INTELLIGENT PRESSURE AND LEVEL TRANSMITTERS

FOR ALL INDUSTRIES
Series 2000

- All stainless steel design
- Easy calibration without test pressure using 3 push buttons
- Accuracy 0.1%
- 4-20 mA / Hart® protocol
- ATEX II 1G/D
- Large rangeability
- Local display
- Adjustable damping
- Over 40 process connections
- Profibus-PA output

Description

Series 2000 is a complete range of intelligent pressure and level transmitters with local display and adjustment by three push buttons. The push buttons are used to set zero and span. Test pressures are not required for calibration.

The display can indicate a number of chosen engineering units, is also used during programming to assist in the easy operation. Process temperatures can be shown and damping times can be adjusted from 0 to 25 seconds. Also a 4-20 mA, current simulation can be performed.

Series 2000 is fully temperature compensated. Over 40 different process connections are available including many flush diaphragm designs. Options include ATEX approval for intrinsically safe applications, HART® protocol and PROFIBUS-PA output.

Stainless steel housing

HART® is a registered trademark of the HARTCommunication Foundation

Manufactured by:

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Series 2000

Description

Series 2000 pressure transmitters have been specially designed for measuring pressure in **pulp and paper mills** and similar industries where plugging is a problem. The transmitters are fully temperature compensated and have strong, laser welded, flush mounted diaphragms. Zero and span can be adjusted without test pressure by 3 push buttons or by an optional hand-held terminal (Hart® protocol)

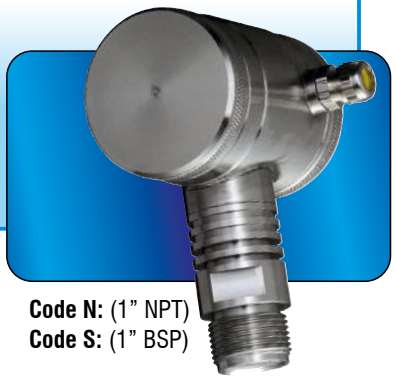
Specifications

Accuracy:	0.1% of adjusted span
Measuring ranges:	0 – 1.45 psi to 0-1450 psi
Output signal:	4-20 mA / 2-wire
Output signal options:	Hart® protocol or PROIBUS-PA
Adjustment:	By 3 push buttons or HHT
Power supply:	12 – 36 Vdc (ATEX: 13 – 26,5 Vdc)
Protection grade:	IP66 (IP68 optional)
Process temperature:	-4ºF to + 176ºF
Temperature effect:	0.01% / K
Wetted parts:	AISI 316L (standard)
Electronic housing:	AISI 304
Process connections:	See below. Also available: PMC, E&H, etc. Specify X code, complete X code list available.

Process Connections

Code: W
(1" Flush Mount)
(Pulp and paper industry)

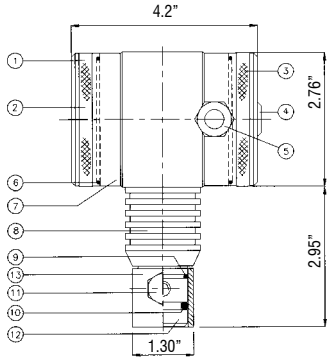
Code: X12
(PASVE connection)



Code N: (1" NPT)
Code S: (1" BSP)

Dimensions (inches)

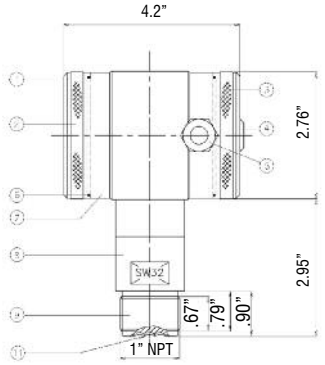
Code W



Parts Description W and N

1. Cover
2. Push buttons + display (behind cover)
3. Cover with venting
4. Venting
5. Cable entry
6. O-ring
7. Electronics housing
8. Foot with cooling fins
9. O-ring (Code W), (Code N=1" thread)
10. O-ring
11. M8 bolt
12. Diaphragm
13. Weld-on nipple ø1.30"

Code N



See back page for ordering code and ranges.

