SPAN™

Industrial Transducers & Transmitters

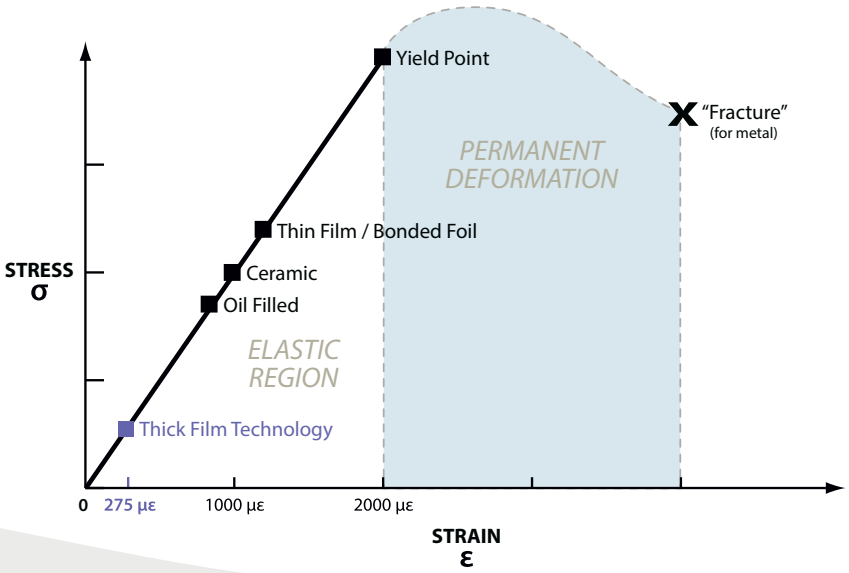
Catalog T217A

About Us

Our Technology

With an operating strain at less than 15% of the metal's yield point, the SPAN pressure sensor cell has less fatigue, higher proof/burst pressure capability, and excellent long term stability.

As a diaphragm is pressurized closer to the yield point, a transformation in the shape occurs, changing the output over time.



How To Select A Proper Pressure Sensor

Pressure Sensors are designed to monitor the changes in pressure for liquid and gas applications. Pressure measurement is found in many different applications in various industries. Accordingly, there are many types of pressure sensors, which makes the selection process complicated so you might find the following selection tips useful. Please bear in mind that there are a lot of variables to consider, but here the most critical elements are highlighted. Please look at our glossary if you are not familiar with any of the sensor terms.

Main Parameters:

- Pressure Range: Generally selection of sensor with the range of 20-30% more than maximum applied pressure is suitable. Specify Line Pressure in case of a differential sensor.
- Pressure Unit: PSI, PSIG, Bar, kPa, In.H2O, others available on request.
- Pressure Reference: Is the pressure on the reverse side of the diaphragm and can be absolute, vented gauge, sealed gauge or differential.
- Output Signal: mV/V, voltage analogue (0-10VDC or others), current (generally 4-20mA) and digital output. Digital output has options such as RS232, CAN Bus, or USB.
  Note: Generally, sensors with mV/V output are called transducers and sensors with VDC or current output called transmitters.
- Accuracy: Is generally a percentage of full range so there is a trade off in accuracy and the range of measurement. Also consider Accuracy at Room Temp or Max. Total Accuracy Over Temp Range of use.
- Electrical Connection: DIN connector, Cable, wireless, etc.
- Pressure Connection Port: Male/Female, NPT, ISO, BSP, etc.
- Media Compatibility and Ambient Environment:
  Gas, Condensing, Liquid, Corrosive, High Viscosity, Abrasive, Hygienic, Oxygen Service, Chemicals, NACE (Offshore), Wastewater, Concrete / Aggregate / Slurry, Landfill, Petrol / Diesel, Plastic Melt, High Purity Gas, Indoor / Outdoor Use, Inside Electronics Enclosure, Occasional Immersion / Hose Down, Submersible, Sea-Water / Salt-Water, Salt Spray / Sea Air, High Humidity, High Vibration or Shock, High External Case Pressure (Subsea), Water Jet Cleaning, High Pressure Steam Cleaning, etc.
- Temperature Limitations: (Highest Media Temperature at Sensor, Lowest Media Temperature at Sensor), High Temperature, Low Temperature.
- Sensor Supply Voltage.
- Sensor Dimensions: Max. Diameter of Sensor, Max. Length of Sensor.
- Other Considerations: Certificate of Conformity, Intrinsic Safety, Lightning Protection, Frequency Response, Display, Zero & Span Adjustment, non-technical parameters (Quantity, Max Delivery Time, After Sales Services, support for long term needs, cost of ownership), etc.

Contents

200 Series

Industrial Pressure Transducer / Transmitter

The SPAN 200 is an ASIC-compensated, high quality, stainless steel industrial pressure transducer designed for use in the measurement of liquids and gases. Intended for mid to high volume applications requiring excellent performance, the SPAN 200 succeeds by offering highly competitive pricing.

