Cal |
| | | Black | - | - | - | - | - | - |
| | | Screen | - | - | - | - | - | - |
| Raychem Cable | 2 | Red | +ve Supply | +ve Supply | +ve Supply | +ve Supply | +ve Supply | +ve Supply |
| | | White | - | +ve Output | +ve Output | +ve Output | +ve Output | +ve Output |
| | | Green | - | - | -ve Output | -ve Output | 0V Common | -ve Output |
| | | Blue | -ve Supply | 0V Common | -ve Supply | -ve Supply | 0V Common | -ve Supply |
| | | Black | - | - | - | Shunt Cal | Shunt Cal | Shunt Cal |
| | | Screen | - | - | - | - | - | - |
| MIL-C-26482 | 6, A | A | +ve Supply | +ve Supply | +ve Supply | +ve Supply | +ve Supply | +ve Supply |
| | | B | -ve Supply | +ve Output | +ve Output | +ve Output | +ve Output | +ve Output |
| | | C | - | - | -ve Output | -ve Output | 0V Common | -ve Output |
| | | D | - | 0V Common | -ve Supply | -ve Supply | 0V Common | -ve Supply |
| | | E | - | - | - | Shunt Cal | Shunt Cal | Shunt Cal |
| | | F | - | - | - | - | - | Shunt Cal |
| DIN Form A<br>Micro DIN | 7<br>D | 1 | +ve Supply | +ve Supply | +ve Supply | +ve Supply | +ve Supply | +ve Supply |
| | | 2 | -ve Supply | 0V Common | -ve Supply | -ve Supply | 0V Common | -ve Supply |
| | | 3 | - | +ve Output | +ve Output | +ve Output | +ve Output | +ve Output |
| | | E | Case | Case | -ve Output | -ve Output | 0V Common | -ve Output |
| MIL-C-26482<br>Alternative Wiring Options | E, F | A | +ve Supply | +ve Supply | +ve Supply | +ve Supply | +ve Supply | +ve Supply |
| | | B | - | 0V Common | -ve Supply | -ve Supply | 0V Common | -ve Supply |
| | | C | - | +ve Output | +ve Output | +ve Output | +ve Output | +ve Output |
| | | D | -ve Supply | - | -ve Output | -ve Output | 0V Common | -ve Output |
| | | E | - | - | - | Shunt Cal | Shunt Cal | Shunt Cal |
| | | F | - | - | - | Shunt Cal | Shunt Cal | - |
| M12 x 1 4-pin | G | 1 | +ve Supply | +ve Supply | +ve Supply | +ve Supply | +ve Supply | +ve Supply |
| | | 2 | | +ve Output | +ve Output | +ve Output | +ve Output | +ve Output |
| | | 3 | -ve Supply | 0V Common | -ve Supply | -ve Supply | 0V Common | -ve Supply |
| | | 4 | Case | Case | -ve Output | -ve Output | 0V Common | -ve Output |
| Zero Halogen Cable (Demountable) | K | Pink | +ve Supply | +ve Supply | +ve Supply | +ve Supply | +ve Supply | +ve Supply |
| | | White | - | +ve Output | +ve Output | +ve Output | +ve Output | +ve Output |
| | | Green | - | - | -ve Output | -ve Output | 0V Common | -ve Output |
| | | Blue | -ve Supply | 0V Common | -ve Supply | -ve Supply | 0V Common | -ve Supply |
| | | Grey | - | - | - | Shunt Cal | Shunt Cal | Shunt Cal |
| | | Brown | - | - | - | - | - | - |
| | | Yellow | - | - | - | - | - | - |
| | | Screen | - | - | - | - | - | - |
| M20 x 1.5 Female Demountable | R | +ve | +ve Supply | - | - | - | - | - |
| | | -ve | -ve Supply | - | - | - | - | - |

