US300

SPECIFICATIONS

- **OEM and End User**
- **High Accuracy**
- **Compact Package**
- **Wide Temperature Range**

The low cost US300 Series incorporates stainless steel isolation, and provides a wide choice of standard pressure ranges and electrical outputs in a very compact package. This product uses MEAS' UltraStable™ technology that provides stability over a wide temperature range, performance previously available only in much higher priced sensors. The modular design is adaptable to a wide variety of pressure ports and electrical connectors. Standard outputs include 0 to 10mV/V, 0.5 to 4.5V ratiometric, 1 to 5V regulated and 4 to 20mA current loop.

FEATURES

- ±0.1% Accuracy
- -40°C to +105°C Operating Temperature Range
- 100% Stainless Steel 316L Isolation
- Wide Variety of Pressure Ranges and Electrical Outputs
- Low Cost and Compact Package
- UltraStable™ Technology

APPLICATIONS

- Refrigeration and HVAC Controls
- Compressed Gases
- Process Control
- Water Pressure Monitoring

STANDARD RANGES

Range	psig	psia	Range	Barg	Bara
0 to 015	•	•	0 to 001	•	•
0 to 030	•	•	0 to 002	•	•
0 to 050	•	•	0 to 3.5	•	•
0 to 100	•	•	0 to 007	•	•
0 to 300	•	•	0 to 020	•	•
0 to 500	•	•	0 to 035	•	•
0 to 01k	•	•	0 to 070	•	•
0 to 03k	•	•	0 to 200	•	•
0 to 05k	•	•	0 to 350	•	•
0 to 10k	•	•	0 to 700	•	•

PERFORMANCE SPECIFICATIONS (AMPLIFIED OUTPUT)

Ambient Temperature: 25°C (unless otherwise specified)

PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Accuracy (combined non linearity, hysteresis, and repeatability)	-0.15	±0.1	0.15	%Span	FS<1kpsi @25°C
	-0.25	±0.2	0.25	%Span	FS≥1kpsi @25°C
Span Tolerance	-1.0	±0.5	1.0	%Span	@25°C
Zero Offset	-1.0	±0.5	1.0	%Span	@25°C
Temperature Error – Span	-1.5	±0.75	1.5	%Span	
Temperature Error – Offset	-1.5	±0.75	1.5	%Span	
Thermal Hysteresis – Span		±0.05		%Span	
Thermal Hysteresis – Offset		±0.05		%Span	
Long Term Stability – Span		±0.10		%Span/year	
Long Term Stability – Offset		±0.10		%Span/year	
Insulation Resistance (50Vdc)	50			MΩ	
Response Time	1		1	ms	
Proof Pressure			3X	Rated	3X RATED OR 20000PSI WHICHEVER IS LESS
Burst Pressure			4X	Rated	4X RATED OR 30000PSI, WHICHEVER IS LESS
Compensated Temperature	-20		+85	°C	Except cable -20~80°C
Operating Temperature	-40		+105	°C	Except cable -20~80°C
Storage Temperature	-40		+125	°C	Except cable -20~80°C
Media Compatibility	Liquids and gases compatible with 316/316L Stainless Steel				
Vibration	±20g MIL-STD-810C, Procedure 514.2, Figure 514-2, Curve L				
Shock (11ms)	100g 11mS				
Pressure Cycles (Zero to Full Scale)	1 million cycles 0 to full scale				
Environmental Protection	IP67 (Cable Version); IP65 (Packard Version)				

For custom configurations, consult factory.

