

Data Sheet

OEM Pressure Transmitters for heavy-duty applications

Type DST P600 and DST P650



The compact OEM pressure transmitter programme is designed for use in severe hydraulic applications. The programme consists of two series:

- DST P600
- DST P650

The integrated pulse-snubber offers a high degree of protection against cavitations and liquid hammer, and the well thought out design results in excellent vibration stability and an exceptional robustness.

The high degree of EMI protection equips the pressure transmitter to meet most requirements. Running a powerful ARM-based micro-controller, offering diagnostic functions and intelligent performance features.

Patented Danfoss Quasi-DC (QDC™) technology inside. For improved immunity and long-term stability under even the most extreme field conditions.

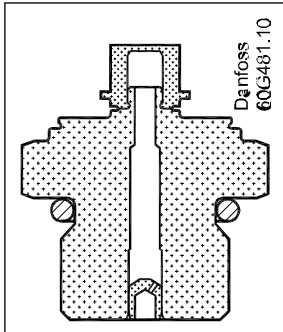
Features

- QDC™ inside
- Designed for use in severe OEM applications
- For medium and ambient temperatures up to 125 °C
- Output signal:
 - 10 - 90% ratiometric output
 - Absolute voltage output
 - 4-20 mA output
- Wetted parts made of stainless steel
- A wide range of pressure and electrical connections
- EMC protection up to 100 V/m
- EMC tested in accordance to Automotive ISO standards
- Fully digitally compensated
- Output clipping Min and Max

Applications

Application and media conditions for DST P650

Figure 1: Pulse-snubber in DST P650



Application for DST P650

Cavitation, liquid hammer and pressure peaks may occur in liquid filled systems with changes in flow velocity, e.g. fast closing of a valve or pump starts and stops.

The problem may occur on the inlet and outlet side, even at rather low operating pressures.

Media condition for DST P650

The media viscosity has only little effect on the response time. Even at viscosities up to 100 cSt, the response time will not exceed 4 ms.

Product Specification

Technical data

Table 1: Performance (EN 60770)

Accuracy (incl. nonlinearity, hysteresis and repeatability)	± 0.5% FS
Total error band [TEB]	-20 to 100°C: ≤ ± 2% FS -40 to 125°C: ≤ ± 3% FS
Response time liquids (10 – 90%)	2 ms
Durability, P: 10 – 90% FS	>10 × 10 ⁶ cycles

Table 2: Overload and burst pressure

Nominal pressure [bar]	40	50	100	160	250	400	500
Overload pressure	120	150	300	480	750	1200	1500
Burst pressure	800	1000	1600	1600	2500 ⁽¹⁾	2500 ⁽¹⁾	2500 ⁽¹⁾

⁽¹⁾ G ¼ A ISO 1179-2 burst pressure 2300 bar

NOTE:

Reachable burst pressure can degrade depending on selected pressure connection, used mounting torque & counter part material. See [Table 8: Dimensions / Combinations](#)

Table 3: Electrical specifications

Nom. output signal (Short-circuit protected)	0 - 10V	1 - 5, 1 - 6V	4 - 20mA	10 – 90% ratiometric
Supply voltage [UB], polarity protected	13 - 32V	8 - 32V	8 - 32V	5 V ± 0.5 V
Supply – current consumption	3 mA	3 mA	--	4.5 mA
Output impedance	≤25 Ω	≤25 Ω	--	≤10 Ω
Load [R _L] (connected to 0 V)	RL ≥ 5 K Ω	RL ≥ 5 K Ω	See chart below	RL ≥ 5 kΩ
Load [R _L] (connected to + V)	Not possible	RL ≥ 10Kohm @ ≤ 26Vdc supply RL ≥ 13Kohm @ ≤ 32Vdc supply	See chart below	RL ≥ 5 kΩ