## Ordering information (see the online configuration tool at Druck.com)

**(1) Select model number**

**Main Product Variant**

**PMP** Amplified Pressure Transducer
**PDCR** mV Pressure Transducer
**PTX** 4-20 mA Pressure Transmitter

**Product Series**

**5** UNIK 5000

**Diameter and Material**

**0** 25mm Stainless Steel

**Electrical Connector (Note 6)**

**0** No Electrical Connector (Note 7)
**1** Cable Gland (Polyurethane Cable)
**2** Raychem Cable
**3** Polyurethane Cable (Depth)
**4** Hytrel Cable (Depth)
**6** MIL-C-26482 (6-pin Shell Size 10) (Mating connector not supplied)
**7** DIN 43650 Form A Demountable (Mating connector supplied)
**A** Demountable MIL-C-26482 (6-pin Shell Size 10) (Mating connector not supplied)
**C** 1/2" NPT Conduit (Polyurethane cable)
**D** Micro DIN (9.4 mm Pitch) (Mating connector supplied)
**E** MIL-C-26482 (6 pin Shell Size 10) Alternative Wiring (Mating connector not supplied)
**F** Demountable 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)
**K** Zero Halogen Cable Demountable
**N** Kynar Cable (Depth)
**R** M20 x 1.5 Inline Female Conduit Demountable (Note 8)

**Electronics Option**

**0** mV Passive 4-wire (PDCR) (Note 1)
**1** mV Linearised 4-wire (PDCR)
**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) (Note 5)
**8** Configurable 4-wire (PMP) (Note 4, 5)
**9** Configurable 3-wire (PMP) (Note 4, 5)

**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)
**TD** -40 to +125 °C (-40 to +257 °F) (Note 2, 5)

**Accuracy**

**A1** Industrial
**A2** Improved
**A3** Premium

**Calibration**

**CA** Zero/Span Data
**CB** Room Temperature
**CC** Full Thermal
**CR** Room Temperature/Measured Reading

**Hazardous Area Approval (Note 6)**

**H0** None
**H1** IECEx/ATEX Intrinsically Safe 'ia' Group IIC
**H2** IECEx/ATEX Intrinsically Safe 'ia' Group I
**H6** FM (C & US) Intrinsically Safe 'ia' Group IIC/ABCD
**HA** IECEx/ATEX Intrinsically Safe 'ia' Groups I/IIC [H1 + H2]
**HS** IECEx/ATEX/FM (C & US) Intrinsically Safe 'ia' Groups IIC/ABCD [H1 + H6]
**J1** IECEx/ATEX/NEPSI Intrinsically Safe 'ia' Group IIC
**JA** INMETRO Intrinsically Safe 'ia' Group IIC
**JB** INMETRO Intrinsically Safe 'ia' Group I
**JF** INMETRO Intrinsically Safe 'ia' Group I/IIC [JA + JB]
**JH** EAEU Intrinsically Safe 'ia' Group IIC
**JJ** EAEU Intrinsically Safe 'ia' Group I
**JN** EAEU Intrinsically Safe 'ia' Groups I/IIC [JH+JJ]
**K6** IECEx/ATEX/Japan Intrinsically Safe 'ia' Group IIC

**Pressure Connector**

**PA** G1/4 Female (Note 3)
**PB** G1/4 Male Flat
**PC** G1/4 Male 60° Internal Cone
**PD** G1/8 Male 60° Internal Cone
**PE** 1/4 NPT Female (Note 3)
**PF** 1/4 NPT Male
**PG** 1/8 NPT Male
**PH** M20 x 1.5 Male (3 mm bore)
**PJ** M14 x 1.5 60° Internal Cone
**PK** M12 x 1 Internal Cone
**PL** 7/16-20 UNJF Male 74° External Cone
**PN** G1/2 Male via Adaptor (Note 3)
**PQ** G1/4 Quick Connect
**PR** 1/2 NPT Male via Adaptor (Note 3)
**PS** 1/4 Swagelok Bulkhead
**PT** G1/4 Male Flat Long
**PU** 7/16-20 NF Long 37° Flare Tip (Note 3)
**PV** 7/16-20 UNJF Female (Note 3)
**PW** Depth Cone (G1/4 Female Open Face)
**PX** 7/16-20 UNF Male Short Flat (Note 3, 9)
**PY** 3/8-24 UNJF
**PZ** M10 x 1 80° Internal Cone
**RA** VCR Female (Note 3, 9)
**RB** G1/4 Male Flat with Snubber
**RC** G1/4 Male Flat with Cross Bore Protection
**RD** M12 x 1.0 74° External Cone
**RE** Quick Release Mount
**RF** VCR Male (Note 3, 9)
**RJ** M20 x 1.5 Male (8 mm bore)
**RQ** NW16 Flange
**RT** 1/8-27 NPT Female
**RU** R3/8 Male
**RV** R1/4 Male
**RW** G1/4 Male with Nipple

**PTX 5 0 7 2 – TA – A2 – CB – H0 – PA (Example Model Number)**

### Ordering notes

Note 1: Premium accuracy is not available on this version

Note 2: Please ensure that the electrical connector selected is option 0, 2, 6, A, E, F or G.

