

Dynisco SPX-T (3-Series)

GENERAL PURPOSE SMART PRESSURE SENSORS
FOR HAZARDOUS LOCATIONS



Description

The SPX-T (3-Series) is a smart 4-20mA pressure transmitter that includes Temperature Compensation and DynaLarity™, a Dynisco innovation. The SPX-T delivers the best spec performance in the line. Temperature Compensation is based on an RTD measurement that compensates for temperature variations which reduces temperature-related drift and increases accuracy. No need to re-zero for temperature changes after installation. DynaLarity uses an advanced algorithm that will linearize offsets due to process effects on the sensor. Combined Temperature Compensation and DynaLarity reduces temperature-related drift by as much as 80% and improves accuracy by more than 60% over other sensors. Process temperature output is available (RTD or 4-20mA). HART communication is standard. The SPX 3-Series is an all-welded construction designed for use in hazardous locations and are available with a variety of different process and electrical connections.

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

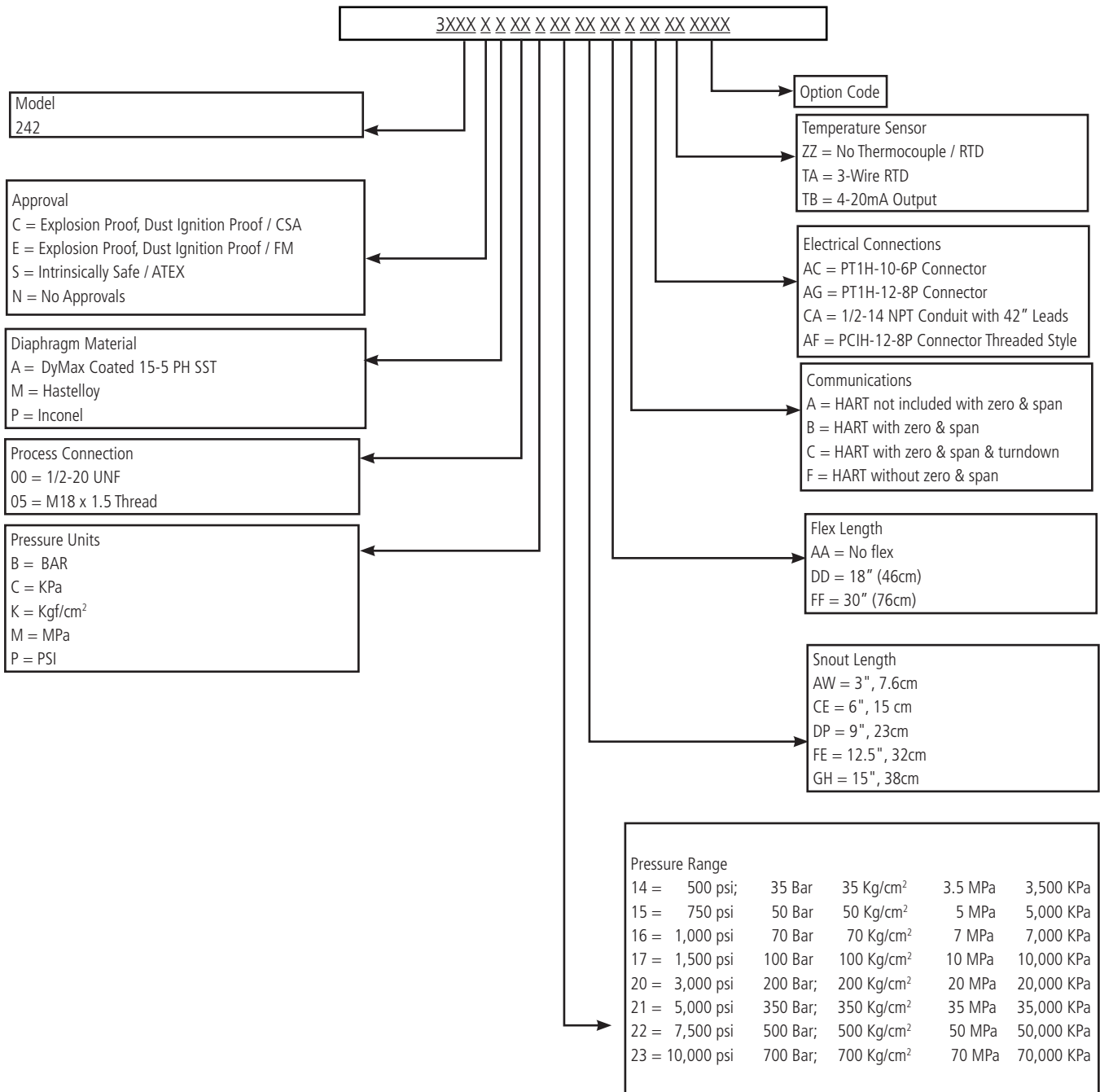
Features

- 4-20mA loop-powered output
- +/- 0.15% accuracy available
- Reduced temperature drift by 80% over non compensated units
- Temperature output available (RTD or 4-20mA)
- Wide selection of pressure ranges available
- Turndown 6:1
- 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
- IECEx 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 SPX-T (3- Series)	
Output	4 - 20 mA, with optional HART™
Input Voltage	16 - 36 Vdc (Std); 16 - 30 Vdc (ATEX IS)
Accuracy	<p>32XX: ± 0.25% for pressure ranges ≥ 3,000 psi ± 0.5% for pressure ranges = 1,500 psi ± 0.75% for pressure ranges < 1,500 psi</p> <p>33XX: ± 0.15% for pressure ranges ≥ 3,000 psi ± 0.25% for pressure ranges = 1,500 psi ± 0.5% for pressure ranges < 1,500 psi</p> <p><small>Accuracy is defined as the combined error expressed as a percentage of full scale output with the specifications of: Electronics ambient temperature; Snout compensated temperature range; capillary of ≤ 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></p>
Repeatability	±0.1%
Rangeability	6:1 Turndown
Over Pressure	1.5 x FSO
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)
Electronics Compensated Temperature Range	70 to 185°F (20 to 85°C)
Snout Compensated Temperature Range	70 to 572°F (20 to 300°C)
Snout Operating Temperature	Models: 3242, 3243, 3342, 3343: 32 to 752°F (0 to 400°C) Models: 3290, 3291, 3390, 3391: 32 to 600°F (0 to 315°C)