Benefits

- Fully Welded Stainless Steel Housing
- No Oil Fill, Welds, or Internal O-rings
- Wide Operating Temperature
- Compatible with Liquids and Gases
- Rugged, Compact Design
- Pressures up to 10,000 PSI
- High Shock and Vibration
- EMI/RFI Protection

Applications

- Industrial OEM Equipment
- Hydraulic Systems
- HVAC Equipment
- Refrigeration Equipment
- Automotive
- Energy / Water Management
- Test Stands
- Off-Road/Construction Equipment

Environmental Data

Temperature	
Operating	-40 to 125°C (-40 to 250°F)
Storage	-40 to 125°C (-40 to 250°F)
Thermal Limits	
Compensated Range	0 to 55°C (32 to 131°F)
TC Zero	<± 1.0% FS
TC Span	<± 1.0% FS
Other	
Shock	100G, 11 msec, 1/2 sine
Vibration	20G peak, 20 to 2400 Hz.
EMI/RFI Protection:	Yes
Rating:	IP-66 (optional IP-67)

Performance @ 25°C (77°F)

Accuracy*	< ±0.25% BFSL
Stability (1 year)	±0.25% FS, typical
Over Range Protection	2X Rated Pressure
Burst Pressure	5X or 20,000 PSI (whichever is less)
Pressure Cycles	> 100 Million

** Accuracy includes non-linearity, hysteresis & non-repeatability*

Electrical Data

Output	**Voltage (.25-5V, 1-5V, 1-6V)**	**0.5-4.5V Ratiometric**
Excitation	10-30VDC	5VDC
Output Impedance	<100 Ohms, Nominal	<100 Ohms, Nominal
Current Consumption:	<10mA	<10mA
Bandwidth	(-3dB): DC to 3KHZ	(-3dB): DC to 3KHZ
Output Noise:	<2mV RMS	<2mV RMS
Zero Offset:	±0.5% of FS	±0.5% of FS
Span Tolerance:	±1.0% of FS	±1.0% of FS
Output Load:	10k Ohms, min	10K Ohms, min
Reverse Polarity Protection	Yes	Yes

200 Series

Ordering Information*

SPAN 200	A	00500	P	1	E	0	000

Series Type

Process Connection**
A= 1/4" NPT Male
B= 1/8" NPT Male
C= 1/4" BSPP Male
F= 7/16" - 20 UNF Male
K= SAE4 Female

*** "B" and "F" not available under 50PSI ("B" not available in 316L)*

Pressure Range
Insert 5-digit pressure code

Pressure Unit
B= Bar
K= kg/cm^2
P= PSI

Outputs
1= 0.5-4.5V ratiometric
3= 1-5V
6= 1-6V

Electrical
E= Mini DIN 43650C
F= Packard Metripack 150 3-Pin
K= Deutsch DT04 3-Pin
R= 6-Pin Bendix
Y= M12x1
Z= Deutsch DT04 4-Pin

Wetted Material
0= 17-4PH
1= 316L

Options (contact factory for additional options)
000= No Options

**Minimum order quantities may apply to certain configurations, please contact factory for more information.*

Pressure Ranges*

PSIG Measurement	Pressure Code
-14.7 to 25++	V0025++
0-25	00025
0-50	00050
0-100	00100
0-150	00150
0-200	00200
0-250	00250
0-500	00500
0-1,000	01000
0-2,500	02500
0-5,000	05000
0-7,500	07500
0-10,000	10000

BARG Measurement	Pressure Code
-1 to 2++	V0002++
0-2	00002
0-5	00005
0-7	00007
0-10	00010
0-20	00020
0-35	00035
0-50	00050
0-100	00100
0-250	00250
0-350	00350
0-500	00500
0-700	00700

*All pressures between 0-25 PSI and 0-10,000 PSI available. ++Compound pressures up to -14.7 to 500 PSI available. Please consult factory.

300 Series

Low Pressure Absolute Pressure Transducer / Transmitter

The SPAN 300 is built for applications requiring absolute pressure measurement of liquids and gases that are compatible with stainless steel. Due to its stainless steel construction, welded housing and high shock and vibration ratings, the SPAN 300 translates into a rugged, reliable absolute pressure transducer.

Supplied with various pressure port, output and electrical connection options, the SPAN 300 is well-suited for a variety of applications across many industries.

Benefits

- High Accuracy
- High Strength Stainless Steel Construction
- Wide Variety of Media Compatibility
- No Internal O-rings
- Rugged Construction
- CE EN61326
- Suitable for High Shock and Vibration

Applications

- Test Stands
- Energy and Water Management
- Autoclave
- Pressure Instrumentation
- Data Loggers
- Barometric Correctors

Environmental Data

Temperature	
Operating	-40 to 85°C (-40 to 185°F)
Storage	-40 to 125°C (-40 to 257°F)
Thermal Limits	
Compensated Range	0 to 70°C (32 to 158°F)
TC Zero	<±1.5% of FS
TC Span	<±1.5% of FS
Other	
Shock	EN 60068-2-27
Vibration	EN 60068-2-6, 60068-2-64, and IEC 68-2-32
EMI/RFI Protection:	Yes
Rating:	IP-66

Performance @ 25°C (77°F)

Accuracy*	< ±0.25% BFSL
Stability (1 year)	±0.25% FS, typical
Over Range Protection	2X Rated Pressure
Burst Pressure	5X Rated Pressure
Pressure Cycles	> 10 Million

