

SPX-2 Series Pressure sensors

General Purpose Smart Pressure Sensors for
Hazardous Locations



Description

The Dynisco SPX 2-Series is a smart 4-20mA pressure transmitter designed for use in hazardous locations and are available with a variety of different process and electrical connections. The SPX 2-Series is an all welded construction.

These amplified transmitters eliminate the need for external signal conditioning. All models can interface directly with distributed control systems, PLC's, computers, and similar high level control devices. Optional thermocouple or RTD configurations are available to provide melt temperature.

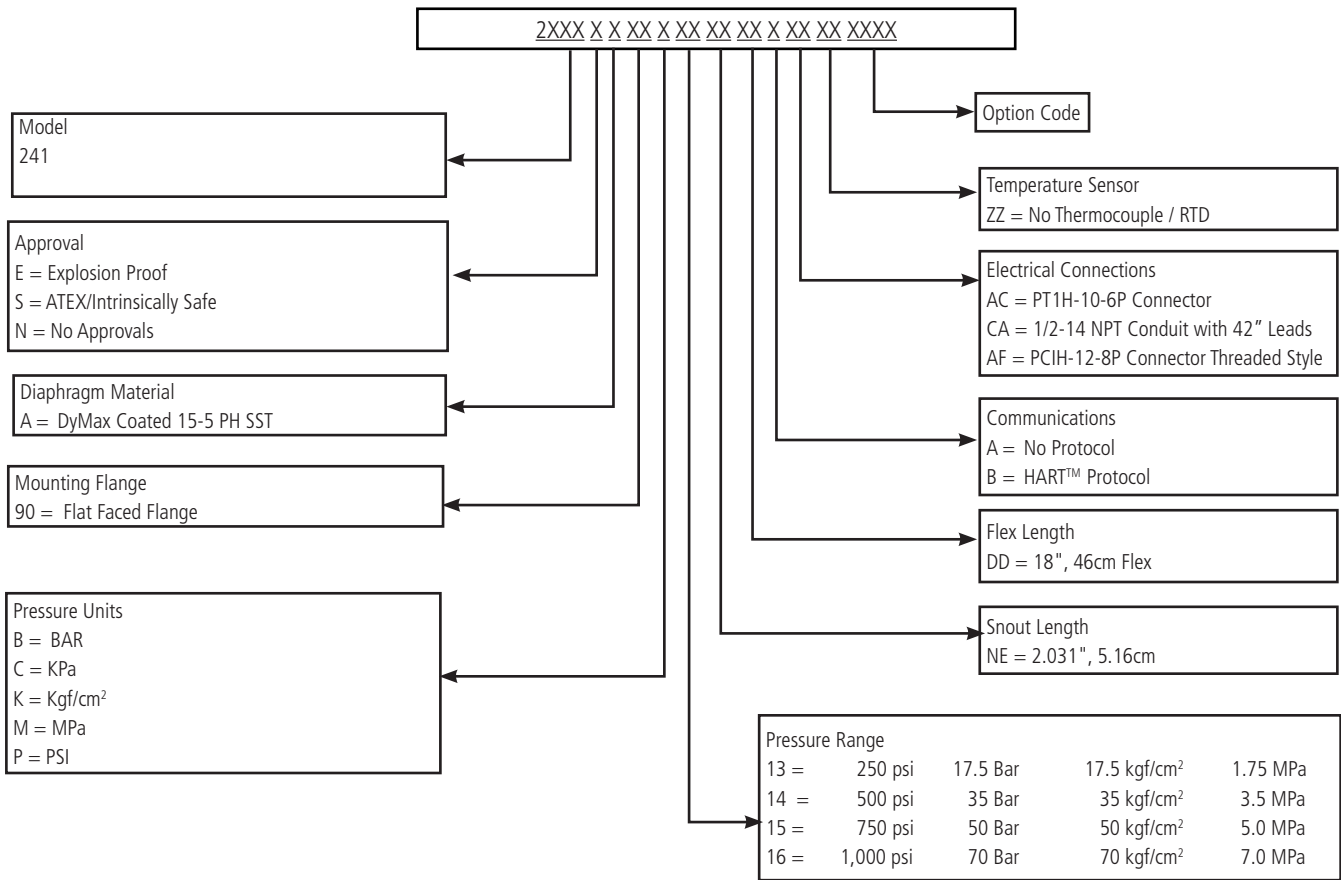
Features

- 4-20mA loop-powered output
- +/- 0.25% accuracy available
- Wide selection of pressure ranges available
- Turndown 6:1 (3:1 Turndown for model SPX 2290)
- Configurations available for use in hazardous locations
- Remotely configurable via HART™
- Precise, repeatable pressure measurements
- Output supplied directly to DSC or PLC
- Meets CE requirements
- CE ATEX Intrinsically Safe Approved
- FM Explosion Proof Approved
- CSA Explosion Proof Approved
- SIL 2 Certified (Pressure Output)
- PL 'c' Certified (Relay Output)
- Additional approvals are available

Performance Characteristics SPX2- Series	
Output	4 - 20 mA, with optional HART™
Input Voltage	16 - 36 Vdc (Std); 16 - 30 Vdc (ATEX IS)
Accuracy	2241 ± 1.0% 2242 ± 0.25% for pressure ranges ≥ 1,500 psi; ± 0.50% for pressure ranges < 1,500 psi 2243 ± 0.25% for pressure ranges ≥ 1,500 psi; ± 0.50% for pressure ranges < 1,500 psi 2244 ± 0.25% for pressure ranges ≥ 500 psi; ± 1.0% for pressure ranges < 500 psi 2290/2291/2292 ± 0.50%
Repeatability	±0.1%
Rangeability	6:1 Turndown (3:1 Turndown for Model SPX2290)
Over Pressure	2X FSO or 35,000 psi, whichever is less (2290, 2291, & 2292 1.5 x FSO for 10,000 psi)
Zero Balance Adjustment Range	-40% to +10%; -80% to 20% for FSP < 500 psi
Load Resistance	500 Ω @ 24 Vdc, 1,000 Ω @ 36 Vdc
Electronics Ambient Temperature	70°F (20°C)
Electronics Operating Temperature	-20 to 185°F (-29 to 85°C)
Diaphragm Temperature	750°F (400°C) max [Models 2241, 2244, 2290, 2291, 2292 limited to 600°F (315°C)]
Electronics Compensated Temperature Range	0 to 150°F (-18 to 65°C)
Zero Shift (Electronics Temp Change)	All Models: 0.01% F.S./°F max (0.02% F.S./°C max)
Span Shift (Electronics Temp Change)	All Models: 0.01% F.S./°F max (0.02% F.S./°C max)
Zero Shift (Snout Temp Change)	2241/2244//2290/2291/2292: 1 psi/100°F (from 75-450°F) typical 2 psi/100°F (from 450-600°F) typical 2242/2243: 15 psi/100°F (27 psi/100°C) typical

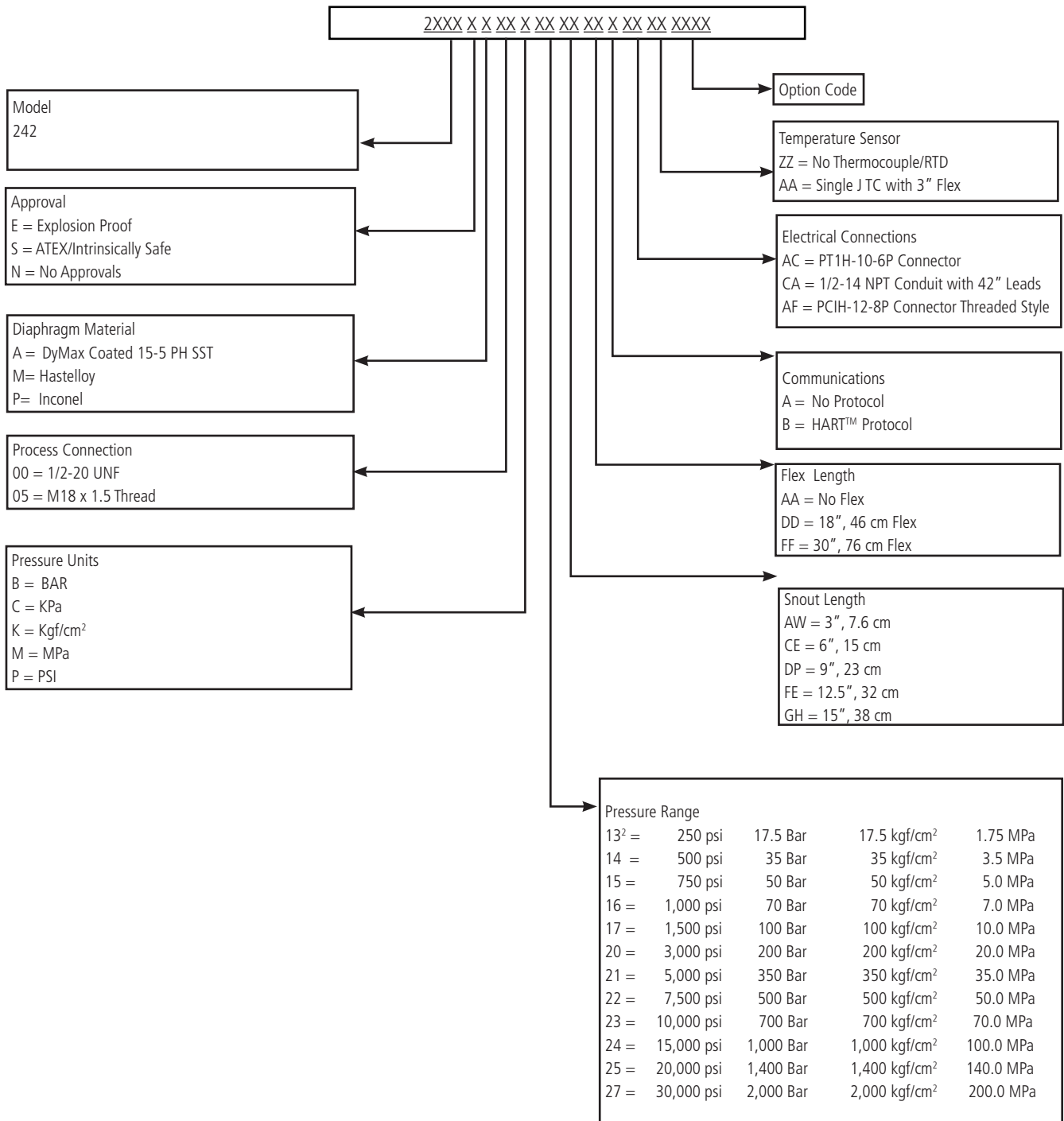
Mechanical Characteristics	
Mounting Torque	2241: 350 inch-lbf max 2242: 500 inch-lbf max 2243: 50 inch-lbf max 2244: 350 inch-lbf max 2290: 350 inch-lbf max 2291: 350 inch-lbf max 2292: 80 ft-lbf max
Standard Wetted Parts	DyMax coated 15-5 PH SST
Approvals & Certifications	
CE ATEX IS	
SIL 2 (pressure output) & PL'c' (relay output)	
FM & CSA Explosion Proof	
Additional Approvals are Available	