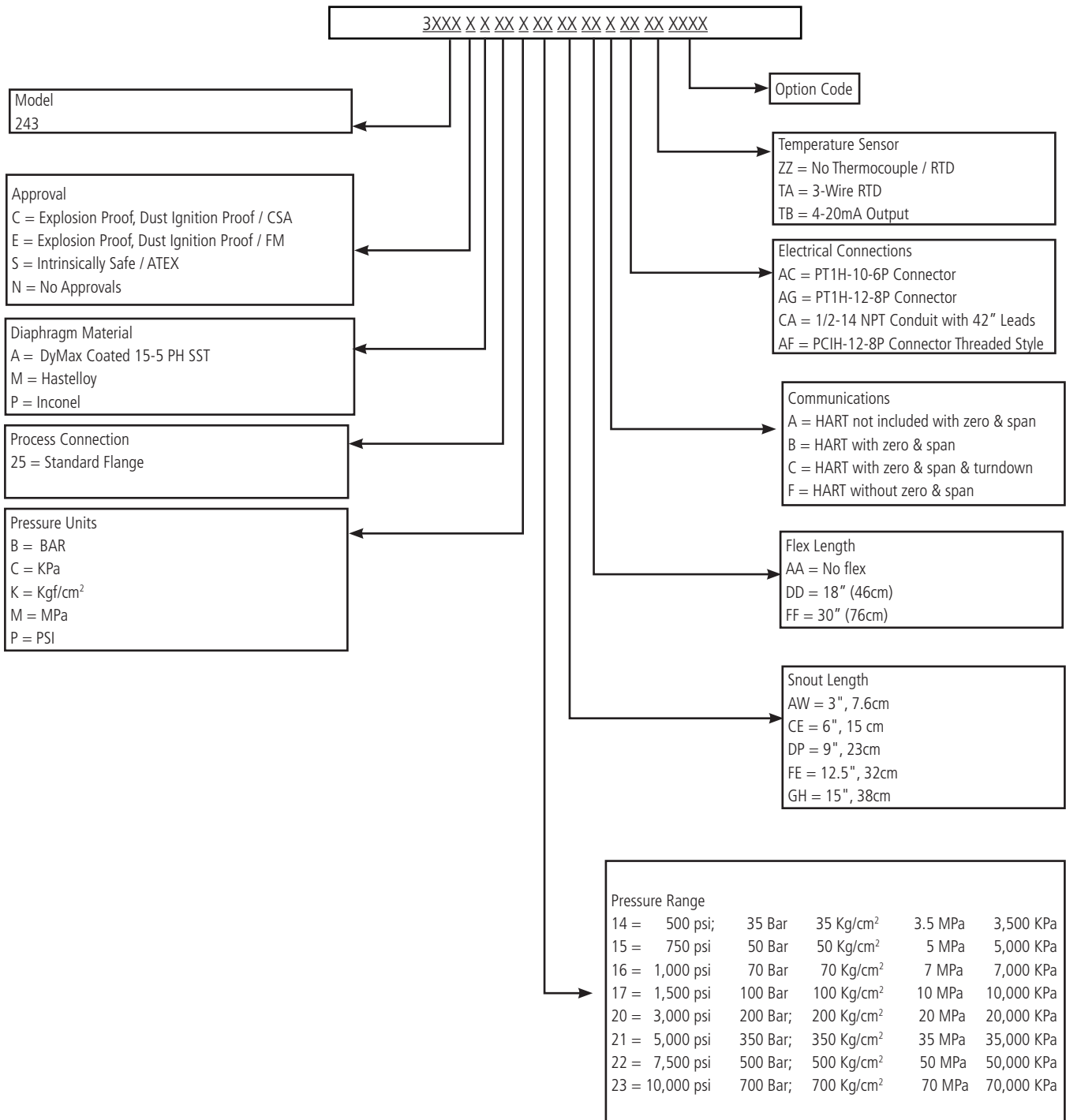
Mechanical Characteristics	
Mounting Torque	3242: 500 inch-lbf max 3243: 50 inch-lbf max 3342: 500 inch-lbf max 3343: 50 inch-lbf max 3290: 350 inch-lbf max 3291: 350 inch-lbf max 3390: 350 inch-lbf max 3391: 350 inch-lbf max
Standard Wetted Parts	DyMax coated 15-5 PH SST
Approvals & Certifications	
ATEX/IECEX Intrinsically Safe	
SIL 2 (pressure output) & PL'c' (relay output)	
FM & CSA Explosion Proof	
Additional Approvals are Available	

Ordering Guide for Models SPX3242¹



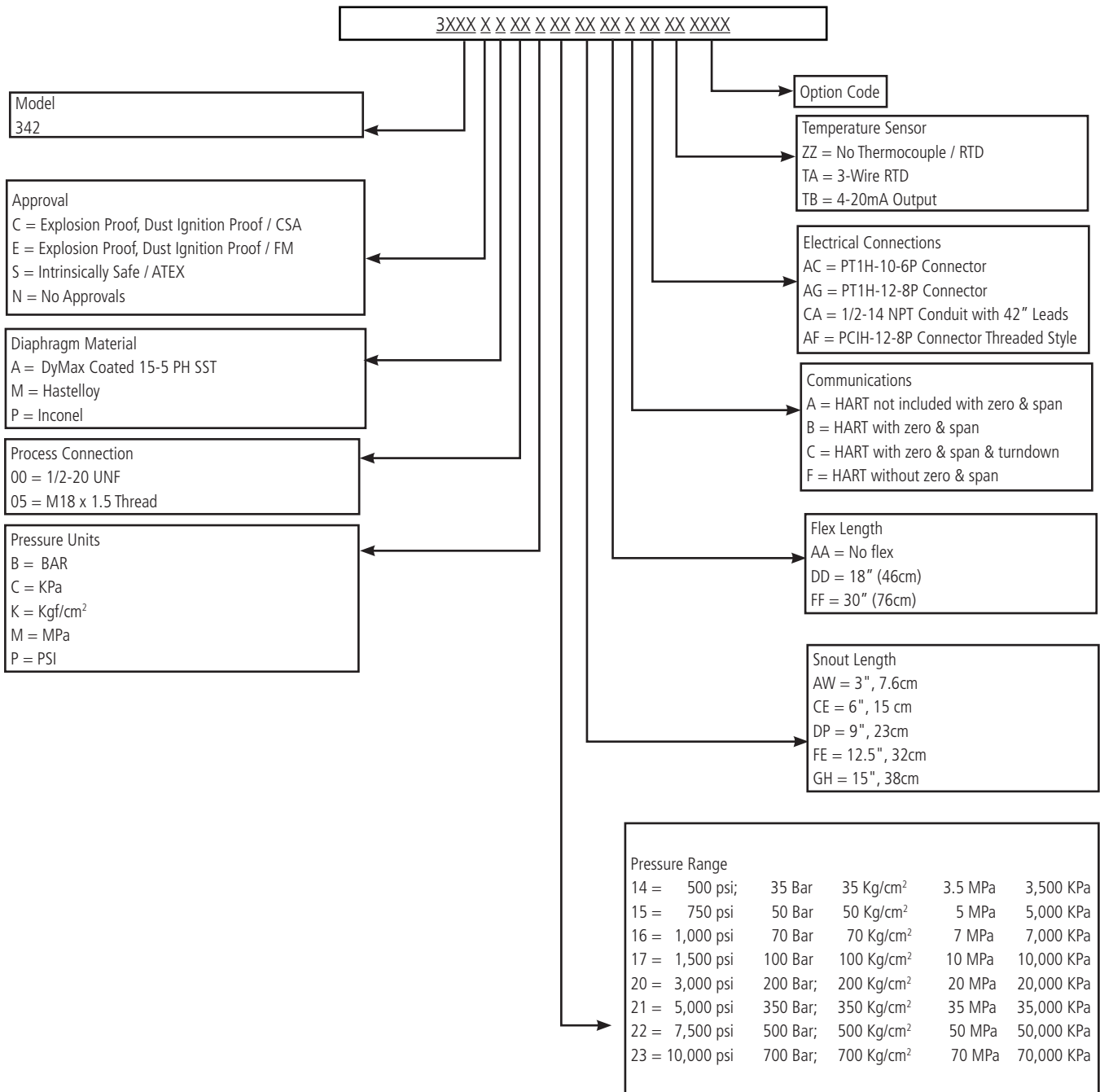
¹ Other configurations are available. Please consult factory.