** Accuracy includes non-linearity, hysteresis & non-repeatability*

Electrical Data

Output	**0-50mV (10mV/V)**	**4-20mA**	**Voltage (3 Wire)**
Excitation	5VDC, typical	10-28VDC	10-28VDC
Output Impedance	5K Ohms, Nominal	>10k Ohms	<100 Ohms, Nominal
Current Consumption:	<5mA	20mA, typical	<10mA
Bandwidth	(-3db): DC to 1kHz	(-3dB): DC to 250 Hz	(-3dB): DC to 1kHz
Output Noise:	N/A	-	<2mV RMS
Zero Offset:	<±2% of FS	<±1% of FS	<±1% of FS
Span Tolerance:	<±2% of FS	<±2% of FS	<±1.5% of FS
Output Load:	>1M Ohm	0-800 Ohms@10-28VDC	10k Ohms, min
Reverse Polarity Protection	N/A	Yes	Yes

300 Series

SPAN™

Ordering Information

SPAN 300	A	A0100	P	4	A	1	000

Series Type

Process Connection*
A= 1/4" NPT Male
C= 1/4" BSPP Male
F= 7/16" - 20 UNF Male (not available under 50PSI)
J= 1/8" NPT Female (panel mount, option code "066")
P= 1/2" NPT Male

Pressure Range
Insert 5-digit pressure code

Pressure Unit
P= PSI

Outputs
A= 10mV/V
2= 0-5V (3-wire)
3= 1-5V (3-wire
4= 4-20mA (loop powered)
5= 0-10V (3-Wire)

Electrical
A= 2 ft. (0.6m)
B= 4 ft. (1.2m)
C= 6 ft. (1.8m)
D= 10 ft. (3.0m)
E= Mini DIN 43650C
I= DIN 43650A
R= Bendix 6 Pin
Y= M12x1 Eurofast

Wetted Material
1= 316L

Options (contact factory for additional options)
000= No Options
066= Panel Mount (1/8"-27 NPT Female Only)

Pressure Ranges

PSI Absolute	Proof PSIA	Burst PSIA	Pressure Code
0-15	30	75	A0015
0-30	60	150	A0030
0-50	100	250	A0050
0-100	200	500	A0100
0-200	400	1000	A0200
0-300	600	1500	A0300

OE400 Series

OEM Pressure Transducer / Transmitter

- The **SPAN OE400 Series** OEM pressure transducer / transmitter remains the most popular configuration. With its welded stainless steel housing and various electrical connections, the SPAN OE400 can be packaged for virtually any OEM pressure transducer application. Voltage and current output signals are available on all products.

Benefits

- High Strength Stainless Steel Construction
- No Oil, Welds or Internal O-rings
- Wide Operating Temperature
- Pressures up to 10,000 PSI
- Low Static and Thermal Errors
- Unparalleled Price and Performance
- Compatible with Wide Variety of Liquids and Gases
- EMI/RFI Protection
- UL/cUL 508 Approved (with housing)

Applications

- Industrial OEM Equipment
- Water Management
- Pneumatics
- Hydrogen Storage
- Sub Sea Pressure
- HVAC/R Equipment
- Control Panels
- Hydraulic Systems
- Data Loggers

Environmental Data

Temperature	
Operating	-40 to 85°C (-40 to 185°F)
Storage	-40 to 100°C (-40 to 212°F)
Thermal Limits	
Compensated Range	0 to 55°C (32 to 132°F)
TC Zero	<±1.5% of FS
TC Span	<±1.5% of FS
Other	
Shock	EN 60068-2-27
Vibration	EN 60068-2-6, 60068-2-64, and IEC 68-2-32
EMI/RFI Protection:	Yes
Rating:	IP-66 (housing only)

Performance @ 25°C (77°F)

Accuracy*	< ±0.5% BFSL
Stability (1 year)	±0.25% FS, typical
Over Range Protection	2X Rated Pressure
Burst Pressure	5X or 20,000 PSI (whichever is less)
Pressure Cycles	> 100 Million

** Accuracy includes non-linearity, hysteresis & non-repeatability*

Electrical Data

Output	**4-20mA**	**1-5VDC, 1-6VDC**	**0-50mV (10mV/V)**	**0.5-4.5V Ratiometric**
Excitation	10-28VDC	10-28VDC	5VDC, typical	5VDC, regulated
Output Impedance	>10k Ohms	<100 Ohms, Nominal	1100 Ohms, Nominal	<100 Ohms, Nominal
Current Consumption:	20mA, typical	<10mA	<5mA	<10mA
Bandwidth	(-3dB): DC to 250 Hz	(-3dB): DC to 1kHz	(-3dB): DC to 5kHz, min	(-3dB): DC to 1kHz
Output Noise:	-	<2mV RMS	-	<2mV RMS
Zero Offset:	<±1% of FS	<±1% of FS	< ±2% of FS	<±1% of FS
Span Tolerance:	<±1.5% of FS	<±1.5% of FS	< ±2% of FS	<±1.5% of FS
Output Load:	0-800 Ohms@10-28VDC	10k Ohms, min	>1M Ohms	10K Ohms, min
Reverse Polarity Protection	Yes	Yes	-	Yes

OE400 Series

Ordering Information

SPAN OE400	A	00500	P	4	E	0	000

Series Type
SPAN OE400 = Industrial Grade

Process Connection*
A= 1/4" NPT Male
B= 1/8" NPT Male
C= 1/4" BSPP Male
F= 7/16" - 20 UNF Male
J= 1/8" NPT Female
K= SAE4 Female
P= 1/2" NPT Male
V= 1/8" BSP Female
** "B" and "F" not available under 50PSI ("B" not available in 316L)*