PERFORMANCE SPECIFICATIONS (mV OUTPUT)

All parameters are measured at 10Vdc drive and at 25°C after 10 sec warm up (unless otherwise specified)

PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Span	99	100	101	mV	FS≥15psi
	98	100	102	mV	FS≥1kpsi
Zero Pressure Output	-1.0		1.0	mV	
Pressure Non Linearity	-0.10		0.10	%Span	FS≥15psi
	-0.25		0.25	%Span	FS≥1kpsi
Pressure Hysteresis	-0.05	±0.02	0.05	%Span	FS≥15psi
	-0.1		0.1	%Span	FS≥1kpsi
Repeatability		±0.02		%Span	
Input Resistance	6.0	10.0	19.0	kΩ	
Output Resistance	4.0		6.0	kΩ	
Temperature Error – Span	-1.0		1.0	%Span	
Temperature Error – Offset	-1.0		1.0	%Span	
Thermal Hysteresis – Span	-0.25		0.25	%Span	Over -20°~85°C
Thermal Hysteresis – Offset	-0.25		0.25	%Span	FS≤15psi over -20°~85°C
Long Term Stability – Span		±0.10		%Span/year	
Long Term Stability – Offset		±0.10		%Span/year	
Output Load Resistance	5			MΩ	
Insulation Resistance (50VDC)	50			MΩ	At 50 V_{DC}
Output Noise (10Hz to 1kHz		1.0		µV p-p	
Response Time (10% to 90%)			0.1	ms	
Proof Pressure			3X	Rated	3X RATED OR 20000PSI, WHICHEVER IS LESS
Burst Pressure			4X	Rated	4X RATED OR 30000PSI, WHICHEVER IS LESS
Compensated Temperature	-20		+85	°C	Except cable -20~80°C
Operating Temperature	-40		+125	°C	Except cable -20~80°C
Storage Temperature	-40		+125	°C	Except cable -20~80°C
Wetted Material	316/316L Stainless steel				
Vibration	±20g MIL-STD-810C, Procedure 514.2, Figure 514-2, Curve L				
Shock	50g, 11 msec half sine hock per ML-STD-202g, Method 213B, Condition A				
Pressure Cycles	1 million cycles 0 to full scale				
Environmental Protection	IP67 (Cable connected with mV version only)				

For custom configurations, consult factory.

