

## Dynisco SPX 2-Series

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.

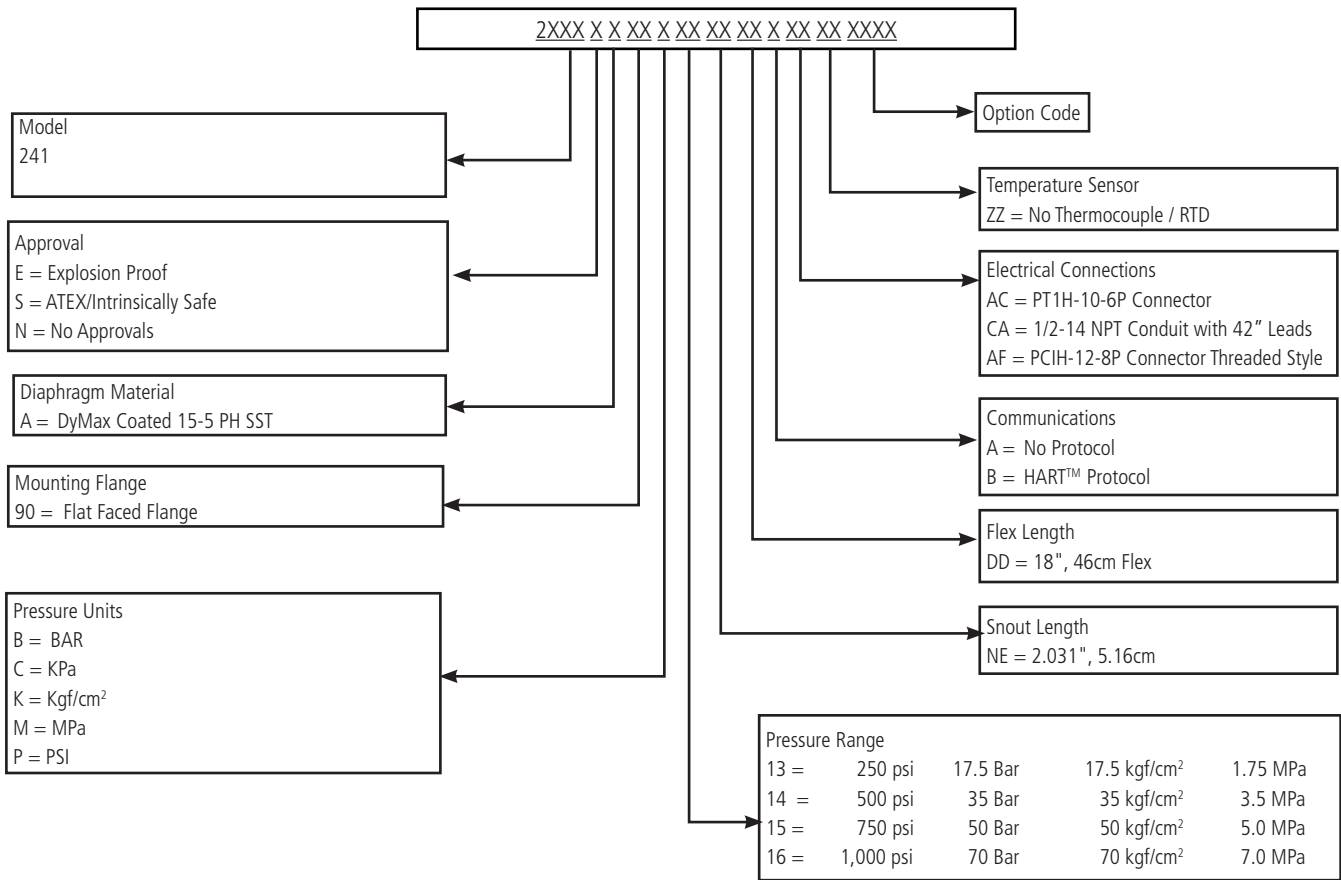
### Features

- 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	
<b>Output</b>	4 - 20 mA, with optional HART™
<b>Input Voltage</b>	16 - 36 Vdc (Std); 16 - 30 Vdc (ATEX IS)
<b>Accuracy</b> <small>Accuracy is defined as the combined error expressed as a percentage of full scale output with the specifications of: Electronics ambient temperature, capillary of &lt;= 36"; DyMax coated 15-5 SST diaphragm; Best Straight Line (BSL) %FS, per ISA-37.1 Consult Factory for availability and specifications of other configurations.</small>	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%
<b>Repeatability</b>	±0.1%
<b>Rangeability</b>	6:1 Turndown (3:1 Turndown for Model SPX2290)
<b>Over Pressure</b>	2X FSO or 35,000 psi, whichever is less (2290, 2291, & 2292 1.5 x FSO for 10,000 psi)
<b>Zero Balance Adjustment Range</b>	-40% to +10%; -80% to 20% for FSP < 500 psi
<b>Load Resistance</b>	500 Ω @ 24 Vdc, 1,000 Ω @ 36 Vdc
<b>Electronics Ambient Temperature</b>	70°F (20°C)
<b>Electronics Operating Temperature</b>	-20 to 185°F (-29 to 85°C)
<b>Diaphragm Temperature</b>	750°F (400°C) max [Models 2241, 2244, 2290, 2291, 2292 limited to 600°F (315°C)]
<b>Electronics Compensated Temperature Range</b>	0 to 150°F (-18 to 65°C)
<b>Zero Shift (Electronics Temp Change)</b>	All Models: 0.01% F.S./°F max (0.02% F.S./°C max)
<b>Span Shift (Electronics Temp Change)</b>	All Models: 0.01% F.S./°F max (0.02% F.S./°C max)
<b>Zero Shift (Snout Temp Change)</b>	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

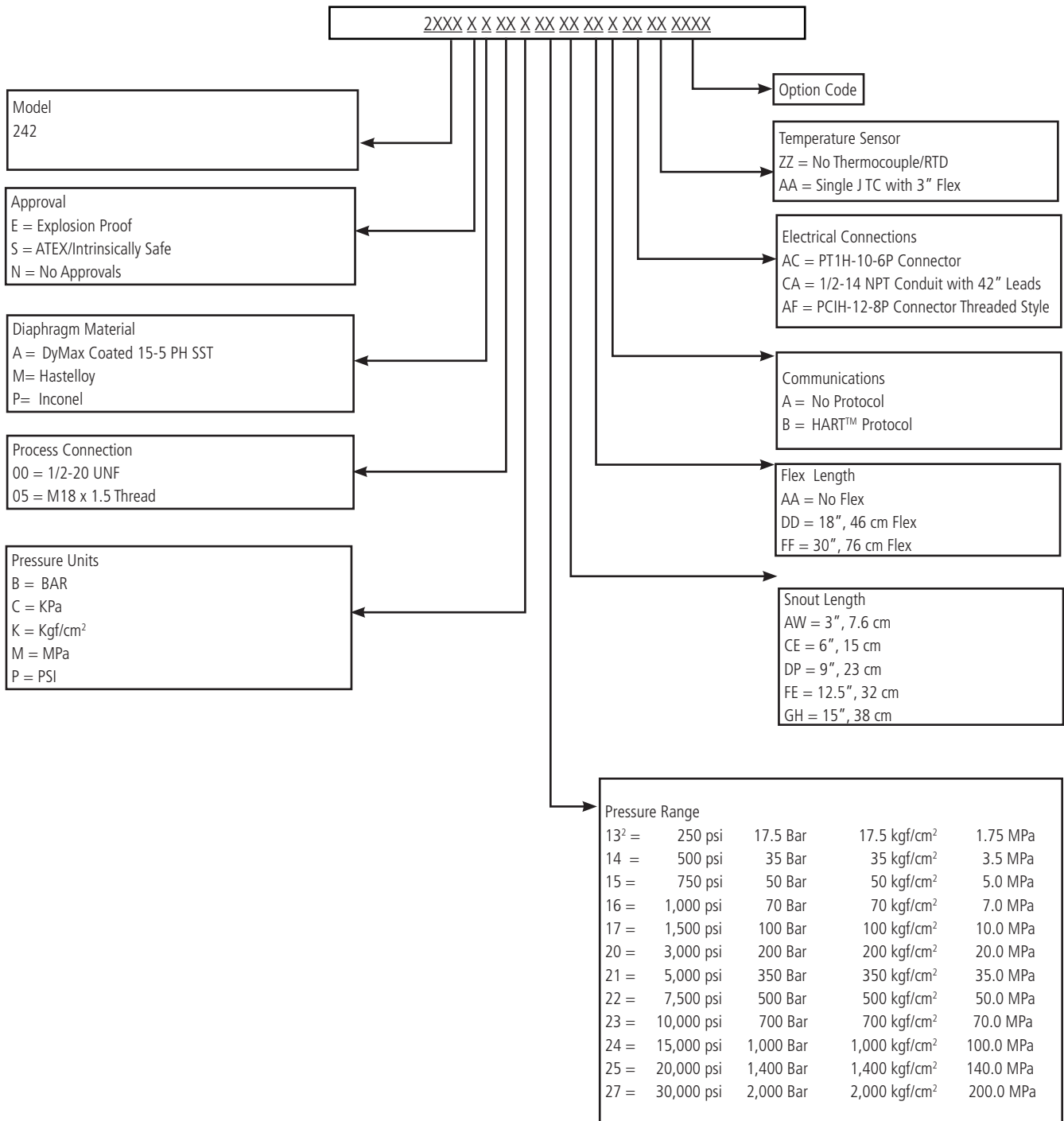
Mechanical Characteristics	
<b>Mounting Torque</b>	2241: 350 inch-lbf max 2242: 500 inch-lbf max 2243: 50 inch-lbf max 2244: 350 inch-lbf max 2290: 350 inch-lbf max 2291: 350 inch-lbf max 2292: 80 ft-lbf max
<b>Standard Wetted Parts</b>	DyMax coated 15-5 PH SST
Approvals & Certifications	
CE ATEX IS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

## Ordering Guide for Models SPX2241<sup>1</sup>



<sup>1</sup> Other configurations are available. Please consult factory.