Figure 2: 4 - 20 mA output - min. / max.resistance vs supply voltage

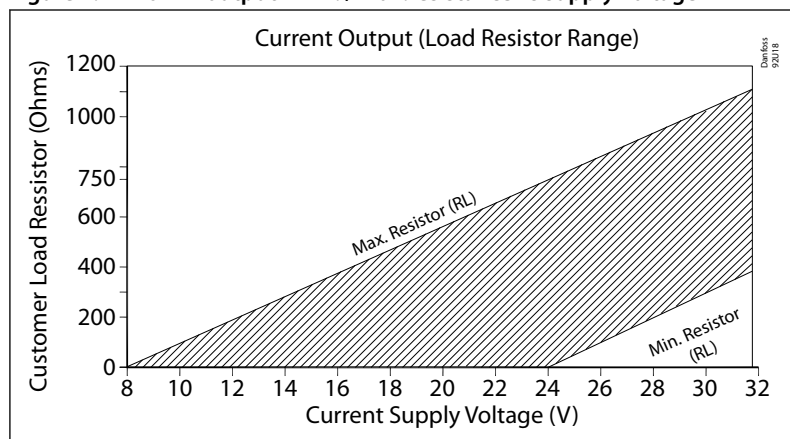


Table 4: Environmental conditions

Media temperature range	- 40 – 125 °C
Ambient temperature range	See page Electrical connections
Compensated temperature range	- 40 – 125 °C
Storage temperature range	-55 – 150 °C
EMC – Emission	EN 61326-2-3
EMC Directive	2014/30/EU
EMC – Immunity RF field	100 V/m
Vibration stability	20Grms, 20-2000Hz
Shock resistance	1000G
Enclosure (depending on electrical connection)	See page Electrical connections

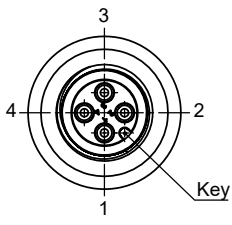
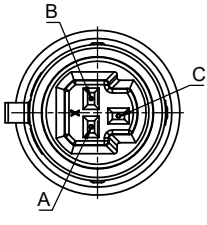
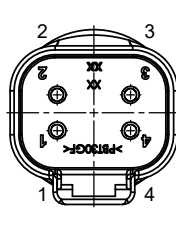
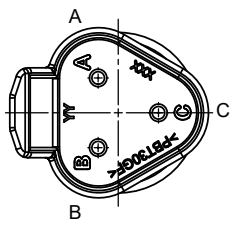
OEM Pressure Transmitters for heavy-duty applications, type DST P600 and DST P650

Table 5: Mechanical conditions

Materials	Wetted parts	Stainless steel
	Enclosure	Stainless steel and plastic
	Pressure connection	Stainless steel
	Electrical connection	See page Electrical connections

Electrical connections

Table 6: Electrical connections

Type code	C1	C2	C3	C7
	M12x1 EN60947-5-2	Round Packard Metri-Pack	Deutsch DT04-4P	Deutsch DT04-3P
				
Ambient temperature, ratiometric 10 – 90%, absolute voltage output	- 40 – 125 °C	- 40 – 125 °C	- 40 – 125 °C	- 40 – 125 °C
Ambient temperature, 4-20mA	- 40 – 105 °C	- 40 – 105 °C	- 40 – 105 °C	- 40 – 105 °C
Enclosure (IP protection fulfilled together with mating connector)	IP67	IP67	IP67	IP67
Material	SS, PBT 30% GFR Gold (Au) plated	Glass filled PBT 30% GFR Tin (Sn) plated	Glass filled PBT 30% GFR Gold (Au) plated	Glass filled PBT 30% GFR Tin (Sn) plated
Electrical connections, ratiometric 10 – 90% and absolute voltage output	Pin 1: + supply Pin 2: output Pin 3: - supply Pin 4: do not connect	Pin A: - supply Pin B: + supply Pin C: output	Pin 1: - supply Pin 2: + supply Pin 3: do not connect Pin 4: output	Pin A: + supply Pin B: - supply Pin C: output
Electrical connections 4-20 mA	Pin 1: + supply Pin 2: do not connect Pin 3: - supply Pin 4: do not connect	Pin A: - supply Pin B: + supply Pin C: do not connect	Pin 1: - supply Pin 2: + supply Pin 3: do not connect Pin 4: do not connect	Pin A: + supply Pin B: - supply Pin C: do not connect