Pressure Range
Insert 5-digit pressure range code

Pressure Unit
B= Bar K= kg/cm^2 P= PSI

Outputs
1= 0.5-4.5V ratiometric
3= 1-5V
4= 4-20mA (2 wire loop powered)
6= 1-6V
A= 10mV/V

Electrical
A= 2 ft. (0.6m)
B= 4 ft. (1.2m)
C= 6 ft. (1.8m)
D= 10 ft. (3.0m)
E= Mini DIN 43650
F= Packard Metripack 150 3-Pin
G= 4-pin Molex (no housing)
I= DIN 43650A
K= Deutsch DT04-3 Pin
Y= M12x1 Eurofast
Z= Deutsch DT04-4 Pin

Wetted Material
0= 17-4PH 1= 316L 2= Inconel 718

Options (contact factory for additional options)
000= No Options
006= Schrader Depressor Pin (only available with process connection "K")
143= Schrader Depressor Pin & Sealed Gauge References (only available with process connection "K")

Pressure Ranges[+]

PSIG Measurement Range	Pressure Range Code
-14.7 to 25**	V0025**
0-25	00025
0-50	00050
0-100	00100
0-150	00150
0-200	00200
0-250	00250
0-500	00500
0-1,000	01000
0-2,500	02500
0-5,000	05000
0-7,500	07500
0-10,000	10000

BARG Measurement Range	Pressure Range Code
-1 to 2**	V0002**
0-2	00002
0-5	00005
0-7	00007
0-10	00010
0-20	00020
0-35	00035
0-50	00050
0-100	00100
0-250	00250
0-350	00350
0-500	00500
0-700	00700

[+]Typical ranges. All ranges between 0-25 PSI and 0-10,000 PSI available. **Compound ranges up to -14.7 to 500 PSI available. Please consult factory.

HA400 Series

High Precision Pressure Transducer / Transmitter

The SPAN HA400 is a digitally compensated precision pressure transducer / pressure transmitter that offers high performance over temperature. Thick Film Technology alone offers excellent non-linearity and non-repeatability performance. When it is combined with the advanced electronics, the SPAN HA400 steps into its own league of high performance pressure sensing at an affordable price.

Benefits

- Digital ASIC Compensation
- Superb Temperature Performance
- Real Time Thermal Compensation
- Real Time Linearity Correction
- Turndown Capability
- Pressures up to 45,000 PSI

Applications

- Aerospace
- Analytical Instruments
- Hydraulics
- Hydrogen (Consult factory for media compatibility)
- Labs / Metrology
- Medical
- Military
- Test Stands

Environmental Data

Temperature	
Operating	-40 to 85°C (-40 to 185°F)
Storage	-50 to 125°C (-58 to 257°F)
Thermal Limits	
Compensated Range	0-70°C (30 to 158°F)
TC Zero	<± 0.5% FS
TC Span	<± 0.5% FS
Other	
Shock	100G, 11 msec, 1/2 sine
Vibration	10G peak, 20 to 2000Hz
EMI/RFI Protection:	Yes
Rating:	IP-66

Performance @ 25°C (77°F)

Accuracy*	< ±0.1% BFSL (<±0.2% BFSL over 15,000 PSI)
Stability (1 year)	±0.1% FS, typical
Proof Pressure **	2X Rated Pressure, standard
Burst Pressure	5X or 50,000 PSI, whichever is less
Pressure Cycles	> 100 Million

** Accuracy includes non-linearity, hysteresis & non-repeatability **For higher proof pressures, contact factory*

Electrical Data

Output	**4-20mA**	**0-5V, 1-5V**	**0-10V, 1-10V**	**0.5-4.5V Ratiometric**
Excitation	10-28VDC	10-28VDC	15-30VDC	5VDC, Regulated
Current Consumption:	-	< 10mA	< 10mA	< 10mA
Sampling Rate	400Hz	400Hz	400Hz	400Hz
Output Noise:	< 1mV, RMS	< 1mV, RMS	< 1mV, RMS	< 1mV, RMS
Zero Offset	< ± 0.5% FS	< ± 0.5% FS	< ± 0.5% FS	< ± 0.5% FS
Span Tolerance	< ± 0.5% FS	< ± 0.5% FS	< ± 0.5% FS	< ± 0.5% FS
Output Load:	0-800 Ohms@10-28VDC	5k Ohms, min.	5k Ohms, min.	5k Ohms, min.
Reverse Polarity Protection	Yes	Yes	Yes	Yes

HA400 Series

Ordering Information*

SPAN HA400	A	05000	P	4	E	0	H	000

Series Type

Process Connection

A = 1/4" NPT Male
B = 1/8" NPT Male**
C = 1/4" BSPP Male
E = 9/16"-18 UNF Male [SAE6]
F = 7/16"-20 UNF Male [SAE4]**
P= 1/2" NPT Male***
W= F250C Female Autoclave****

*** Not available under 50PSI (1/8" NPT Male not available in 316L)*
**** Pressures up to 15,000 PSI*
*****Pressures from 10,000 to 45,000 PSI, not available in 316L*

Pressure Range
Insert 5-digit pressure code

Pressure Unit
B= Bar K= kg/cm^2 P= PSI

Outputs
1= 0.5-4.5V ratiometric
2= 0-5V(3 wire)
3= 1-5V
4= 4-20mA
5= 0-10V(3 wire)
G= 1-10V