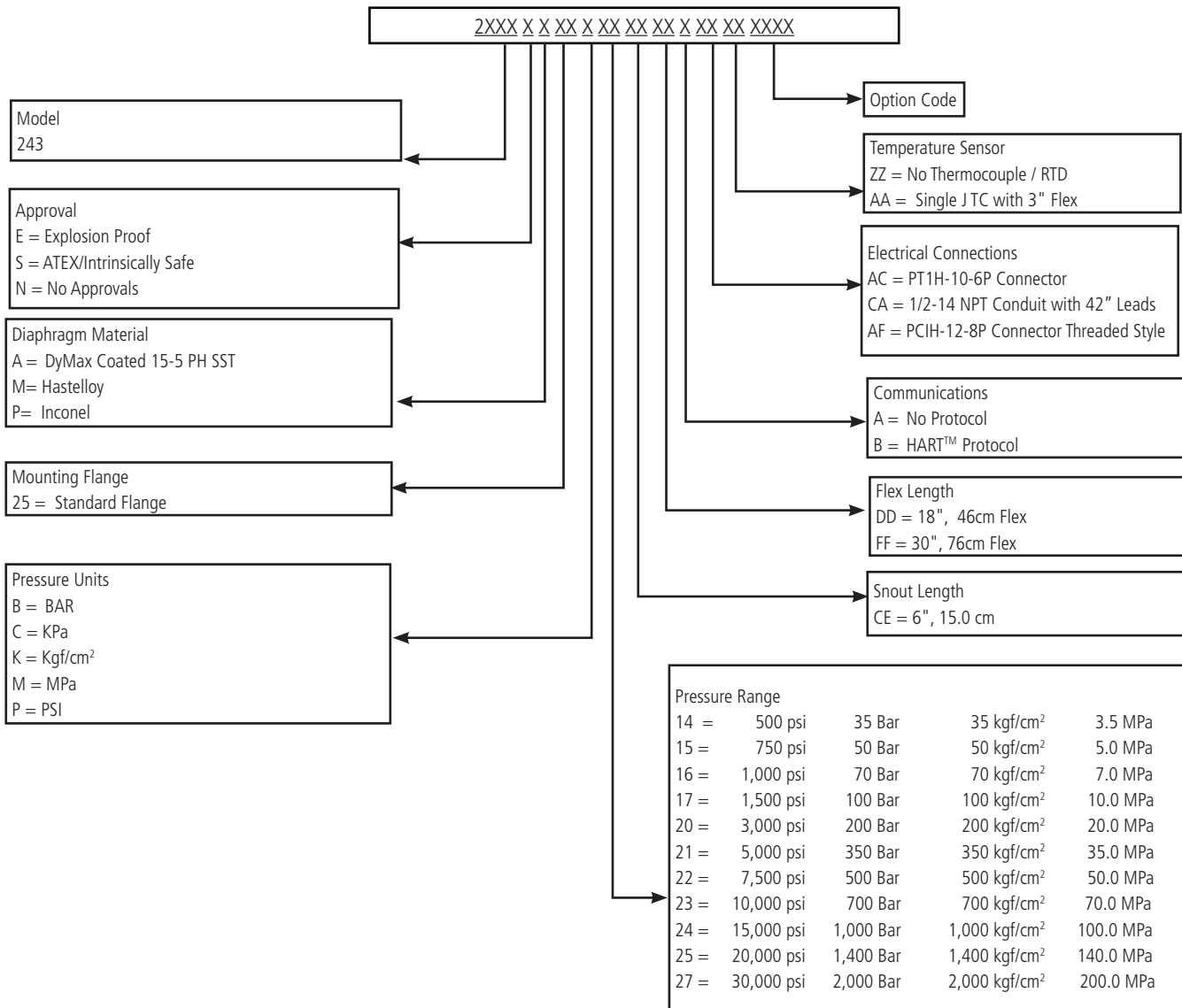
## Ordering Guide for Models SPX2242<sup>1</sup>



<sup>1</sup>Other configurations are available. Please consult factory.

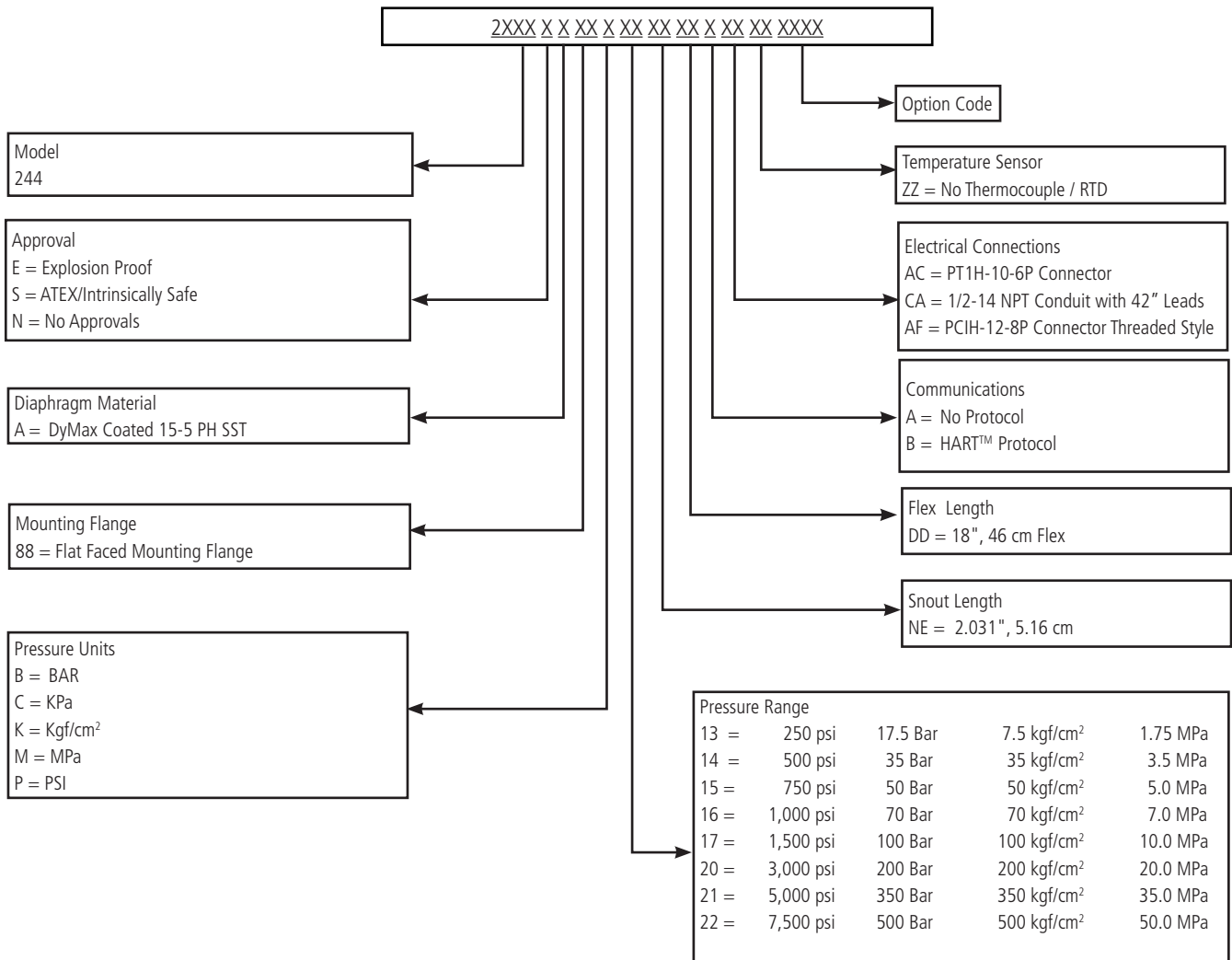
<sup>2</sup>Available in M18 x 1.5 thread only.