Ordering Guide for Models SPX3243¹



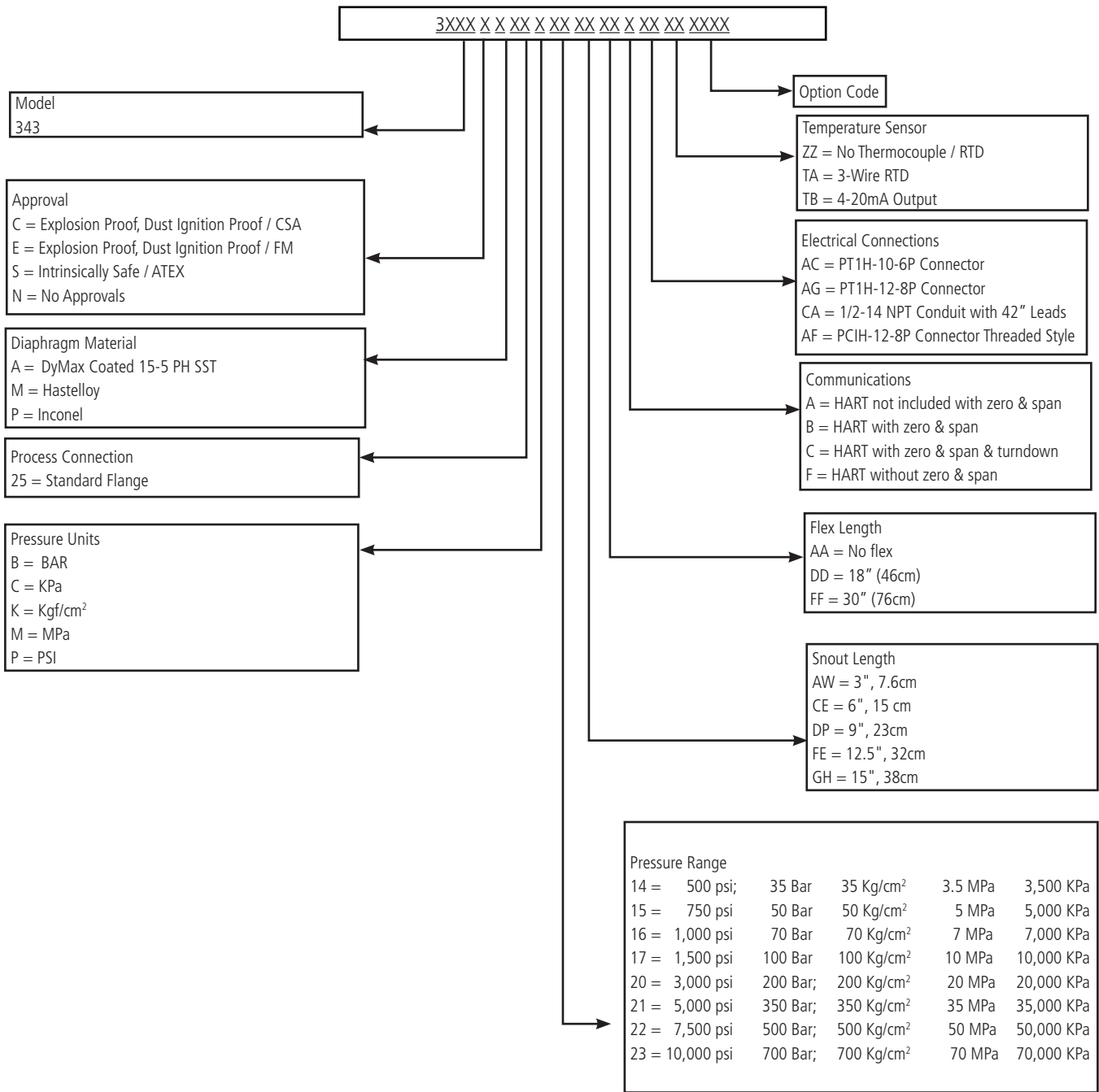
¹ Other configurations are available. Please consult factory.