Ordering Guide for Models SPX2241¹



¹ Other configurations are available. Please consult factory.

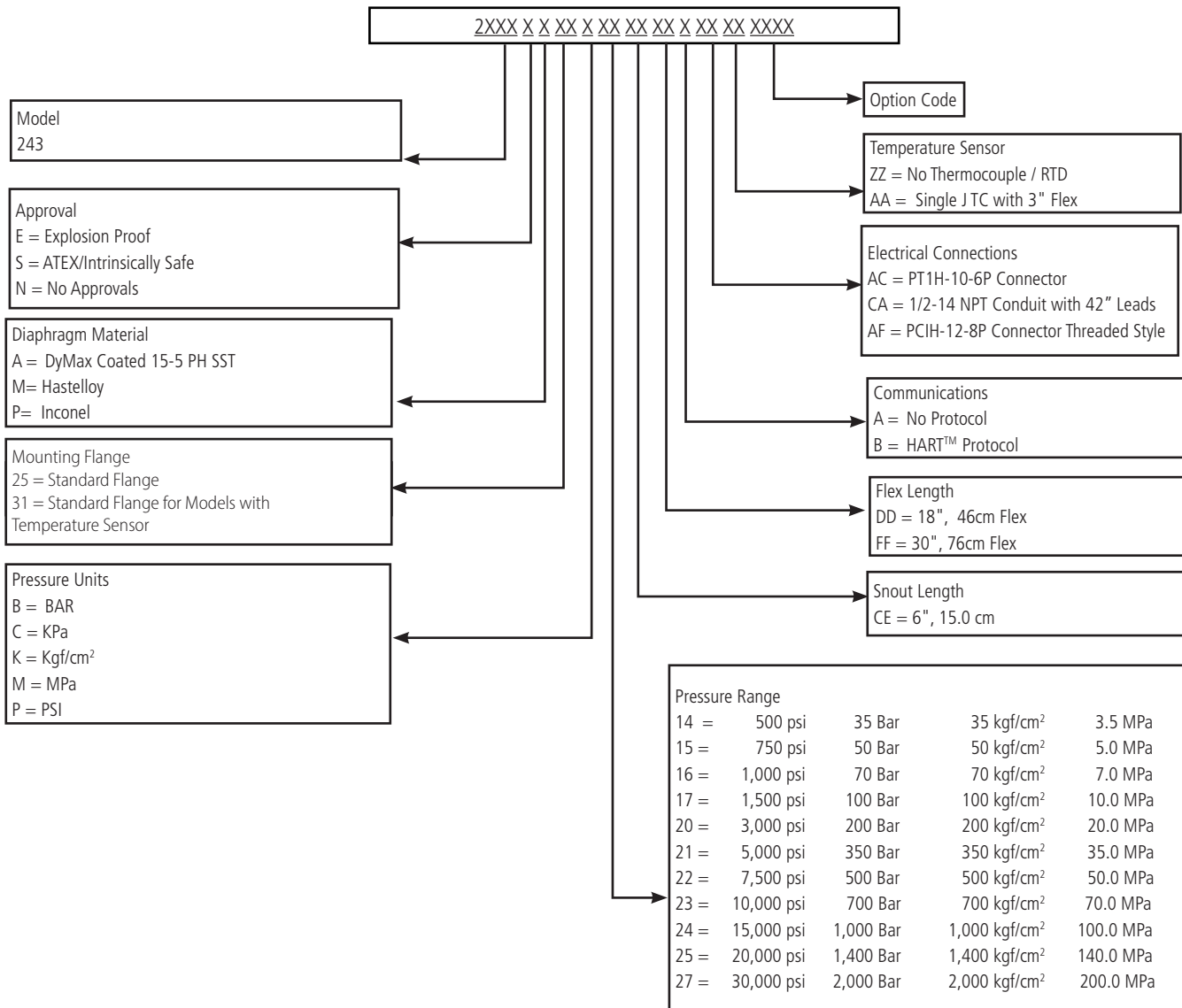
Ordering Guide for Models SPX2242¹



¹Other configurations are available. Please consult factory.

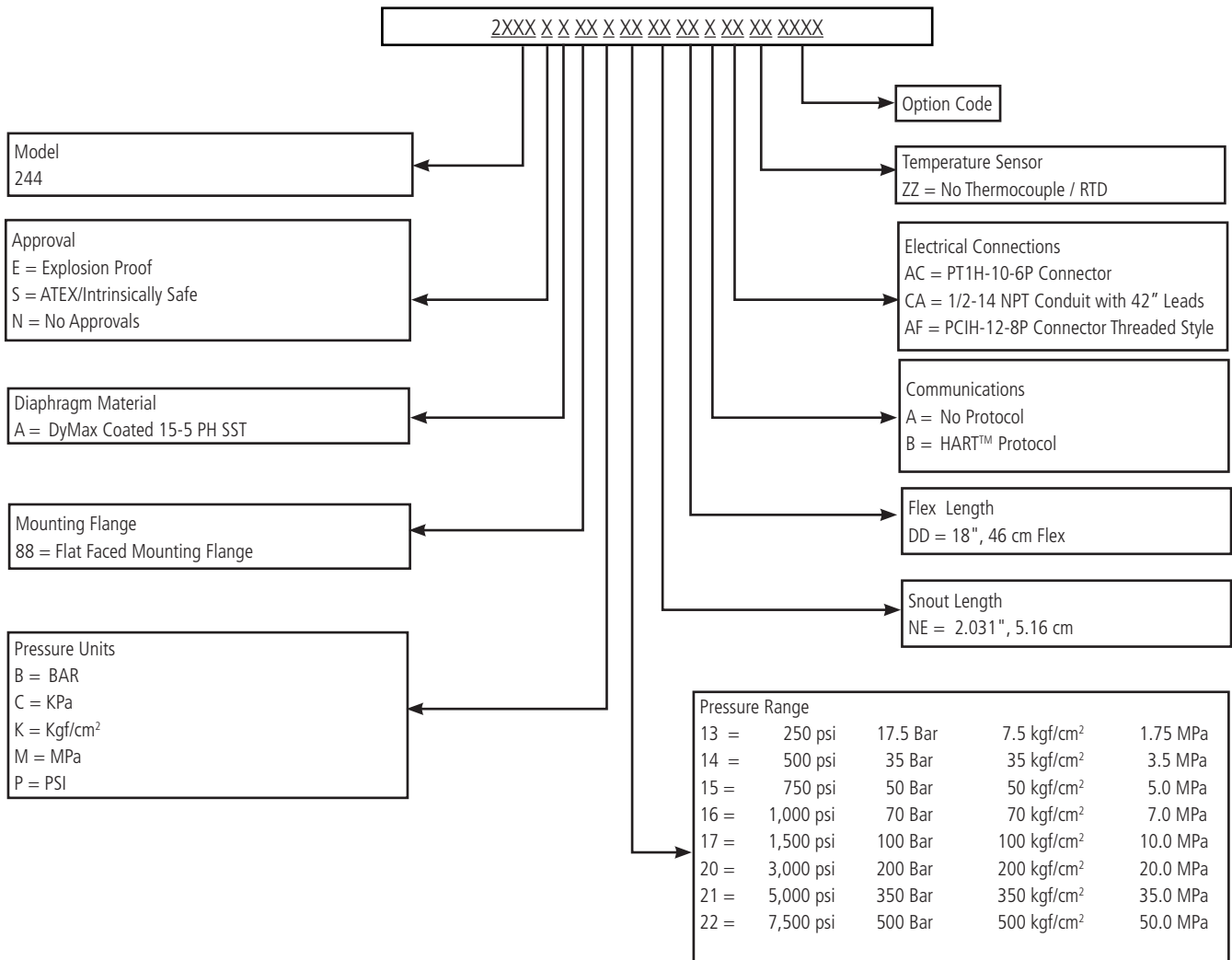
²Available in M18 x 1.5 thread only.