## Ordering Guide for Models SPX2243<sup>1</sup>



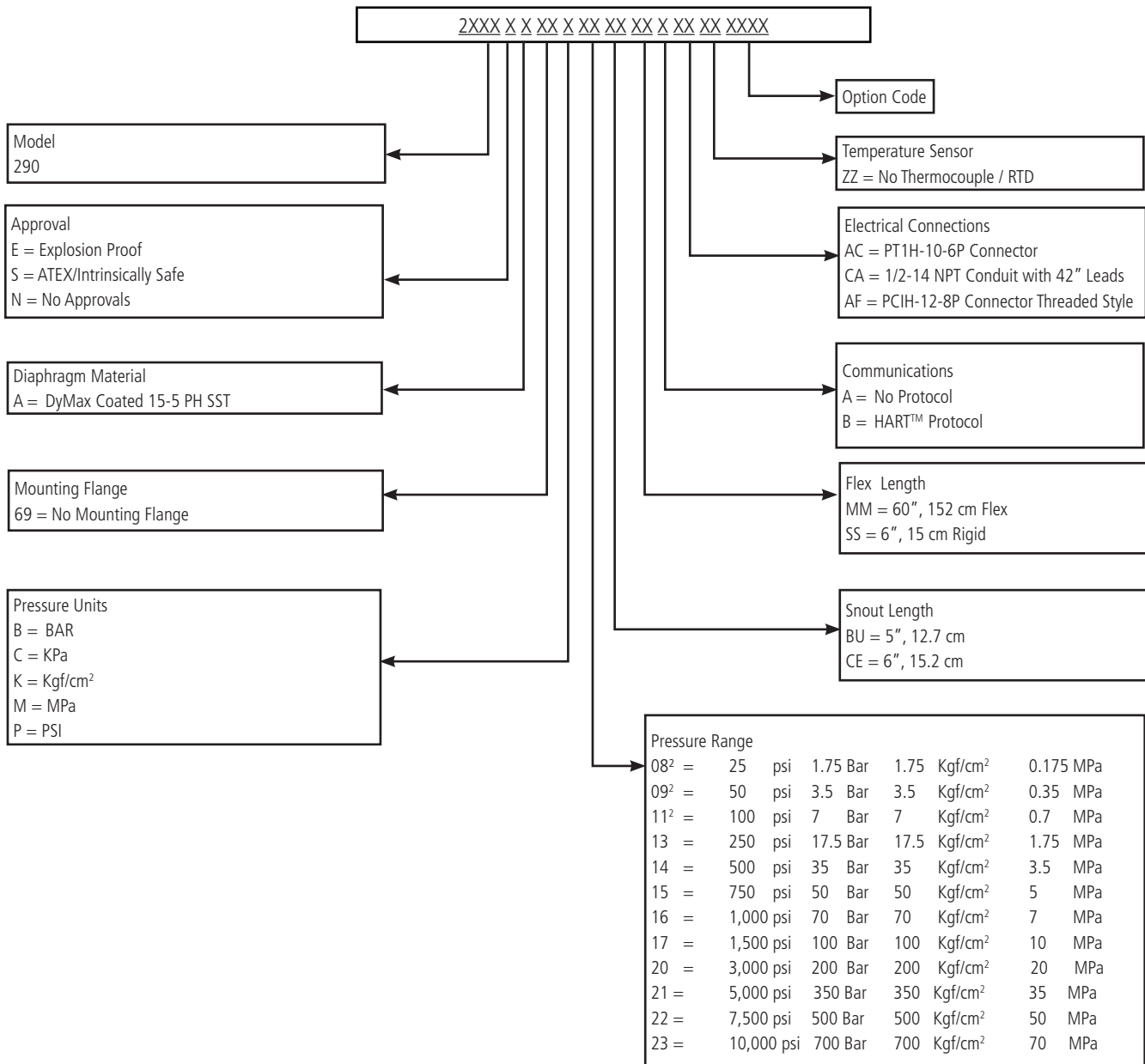
<sup>1</sup>Other configurations are available. Please consult factory.

## Ordering Guide for Models SPX2244<sup>1</sup>



<sup>1</sup>Other configurations are available. Please consult factory.

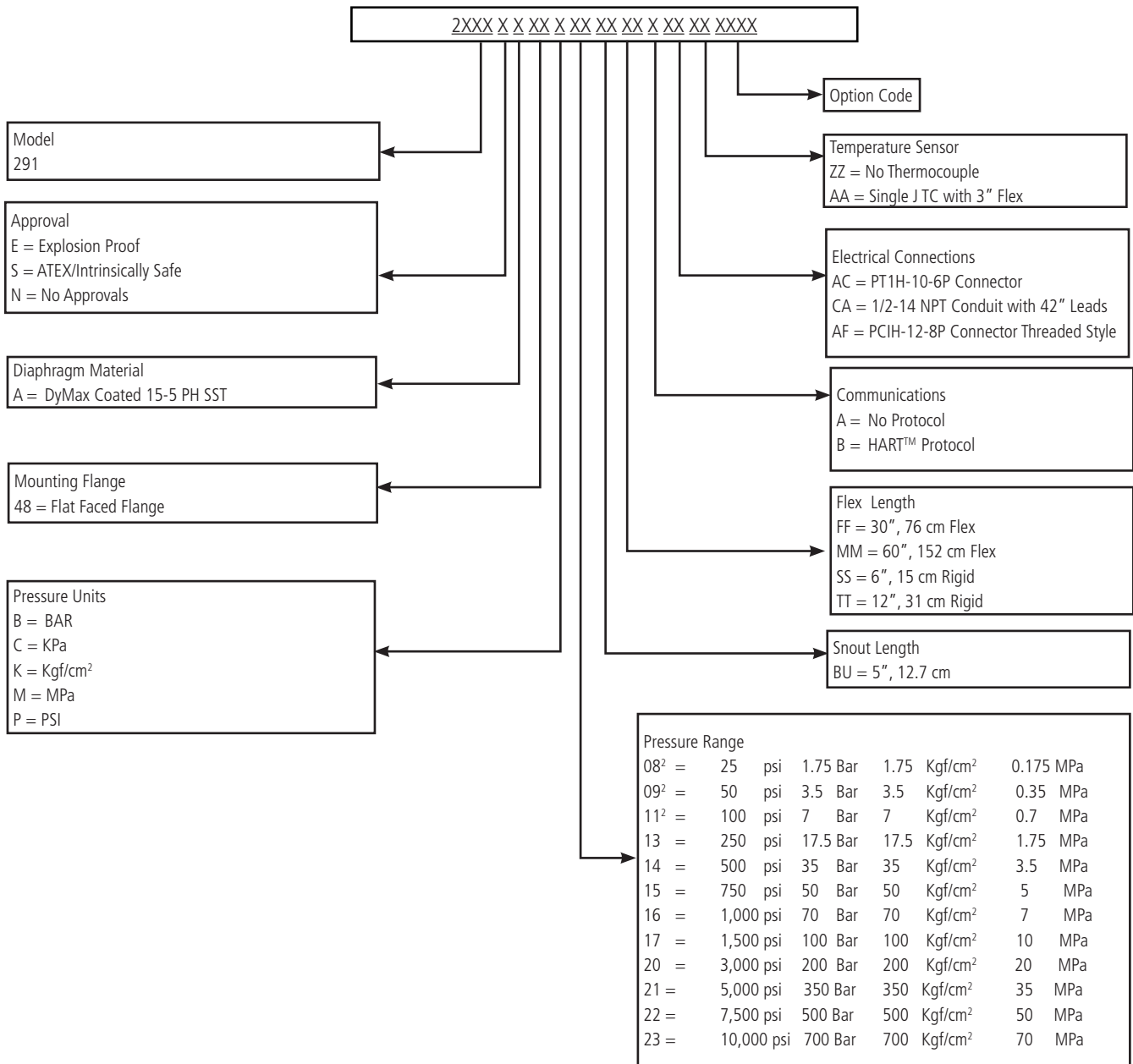
## Ordering Guide for Models SPX2290<sup>1</sup>



<sup>1</sup>Other configurations are available. Please consult factory.

<sup>2</sup>Pressure ranges below 250 psi are supplied with rigid capillary

## Ordering Guide for Models SPX2291<sup>1</sup>

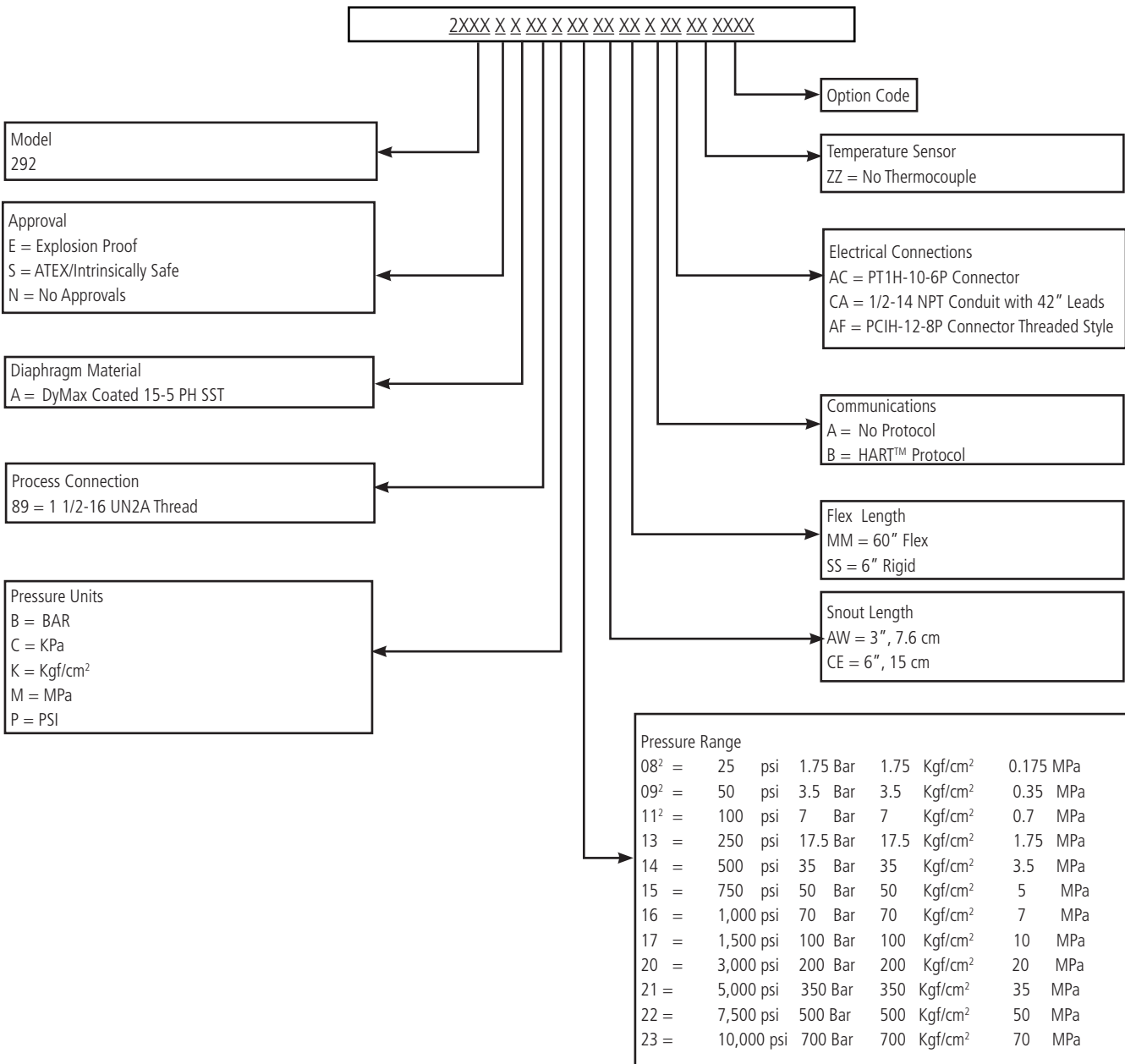


<sup>1</sup>Other configurations are available. Please consult factory.