Ordering Guide for Models SPX3342¹



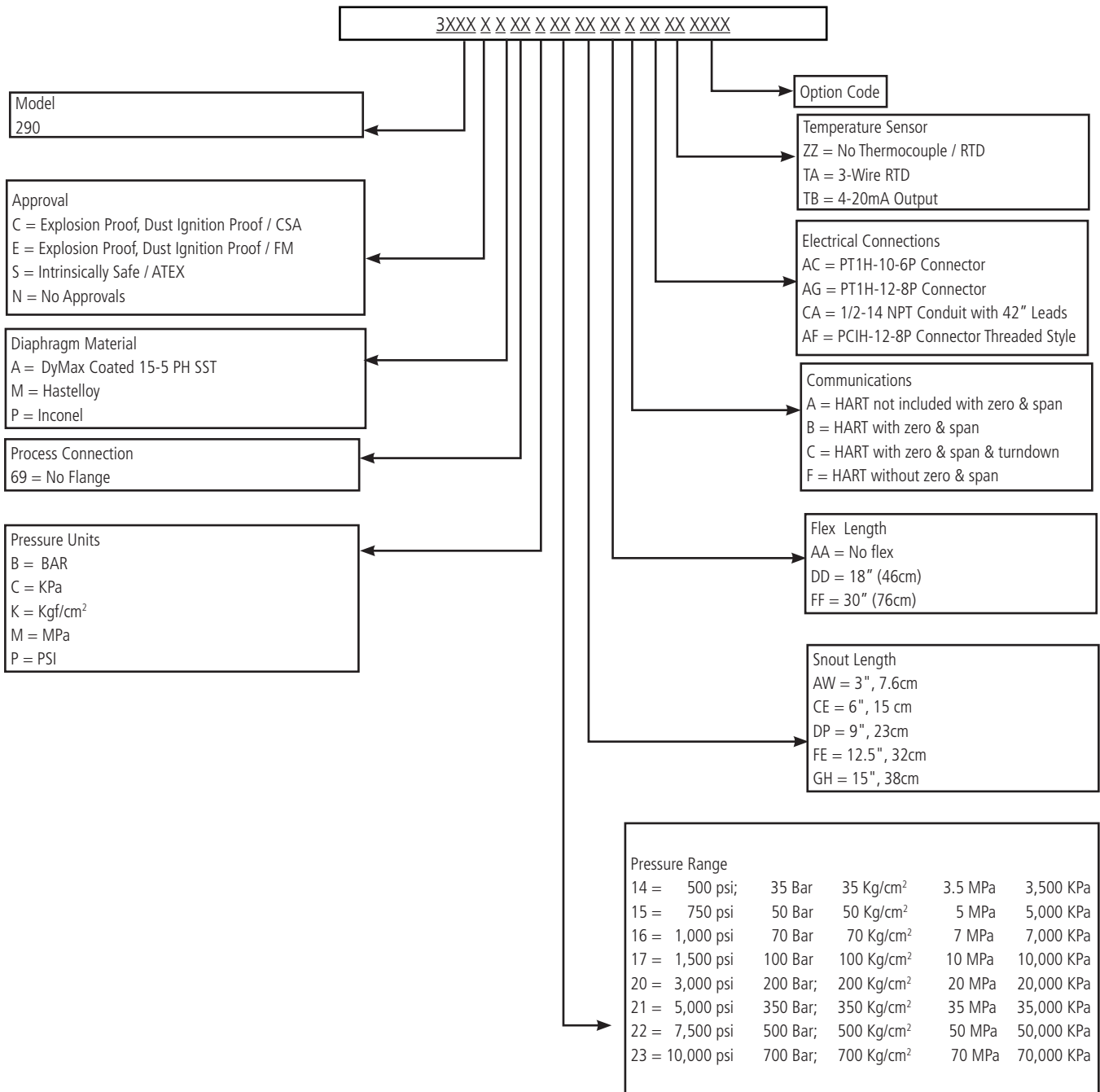
¹ Other configurations are available. Please consult factory.

Ordering Guide for Models SPX3343¹



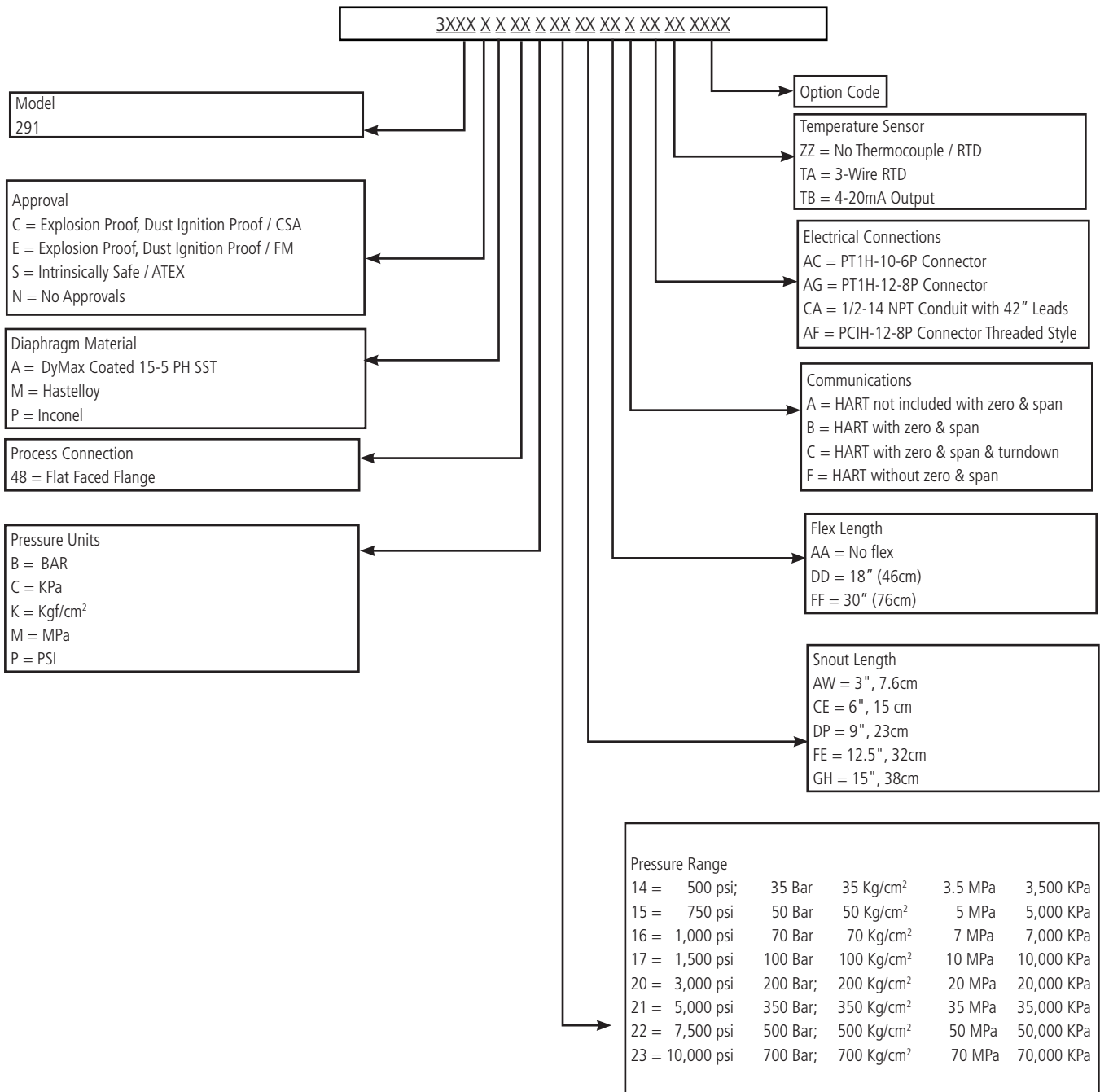
¹ Other configurations are available. Please consult factory.