Ordering Guide for Models SPX2243¹



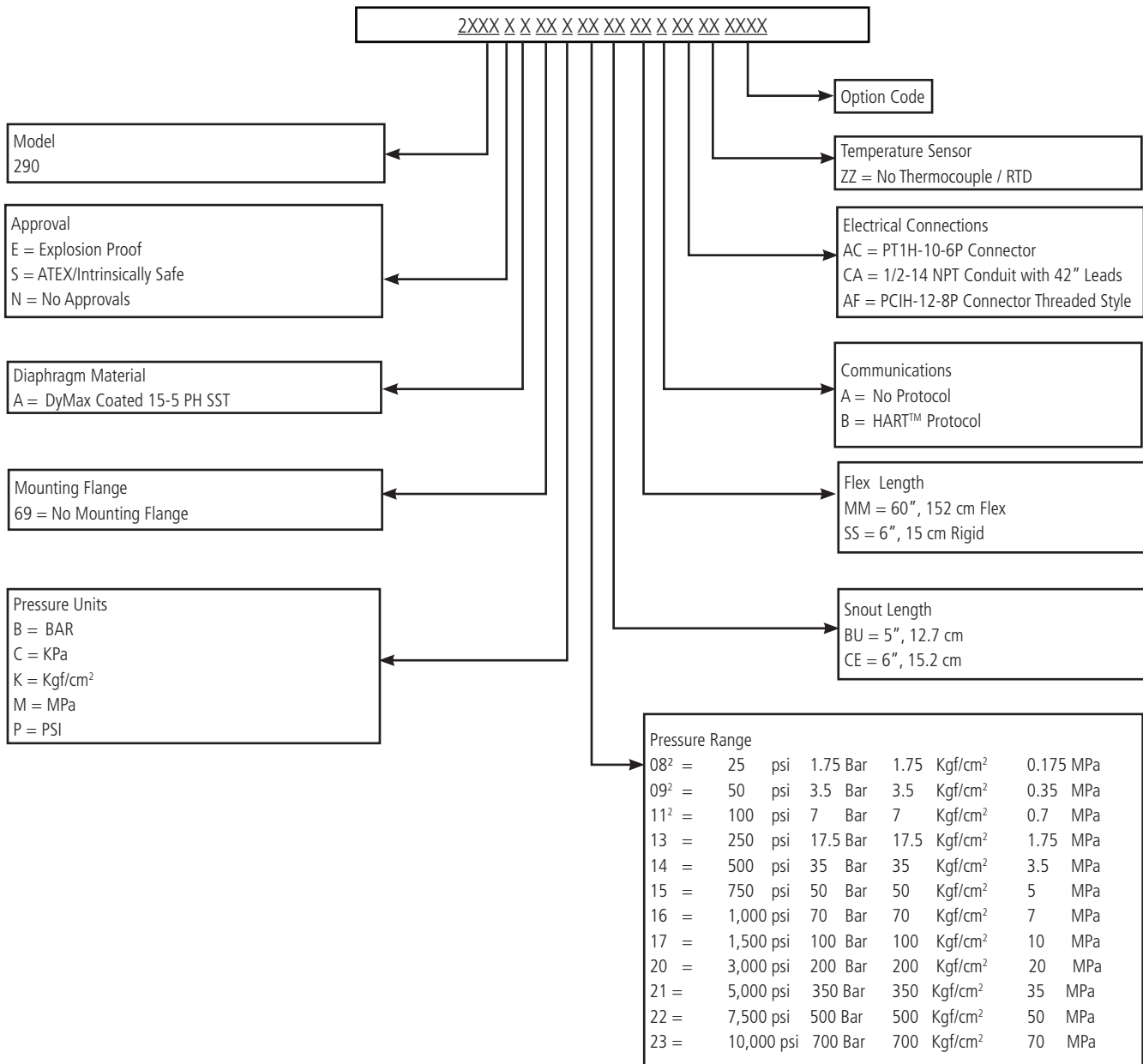
¹Other configurations are available. Please consult factory.

Ordering Guide for Models SPX2244¹



¹Other configurations are available. Please consult factory.

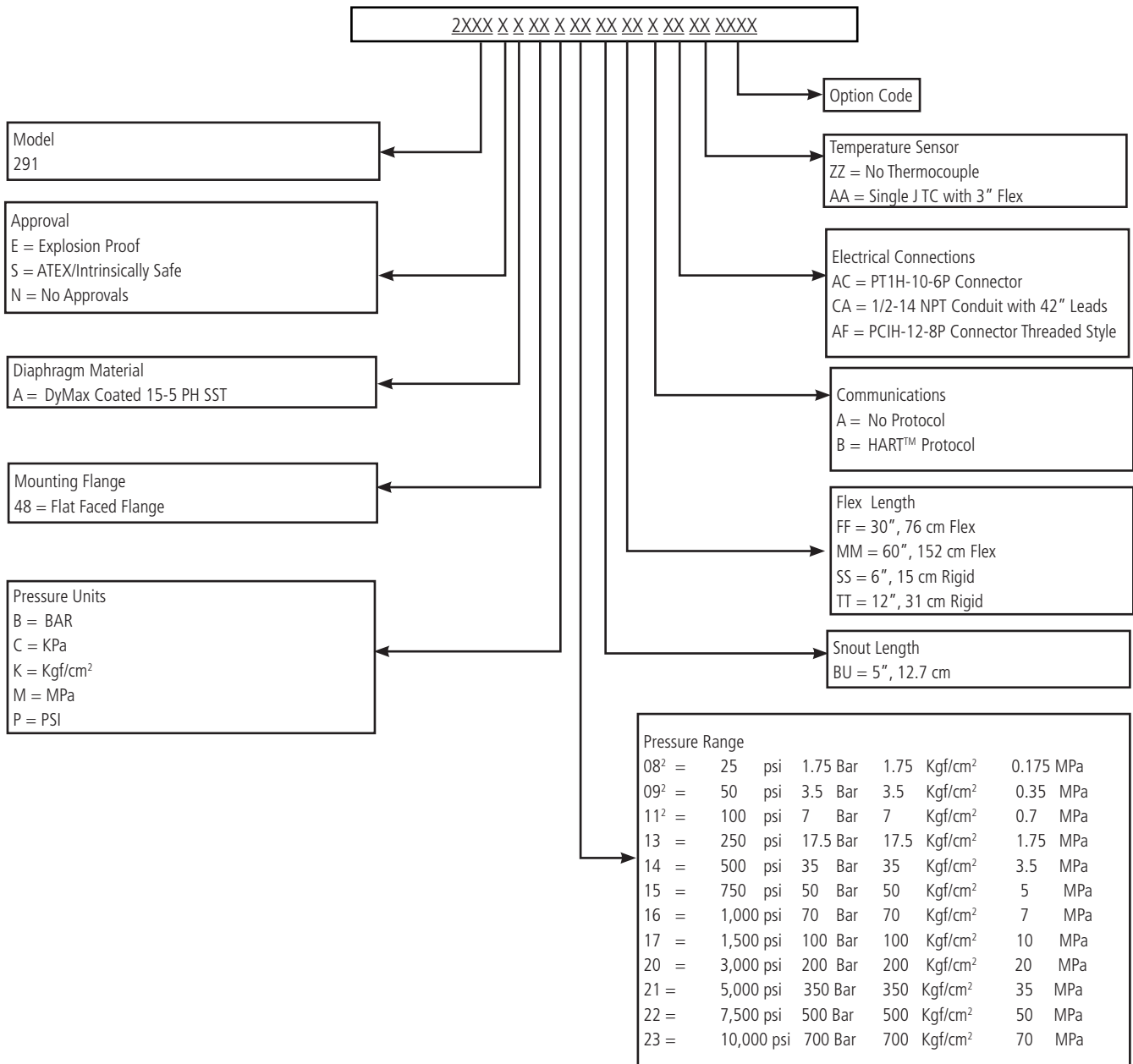
Ordering Guide for Models SPX2290¹



¹Other configurations are available. Please consult factory.