Electrical
A= 2 ft.(0.6m)
B= 4 ft.(1.2m)
C= 6 ft.(1.8m)
D= 10 ft.(3.0m)
E= Mini DIN 43650C
I= DIN 43650A
R= 6- Pin Bendix
Y= M12x1

Wetted Material
0=17-4PH 1=316 L *(available up to 10,000 PSI)* 2= Inconel 718 *(consult factory on availability)*

Fail Condition
N= Not Specified H= Fail High L= Fail Low

Options (contact factory for additional options)
000= No Options

**Minimum order quantities may apply to certain configurations, please contact factory for more information.*

Pressure Ranges+

PSIG Measurement	Pressure Code
-14.7 to 25++	V0025++
0-25	00025
0-50	00050
0-100	00100
0-150	00150
0-200	00200
0-250	00250
0-500	00500
0-1,000	01000
0-2,500	02500
0-5,000	05000
0-7,500	07500
0-10,000	10000
0-15,000	15000
0-20,000	20000
0-30,000	30000
0-45,000	45000

BARG Measurement	Pressure Code
-1 to 2++	V0002++
0-2	00002
0-5	00005
0-7	00007
0-10	00010
0-20	00020
0-35	00035
0-50	00050
0-100	00100
0-250	00250
0-350	00350
0-500	00500
0-700	00700
0-1,000	01000
0-1,400	01400
0-2,000	02000
0-3,000	03000

+All pressures between 0-25 PSI and 0-45,000 PSI available. ++Compound pressures up to -14.7 to 500 PSI available. Please consult factory.

700 Series

Differential Pressure (DP) Transducer / Transmitter

The SPAN 700 differential pressure (DP) transducer can measure line pressures up to 5,000 PSI with a turndown ratio of 15 to 1. Using Thick Film Technology, the AST5400 contains no silicone oil, O-rings, or welds. This MEMS pressure sensor technology completely isolates the media to the pressure ports, thus eliminating contamination risk. The low strain level on the diaphragm results in accurate, repeatable measurements. The SPAN 700 can be used to measure differential pressure across a filter, monitor level in a sealed or vented tank, or calculate flow across an orifice plate.

With its digital compensation, this series offers excellent linearity and performance over temperature. The electronics now offer a fail safe condition on the output signal. If the transducer were to experience a fault condition, the transducer can be programmed to rail the output signal to 10% below the minimum or 10% above maximum output signal to notify the user of an issue and protect the system from undesirable conditions. The SPAN 700 also offers excellent flexibility in its configuration, allowing for a variety of wetted materials and pressure ports.

Benefits

- ASIC compensation
- Turn-down capability
- Both or either pressure port can see full line pressure - No expensive balancing valves required!
- Line pressure up to 5,000 PSI (350 Bar)
- Smart electronics with failure condition protection
- Wide variety of materials for a variety of media

Applications

- Aerospace
- Building Automation
- Fuel Systems
- Hydraulics
- Hydrogen (316L only)
- Labs / Metrology
- Medical
- Military Vehicles
- HVAC/R Systems
- Desalination Equipment (Inconel 718 Recommended)

Environmental Data

Temperature	
Operating	-20 to 70ºC (-4 to 158ºF)
Storage	-50 to 125ºC (-58 to 257ºF)
Thermal Limits	
Compensated Range	-20 to 70ºC (-4 to 158ºF)
Other	
Shock	100G, 10msec, 1/2 sine
Vibration	10G peak, 20 to 2000Hz
EMI/RFI Protection:	Yes
IP Class:	IP-66; IP-67 Optional

Performance @ 25°C (77°F)

Total Error Band*	<± 1% of Line Pressure
Maximum Line Pressure	2,000 PSI (140 Bar)
Proof Pressure	2X Line pressure**
Burst Pressure	5X Line pressure
Pressure Cycles	> 100 Million

*Typical Values shown; Combined effects of Zero Offset, Span Tolerance, Thermal Zero, Thermal Span, Non-linearity, Repeatablity and Hysteresis. **For higher line pressures, contact factory.

Electrical Data

Output	**4-20mA**	**1-5V, 0-5V, 1-6V**	**1-10V, 0-10V**	**0.5-4.5V Ratiometric**
Excitation	10-28VDC	10-28VDC	15-28VDC	5VDC, Regulated
Current Consumption	-	< 15mA	< 15mA	< 15mA
Sampling Rate	200Hz	200Hz	200Hz	200Hz
Output Noise	< 1mV, RMS	< 1mV, RMS	< 1mV, RMS	< 1mV, RMS
Output Load	0-800 Ohms@10-28VDC	5k Ohms, min.	5k Ohms, min.	5k Ohms, min.
Reverse Polarity Protection	Yes	Yes	Yes	Yes

700 Series

Ordering Information

SPAN 700	F	01000	P		Y	0	0500	H	00

Series Type

Process Connection
A= 1/4" NPT Male
B= 1/8" NPT Male
F= 7/16-20 UNF Male
R= 7/16-20 UNF Female

Line Pressure
Insert 5-digit code chart

Pressure Unit
B= Bar
K= kg/cm^2
P= PSI

Outputs
1= 0.5-4.5V ratiometric
2= 0-5V
3= 1-5V
4= 4-20mA (2 wire loop powered)
5= 0-10V
6= 1-6V
G= 1-10V