<sup>2</sup>Pressure ranges below 250 psi are supplied with rigid capillary



## Ordering Guide for Models SPX2292<sup>1</sup>



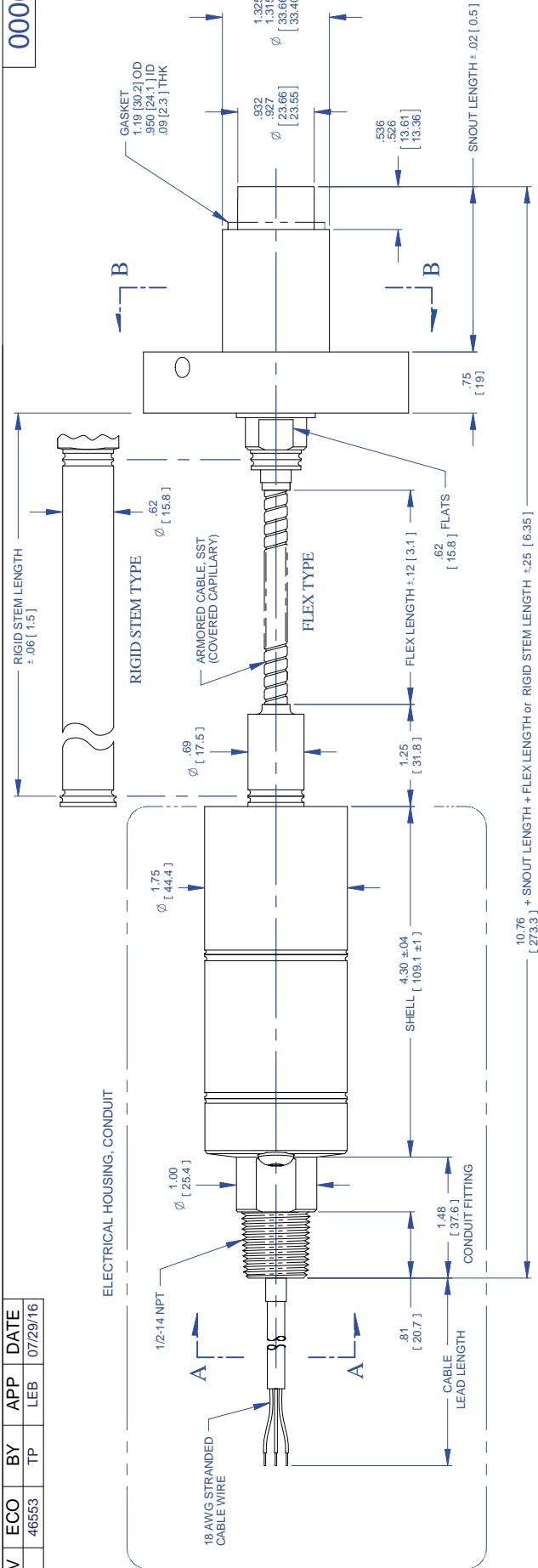
<sup>1</sup>Other configurations are available. Please consult factory.

<sup>2</sup>Pressure ranges below 250 psi are supplied with rigid capillary

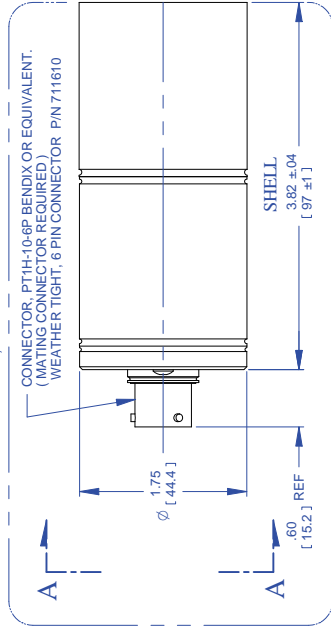
REV	ECO	BY	APP	DATE
B	46553	TP	LEB	07/29/16

000614

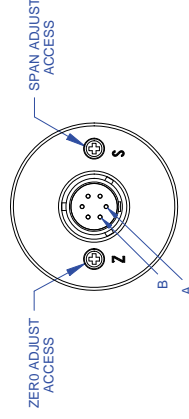
ELECTRICAL HOUSING, CONDUIT



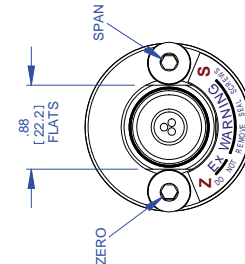
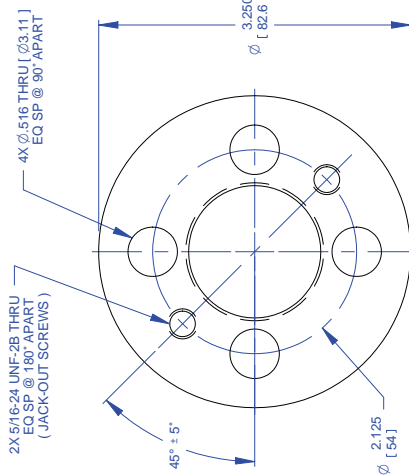
ELECTRICAL HOUSING, CONNECTOR CONFIGURATION



ZERO AND SPAN ADJUSTERS ARE PROTECTED BY SEAL SCREWS



CONDUCTOR	FUNCTION
A	POWER + / SIGNAL +
B	POWER - / SIGNAL -
C	NO CONNECTION
D	Rcal -
E	Rcal +
F	Rcal +



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

- NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS
  2. EXPOSED SURFACES ARE STAINLESS STEEL.

TOLERANCES UNLESS OTHERWISE SPECIFIED:

1. 2 PLACE DECIMAL = .01
2. 3 PLACE DECIMAL = .005
3. DIMENSIONS IN PARENTHESES ARE FOR INFORMATION ONLY
4. DRILLS = Ø.508 ± .005
5. ANGLES = 10° ± .05° MAX
6. EDGES R .005 OR CHAMFER MAX
7. ALL DIMENSIONS ARE IN INCHES

