



# DPS5000 SDI-12

## Digital pressure sensing platform

The DPS5000 SDI-12 from Druck, part of the UNIK5000 family, offers integrated digital electronics to enhance the performance level of the UNIK 5000 Pressure Sensing Platform to levels unmatched by traditional analogue sensors. It uses SDI-12 protocol, over which fully compensated readings of pressure and temperature are sent, as well as control of many functions of the device.

### High quality

With 50 years of pressure measurement experience, our field-proven Druck technology is at the heart of the new platform, resulting in a range of high quality, high stability pressure sensors.

### 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 that you ensure that the sensor materials and performance selected are suitable for your application.

### Features

- Ranges from 350 mbar to 70 bar
- Total accuracy to  $\pm 0.1\%$  FS
- Stainless steel or titanium construction
- Wide temperature range  $-40\text{ }^{\circ}\text{C}$  to  $80\text{ }^{\circ}\text{C}$
- Low power
- Customer set filter setting
- Excellent long-term stability
- Customizable and reconfigurable output formats

# DPS5000 SDI-12 specifications

## Operating pressure ranges

### Gauge ranges

Any zero based range from 350 mbar to 70 bar (6 to 1000 psi)

### Absolute ranges

Any zero based range from 350 mbar to 70 bar (6 to 1000 psi)

### Barometric ranges

Any upper range limit (URL) with a minimum span of 350 mbar (5 psi) between 700 mbar to 1300 mbar (10 to 18 psi)

### Over pressure

2 × pressure range for barometric range

4 × pressure range for all other ranges

### Containment pressure

6 × pressure range (200 bar (3000 psi) maximum)

### Supply

Voltage: 6 Vdc to 30 Vdc

Current: <10 mA measure at 25 °C

15 mA peak

<50 µA standby

### Output/communications

SDI-12 protocol V1.4

### Power on time

1000 ms to acquisition from power on

### Insulation resistance

>100 MΩ at 500 Vdc

## Performance

### Pressure performance

Accuracy over the calibrated temperature range including zero and span setting and the effects of non-linearity, hysteresis and repeatability

A3 Premium: ±0.1 % FS over -10 to 50 °C (14 to 122 °F)

A2 Improved: ±0.2 % FS over -40 to 80 °C (-40 to 176 °F)

For barometric ranges FS is the URL

Accuracy effects increase pro-rata for pressure ranges below 700 mbar

### Temperature performance

Accuracy over the calibrated temperature range ±3 °C (6 °F) with 0.1 °C (0.2 °F) resolution

### Long term stability

±0.05 % FS/year typical

±0.1 % FS/year maximum at reference conditions

±0.2 % maximum over five years at reference conditions is available by arrangement with the factory

Stability effects increase pro-rata for pressure ranges below 700 mbar

## Physical specifications

### Environmental protection

Up to IP68, see electrical connector section

### Operating temperature range

-40 °C to 80 °C (-40 °F to 176 °F)

### Pressure media

Fluids compatible with stainless steel 316L and Hastelloy C276 or titanium

Statement in accordance with the European pressure equipment directive

### Enclosure materials

Stainless steel 316L or titanium (body), PVDF (nose cone), and cable sheath as specified

### Pressure connectors

See the ordering information

### Electrical connector

Option code	Description	IP rating
2	Raychem cable	IP65
3	Polyurethane depth cable	IP68
4	Hytrel depth cable	IP68

Note: Maximum cable length is 457 m (1500 ft).

### Wiring details

Core color	Function
Black	Case
Red	+ VE Supply
Blue	- VE Supply
White	SDI-12 Data
Screen	Case

### General certifications

RoHS 2011/65/EU

CRN Certified 0F18611.513467890YTN for pressure ranges up to and including 100 bar

### CE conformity

Pressure equipment directive 2014/68/EU: sound engineering practice

### EMC directive 2014/30/EU, AUS/NZ EMC compliant

BS EN 61326-1:2013

BS EN 61000-6-1: 2007

BS EN 61000-6-3: 2007 + A1:2011

# Ordering information

## 1) Select part number

### Main product Family

DPS Digital output transducer  
5 5000 series

#### Diameter and material

0 25mm stainless steel  
T 25mm titanium

#### Electrical connection

2 Raychem cable (See Note 1)  
3 Polyurethane depth cable  
4 Hytrel depth cable

#### Electronics option

E SDI-12 protocol

#### Compensated temperature range

TA -10 °C to +50 °C (See note 2)  
TC -40 °C to +80 °C (See note 3)