Electrical
A= 2 ft. (0.6m)
B= 4 ft. (1.2m)
C= 6 ft. (1.8m)
D= 10 ft. (3.0m)
E= Mini DIN 43650C
I= DIN 43650A
L= Conduit 2 ft. (0.6m)
R= 6 Pin Bendix
Y= M12 Eurofast

Wetted Material
0= 17-4PH
1= 316L
2= Inconel 718

Differential Pressure Range
Insert 4-digit code from chart

Fail Condition
N= Not Specified
H= Fail High
L= Fail Low

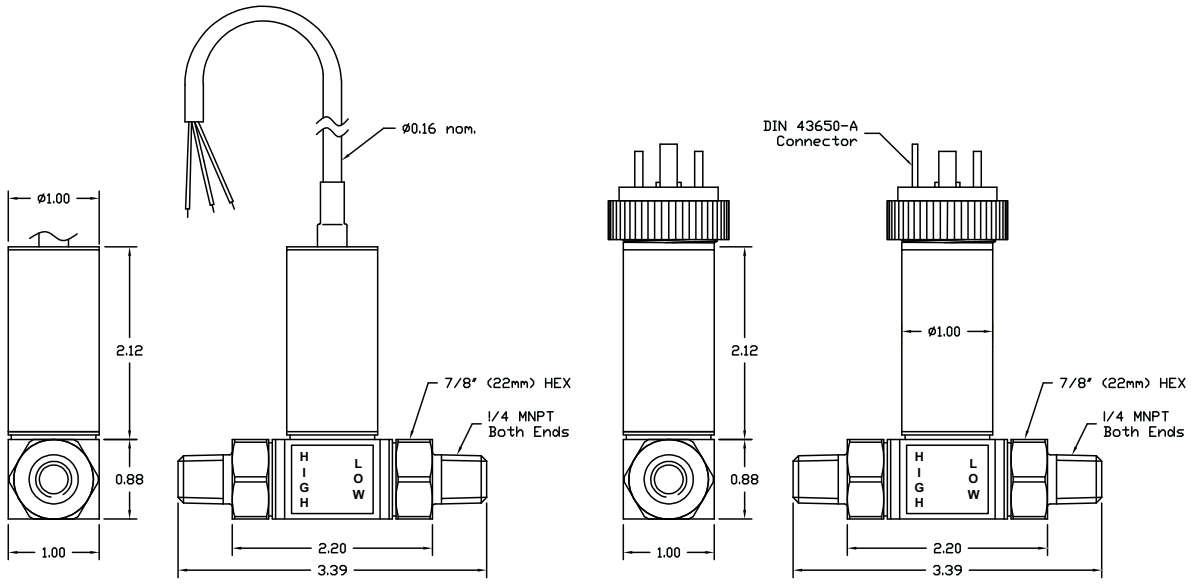
Options (contact factory for additional options)
000= No Options

Line Pressure*

Differential Pressure Range* (PSID)	CODE	50	100	300	500	1000	2000	5000
		00050	00100	00300	00500	01000	02000	05000
10	0010	✔	✔					
20	0020	✔	✔	✔				
50	0050		✔	✔	✔			
75	0075		✔	✔	✔	✔		
100	0100		✔	✔	✔	✔		
150	0150			✔	✔	✔		
200	0200			✔	✔	✔	✔	
300	0300			✔	✔	✔	✔	
500	0500				✔	✔	✔	✔
750	0750					✔	✔	✔
1000	1000						✔	✔
2000	2000						✔	✔
5000	5000							✔

Other pressures available; contact factory.

Dimensional Data



900 Series

Pressure & Temperature Submersible Transducer / Transmitter

- The SPAN 900 is a combined pressure and temperature transmitter for accurate liquid level measurement.
- For pressure ranges from 0-1 to 100 PSI that require a wide range of media compatibility, the SPAN 900 submersible series is an excellent solution to monitor level and temperature.

Benefits

- High Strength Stainless Steel Construction
- No Internal O-rings
- Wide Operating Temperature
- Pressures up to 100 PSI
- Low Static and Thermal Errors
- Unparalleled Price and Performance
- Rugged Design
- New Conduit Fitting at Electrical Connection
- Compatible with Wide Variety of Liquids
- EMI/RFI Protection

Applications

- Ground Water Level Measurement
- Earthen & Concrete Dams
- Liquid Tanks
- Irrigation
- Environmental Sites
- Building Automation Controls
- Waste Water Canals

Environmental Data

Temperature	
Operating	-40 to 85°C (-40 to 185°F)
Storage	-40 to 100°C (-40 to 212°F)
Thermal Limits	
Compensated Range	0 to 55°C (32 to 131°F)
TC Zero	<±1.5% of FS
TC Span	<±1.5% of FS
Other	
Shock	100G, 11 msec, 1/2 sine
Vibration	10G peak, 20 to 2000 Hz.
EMI/RFI Protection:	Yes
Rating:	IP-68

Performance @ 25°C (77°F)

Accuracy (Pressure)*	< ±0.25% of FS BFSL
Accuracy (Temp.)*	< ±1.0% of FS BFSL
Over Range Protection	2X Rated Pressure
Burst Pressure	5X or 1,250 PSI (whichever is less)
Pressure Cycles	> 50 Million

** Accuracy includes non-linearity, hysteresis & non-repeatability*

Electrical Data

Output	**4-20mA** [+]	**1-5V**
Excitation	10-28VDC	10-28VDC
Current Consumption:	-	< 10mA
Sampling Rate	400Hz	400Hz
Output Noise:	< 1mV, RMS	< 1mV, RMS
Zero Offset	< ± 0.5% FS	< ± 0.5% FS
Span Tolerance	< ± 0.5% FS	< ± 0.5% FS
Output Load:	0-800 Ohms@10-28VDC	5k Ohms, min.
Reverse Polarity Protection	Yes	Yes

[+]For units with loop-powered 4-20mA output, the pressure loop must be powered or the temperature output will not operate.