MODEL NO. SPX-GEN2

DATE 11/24/11

DRG DATE 11/24/11

DRWN DATE 11/24/11

CHECKED DATE 11/13/11

APPROVED DATE 11/13/11

FINISH

MATERIAL

DO NOT SCALE DRAWING

SIZE C

DWG. NO. 000614

REV B

SCALE: NONE

SHEET 1 OF 1

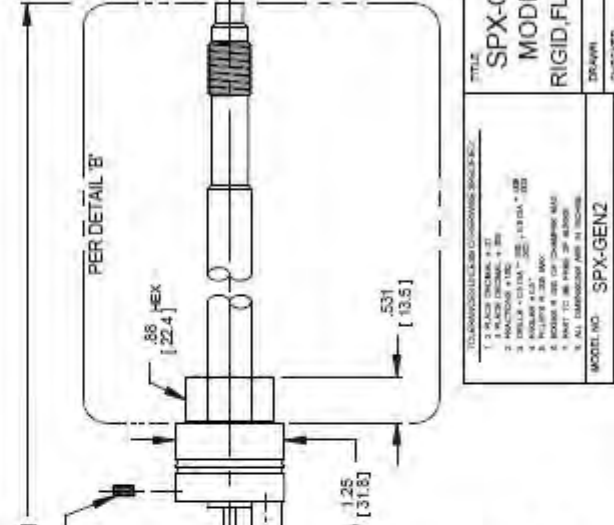
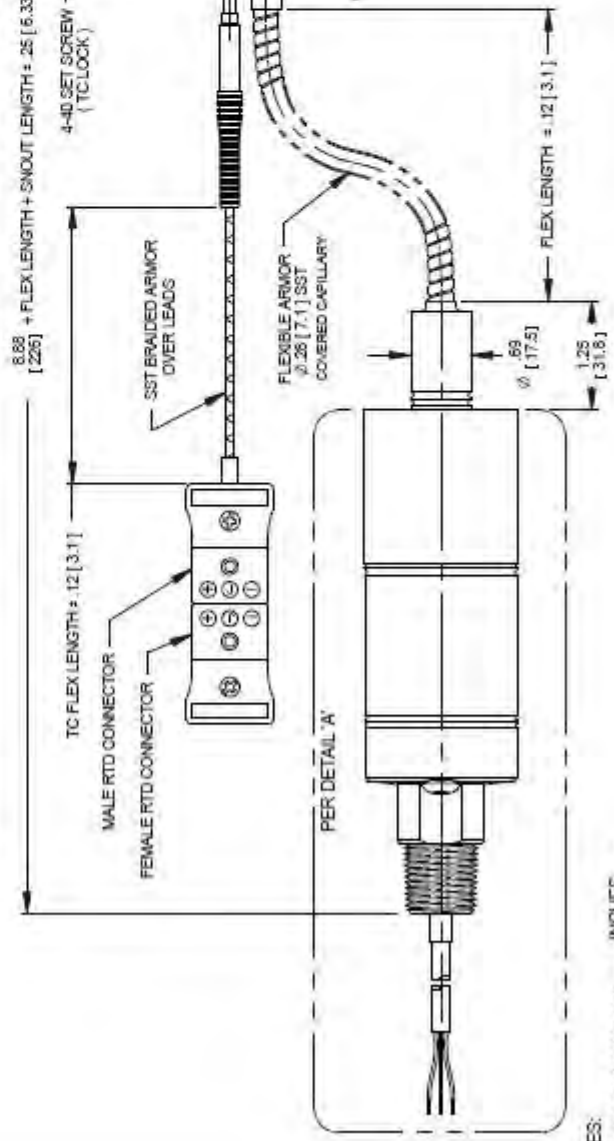
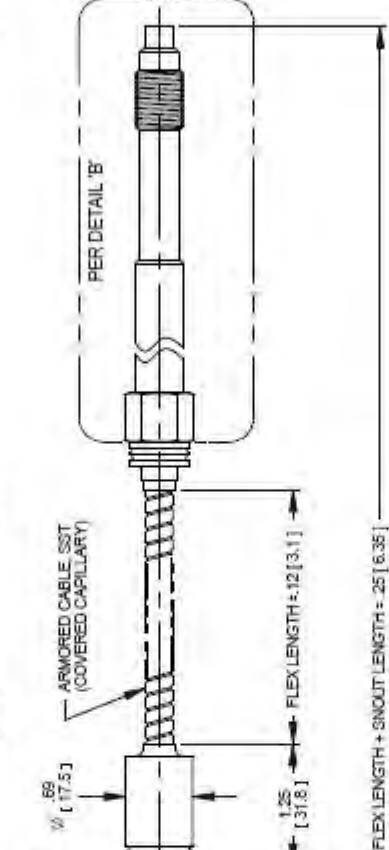
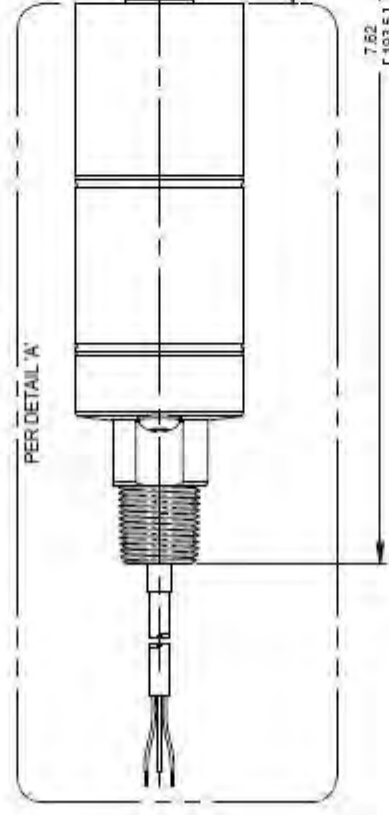
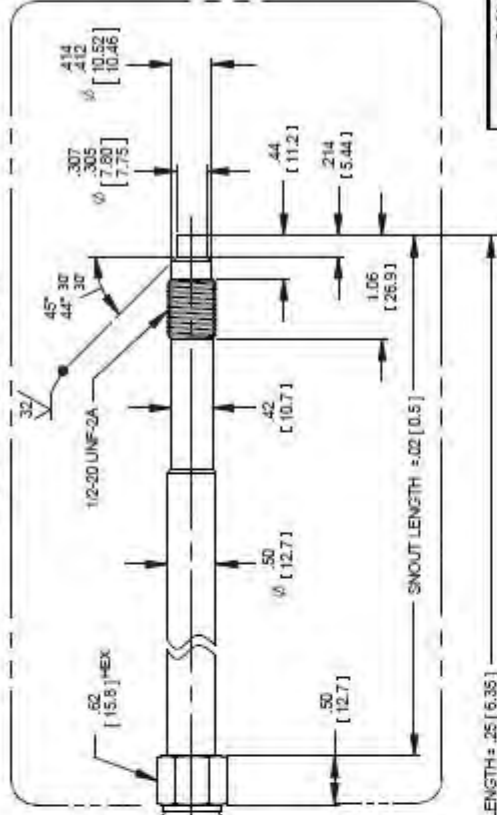
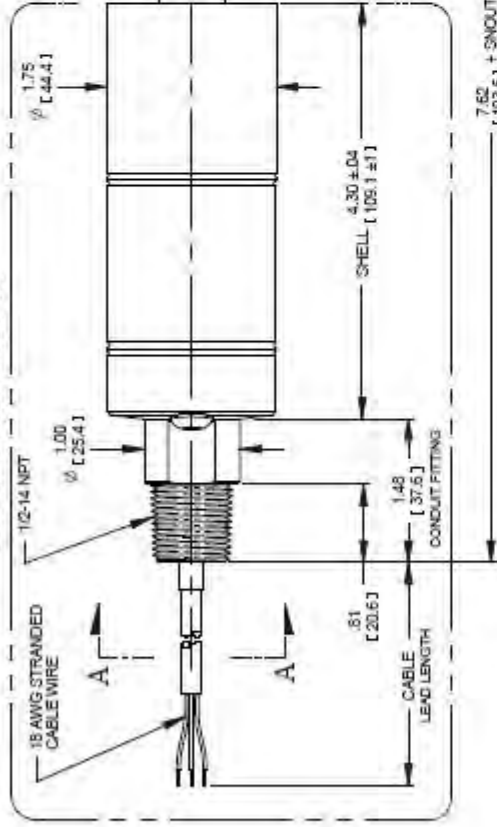
**Dynisco**  
FORCE PARKWAY, FRANKLIN, MA

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

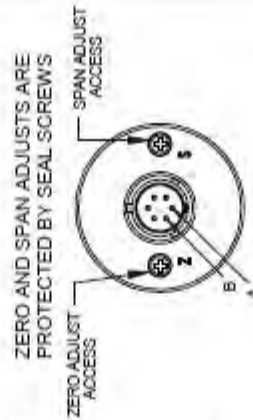
REV	ECO	BY	APP	DATE
C	47088	TP	LEB	11/18/16

000616

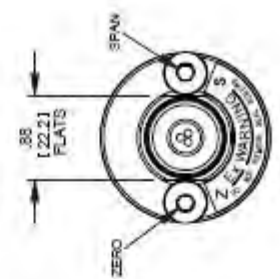
**DETAIL 'A'**  
ELECTRICAL HOUSING, CONDUIT



Color	Function
RED	POWER + / SIG +
BLACK	POWER - / SIG -
GREEN	GROUND
ORANGE	Span +
BLUE	Span -



**VIEW A-A**



**VIEW A-A**

3 CONDUCTOR SHOWN

1. ALL DIMENSIONS ARE IN INCHES. DIMENSIONS IN MILLIMETERS ARE FOR INFORMATION ONLY. DIMENSIONS IN MILLIMETERS ARE NOT TO BE USED FOR MANUFACTURE OF PARTS UNLESS SPECIFICALLY INDICATED.

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

DATE	11/29/10
DRG	DRG
DATE	DATE
APPROVED	MAL
DATE	03/31/11
FINISH	

MODEL NO. SPX-GEN2

DO NOT SCALE DRAWING

MATERIAL

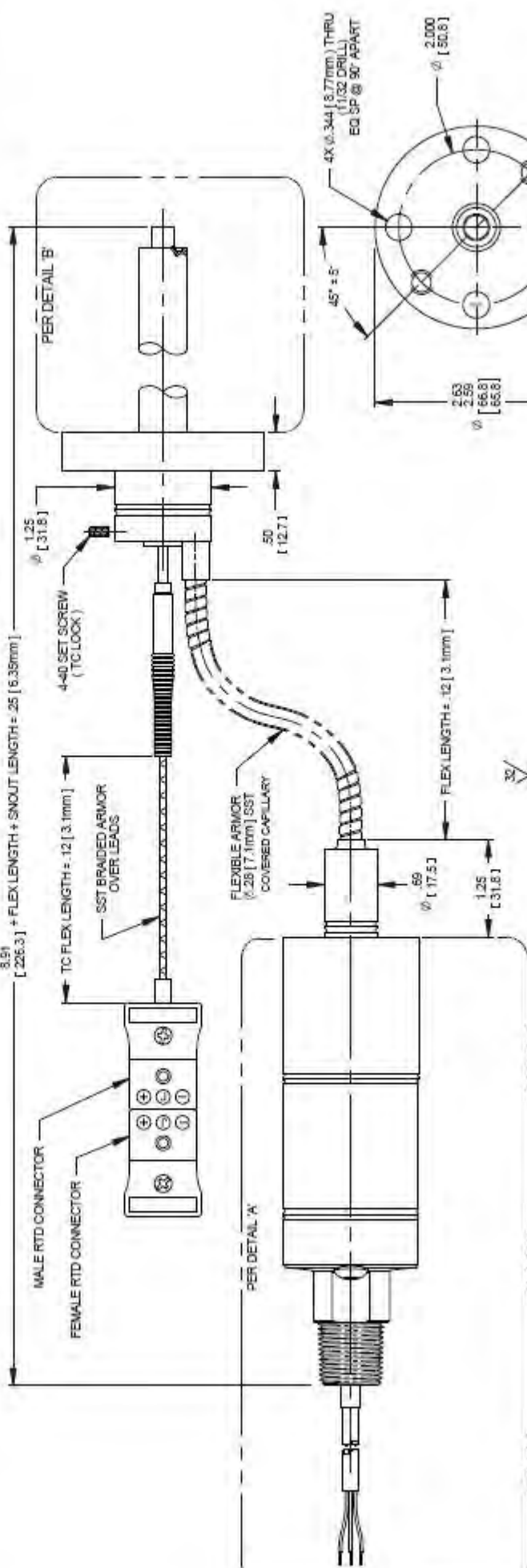
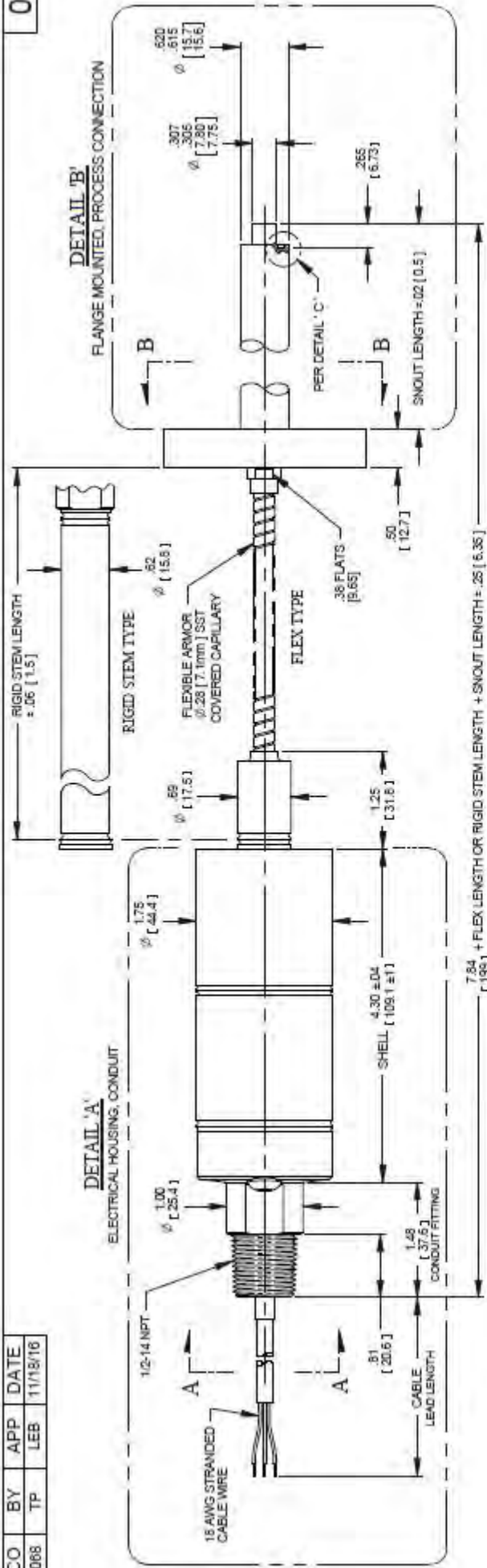
**Dynisco**