Note 3: Select one of these pressure connectors for pressure ranges over 70 bar

Note 4: Maximum operating temperature is 80°C (176°F)

Note 5: Hazardous area certifications not available

Note 6: Hazardous area certifications are restricted by electrical connector options in line with the following table:

| | Connector | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approval | 0 | 1 | 2 | 3 | 4 | 6/E | 7 | A/F | C | D | G | K | N | R |
| H0 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| H1 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| H2 | Y | – | Y | Y | Y | Y | – | – | Y | – | Y | – | Y | – |
| H6 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| HA | Y | – | Y | Y | Y | Y | – | – | Y | – | Y | – | Y | – |
| HS | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| J1 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | – | Y | Y |
| JA | – | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| JB | – | – | Y | Y | Y | Y | – | – | Y | – | Y | – | Y | – |
| JF | – | – | Y | Y | Y | Y | – | – | Y | – | Y | – | Y | – |
| JH | – | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| JJ | – | – | Y | Y | Y | Y | – | – | Y | – | Y | – | Y | – |
| JN | – | – | Y | Y | Y | Y | – | – | Y | – | Y | – | Y | – |
| K6 | – | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |

Note 7: Available with component certification for certain regions, use of which requires incorporation into a certified apparatus with an IP rated enclosure appropriate to the certificate type supplied.

Note 8: Electronics option 2 only

Note 9: Pressure ranges less than 500 bar

### 2) State pressure range and units (e.g., 0 to 10 bar, -5 to +5 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., gauge)

**Reference options are:**

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

### 4) State cable lengths and units

Integer values only, e.g. 1 m cable, 8 ft. Minimum length 1 m (3 ft) cable (only required with certain electrical connectors).

Maximum cable length 100 m (300 ft) for approval options not H0; 200 m (600 ft) for approval option H0.

### 5) Output options 5, 8 and 9

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

### Typical order examples

**PTX5012-TB-A2-CA-H0-PA:** 0 to 10 bar, gauge, 3 m cable

**PMP5028-TC-A3-CC-H0-PE:** -15 to 75 psi, gauge, 15 ft cable, output voltage -1 to 5 volts

**PDCR5071-TB-A1-CB-H0-PA:** 0 to 100 bar, sealed gauge

### Accessories (order as separate line items)

P/N 202-034-05: Sensor termination enclosure
P/N 600-914: Desiccant gel pack for STE
P/N 222-117-01: Short sink weight (to fit G1/4 female)
P/N 222-179-01: Depth cone injection moulded for PW connection
P/N 163-009: Mating connector for MIL-C-26482 (Electrical connector options 6, A, E, and F) (Note 10)

## Cable assemblies (Note 10)

A made up electrical connector with a length of cable.

### 1) Select part number

**Main product (Note 10)**

UNIKCABLE — Cable assembly

**Electrical connector**

| | |
|---|---|
| 6 | MIL-C-26482 |
| 7 | DIN 43650 |
| D | MICRO DIN (9.4 mm Pitch) |

**Cable**

| | |
|---|---|
| 1 | Polyurethane cable (Note 11) |
| 2 | Raychem cable |

**UNIKCABLE - 6 - 2 (Example part number)**

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

Minimum length 1 m (3 ft)