Ordering Guide for Models SPX3290¹



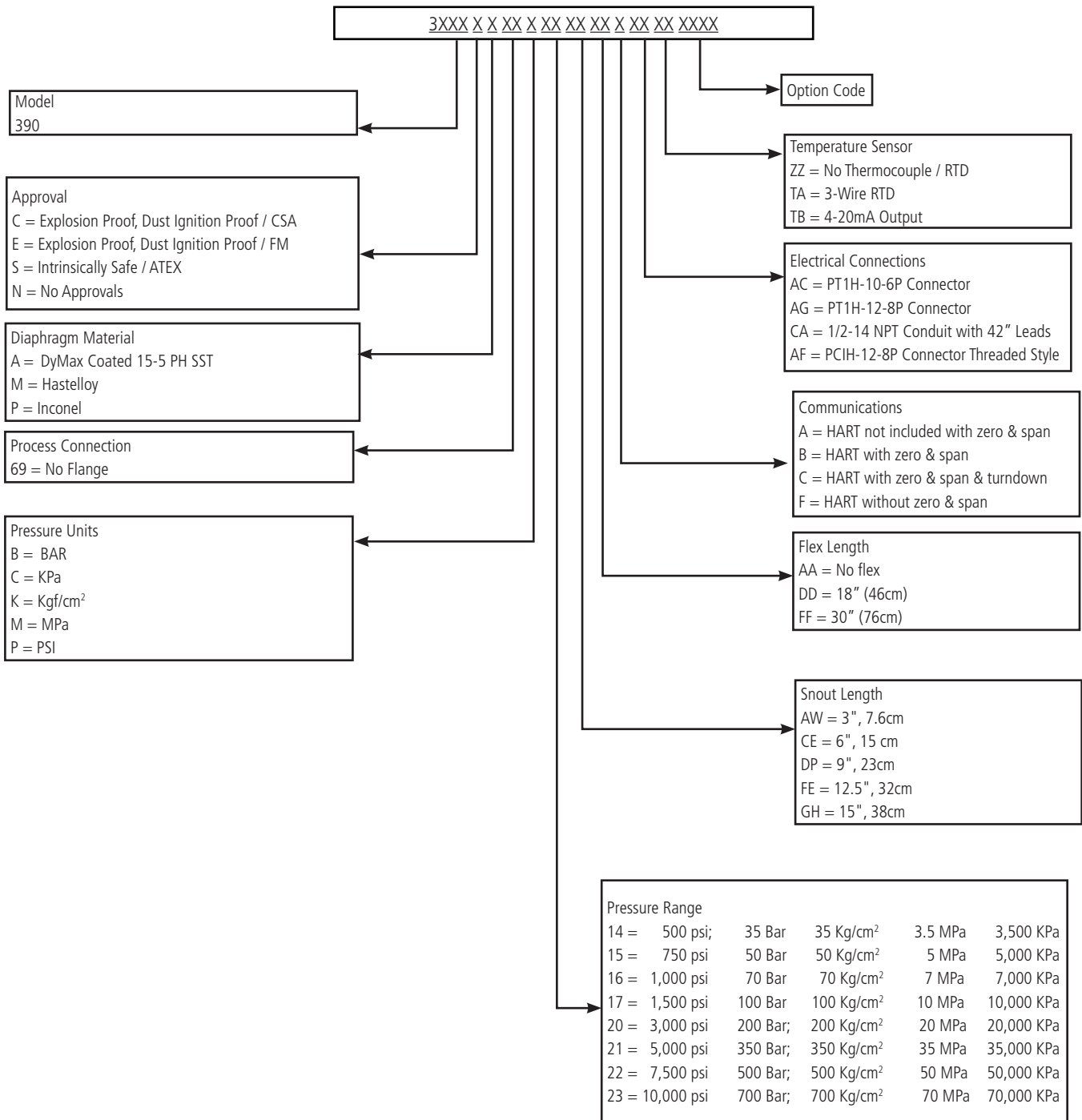
¹ Other configurations are available. Please consult factory.