²Pressure ranges below 250 psi are supplied with rigid capillary

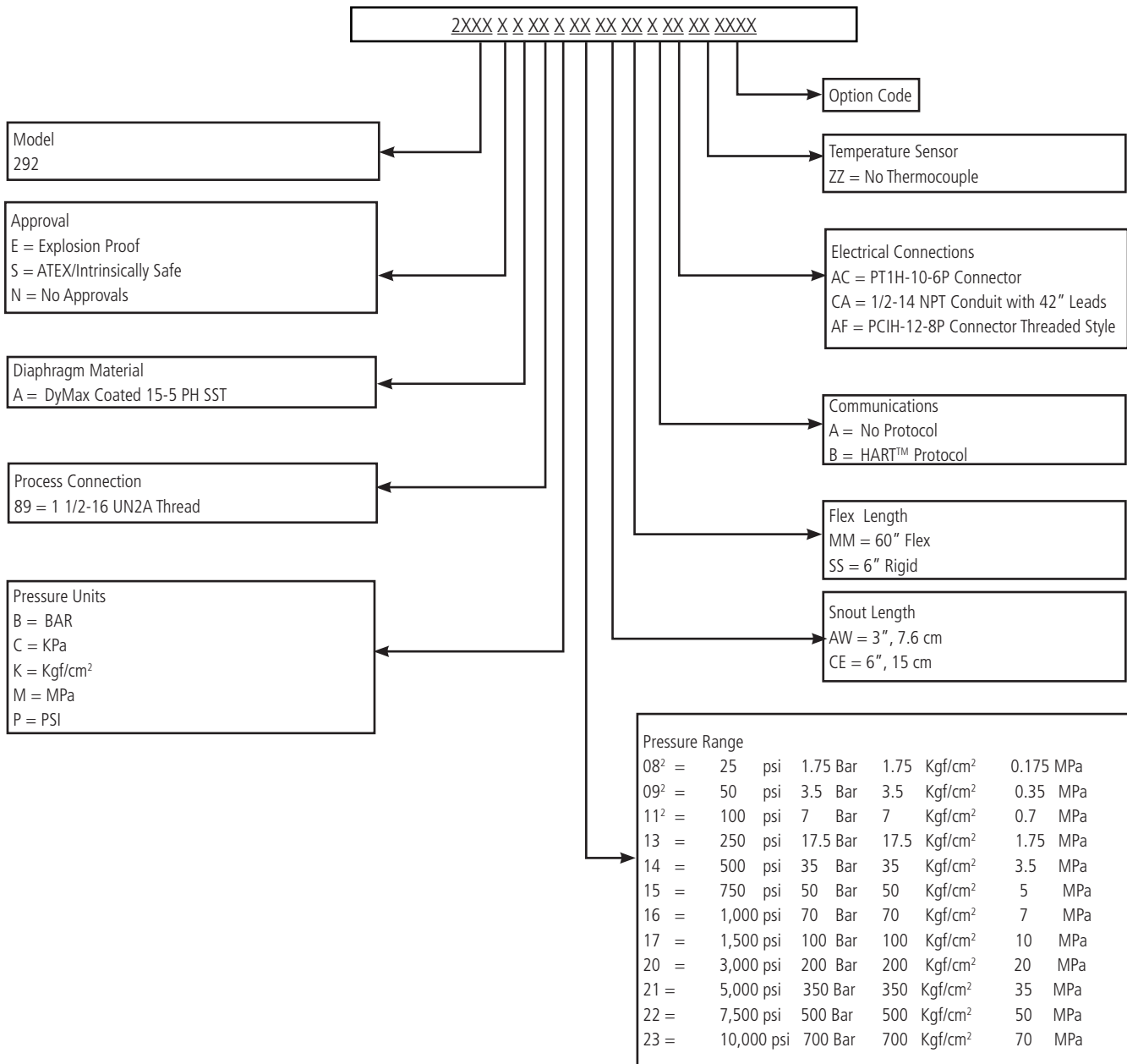
Ordering Guide for Models SPX2291¹



¹Other configurations are available. Please consult factory.

²Pressure ranges below 250 psi are supplied with rigid capillary

Ordering Guide for Models SPX2292¹



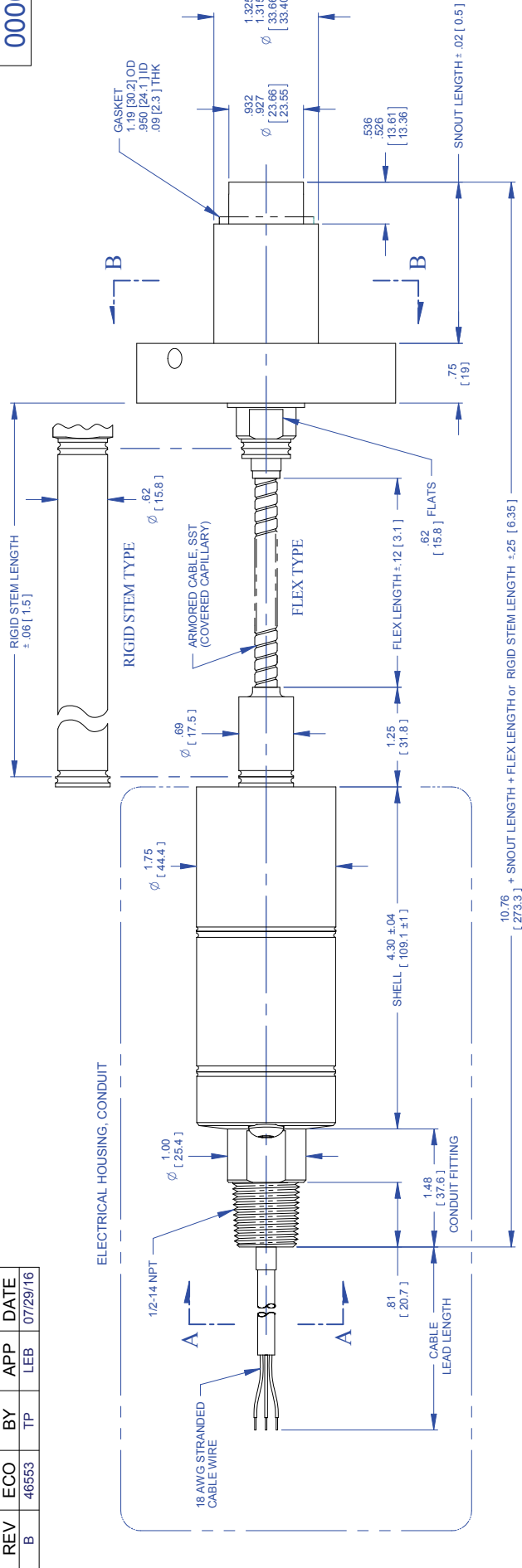
¹Other configurations are available. Please consult factory.

²Pressure ranges below 250 psi are supplied with rigid capillary

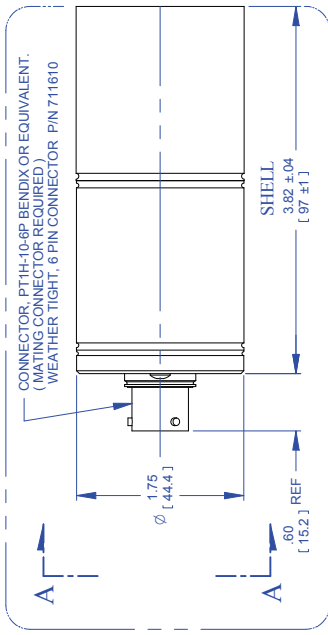
REV	ECO	BY	APP	DATE
B	46553	TP	LEB	07/29/16

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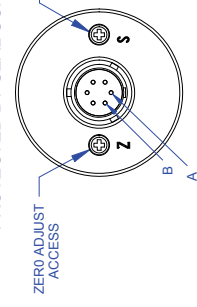
ELECTRICAL HOUSING, CONDUIT



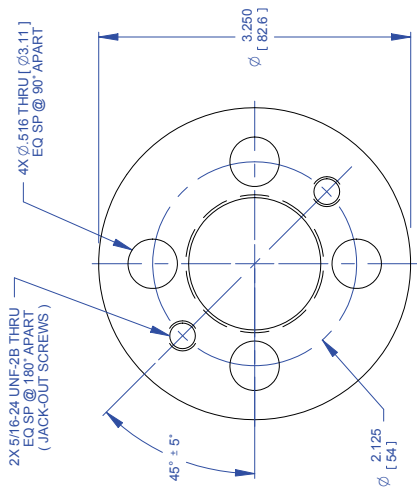
ELECTRICAL HOUSING, CONNECTOR CONFIGURATION



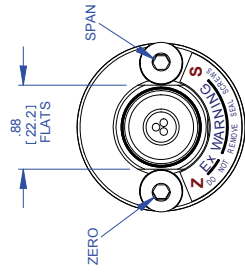
ZERO AND SPAN ADJUSTS ARE PROTECTED BY SEAL SCREWS



CONNECTOR WIRING	
PIN	FUNCTION
A	POWER + / SIGNAL +
B	POWER - / SIGNAL -
C	NO CONNECTION
D	NO CONNECTION
E	Rcal -
F	Rcal +



VIEW B-B
FLANGE



VIEW A-A
3 CONDUCTOR SHOWN

Cable Wiring	
Color	Function
RED	POWER + / SIG +
BLACK	POWER - / SIG -
GREEN	GROUND
ORANGE	Rcal +
BLUE	Rcal -

TOLERANCES UNLESS OTHERWISE SPECIFIED:

- 1. 2 PLACE DECIMAL ± .01
- 2. 3 PLACE DECIMAL ± .005
- 3. 4 PLACE DECIMAL ± .0005
- 4. DRILLS ± 0.0005, ± 0.001, ± 0.0015, ± 0.002
- 5. ANGLES ± 0.05° MAX
- 6. EDGES R .005 OR CHAMFER MAX
- 7. DIMENSIONS ARE IN INCHES
- 8. ALL DIMENSIONS ARE IN INCHES

NOTES:

- 1. ALL DIMENSIONS ARE [MILLIMETERS] INCHES
- 2. EXPOSED SURFACES ARE STAINLESS STEEL.