Series 2000-SAN

Description

Series 2000-SAN are designed for all pressure and level applications in the food, beverage, chemical and phamaceutical industries. All hygienic process connections are available most of them are 3-A, FDA or EHEDG, certified. The transmitters are fully temperature compensated and have strong, laser welded, flush mounted diaphragms. They are both CIP and SIP cleanable. Zero and span can be adjusted without test pressure by 3 push buttons or by an optional hand-held terminal (Hart® protocol)

Specifications

Accuracy:	0.1% of adjusted span
Measuring ranges:	0 – 0,58 psi to 0 – 1450 psi
Output signal:	4-20 mA / 2-wire
Output signal options:	Hart® protocol or PROIBUS-PA
Adjustment:	By 3 push buttons or HHT
Power supply:	12 – 36 Vdc (ATEX: 13 – 26,5 Vdc)
Protection grade:	IP66 (1P68 optional)
Process temperature:	-4°F to + 212°F (293°F / 45 min.)
Temperature effect:	0.01% / K
Wetted parts:	AISI 316L (standard)
Wetted parts options:	Hastelloy C, Tantalum or Goldplated
Electronic housing:	AISI 304
Process connections:	All industrial process connections available (more than 40*)

Process Connections

***More than 40 different process connections are available: Tri-clamp, SMS, IDF, 1-1/2" BSP, Varivent, etc.**

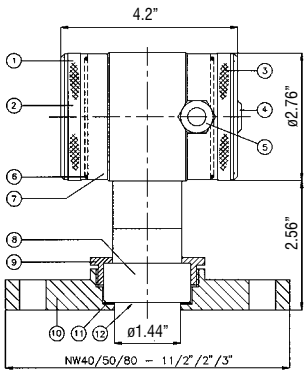
Code: M
(Milkcoupling - DN25, DN40 or DN50)

Code: F
Flange connection (DIN or ANSI)

Code: W
(Weld-on nipple ø3.35")

Dimensions (inches)

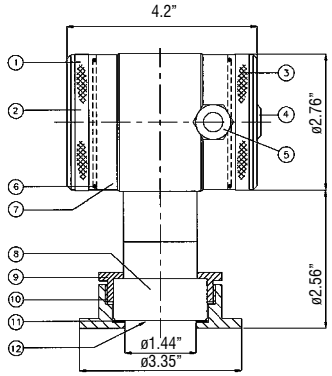
Code F



Parts Description F and W

1. Cover
2. Push buttons + display (behind cover)
3. Cover with venting
4. Venting
5. Cable entry
6. O-ring
7. Electronics housing
8. Foot
9. Lockring
10. Weld-on nipple (W) or Flange (F)
11. Packing ring (PTFE)
12. Flush Diaphragm

Code W



See back page for ordering code and ranges.

Peramic "S" Series CER 2000

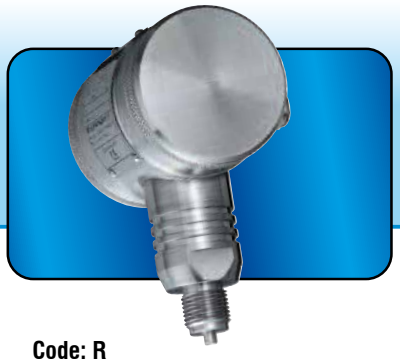
Description

The Peramic "S" Series CER-2000 is a pressure transmitter based on a ceramic measuring sensor. The CER-2000 series is fully temperature compensated and is made for all pressure applications in clean liquids, gases and vapours. The ceramic measuring cell can withstand high overpressures and is sealed by a standard supplied Viton® o-ring. Other o-ring material types are available. Zero and span can be adjusted without test pressure over wide ranges by 3 push buttons or by an optional hand-held terminal (Hart® protocol)