SCALE: NONE SHEET 1 OF 1

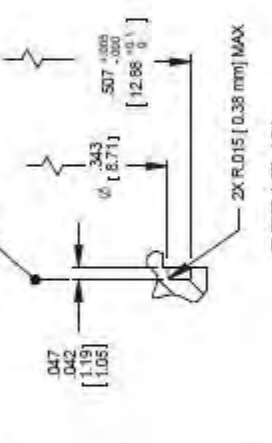
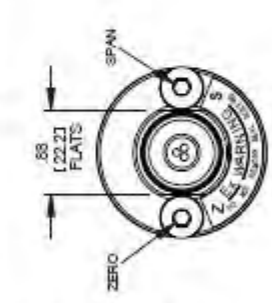
- NOTES:
- ALL DIMENSIONS ARE IN INCHES. DIMENSIONS ARE IN MILLIMETERS.
  - EXPOSED SURFACES ARE STAINLESS STEEL.

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

000618



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



NOTES:

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

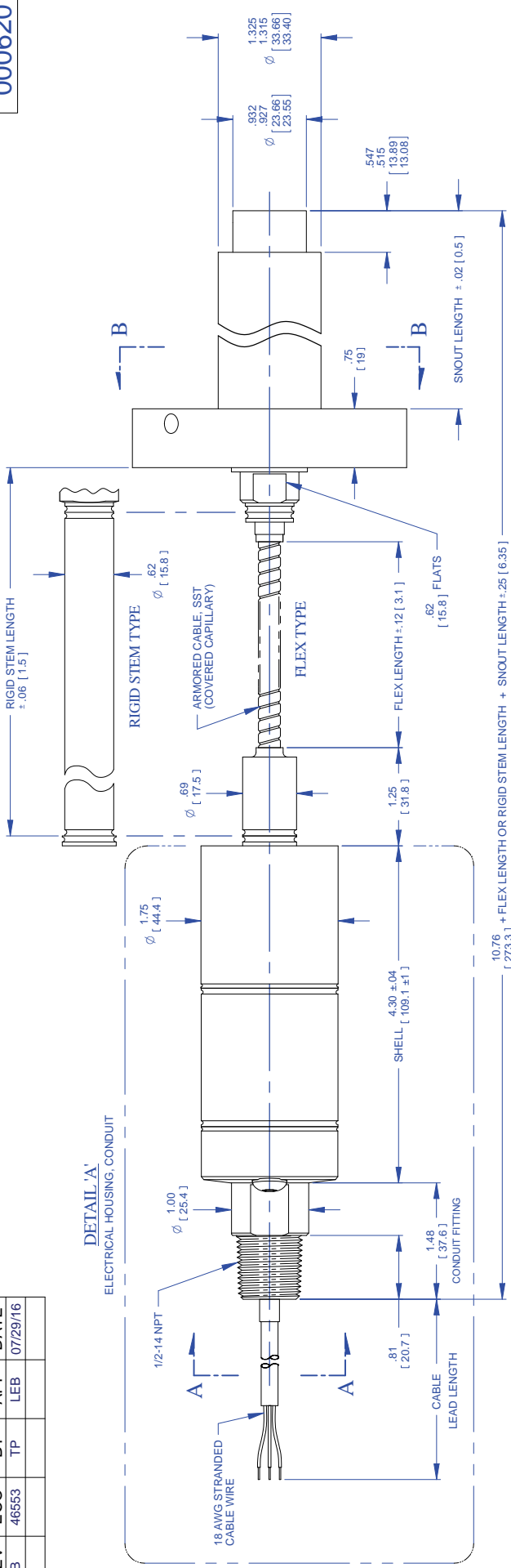
TITLE <b>SPX-GEN2 OUTLINE</b> <b>MODELS 2243, 5343</b> <b>FLEX,RIGID &amp; TPT VERSIONS</b>		DRAWN DRG DATE 11/29/10
MODEL NO SPX-GEN2		CHECKED MLL DATE 01/31/11
DO NOT SCALE DRAWING		APPROVED DATE 01/31/11
MATERIAL		FINISH
SCALE: NONE SHEET 1 OF 1		

DYNISCO IS NOT BE RESPONSIBLE FOR ANY DAMAGE TO PROPERTY OR PERSONS OR THE WORKMANSHIP OF ANY OTHERS WHOSE WORK IS AFFECTED BY THE MANUFACTURE OF THIS PRODUCT.

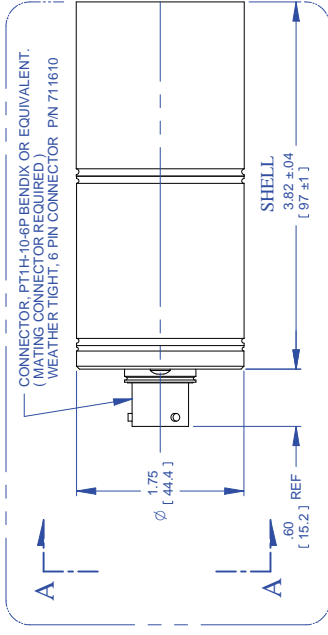
REV	ECO	BY	APP	DATE
B	46563	TP	LEB	07/29/16

000620

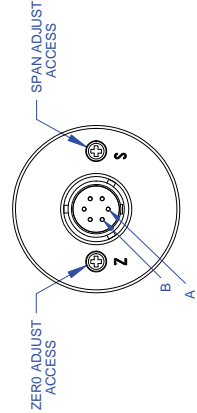
**DETAIL 'A'**  
ELECTRICAL HOUSING, CONDUIT



**ELECTRICAL HOUSING, CONNECTOR CONFIGURATION**

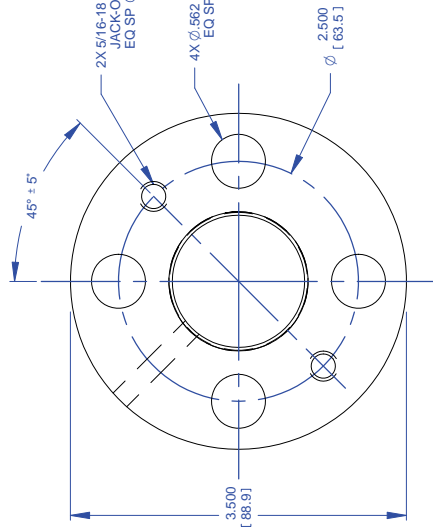


ZERO AND SPAN ADJUSTS ARE PROTECTED BY SEAL SCREWS

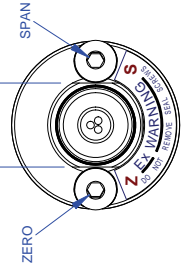


**VIEW A-A**

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



**VIEW B-B**  
FLANGE



**VIEW A-A**

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

1. ALL DIMENSIONS ARE IN INCHES [MILLIMETERS]

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

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**Dynisco**  
FORCE PARKWAY, FRANKLIN, VA