Ordering Guide for Models SPX3291¹



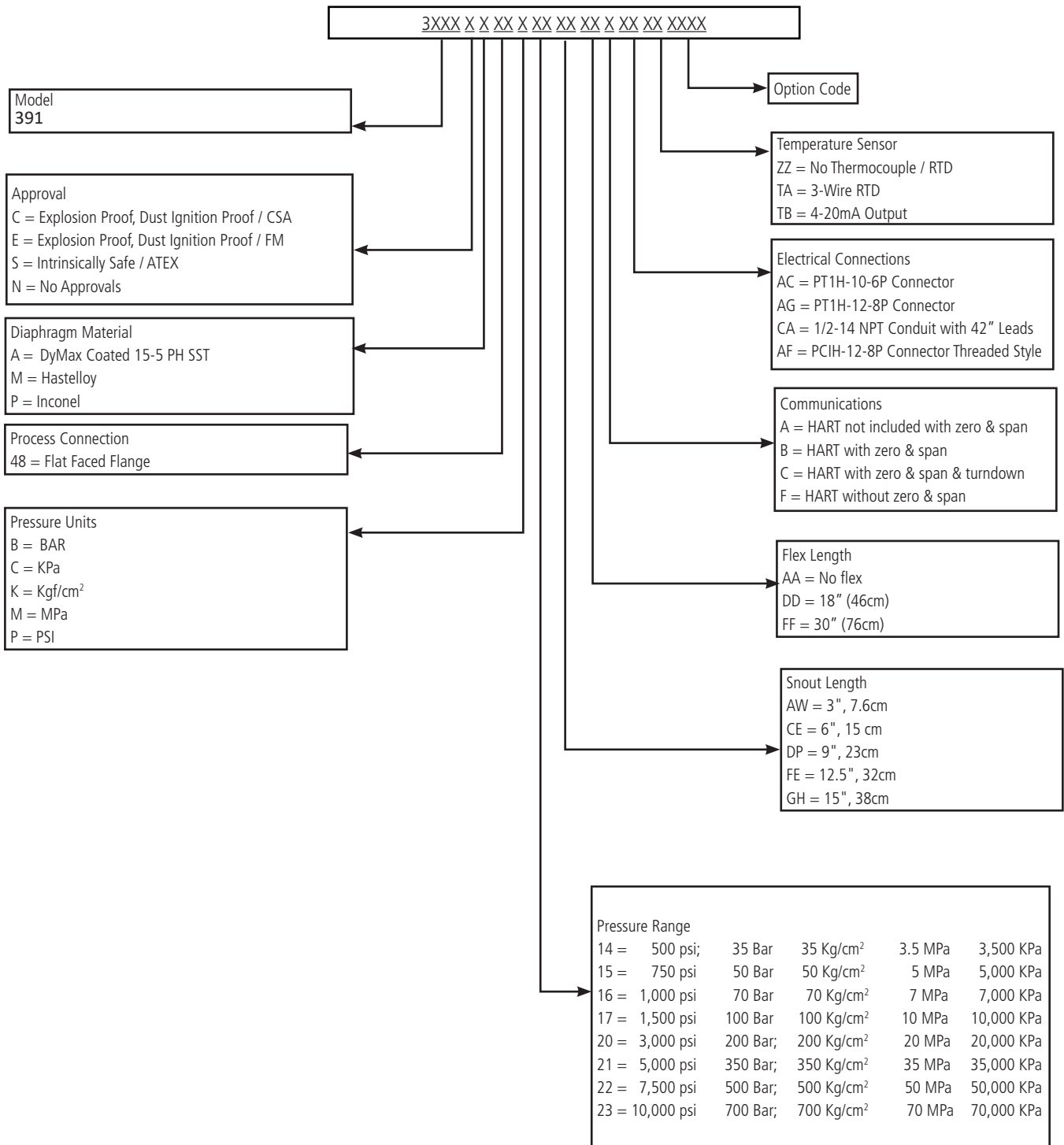
¹ Other configurations are available. Please consult factory.

Ordering Guide for Models SPX3390¹



¹ Other configurations are available. Please consult factory.

Ordering Guide for Models SPX3391¹



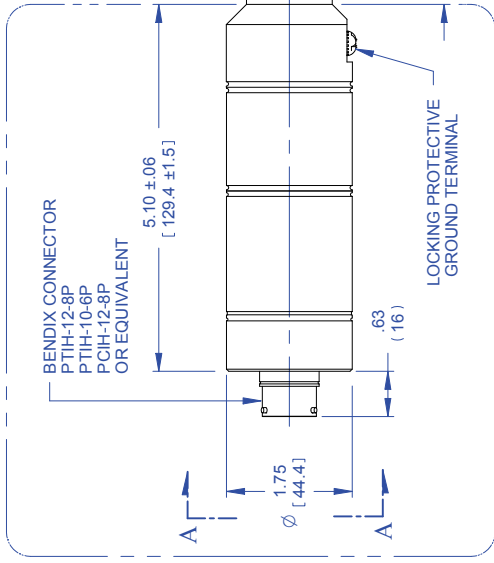
¹ Other configurations are available. Please consult factory.

REV	ECO	BY	APP	DATE
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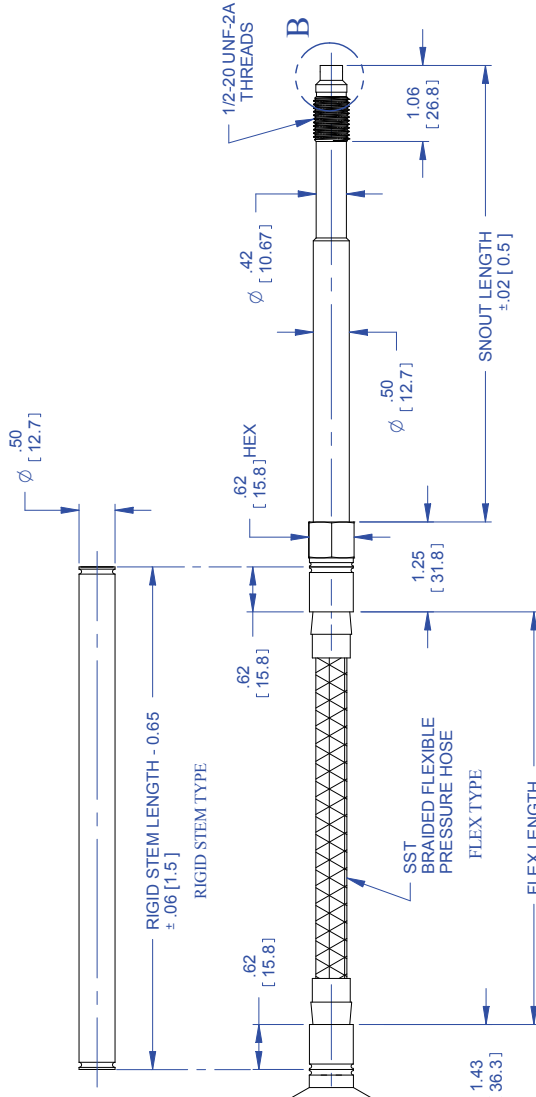
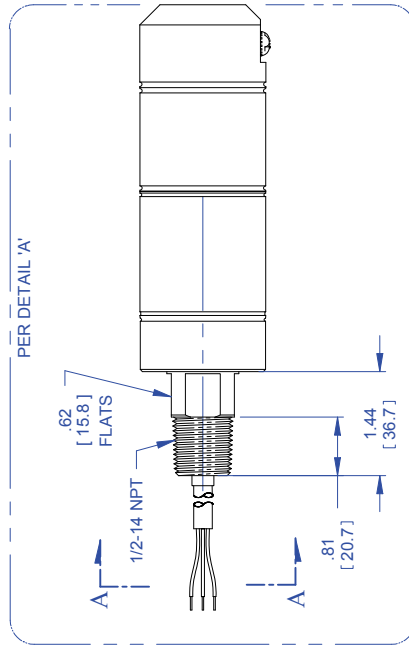
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DETAIL 'A'