Specifications

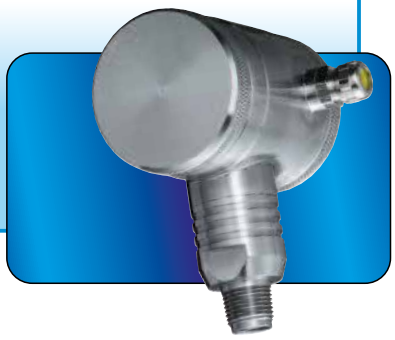
Accuracy:	0.1% of adjusted span
Measuring ranges:	0 – 2.9 psi to 0 – 5800 psi
Output signal:	4-20 mA / 2-wire
Output signal options:	Hart® protocol or PROIBUS-PA
Adjustment:	By 3 push buttons or HHT
Power supply:	12 – 36 Vdc (ATEX: 13 – 26,5 Vdc)
Protection grade:	IP66 (IP68 optional)
Process temperature:	-4°F to + 176°F
Temperature effect:	0.01% / K
Measuring sensor:	Ceramic AL_2O_3
Sensor sealing:	Viton® (Other materials on request)
Other wetted parts:	AISI 316 (standard)
Material housing:	AISI 304

Process Connections



Code: R
(1/2" BSP - DIN 16288)

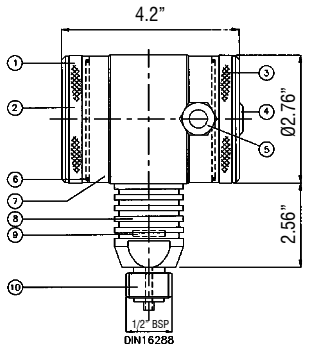
Code: S
(1/2" BSP M and 1/4" BSP F)



Code: N
(1/2" NPT M and 1/4" NPT F)

Dimensions (inches)

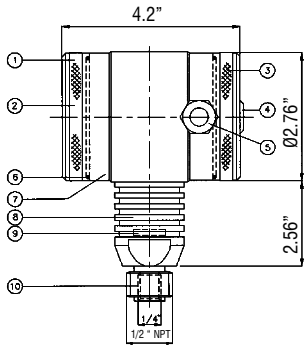
Code R



Parts Description R and N

1. Cover
2. Push buttons + display (behind cover)
3. Cover with venting
4. Venting
5. Cable entry
6. O-ring
7. Electronics housing
8. Foot with cooling fins
9. Ceramic sensor
10. Process connection

Code N



See back page for ordering code and ranges.

General Information

Calibration

As a standard, the Series 2000 is equipped with a display and 3 push buttons for easy calibration. Both the measured and the calibrated value can be read locally. A full calibration can be done using the 3 push buttons or with the optional handheld terminal (HHT), (Hart® protocol), or with special software which you can obtain from us.

Zero and span can be calibrated very easily without test pressure, including vacuum ranges. Linearisation can be made for different tank shapes such as horizontal and conical tanks (P111). For all other adjustable points see the table right.

The Series 2000 is delivered with 2 closed covers, so the 3 push buttons and the standard display are protected behind the cover.

A transparent cover is an option (I). Using a transparent cover allows you to use the display as a local indicator.

Display with 3 push buttons (Standard)

Adjustable Points

P101	Zero adjustment (4 mA)
P102	Span adjustment (20 mA)
P103	Cancel mounting position effect
P104	Adjustment pressure unit (see conversion table)
P105	4-20 mA* 20-4 mA (reverse output)
P106	Damping adjustment (0 to 25 sec)
P107	Indication of process temperature (read out on display)
P108	0 = CELC °C* 1 = FAHR °F
P109	Read out on display: 0 = current (4-20 mA)* 1 = pressure unit 2 = percent %
P110	Current simulation (4-20 mA)
P111	Linearisation (different tank shapes)

* = factory setting

2000-SAN-HT

Certificates and Options

Temperature Compensation
All our transmitters are fully temperature compensated. All Klay transmitters with flush diaphragm are equipped with the unique Klay **Flush Diaphragm Technology**. Detailed documentation available.

High Temperature Applications
Where the process temperature is continuously above 212°F, we manufacture transmitters with cooling fins to reduce the temperature, Series 2000-SAN with HT option. With a compact 2000-SAN transmitter with option HT, we can go up to 356°F and with separation by a cable between the process connection and electronics housing, Series 2000-SAN-CABLE-HT, we can continuously go up to 536°F. The HT option is only available on Series 2000-SAN, except for ranges 1 and 2.

