

ENGINEERING
TOMORROW

Danfoss

DST P150 pressure sensor, improved **performance, reliability** and **self-diagnostics**

Introducing the DST P150 pressure sensor for hydrogen applications



Up to
50%
reduction in
warranty claims
through diagnostics

PRODUCT HIGHLIGHTS

The DST P150 sensor is:

- **Tailored performance.** The sensor provides improved accuracy across the temperatures range, allowing a more efficient application control.
- **Rugged and reliable.** The DST P150 is protected by a corrosion-resistant stainless-steel housing and is designed to resist extreme vibration, temperature change, and electrical interference. All wetted parts in media contact have been changed to 316L to support the highest performance in hydrogen applications.
- **Thoroughly tested.** A "test-to-failure" method is an important part of the Danfoss product development process, providing increased product specification and insight into product design. Based on our strong DST P1xx design we have extended the platform with our DST P150 to meet the EC79/2009 approval.
- **Forward-looking.** The DST P150's onboard diagnostics (optional) can be used to communicate internal failure modes to the controller - helping to rapidly identify the root cause of a problem and save troubleshooting costs.
- **Scalable and customizable.** The new electronics platform allows many performance specifications to be fine-tuned for application requirements.
- **Compliant.** The DST P150 meets strict EMI/EMC standards.
- **Flexible.** Already available in various configurations and designed for customization to specify the sensor to your application needs. Please do not hesitate to reach out to your Danfoss contact for more details.

Premium MEMS technology at a competitive price

Get the strong, reliable characteristics of an oil filled sensing element based on the MEMS technology at a cost-effective price point.

The physical properties of an oil filled sensing element provide a superior dynamic range leading to scalable accuracy over temperature and outstanding overpressure capabilities. The DST P150 sensor with EC79/2009 approval is built with a robust, stainless steel, welded design — meeting highest quality standards. The hermetically sealed design provides excellent media compatibility and making it ready for **today's hydrogen and future fuels**.



Self-diagnostic Features

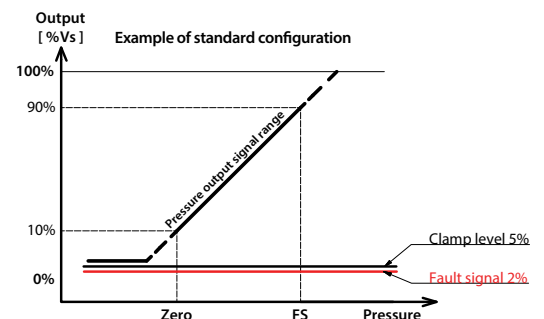
Increase machine uptime and reduce troubleshooting costs with the self-diagnostic features available with the DST P150 sensor — like automatic sensor failure detection, power-up diagnostics, run-time diagnostics and harness fault detection.

The DST P150's output and fault signals can be programmed to fit your application requirements:

- **Pressure output range.** Defines the measuring range of the sensor.
- **Output clamp levels.** Limit the pressure output signal if the pressure exceeds the normal range. Clipping Levels are used as a basis for further diagnostic features. Clipping above measuring range optionally available on request.
- **Sensor fault signal.** Placed in fault signal range above or below the pressure output range. Output at this level signals a sensor fault. Contact Danfoss for further information regarding pull-up resistor maximum values.
- **Harness fault detection** (optional, available on request). Low leakage current of the sensor allows the controller to recognize harness fault conditions. (Requires a pull-down or pull-up resistor at controller interface, see datasheet for further details).

Flexible Output and Diagnostics

Ratio metric example



Performance Specifications

Pressure Ranges (absolute and gauge)	0 – 50 bar (0 – 725 psi)
Accuracy	Optimized for application fit ± 1.5% F.S. (within specified temperature range). See Data Sheet.
Operating Temperature Range (for ratiometric output)	-40° to 135°C (-40° to 275°F)
Overload Pressure	4x fullscale pressure
Burst Pressure	>250 bar (>3626 psi)
Endurance	>10 million cycles, 10%-110% F.S.
Response Time	<2 ms
Wetted Materials in media contact	316L Stainless Steel

Electrical Specifications

Output Modes	Ratiometric (10%-90% Vss) Absolute Voltage (e.g., 1-5Vdc) Current (4-20mA)
Output Limiting (clamping)	Programmable
Over and Reverse Voltage	Protected
Short Circuit	Protected
Miswiring	Protected
Diagnostic Fault Signal	Programmable
EMC	IS 11452-2 Level IV (100v/m) ISO 11454-4 Level IV (200 mA)
ESD	IEC 6100-4-2 8kV contact, 15kV air

Please contact Danfoss for full specifications and available configurations.

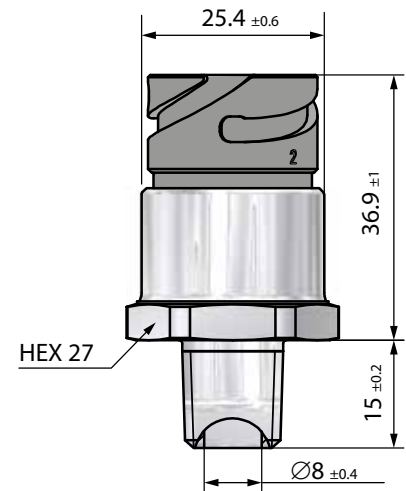
Environmental Specifications

Enclosure	IP67
Mech. Vibration, Random	IEC 600068-2-64, 16.5 gRms 3 x 2h, 10Hz-2 kHz, at 25°C

Application examples

- Fuel cells
- Electrolyzers
- Hydrogen powered combustion engines
- Others

Dimensions



Shown with Bayonet and 1/4-18 NPT.

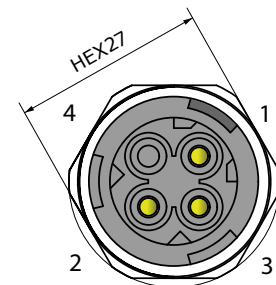
Available electrical connectors:

- Bayonet, ISO 15170
- Packard Metri-Pack, 150 series
- Deutsch
- Tyco AMPSEAL-16

Available pressure ports:

- Various options available,
e.g., M16x1.5, 1/8-27 NPTF, M10x1.5, M12x1.5,
G 1/4 A

Please contact Danfoss for other options.



Pin configuration (example):

- 1 = +Supply
- 2 = - Common
- 3 = Output
- 4 = Ventilation

A dedicated **partner** you can rely on

Danfoss develops new product solutions with both its customers and its extensive application expertise in mind. Years of producing reliable, effective solutions for the refrigeration and cooling market have provided valuable insight that can then be leveraged to work for you.

DANFOSS IS COMMITTED TO WORKING WITH YOU TO FIND THE RIGHT SOLUTION FOR YOUR UNIQUE APPLICATION NEEDS.



System solutions

Danfoss products are designed to provide value on their own and as part of an optimized system.



Application expertise

Your challenges are also our challenges. We understand your unique needs because we partner with you every step of the way for a wide variety of cooling applications.

For more information, visit sensors.danfoss.com