900 Series

Ordering Information

SPAN 900	1	L	00005	P	4	X	1	N	065

Series Type

Temperature Output Range
1= -40 to 85°C (-40 to 185°F)
2= -40 to 125°C (-40 to 257°F)
3= 0 to 70°C (32 to 158°F)
4= -55 to 125°C (-67 to 250°F)
5= -18 to 93°C (0-200°F)

Configuration Interface
L= Cone (removable)

Pressure Range
Insert 5-digit pressure code

Pressure Unit
H= Inches H_2O P= PSI

Outputs
3= 1-5V 4= 4-20mA

Electrical
N= Conduit fitting, Cable 6 ft.
P= Conduit fitting, Cable 10 ft.
X= Optional Length (see options)

Wetted Material
1= 316L / 304 / Hytrel (cable) / Kynar (cord grip)

Fail Condition
N= Not Specified H= Fail High L= Fail Low

Options Cable Lengths:
140= 15 ft. (4.6 m)
075= 20 ft. (6.1 m)
074= 25 ft. (7.6 m)
004= 35 ft. (10.7 m)
130= 40 ft. (12.2 m)
065= 50 ft. (15.2 m)
003= 100 ft. (30.5 m)
050= 150 ft. (45.7 m)

Pressure Ranges

	Gauge PSIG	Pressure Code	Feet of Water Column @ 4°C (approx.)
SPAN 900	0-100	00100	230.67
	0-50	00050	115.33
	0-30	00030	69.20
	0-20	00020	46.13
	0-15	00015	34.60
	0-10	00010	23.07
	0-7.5*	00208*	17.30
	0-5	00005	11.53
	0-2.5*	00069*	5.77
	0-1	00001	2.31

**2.5 and 7.5 PSI Sensor must be ordered in inches of H_2O.*

1000 Series

Temperature Transducer / Transmitter

The SPAN 1000 industrial temperature transmitter offers accurate temperature measurements with a 4-20mA or 1-5V output signal. Offering a wide selection of process connections, lengths, temperature and connections, the SPAN 1000 can be specified for existing or new applications. Featuring a stainless steel housing, this transmitter can be packaged with IP-66 to IP-68.

Benefits

- Compact Size
- Rugged Design
- Wide Choice of Process Connectors
- Stainless Steel 316L Wetted Parts
- High Media Process Capabilities (7000 psi)
- Suitable for High Shock and Vibration

Applications

- Mud and Frack Pumps
- Gas Flow Temperature
- Well Heads
- Gas Compressors & Turbines
- Hydraulic Oil Temperature
- Wind Turbines

Electrical Data

Output	4-20mA
Excitation	22 to 28VDC
Output Impedance	>10k Ohms
Zero Offset	±0.5%
Span Tolerance	±0.5%
Response Time	< 1 second
Reverse Polarity	Yes

Temperature

Ambient Temperature	-40 to 85ºC
Storage Temperature	-50 to 120ºC
Liquid or Gas Temperature	-40 to 200ºC
IP Rating	IP-66, min

Environmental Data

Shock	100G, 11 msec, 1/2 sine
Vibration	10G peak, 20 to 2000 Hz.

Performance @ 25°C (77°F)

Accuracy*	±0.25ºC
Stability (1 year)	0.2%FS, typical

Maximum Pressure

< 2 inch Probe	500 Bar (7,250 PSI)
> 2 inch Probe	150 Bar (2,175 PSI)

1000 Series

SPAN™

Ordering Information

Ordering Method
For Example:-

1000 4 A 1 4 S L

❶ ❷ ❸ ❹ ❺ ❻ ❼

❶

Series	Code	Description
	1000	

❷

Process Connection		
	4	1/4” NPT Male
	Z	G1/4 3852 Male
	9	9/16-18 UNF Male
	7	7/16-20 UNF Male
	2	1/2” NPT Male

❸

Probe Length*		
	A	25mm
	B	50mm
	C	75mm
	D	100mm

❹

Temperature Range		
	1	-40°C to 85°C (-40 to 185°F)
	2	-40 to 125°C (-40 to 257°F)
	3	0 to 70°C (32 to 158°F)
	4	-55°C to 125°C (-67 to 257°F)
	5	-18 to 93°C (0 to 200°F)
	6	0 to 200°C (32 to 392°F)