Ordering Codes: Series 2000, 2000-SAN and CER 2000

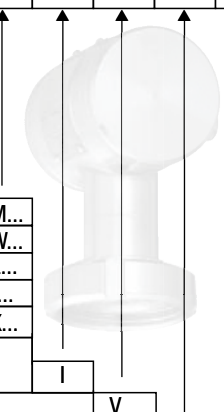
Series 2000

Ranges (psi)	Maximum Overpressure (psi)	Adjustable Span Range (psi)	SERIES 2000
0 - 1.45 ... 5.8	93	0 - 1.45 to 0 - 5.8	1
0 - 4.35 ... 17.4	150	0 - 4.35 to 0 - 17.4	2
0 - 14.5 ... 145	435	0 - 14.5 to 0 - 145	3
0 - 72.5 ... 435	1450	0 - 72.5 to 0 - 435	4
0 - 290 ... 1450	2900	0 - 290 to 0 - 1450	5

Process Connections:	
• Weld-on nipple diameter 1.30" (One-inch flush mount / pulp and paper)	W
• G1" (1" BSP) threaded connection (flush diaphragm)= code S. 1" NPT thread = code N	S
• PASVE 1" connection (Valmet, Satron)	X12
• Other connections: i.e. PMC (X2), Valcom, Vega, etc. (specify X code)	X...
Options:	
• Transparent cover, display functions as a local indicator.	I
• Vacuum ranges (specify relative or absolute). Compound ranges available (example -14.5 to + 14.5 psi)	V
• Intrinsically safe ATEX II 1G/D EEx ia IIC T4	Ex
• Hart® Protocol	H
• PROFIBUS-PA output (Not available in Ex)	P

Series 2000 - SAN

Ranges (psi)	Maximum Overpressure (psi)	Adjustable Span Range (psi)	SERIES 2000 - SAN
0 - 0.58 ... 5.8	93	0 - 0.58 to 0 - 5.8	1
0 - 1.74 ... 17.40	150	0 - 1.74 to 0 - 17.40	2
0 – 14.5 ... 145	435	0 – 14.5 to 0 - 145	3
0 - 72.5 ... 435	1450	0 - 72.5 to 0 - 435	4
0 - 290 ... 1450	2900	0 - 290 to 0 - 1450	5



Process Connections:	
• Milk coupling DIN 11851, DN 25 (only ranges 3, 4 and 5) DN 40, DN 50 (all ranges)	M...
• Hygienic weld on nipple diameter 3.35" (other diameters on request)	W...
• Tri-clamp 1-1/2", 2" or 3" (specify size)	L...
• Flange: DN 25, 40, 50 or 80 (DIN) or 1-1/2", 2" or 3" (ANSI) (specify size)	F...
• Other connections: E+H (X1), Varivent (X4), IDF (X5), DRD (X7), 11/2"NPT (X20), etc. (Specify X code)	X...
Options:	
• Transparent cover, display functions as a local indicator.	I
• Vacuum ranges (specify relative or absolute). Compound ranges available (example -14.5 to + 14.5 psi)	V
• High temperature version with cooling fins. Always specify process temperature	HT
• Intrinsically safe ATEX II 1G/D EEx ia IIC T4	Ex
• Hart® Protocol	H
• PROFIBUS-PA output (Not available in Ex)	P

Series CER-2000

Ranges (psi)	Maximum Overpressure (psi)	Adjustable Span Range (psi)	SERIES CER 2000
0 - 2.9 ... 11.6	72	0 - 2.9 to 0 - 11.6	1
0 - 11.6 ... 29	145	0 - 11.6 to 0 - 29	2
0 - 29 ... 145	725	0 - 29 to 0 - 145	3
0 - 145 ... 580	1740	0 - 145 to 0 - 580	4
0 - 580 ... 2900	5075	0 - 580 to 0 - 2900	5
0 - 2175 ... 5800	8700	0 - 2175 to 0 - 5800	6

Process Connections:	
• G 1/2" (1/2" BSP) manometer (gauge) connection DIN 16288	R
• G 1/2" (male) and G 1/4" (female)	S
• 1/2" NPT (male) and 1/4" NPT (female)	N
Options:	
• Transparent cover, display functions as a local indicator.	I
• Vacuum ranges (specify relative or absolute). Compound ranges available (example -14.5 to + 14.5 psi)	V
• Intrinsically safe ATEX II 1G/D EEx ia IIC T4	Ex
• Hart® Protocol	H
• PROFIBUS-PA output (Not available in Ex)	P