#### Accuracy

A2 Improved  
A3 Premium

#### Calibration

CC Full thermal

#### Hazardous area certification

H0 None

#### Pressure connector

##### - Stainless steel

PA G1/4 female  
PB G1/4 male Flat  
PC G1/4 male 60° Int cone  
PD G1/8 male 60° Int cone  
PE 1/4 NPT female  
PF 1/4 NPT male  
PG 1/8 NPT male  
PH M20 x 1.5 male (3mm bore)  
PJ M14 x 1.5 60° Int cone  
PL 7/16-20 UNJF male 74° Ext  
PN G1/2 male  
PQ G1/2 quick connect  
PR 1/2 NPT male  
PV 7/16-20 UNF female  
PW Depth cone (G1/4 female)  
RV R1/4 male

##### - Titanium

PA G1/4 female  
PB G1/4 male flat  
PF 1/4 NPT male  
PH M20 x 1.5 male (3mm bore)  
PN G1/2 male  
PR 1/2 NPT male  
PW Depth cone (G1/4 female)  
RJ M20 x 1.5 male (8mm bore)  
RK M20 x 1.5 male (14mm bore)

Sensor output: can be selected in any order (see note 4)

##### - Level

L1 Meters  
L2 Centimeters  
L3 Feet

##### - Temperature

T1 Kelvin  
T2 ° Celsius  
T3 ° Fahrenheit

##### - Pressure

P Pressure (as specified)

##### - Voltage (Power Supply)

V Volts (as specified)

##### - No Output

N No output (see note 5)

DPS 5 0 2 E - TA - A3 - CC - H0 - PA - \* - \* - \* - \*

\* = Sensor output

**2) Specify maximum working pressure unit and reference. Available units are:**

Symbol	Description	Symbol	Description	Symbol	Description
bar	bar	kPa	Kilo Pascal	mmHg	millimeters mercury
mbar	millibar	mmH <sub>2</sub> O	millimeters water	inHg	inches mercury
psi	pounds/square inch	mH <sub>2</sub> O	meters water	kgf/cm <sup>2</sup>	Kilograms force/centimeters square
Pa	Pascal	in H <sub>2</sub> O	inches water	atm	atmosphere
hPa	hecto Pascal	ft H <sub>2</sub> O	feet water	MPa	Mega Pascal

**3) Specify cable length and units:**

Integer values in m or ft (maximum length 457 m (1500 ft)).

Notes:

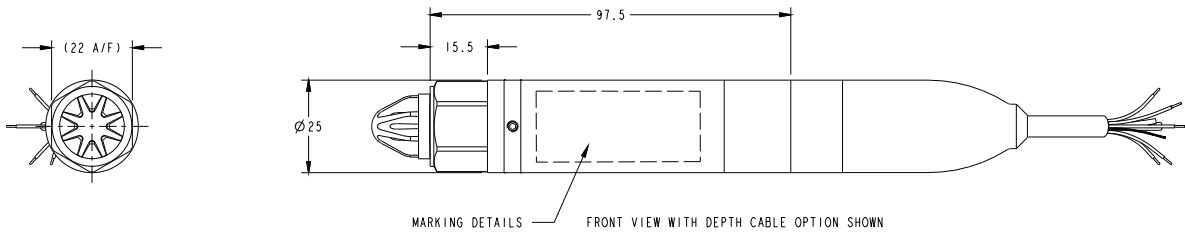
1. Not available with a titanium body.
2. Choose A3-Premium accuracy with this option.
3. Choose A2-Improved accuracy with this option.
4. Maximum of 4 outputs. Each output option can only be selected once.
5. Once No output (N) is selected, subsequent options default to N.

**Typical order examples**

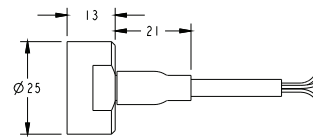
DPS503E-TA-A3-CC-H0-PW-T2-L1-P-V 700 mbar gauge 10m cable

DPS5T4E-TC-A2-CC-H0-PA-L3-T3-N-N 10 bar absolute 10m cable

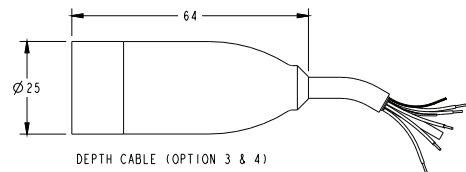
**Mechanical drawings**



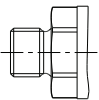
ELECTRICAL CONNECTION OPTIONS



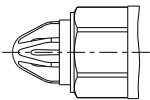
RAYCHEM CABLE (OPTION 2)



DEPTH CABLE (OPTION 3 & 4)



MALE PRESSURE CONNECTION [1]



DEPTH CONE PRESSURE ADAPTOR [1]

Note: All dimensions in millimeters.