TITLE
SPX-GEN2 OUTLINE
MODELS 2241, 5341
FLEX & RIGID VERSIONS

MODEL NO.	SPX-GEN2
DRAWN	DRG DATE 11/24/11
CHECKED	MUL DATE 11/03/11
APPROVED	DATE
FINISH	DATE
DO NOT SCALE DRAWING	
MATERIAL	



FORCE PARKWAY FRANKLIN, MA
DWG. NO. C 000614 B

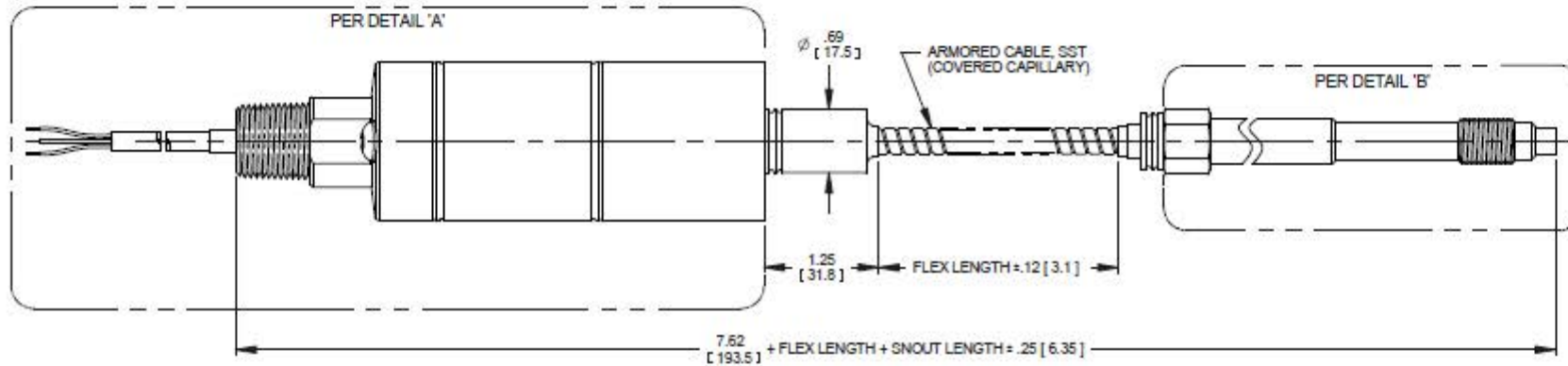
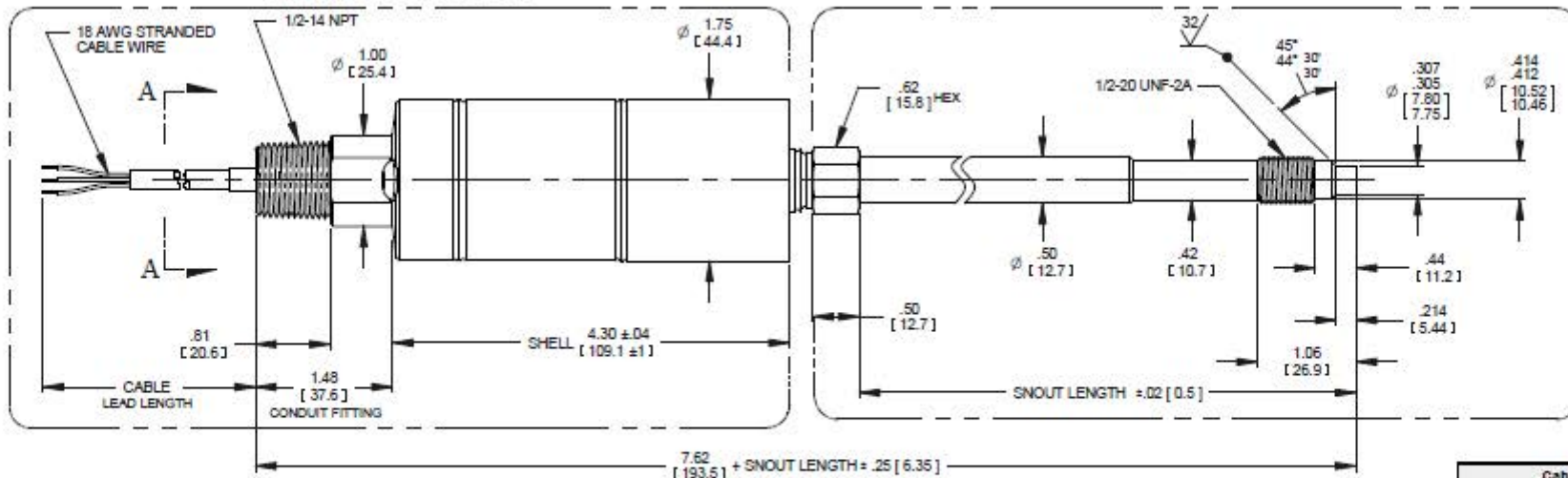
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REV	ECO	BY	APP	DATE
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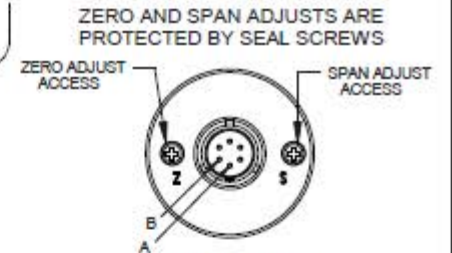
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DETAIL 'A'
ELECTRICAL HOUSING, CONDUIT

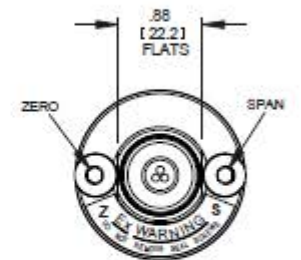
DETAIL 'B'
1/2 - 20 PROCESS CONNECTION



Cable Wiring		
Conductor	Color	Function
3 - Conductor	RED	POWER + / SIG +
	BLACK	POWER - / SIG -
	GREEN	GROUND
	ORANGE	Real +
	BLUE	Real -

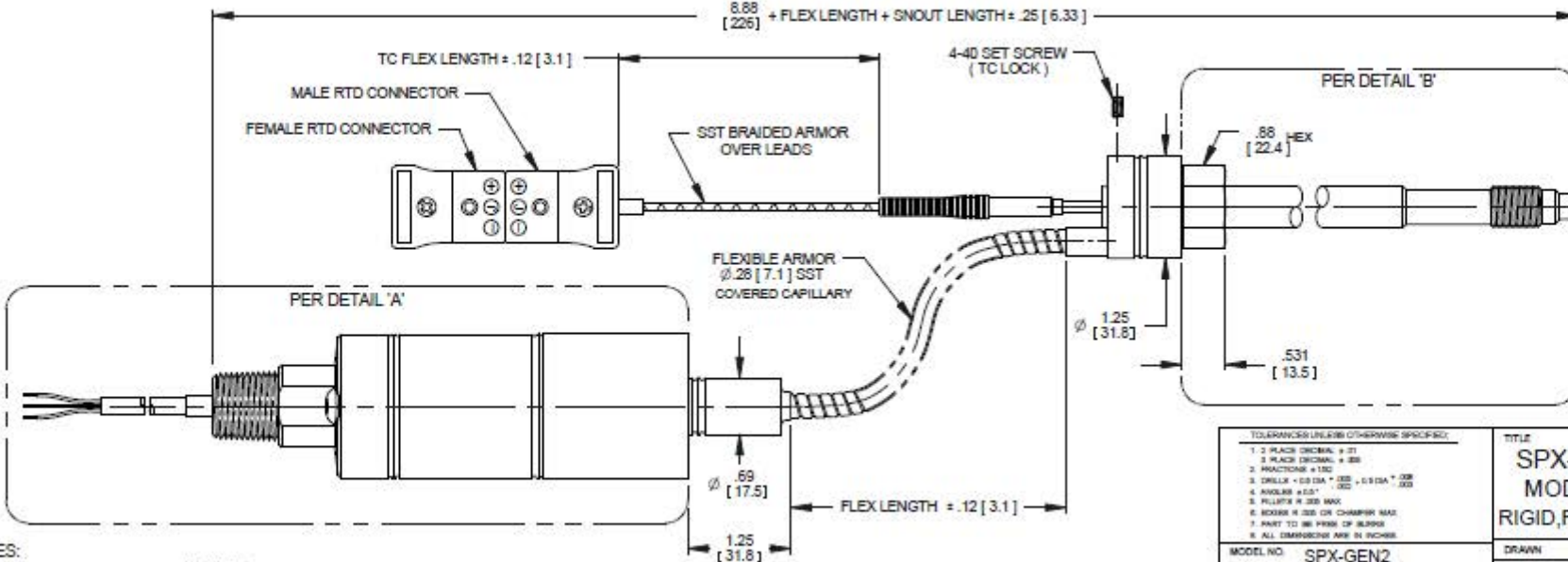


VIEW A-A



VIEW A-A

3 CONDUCTOR SHOWN



NOTES:
1. ALL DIMENSIONS ARE IN INCHES [MILLIMETERS]
2. EXPOSED SURFACES ARE STAINLESS STEEL.