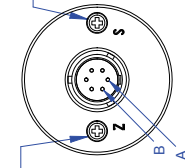
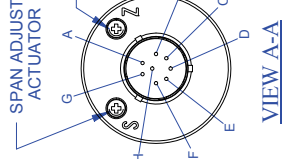
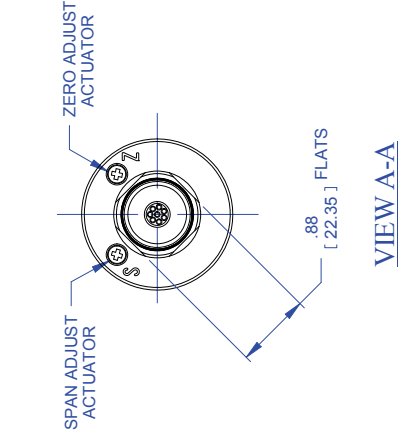
ELECTRICAL HOUSING, CONNECTOR



ELECTRICAL HOUSING, CONDUIT
PER DETAIL 'A'



ZERO AND SPAN ADJUSTERS ARE PROTECTED BY SEAL SCREWS



SIGNAL	TERMINAL DESCRIPTION	CONDUIT-LEAD WIRE COLOR	6-PIN	8-PIN
PRIMARY 4-20mA	PWR+/SIG+	RED	A	A
	PWR-/SIG-	BLACK	B	B
	CASE	GREEN	-	-
	OPTIONS			
RCAL ONLY	RCAL+	ORANGE	F	E
	RCAL-	BLUE	E	D
RCAL WITH SECONDARY 4-20mA ONLY	RCAL+	ORANGE	-	D
	RCAL-	BLUE	-	D
	2ND PWR+/SIG+	VIOLET	-	G
	2ND PWR-/SIG-	YELLOW	-	H
SECONDARY 4-20mA ONLY	2ND PWR+/SIG+	VIOLET	-	H
	2ND PWR-/SIG-	YELLOW	-	H
DUAL RTD ONLY	RTD (-)	WHITE	-	D
	RTD (+)	GREY	-	E
	RTD (+)	BROWN	-	F

NOTES:

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

DETAIL 'B'

TITLE		DRAWN		DATE	
SPX-T 3342 OUTLINE DWG		DRC		01/30/07	
CHECKED		APPROVED		DATE	
MIL		MIL		05/27/08	
FINISH		FINISH		63	
SCALE		SCALE		NONE	
SHEET		SHEET		1 OF 1	

MODEL NO.		SPX-T	
DO NOT SCALE DRAWING			
MATERIAL			

1. UNLESS OTHERWISE SPECIFIED:
 1. 1/2 INCHES
 2. 3 PLACES
 3. 0.005
 4. 0.005
 5. 0.005
 6. 0.005
 7. 0.005
 8. 0.005
 9. 0.005
 10. 0.005

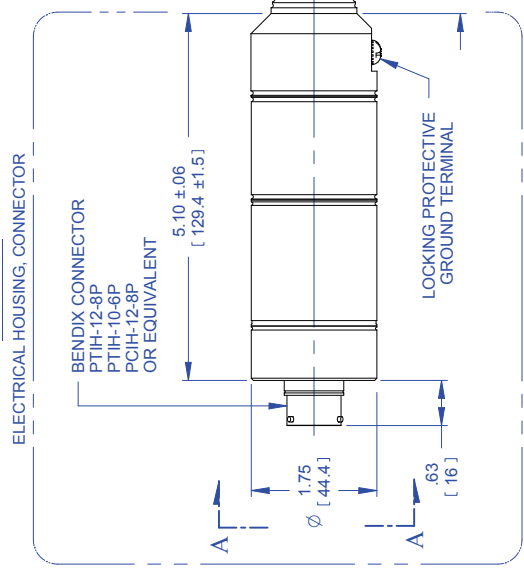
EXCEPT AS MAY BE OTHERWISE PROVIDED BY CONTRACT, THESE DRAWINGS AND SPECIFICATIONS SHALL BE VOID IN THE EVENT OF A DISCREPANCY BETWEEN THE DRAWINGS AND THE PARTS FOR THE MANUFACTURE OR SALE OF APPARATUS WITHOUT PERMISSION.

Dynisco
 FORGE INNOVATION TRANSLINK, VA
 SIZE DWG. NO.
 C 642001 C

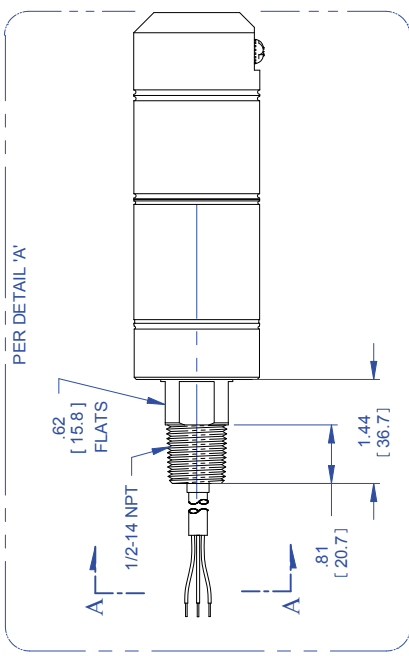
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C	46553	TP	LEB	07/29/16 R

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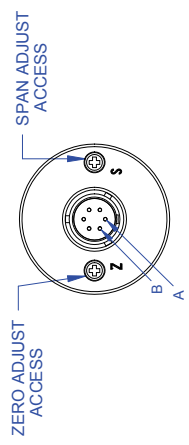
DETAIL 'A'



PER DETAIL 'A'