Dimensions / Combinations

Table 7: Dimensions / Combinations

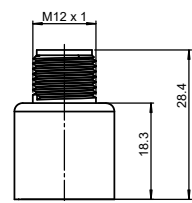
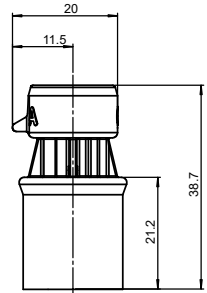
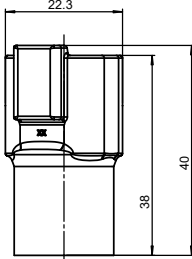
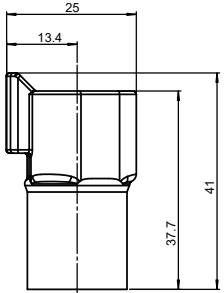
Type code	C1	C2	C3	C7
	M12 × 1 EN60947-5-2	Round Packard Metri-Pack	Deutsch DT04-4P	Deutsch DT04-3P
				

Table 8: Dimensions / Combinations

Type code	BD08	BD11	FA08	GB04
Recommended torque ⁽¹⁾	22 - 25 Nm	27 - 30 Nm	31 - 35 Nm	35 - 38 Nm
HEX is 22 mm across flats.	<p>7/16 - 20 UNF-2A</p>	<p>9/16-18 UNF-2A</p>	<p>M14x1.5 per ISO 6149-2</p>	<p>G 1/4 A ISO 1179-2 (DIN3852-E)</p>

⁽¹⁾ Depends on different parameters such as seal ring, mating material, thread lubrication and pressure level.

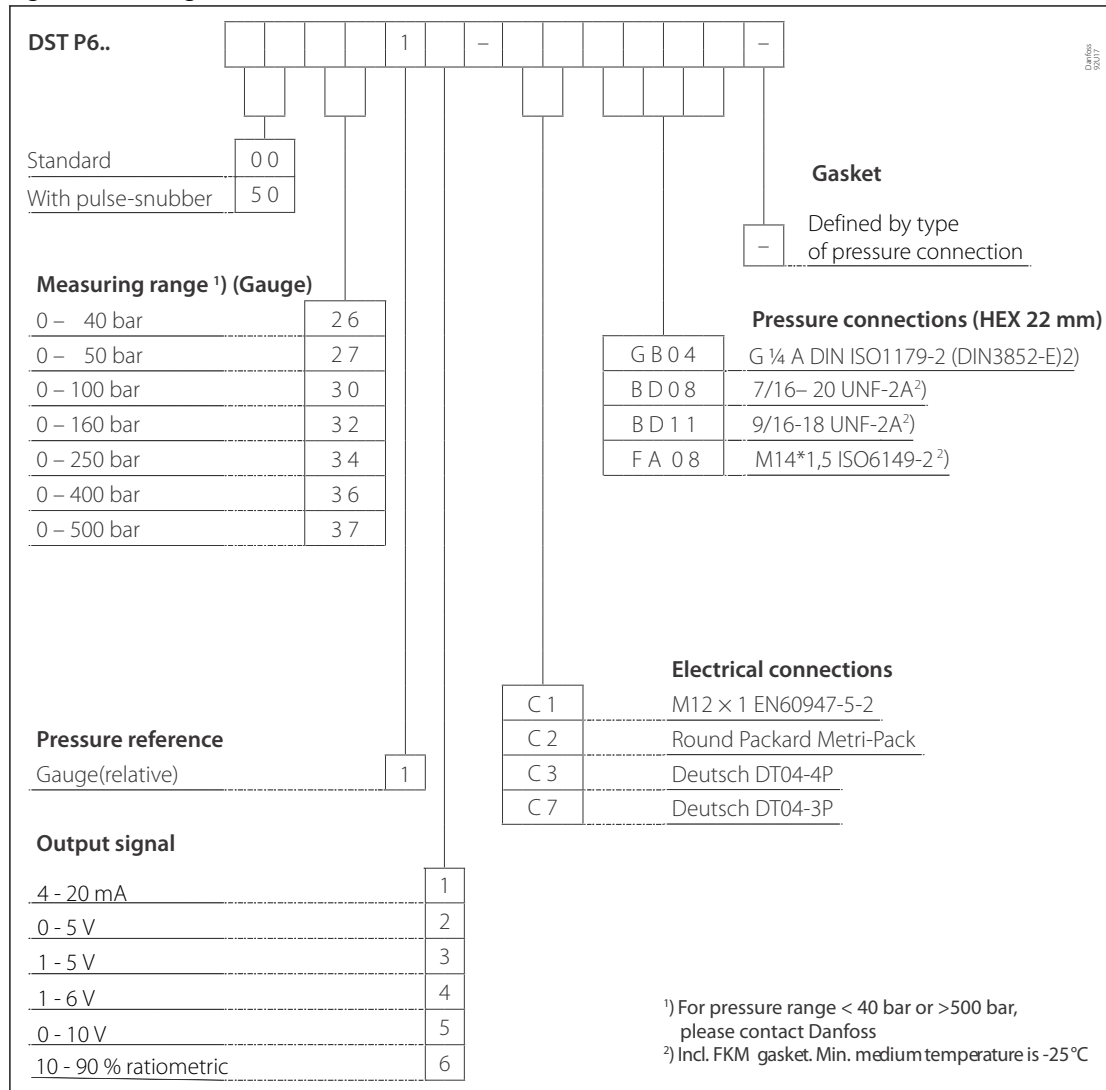
NOTE:

For other combinations please contact Danfoss

Ordering

Ordering standard

Figure 3: Ordering standard



NOTE:

For other combinations and variants please contact Danfoss

¹⁾ For pressure range < 40 bar or >500 bar, please contact Danfoss

²⁾ Incl. FKM gasket. Min. medium temperature is -25°C

Certificates, declarations and approvals

The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

Some approvals may change over time. You can check the most current status at danfoss.com or contact your local Danfoss representative if you have any questions.

Approvals

- CE
- UKCA
- RoHS
- REACH
- MTTFd >100 years

UL recognized File E494625

Conditions of Acceptability – when installed in the final use equipment, etc., the following are among the considerations to be made:

- To be Powered by a Class 2 Source, or similar
- Supply voltage and current rating see [Product Specification](#)
- MWP (max working pressure) see [Product Specification](#)
- Altitude up to 8000 meters
- Medium and ambient temperatures see [Product Specification](#)
- Maximum relative humidity 95% non-condensing
- Evaluated for Pollution Degree 2
- Class 2 Device Wiring Only

Technical assistance may be obtained from Danfoss Sensing Solutions, DK 6430 Nordborg – Denmark

Online support

Danfoss offers a wide range of support along with our products, including digital product information, software, mobile apps, and expert guidance. See the possibilities below.

The Danfoss Product Store



The Danfoss Product Store is your one-stop shop for everything product related—no matter where you are in the world or what area of the cooling industry you work in. Get quick access to essential information like product specs, code numbers, technical documentation, certifications, accessories, and more.

Start browsing at store.danfoss.com.

Find technical documentation



Find the technical documentation you need to get your project up and running. Get direct access to our official collection of data sheets, certificates and declarations, manuals and guides, 3D models and drawings, case stories, brochures, and much more.

Start searching now at www.danfoss.com/en/service-and-support/documentation.

Danfoss Learning



Danfoss Learning is a free online learning platform. It features courses and materials specifically designed to help engineers, installers, service technicians, and wholesalers better understand the products, applications, industry topics, and trends that will help you do your job better.

Create your Danfoss Learning account for free at www.danfoss.com/en/service-and-support/learning.

Get local information and support



Local Danfoss websites are the main sources for help and information about our company and products. Find product availability, get the latest regional news, or connect with a nearby expert—all in your own language.

Find your local Danfoss website here: www.danfoss.com/en/choose-region.

Spare Parts



Get access to the Danfoss spare parts and service kit catalog right from your smartphone. The app contains a wide range of components for air conditioning and refrigeration applications, such as valves, strainers, pressure switches, and sensors.

Download the Spare Parts app for free at www.danfoss.com/en/service-and-support/downloads.

Danfoss A/S

Climate Solutions • danfoss.com • +45 7488 2222

Any information, including, but not limited to information on selection of product, its application or use, product design, weight, dimensions, capacity or any other technical data in product manuals, catalogues descriptions, advertisements, etc. and whether made available in writing, orally, electronically, online or via download, shall be considered informative, and is only binding if and to the extent, explicit reference is made in a quotation or order confirmation. Danfoss cannot accept any responsibility for possible errors in catalogues, brochures, videos and other material. Danfoss reserves the right to alter its products without notice. This also applies to products ordered but not delivered provided that such alterations can be made without changes to form, fit or function of the product.

All trademarks in this material are property of Danfoss A/S or Danfoss group companies. Danfoss and the Danfoss logo are trademarks of Danfoss A/S. All rights reserved.