TOLERANCES UNLESS OTHERWISE SPECIFIED	
1. 3 PLACE DECIMAL = .01	2. 2 PLACE DECIMAL = .005
3. 1 PLACE DECIMAL = .030	4. DIMENSIONS IN PARENTHESES ARE PREFERRED
5. DIMENSIONS IN PARENTHESES ARE PREFERRED	6. DIMENSIONS IN PARENTHESES ARE PREFERRED
7. DIMENSIONS IN PARENTHESES ARE PREFERRED	8. DIMENSIONS IN PARENTHESES ARE PREFERRED
9. DIMENSIONS IN PARENTHESES ARE PREFERRED	10. DIMENSIONS IN PARENTHESES ARE PREFERRED

TITLE
SPX-GEN2 OUTLINE
MODELS 2242, 5342
RIGID, FLEX & TPT VERSION

ACCEPTANCE MAY BE OTHERWISE PROVIDED BY CONTRACT. THESE DIMENSIONS AND SPECIFICATIONS ARE THE PROPERTY OF DYNISCO, AND SHOULD BE PROTECTED IN CONFIDENCE AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF EQUIPMENT WITHOUT PERMISSION.



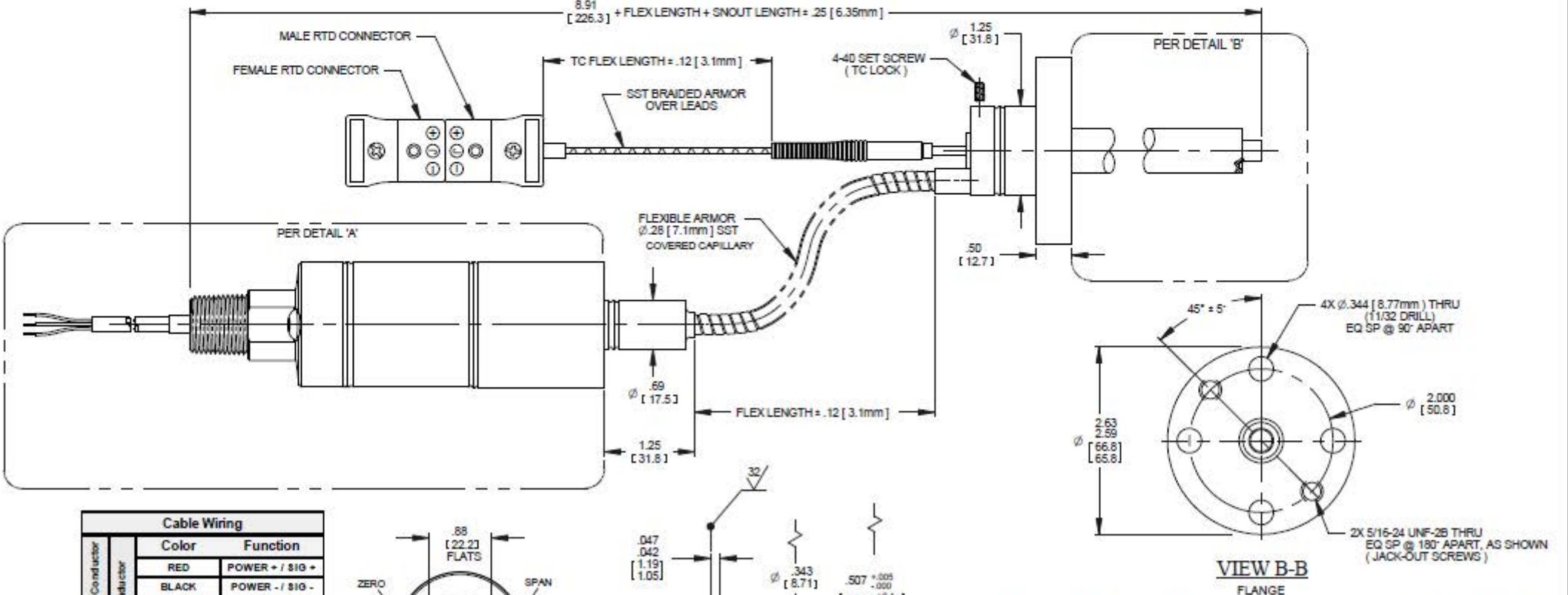
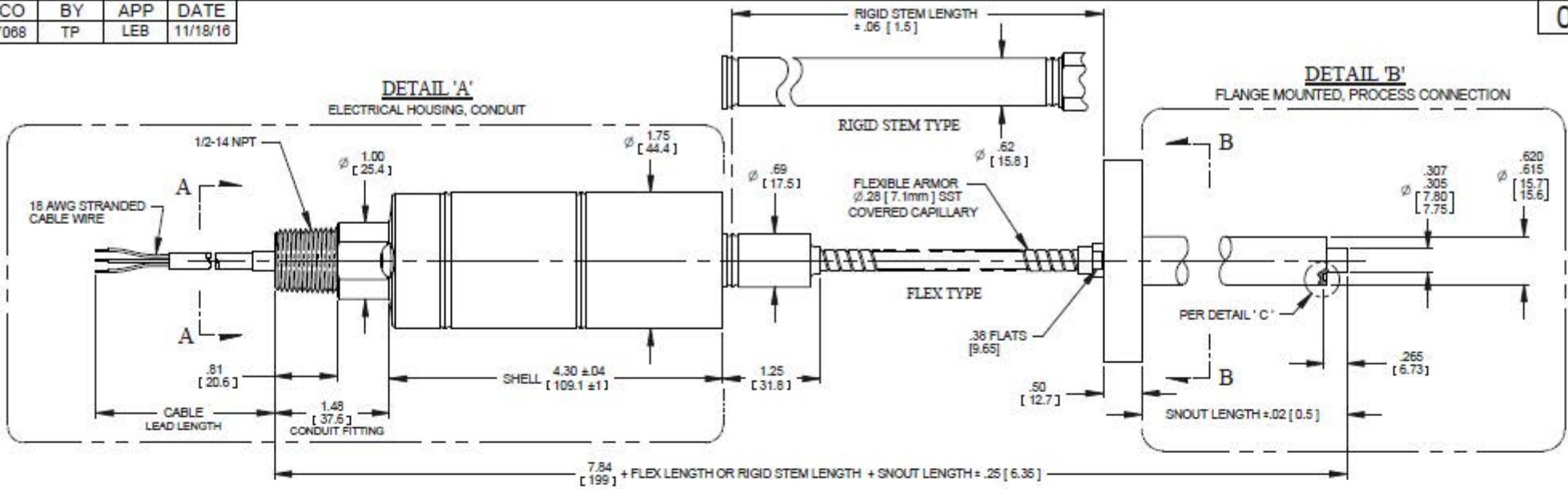
MODEL NO.	SPX-GEN2
DO NOT SCALE DRAWING	
MATERIAL	

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CHECKED		DATE	
APPROVED	MJL	DATE	01/31/11

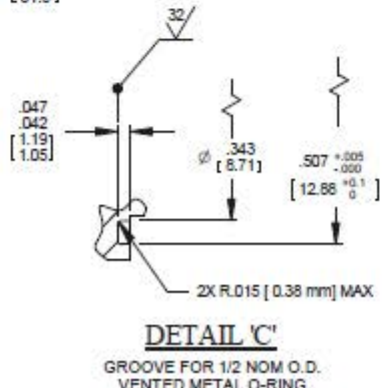
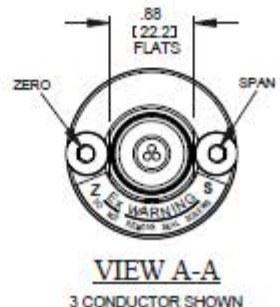
SIZE	DWG. NO.	REV.
C	000616	C
SCALE:	NONE	SHEET 1 OF 1

REV	ECO	BY	APP	DATE
C	47068	TP	LEB	11/18/16

000618



Cable Wiring		
Conductor	Color	Function
3-Conductor	RED	POWER + / 810 +
	BLACK	POWER - / 810 -
5-Conductor	GREEN	GROUND
	ORANGE	Real +
	BLUE	Real -