MODEL NO. **SPX-GEN2**    DATE **11/29/10**

DRAWN **DRG**    CHECKED **C**    DATE **01/13/11**

APPROVED **MUL**    DATE **01/13/11**

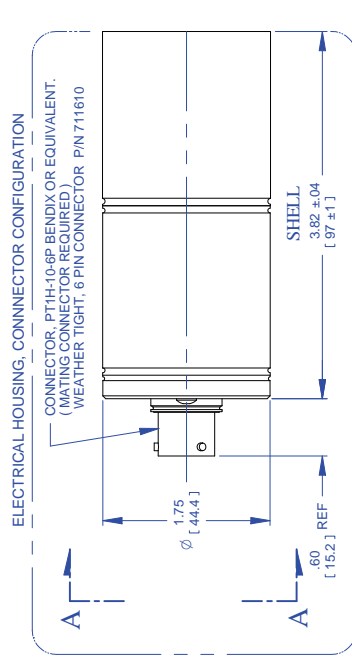
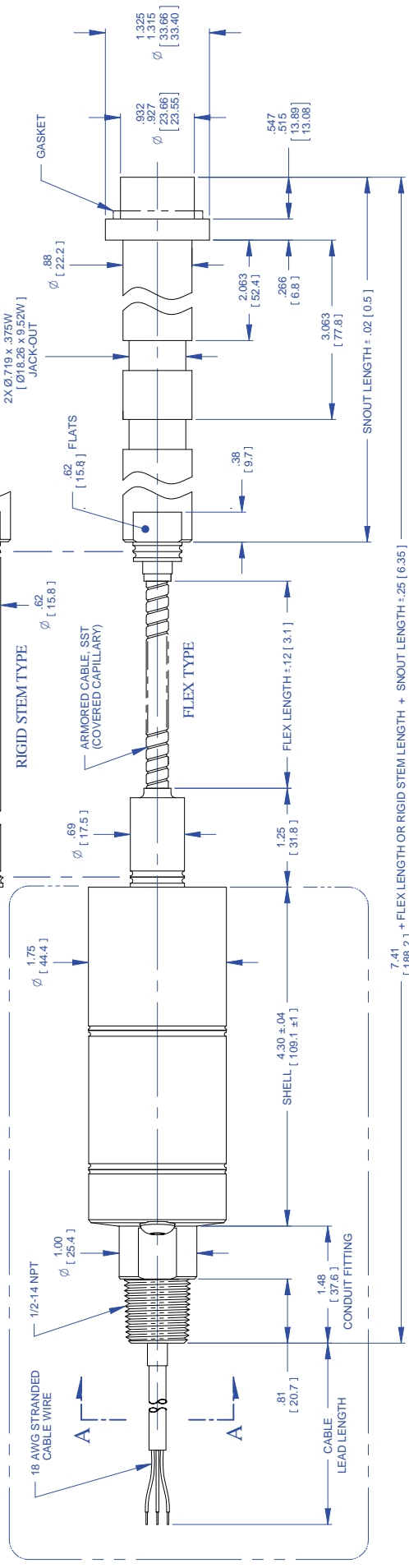
FINISH **B**

SCALE: NONE    SHEET 1 OF 1

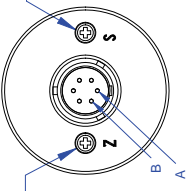
REV	ECO	BY	APP	DATE
B	46553	TP	LEB	07/29/16

000622

DETAIL A  
ELECTRICAL HOUSING, CONDUIT

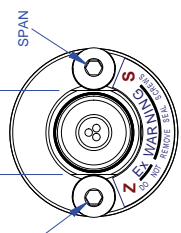


ZERO AND SPAN ADJUSTS ARE PROTECTED BY SEAL SCREWS



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 = .01
  2. 3 PLACE DECIMAL = .005
  3. DRILLS = .0003
  4. ANGLES = 0.01° MAX
  5. EDGES R .005 OR CHAMFER MAX
  6. FINISHES ARE IN INCHES
  7. ALL DIMENSIONS ARE IN INCHES

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

DRAWN	DATE	DRG	DATE
CHECKED	MUL	DATE	DATE
APPROVED			
FINISH			

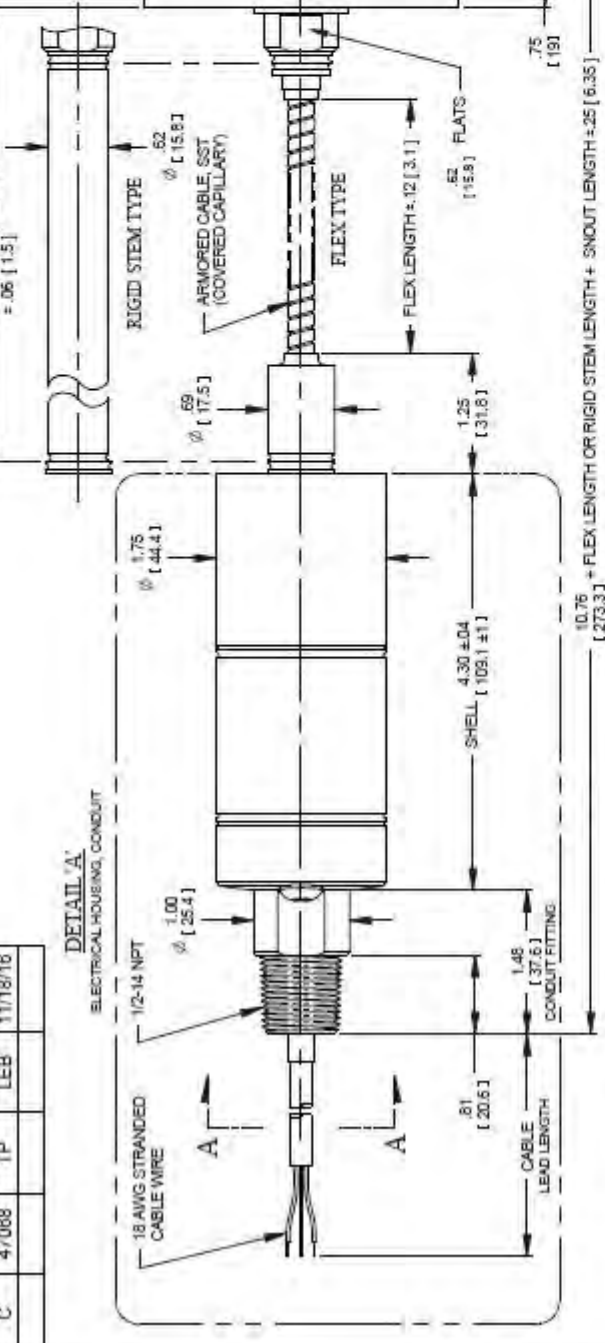
- NOTES:
1. ALL DIMENSIONS ARE INCHES [MILLIMETERS]
  2. EXPOSED SURFACES ARE STAINLESS STEEL.

**Dynisco**  
FORCE PARKWAY, FRANKLIN, MA  
DWG. NO. **000622**  
REV. **B**

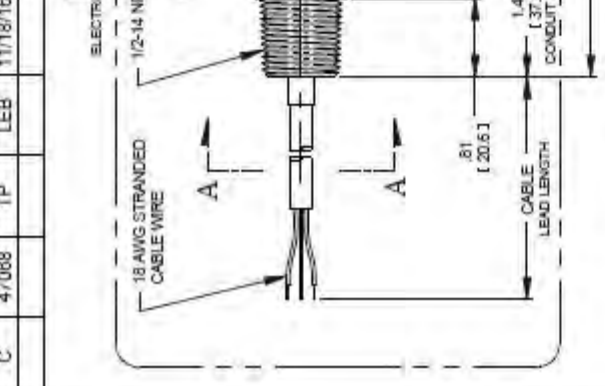
REV	ECO	BY	APP	DATE
C	47068	TP	LEB	11/18/16

000623

**DETAIL 'A'**  
ELECTRICAL HOUSING, CONDUIT

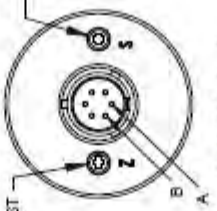


**DETAIL 'B'**  
FLANGE MOUNTED, PROCESS CONNECTION



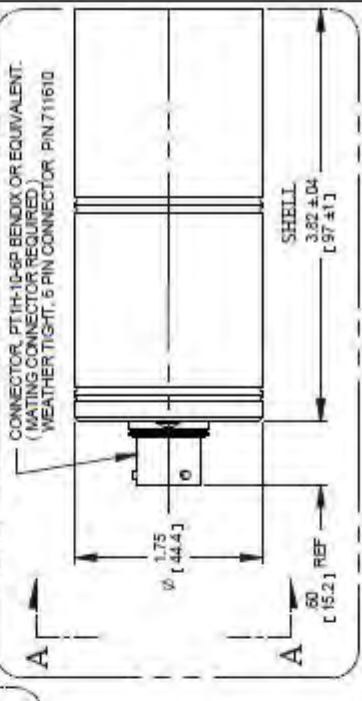
PIN	CONNECTOR WIRING	FUNCTION
A	POWER + / SIGNAL +	
B	POWER - / SIGNAL -	
C	NO	
D	CONNECTION	
E	RES -	
F	RES +	