DIMENSIONS

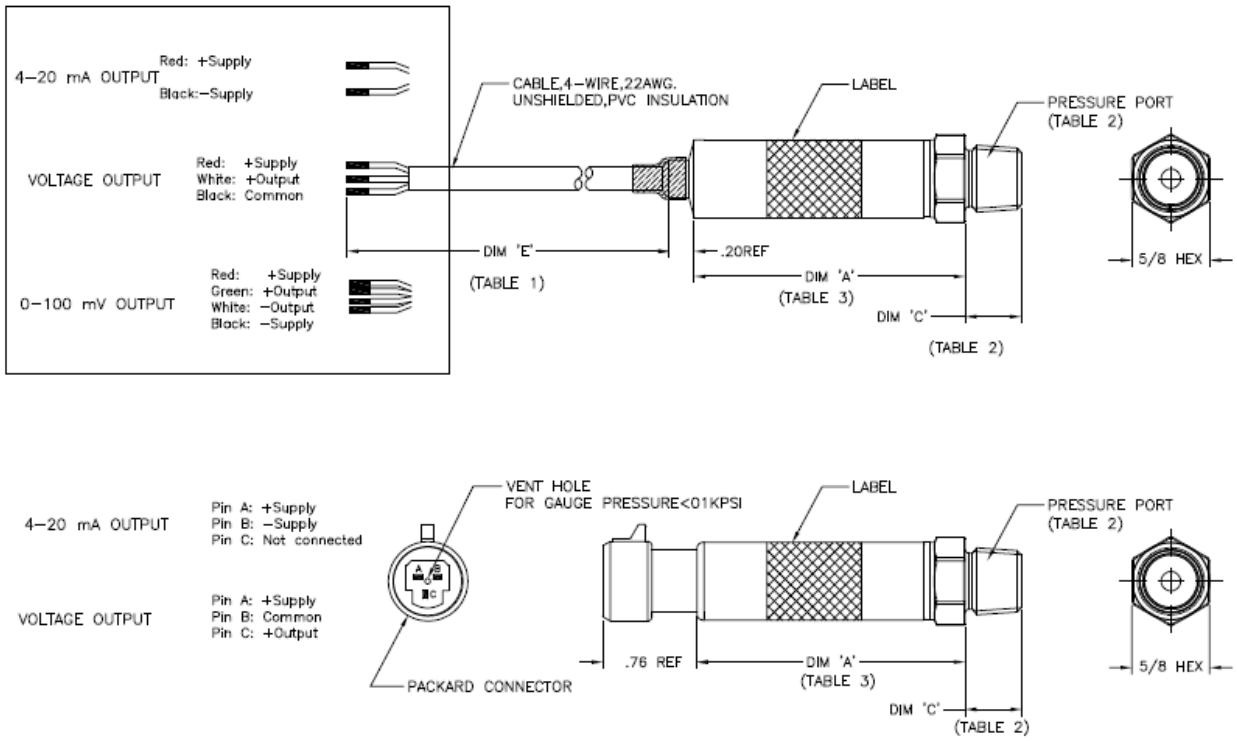

TABLE 1 : CONNECTION

CODE	CONNECTION	DIM 'E'
1	CABLE,BELDEN #8444 2 FEET	24"±1"
2	CABLE,BELDEN #8444 4 FEET	48"±2"
3	CABLE,BELDEN #8444 10 FEET	120"±4"
4	PACKARD CONNECTOR	-

TABLE 2: PRESSURE PORT

CODE	PRESSURE PORT	DIM 'C'
2	1/4-19 BSPP	0.45[11.43]
4	7/16-20 UNF Male SAE J514 Straight Thread Boss O-Ring Buna-N 70SH -904, ID8.92mm X W1.83mm	0.33 [8.38]
5	1/4-18 NPT	0.45[11.43]
6	1/8-27 NPT	0.32[8.13]

TABLE 3

	CONNECTION	V/mA OUTPUT		mV OUTPUT
DIM 'A'		<1000 PSIG/A	≥1000 PSIG/A	
	CABLE	2.18" MAX	2.24" MAX	1.21"
	PACKARD	2.14" MAX	2.19 MAX	-

OUTPUT OPTIONS

		Supply (V)		
Code	**Output**	**MIN**	**TYP**	**MAX**
2	0 – 100mV (Constant Voltage 10mV/V Output)	2.5	10	14
3	0.5 – 4.5 V (Ratiometric @ 5V)	4.75	5	5.25
4	1 – 5 V	8		30
8	4 – 20 mA	9		30

Packard connector not available with mV output

ORDER INFORMATION

US3 3 3 - 00000 2 – 100P A

Output		
Code	**Type**	**Supply Voltage**
2	0 – 100mV Ratiometric	2.5 – 14V (typ. 10V)
3	0.5 – 4.5V Ratiometric	4.75 – 5.25V (Typ. 5V)
4	1 – 5V	8 – 30V
8	4 – 20mA	10 – 30V

Pressure Reference	
G	Gauge
A	Absolute

Connection		
Code	**Connection Type**	**Dim 'E'**
1	Cable, 2 feet	24"±1"
2	Cable, 4 feet	48"±2"
3	Cable, 10 feet	120"±4"
4	Packard Connector	-

Pressure Range		
mV Output Version	**Amplified Output Version**	
psi Std.	psi Std	bar Std
015P	015P	001B
030P	030P	002B
050P	050P	3.5B
100P	100P	007B
300P	300P	020B
500P	500P	035B
01KP	01KP	070B
03KP	03KP	200B
05KP	05KP	350B
10KP	10KP	700B

Pressure Port		
Code	**Port Type**	**Dim 'C'**
2	1/4-19 BSPP	0.45[11.43]
4	7/16"-20UNF Male SAE J514 Straight Thread Boss O-Ring BUNA-N 70SH-904 ID8.92mmxW1.83mm	0.33[8.38]
5	1/4-18 NPT	0.45[11.43]
6	1/8-27 NPT	0.32[8.13]

All Intermediate ranges with amplified output are available

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