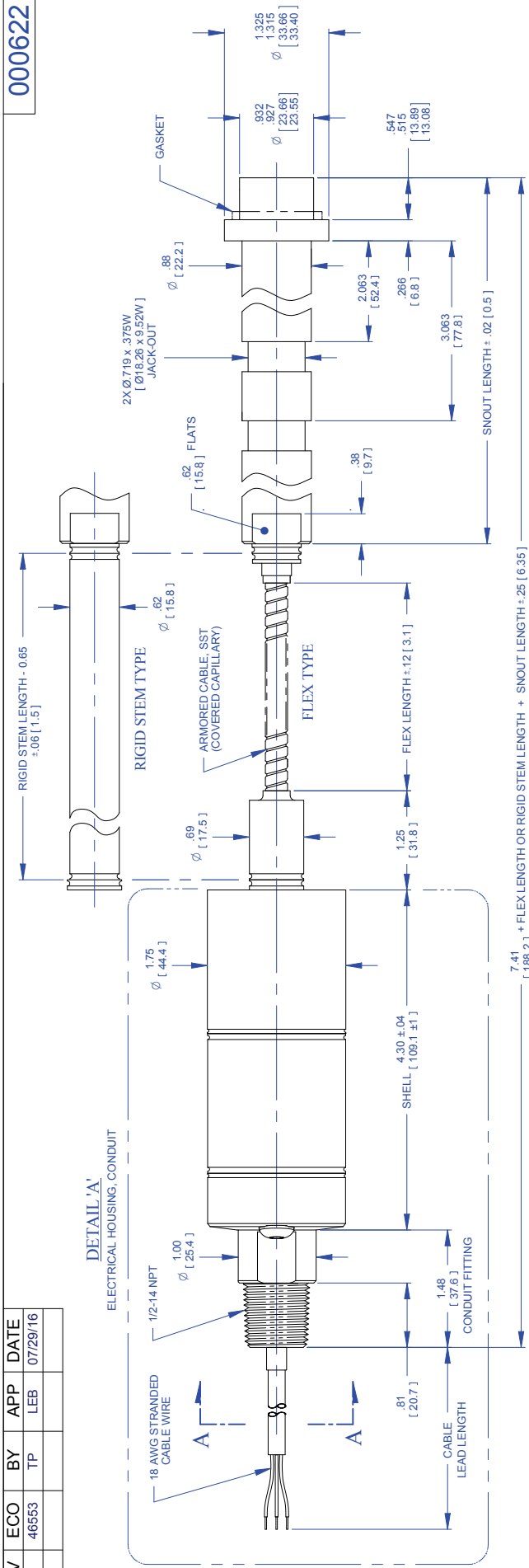
- NOTES:
- ALL DIMENSIONS ARE INCHES [MILLIMETERS]
 - EXPOSED SURFACES ARE STAINLESS STEEL.

TOLERANCES UNLESS OTHERWISE SPECIFIED:		TITLE		RECEIPT AIR MAY BE OTHERWISE PROVIDED BY CONTRACT. THESE DIMENSIONS AND SPECIFICATIONS ARE THE PROPERTY OF DYNISCO, AND SHALL NOT BE REPRODUCED OR COPIED, OR USED, AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS WITHOUT PERMISSION.	
1. 2 PLACE DECIMAL $\pm .01$	2. 3 PLACE DECIMAL $\pm .005$	SPX-GEN2 OUTLINE		DYNISCO	
3. FRACTIONS $\pm .001$	4. DRILLS $\pm .0015$ (1/8" - 1/2") $\pm .001$ (1/2" - 1")	MODELS 2243, 5343		FORMER PART NO. 7001018	
5. ANGLES $\pm .01^\circ$	6. RADIUS $\pm .005$ MAX	FLEX, RIGID & TPT VERSIONS		REV	
7. SQUARE $\pm .005$ OR CHAMFER MAX	8. PART TO BE FREE OF BURRS	MODEL NO. SPX-GEN2	DRAWN DRG DATE 11/29/10	SIZE	DWG. NO.
9. ALL DIMENSIONS ARE IN INCHES		DO NOT SCALE DRAWING	CHECKED DATE	C	000618
		MATERIAL	APPROVED MJL DATE 01/31/11	SCALE: NONE	SHEET 1 of 1
			FINISH		

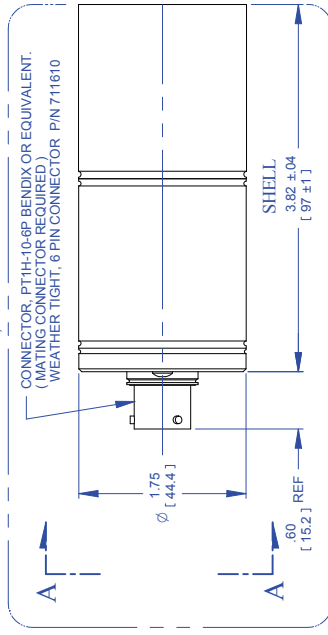
REV	ECO	BY	APP	DATE
B	46553	TP	LEB	07/29/16

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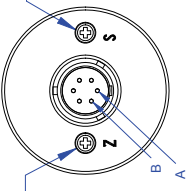
DETAIL A
ELECTRICAL HOUSING, CONDUIT



ELECTRICAL HOUSING, CONNECTOR CONFIGURATION

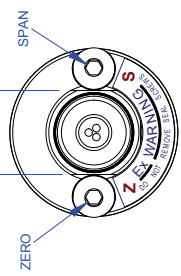


ZERO AND SPAN ADJUSTERS ARE PROTECTED BY SEAL SCREWS



CONNECTOR WIRING	
PIN	FUNCTION
A	POWER + / SIGNAL +
B	POWER - / SIGNAL -
C	NO
D	CONNECTION
E	Rcal -
F	Rcal +

Cable Wiring	
Color	Function
RED	POWER + / SIG +
BLACK	POWER - / SIG -
GREEN	GROUND
ORANGE	Rcal +
BLUE	Rcal -



VIEW A-A
3. CONDUCTOR SHOWN

- TOLERANCES UNLESS OTHERWISE SPECIFIED:
1. 2 PLACE DECIMAL ± 0.01
 2. 3 PLACE DECIMAL ± 0.005
 3. DIMENSIONS IN PARENTHESES ARE FOR REFERENCE ONLY
 4. DRILLS ± 0.030 DIA ± 0.005
 5. ANGLES ± 0.05° MAX
 6. EDGES R 0.05 OR CHAMFER MAX 0.05
 7. ALL DIMENSIONS ARE IN INCHES
 8. ALL DIMENSIONS ARE IN MILLIMETERS

TITLE
SPX-GEN2 OUTLINE
MODELS 2290, 5390
FLEX & RIGID VERSIONS

DRAWN	DATE	DRG	DATE
CHECKED	MUL	DATE	DATE
APPROVED	MUL	DATE	DATE
FINISH			

SIZE	DWG. NO.	REV
C	000622	B

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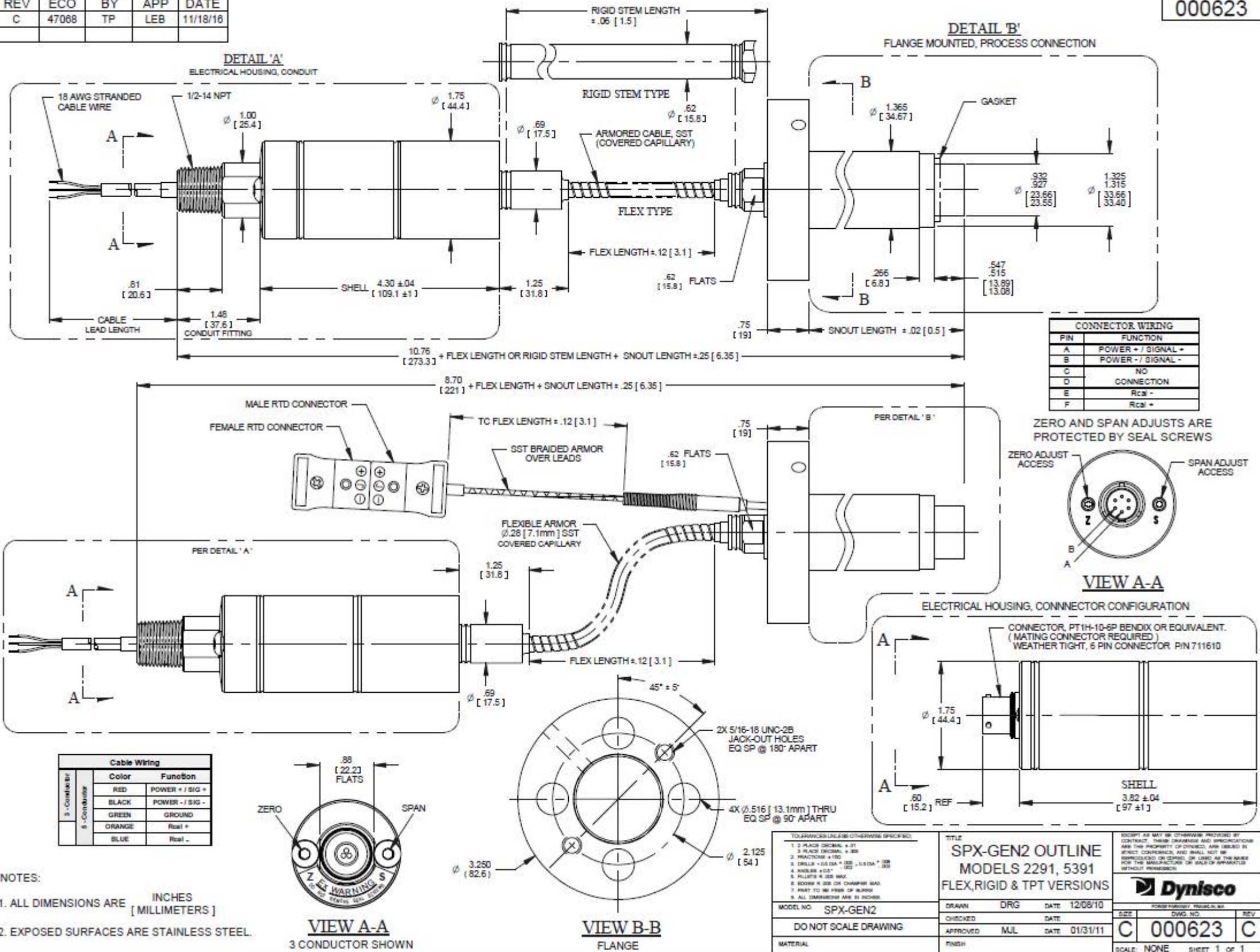
- NOTES:
1. ALL DIMENSIONS ARE INCHES [MILLIMETERS]
 2. EXPOSED SURFACES ARE STAINLESS STEEL.