ZERO AND SPAN ADJUSTERS ARE PROTECTED BY SEAL SCREWS



**VIEW A-A**

ELECTRICAL HOUSING, CONNECTOR CONFIGURATION

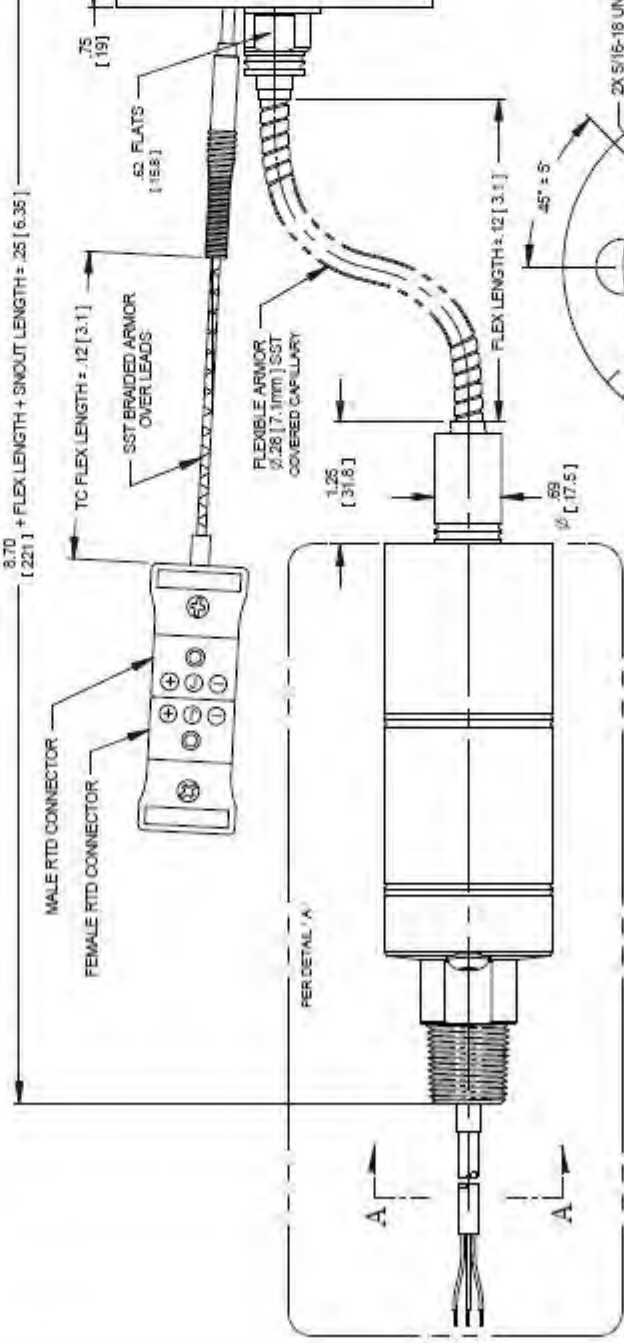


CONNECTOR, PT 1H-16-6P BENDIX OR EQUIVALENT. (MATING CONNECTOR REQUIRED) WEATHER TIGHT, 6 PIN CONNECTOR, PIN 711610

REV	C
DATE	01/31/11
APPROVED	M.L.
DRAWN	DRG
DATE	12/03/10
MODEL NO.	SPX-GEN2
DO NOT SCALE DRAWING	
MATERIAL	
SIZE	C
CONTRACT NO.	000623
SCALE	NONE
SHEET	1 OF 1

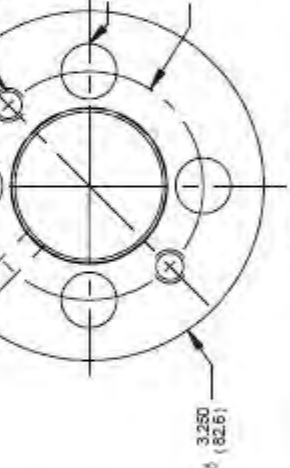
**SPX-GEN2 OUTLINE**  
MODELS 2291, 5391  
FLEX, RIGID & TPT VERSIONS

**Dynisco**  
CORPORATION  
12000 WILSON AVENUE  
DALLAS, TEXAS 75243  
TEL: 972.706.1000  
WWW.DYNISCO.COM



Cable Wiring	Color	Function
1 - Conductor	RED	POWER + / SIG +
1 - Conductor	BLACK	POWER - / SIG -
1 - Conductor	GREEN	GROUNDING
1 - Conductor	ORANGE	HEAT +
1 - Conductor	BLUE	HEAT -

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

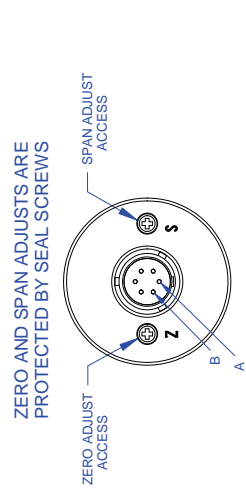
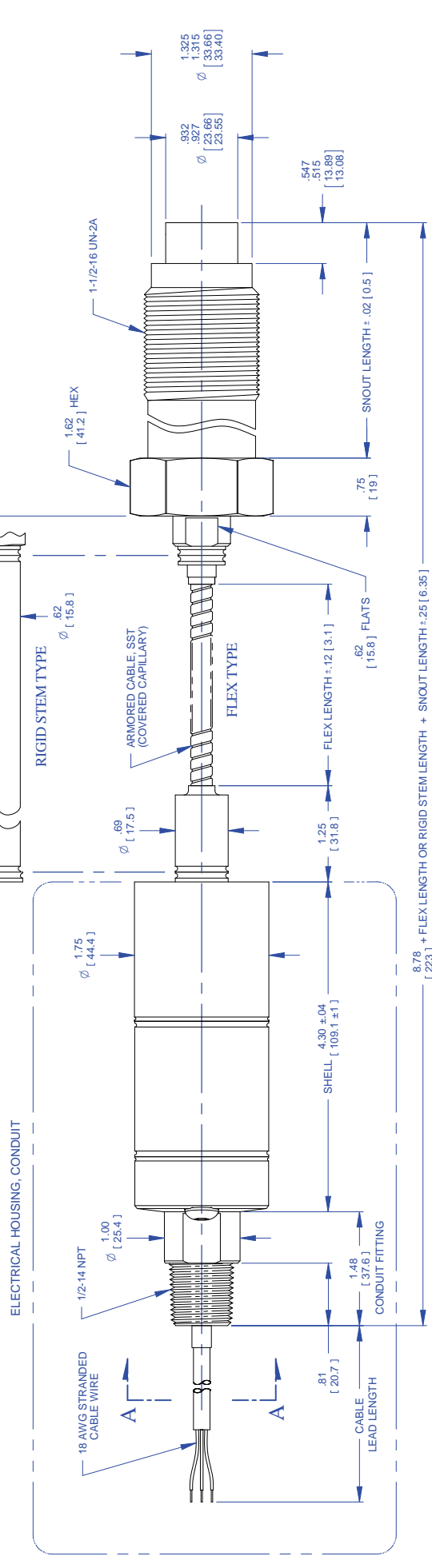


**VIEW B-B**  
FLANGE

**VIEW A-A**  
3 CONDUCTOR SHOWN

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 +

ZERO AND SPAN ADJUSTERS ARE PROTECTED BY SEAL SCREWS



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

3 CONDUCTOR SHOWN

**VIEW A-A**

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**Dynisco**  
FORCE PARKWAY, FRANKLIN, MA

**VIEW A-A**

**VIEW A-A**

3 CONDUCTOR SHOWN

NOTES:

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

TOLERANCES UNLESS OTHERWISE SPECIFIED:

- 1.2 PLACE DECIMAL 1.005
- 3 PLACE DECIMAL 1.005
- DRILLS -0.0050
- DRILLS -0.0050
- ANGLES ± 0.05° MAX
- EDGES R .005 OR CHAMFER MAX
- FINISHES AS SHOWN
- ALL DIMENSIONS ARE IN INCHES

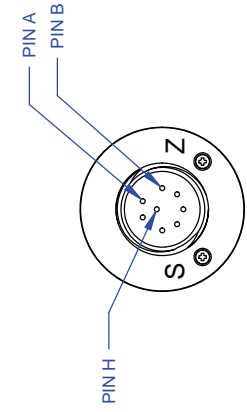
TITLE	SPX-GEN2 OUTLINE	DRAWN	DRG	DATE	12/07/10
	MODELS 2292, 5392	CHECKED	MUL	DATE	01/31/11
	FLEX & RIGID VERSIONS	APPROVED		DATE	
		FINISH			
MODEL NO.	SPX-GEN2				
DO NOT SCALE DRAWING					
MATERIAL					

SCALE: NONE SHEET 1 OF 1

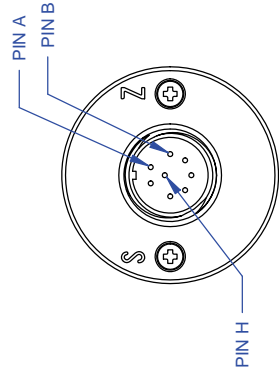


REV	ECO	BY	APP	DATE
A	46553	TP	LEB	07/29/16 R

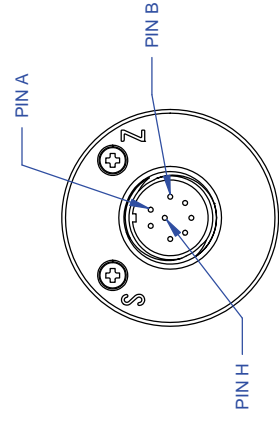
000652



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

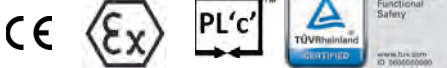
NOTE:  
1. THESE CONNECTOR OPTIONS ARE AVAILABLE ON MOST OF THE CONFIGURATIONS SHOWN ON THE PREVIOUS SHEETS.

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. HOLE DEPTH ± .005 MAX. 6. EDGES R .006 OR CHAMFER MAX. 7. PART TO BE FREE OF BURRS 8. ALL DIMENSIONS ARE IN INCHES.		<b>GUARDIAN SERIES CONNECTORS</b>	
MODEL NO. X		DRAWN TP	DATE 7/27/16
DO NOT SCALE DRAWING		CHECKED LEB	DATE 7/27/16
MATERIAL X		APPROVED LEB	DATE 7/27/16
FINISH 63 ✓		SIZE B	REV A
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FORCE PARKWAY, FRANKLIN, MA 01901			
DWG. NO. 000652		SCALE NONE SHEET 1 OF 1	

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PN: DSSPX2SERIES  
REV: 1116  
ECO: 470658



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