❺

Outputs		
	4	4-20mA (2 wire loop powered)
	1	1-5V

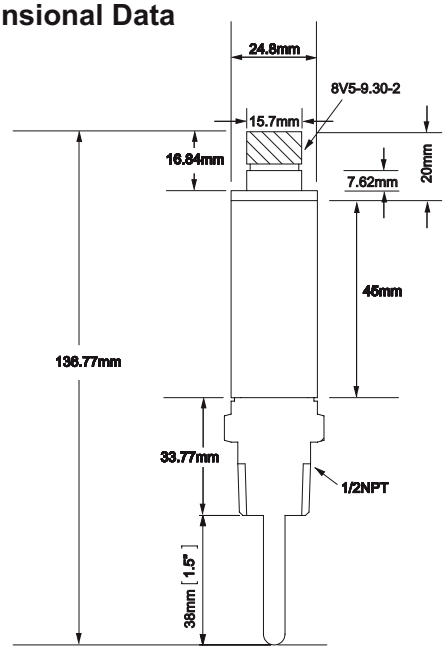
❻

Electrical		
	J	Conduit, 1m
	K	Conduit, 2m
	L	Conduit, 3m
	P	Packard Metripack 150 3Pin
	Q	4ft. (1.2m)
	R	6ft. (1.8m)
	S	10ft. (3.0m)
	X	6 Pin Bendix (PT06A)
	Y	M12x1 Eurofast

❼

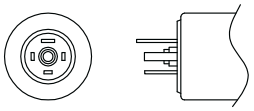
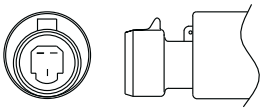
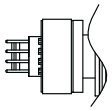
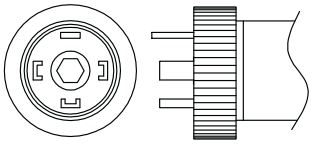
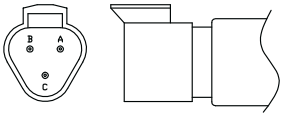
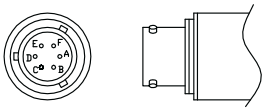
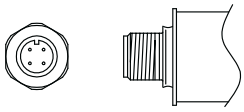
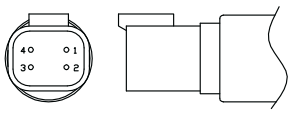
Wetted Material		
	L	316L-SS

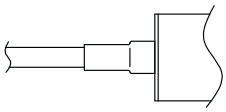
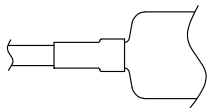
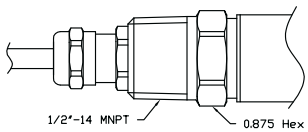
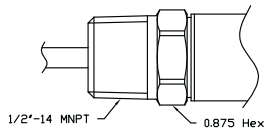
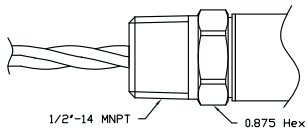
Dimensional Data



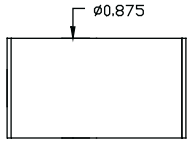
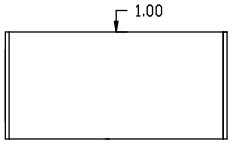
Dimensional Data

Electrical Connections

Connector Options		Letter
DIN 43650 C		E
Packard Metripack 150		F
4 Pin Molex (millivolt / no housing only)		G
DIN 43650 A		I
DT04 3-Pin		K
6 Pin Bendix		R
M12x1		Y
DT04 4-Pin		Z

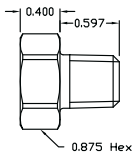
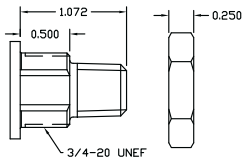
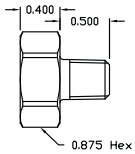
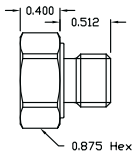
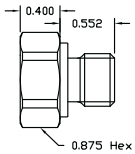
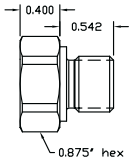
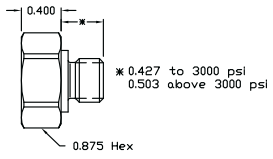
Cable Options		Letter(s)
Cable - Standard		A, B, C, D
Cable - OE400		A, B, C, D
Conduit with Cable - Submersible		N, P, X
Conduit with Cable - Standard		L, M, N, P
Conduit with 18AWG Wires		T, U, W

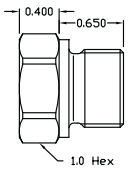
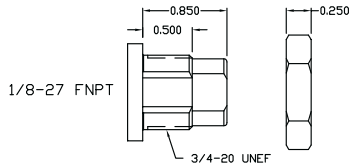
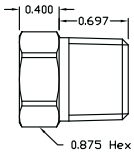
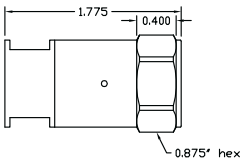
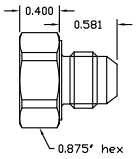
Housings

Models	Max Dia.	Max Length	
SPAN 400	.875"	1.75"	
SPAN 200 SPAN 300 SPAN HA400	1.00"	2.25"	

Dimensional Data

Process Connections

Threaded Connections		Letter
1/4” NPT Male		A
1/4” NPT Male (Panel Mount)		A
1/8” NPT Male		B
1/4 BSPP Male		C
G 1/4 Male		D
9/16-18 UNF Male		E
7/16-20 UNF Male		F

Threaded Connections		Letter
M20x1.5 Male		H
1/8” NPT Female (Panel Mount)		J
1/2” NPT Male		P
F250C Female Autoclave		W
9/16-18 UNF with 37° Flare		X

SPAN™

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