FORCE PARKWAY, FRANKLIN, MA
SCALE: NONE SHEET 1 OF 1

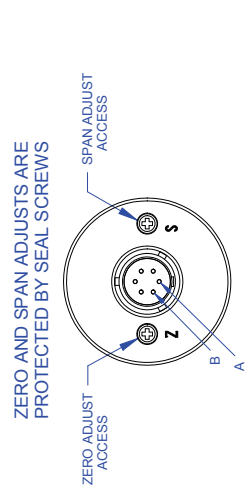
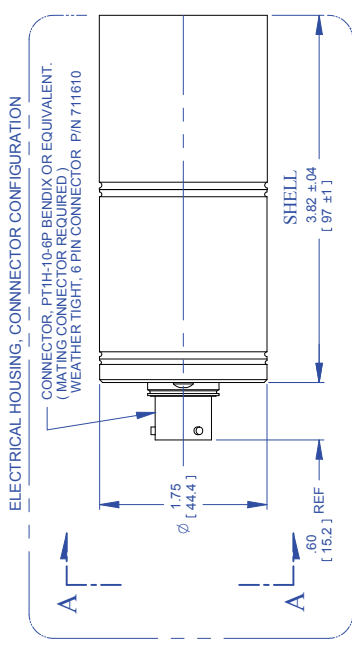
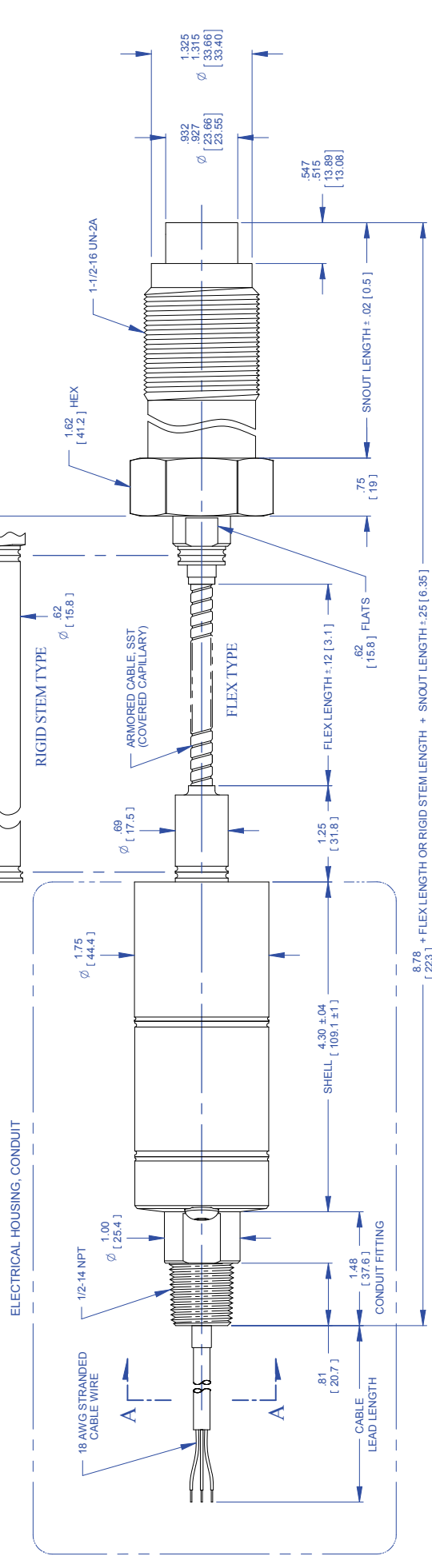
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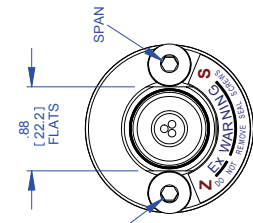


REV	ECO	BY	APP	DATE
B	46553	TP	LEB	07/29/16

000625



CONNECTOR WIRING	
PIN	FUNCTION
A	POWER + / SIGNAL +
B	POWER - / SIGNAL -
C	NO
D	CONNECTION
E	Rcal -
F	Rcal +



Cable Wiring	
Color	Function
RED	POWER + / SIG +
BLACK	POWER - / SIG -
GREEN	GROUND
ORANGE	Rcal +
BLUE	Rcal -

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Dynisco
FORCE PARTWAY, FRANKLIN, VA

TOLERANCES UNLESS OTHERWISE SPECIFIED:
 1. 2 PLACE DECIMAL 0.01
 2. 3 PLACE DECIMAL 0.005
 3. DIMENSIONS IN PARENTHESES ARE FOR INFORMATION ONLY
 4. ANGLES ± 0.05° MAX
 5. EDGES R .005 OR CHAMFER MAX
 6. DIMENSIONS ARE IN INCHES
 7. ALL DIMENSIONS ARE TO BE IN UNLESS OTHERWISE SPECIFIED

MODEL NO. SPX-GEN2
 DATE 12/07/10
 DRAWN DRG
 CHECKED DATE 01/13/11
 APPROVED MJL
 FINISH

TITLE
 SPX-GEN2 OUTLINE
 MODELS 2292, 5392
 FLEX & RIGID VERSIONS

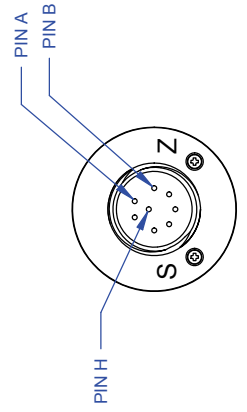
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 REV B

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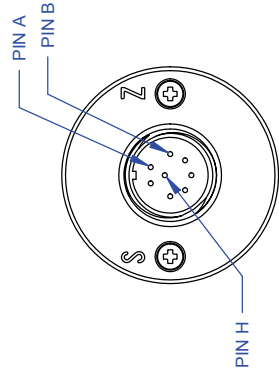
NOTES:
 1. ALL DIMENSIONS ARE INCHES [MILLIMETERS]
 2. EXPOSED SURFACES ARE STAINLESS STEEL.

REV	ECO	BY	APP	DATE
A	46553	TP	LEB	07/29/16 R

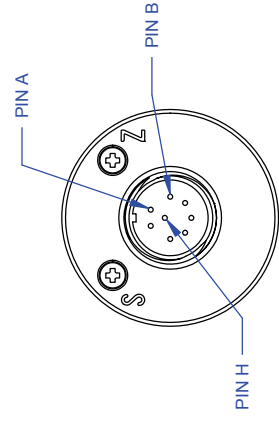
000652



8 - PIN PC
O-RING WITH PUSH BUTTONS
PCIH-12-8P



8 - PIN PC
WELDED WITH PUSH BUTTONS
PCIH-12-8P



8 - PIN PC
WELDED WITH HALLS
PCIH-12-8P

GUARDIAN CONNECTOR WIRING	
PIN	FUNCTION
A	POWER +
B	SIGNAL -
C	POWER -
D	NO CONNECTION
E	Rcal -
F	Rcal +
G	RELAY CONTACT
H	RELAY CONTACT

NOTE:
1. THESE CONNECTOR OPTIONS ARE AVAILABLE ON MOST OF THE CONFIGURATIONS SHOWN ON THE PREVIOUS SHEETS.

TOLERANCES UNLESS OTHERWISE SPECIFIED:
 1. 3 PLACE DECIMAL ± .005
 2. FRACTIONS ± 1/32
 3. DRILLS < 0.5 DIA. ± .002 > 0.5 DIA. ± .003
 4. ANGLES ± 0.5° MAX.
 5. EDGES R .006 OR CHAMFER MAX.
 6. PART TO BE FREE OF BURRS
 7. ALL DIMENSIONS ARE IN INCHES.

TITLE		DATE	
GUARDIAN SERIES CONNECTORS		TP	7/27/16
DRAWN	CHECKED	DATE	DATE
LEB	LEB	7/27/16	7/27/16
APPROVED	APPROVED		
FINISH	FINISH	63 ✓	

SIZE		REV	
B		A	
DWG. NO.		REV	
000652			
SCALE NONE SHEET 1 OF 1			

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naleznete na www.dynisco.com
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