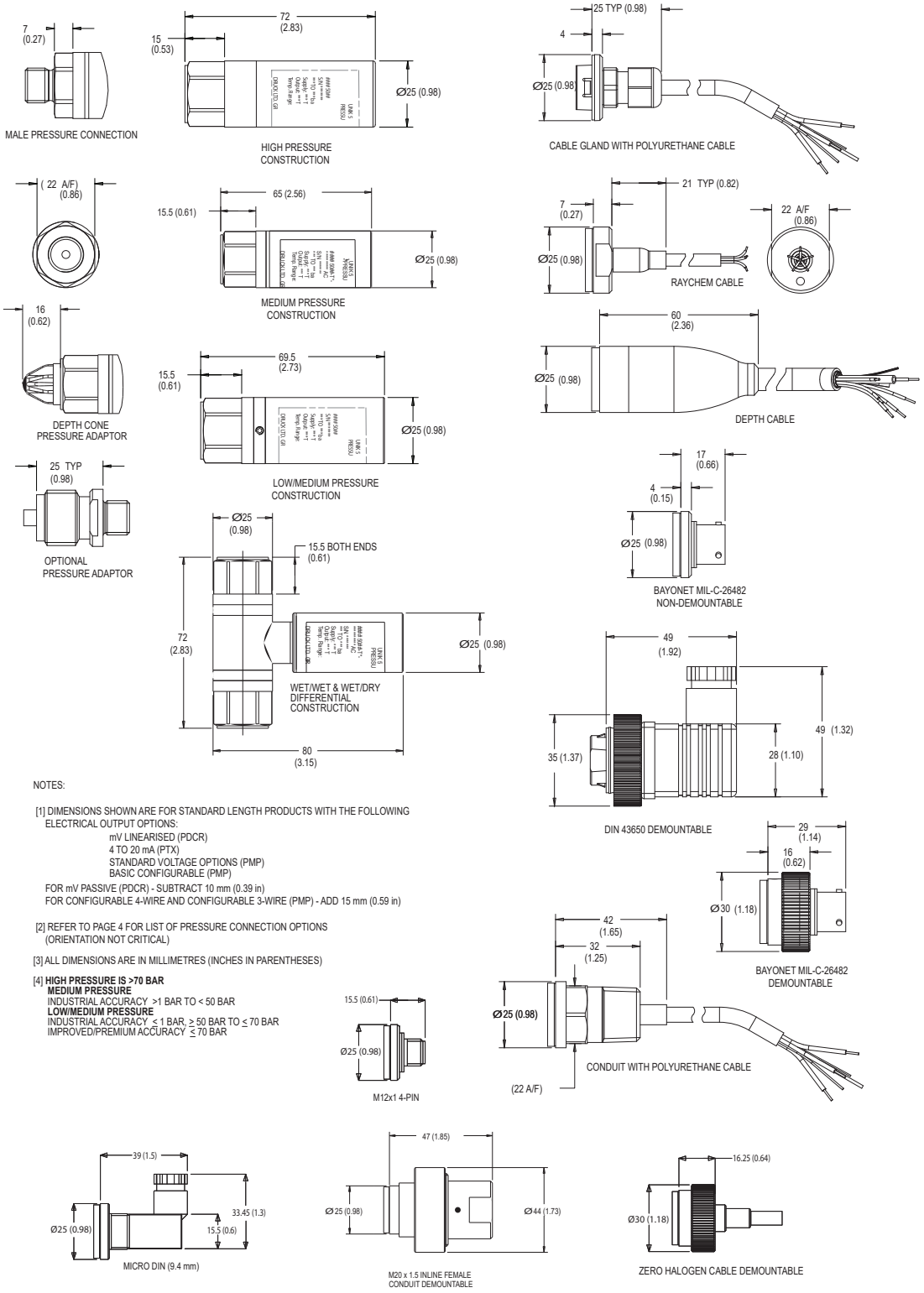
Maximum length 200 m (600 ft)

**Example:** UNIKCABLE-6-2 5 m

Note 10: Not considered suitable for use in hazardous areas.

Note 11: This cable is the same as that used in the electrical connector cable gland (UNIK5000 electrical connector Option 1).

# Mechanical drawings




NOTES:

[1] DIMENSIONS SHOWN ARE FOR STANDARD LENGTH PRODUCTS WITH THE FOLLOWING ELECTRICAL OUTPUT OPTIONS:
- mV LINEARISED (PDCR)
- 4 TO 20 mA (PTX)
- STANDARD VOLTAGE OPTIONS (PMP)
- BASIC CONFIGURABLE (PMP)

FOR mV PASSIVE (PDCR) - SUBTRACT 10 mm (0.39 in)
FOR CONFIGURABLE 4-WIRE AND CONFIGURABLE 3-WIRE (PMP) - ADD 15 mm (0.59 in)

[2] REFER TO PAGE 4 FOR LIST OF PRESSURE CONNECTION OPTIONS (ORIENTATION NOT CRITICAL)

[3] ALL DIMENSIONS ARE IN MILLIMETRES (INCHES IN PARENTHESES)

[4] **HIGH PRESSURE IS >70 BAR**
**MEDIUM PRESSURE**
INDUSTRIAL ACCURACY >1 BAR TO < 50 BAR
**LOW/MEDIUM PRESSURE**
INDUSTRIAL ACCURACY < 1 BAR, ≥ 50 BAR TO ≤ 70 BAR
IMPROVED/PREMIUM ACCURACY ≤ 70 BAR

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