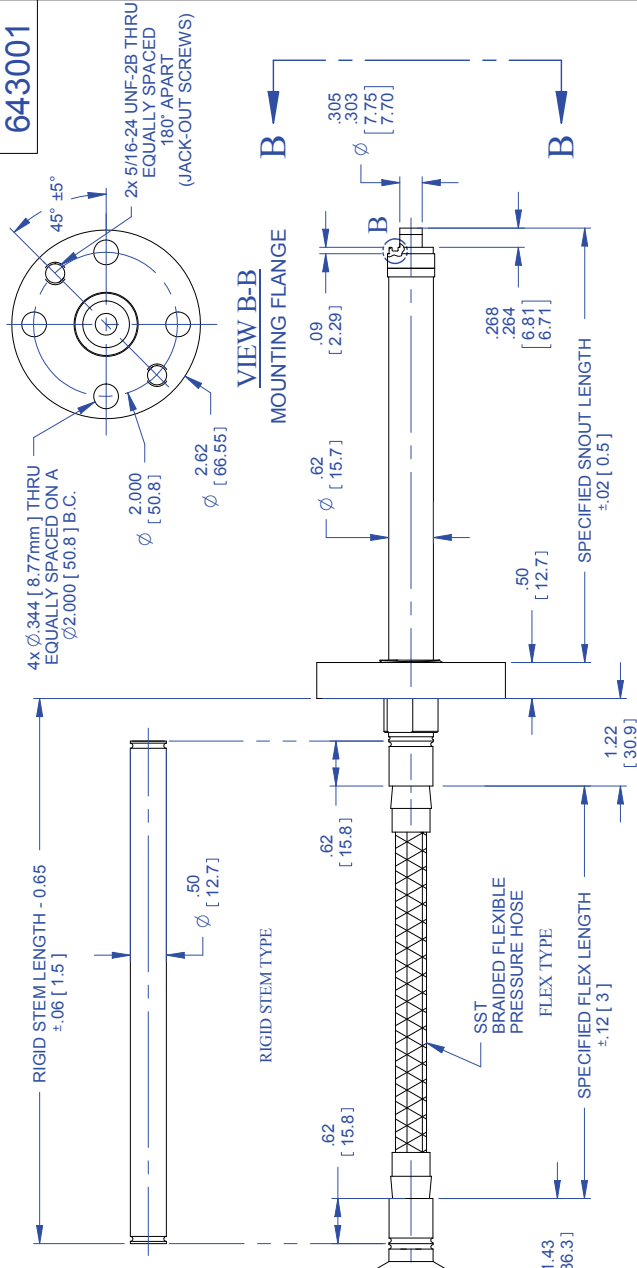


ZERO AND SPAN ADJUSTS ARE PROTECTED BY SEAL SCREWS

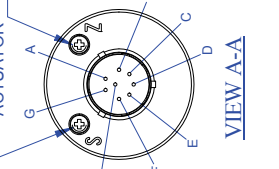


VIEW A-A

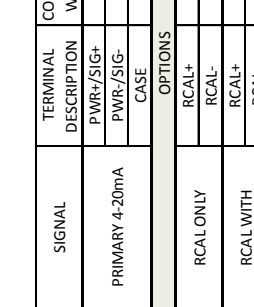
- NOTES:
- ALL DIMENSIONS ARE INCHES [MILLIMETERS]
 - EXPOSED SURFACES ARE STAINLESS STEEL.



VIEW A-A

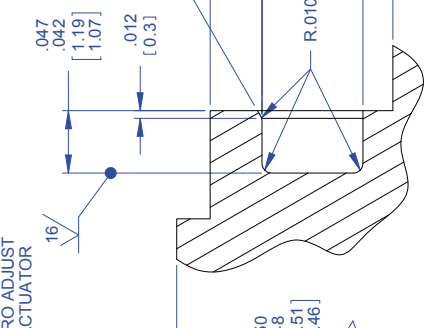


VIEW A-A



SIGNAL	TERMINAL DESCRIPTION	CASE	OPTIONS											
			RCAL+	RCAL-	RCAL+	RCAL-	2ND PWR+/SIG+	2ND PWR-/SIG-	2ND PWR+/SIG+	2ND PWR-/SIG-				
PRIMARY 4-20mA	PWR+/SIG+	RED	A	A										
	PWR-/SIG-	BLACK	B	B										
SECONDARY 4-20mA ONLY	RCAL+	ORANGE	F	E										
	RCAL-	BLUE	E	D										
	2ND PWR+/SIG+	VIOLET	-	G										
	2ND PWR-/SIG-	YELLOW	-	H										
SECONDARY 4-20mA ONLY	RTD (-)	WHITE	-	D										
	RTD (+)	GREY	-	E										
DUAL RTD ONLY	RTD (+)	BROWN	-	F										
	RTD (-)	BROWN	-	F										

DETAIL 'B'



GROOVE FOR 1/2 NOM O.D. VENTED METAL O-RING (SILVER PLATED) DYNISCO PIN 652116

DO NOT SCALE DRAWING	
CHECKED	DATE 5/27/08
APPROVED	DATE 5/27/08
FINISH	63
MATERIAL	

TITLE	
SPX-T 3343 OUTLINE DWG	
MODEL NO.	SPX-T
DRAWN	DATE 01/30/07
DRC	

EXCEPT AS MAY BE OTHERWISE PROVIDED BY CONTRACT, THESE DRAWINGS AND SPECIFICATIONS SHALL BE THE PROPERTY OF DYNISCO AND SHALL NOT BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT PERMISSION FOR THE MANUFACTURE OR SALE OF APPARATUS.

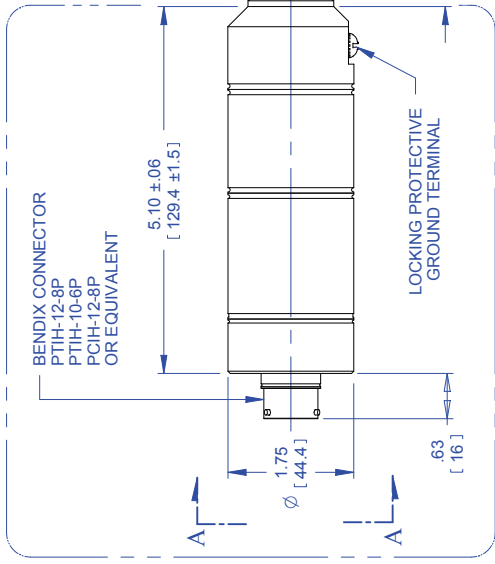
Dynisco
FORCE MAJEURE TRAINING, VA.
DIVISION NO. _____

SIZE: **C** DWG. NO.: **643001** REV: **C**

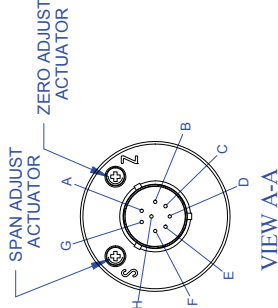
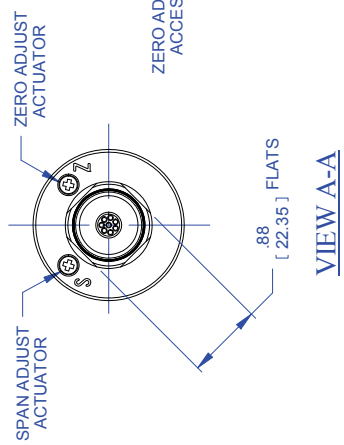
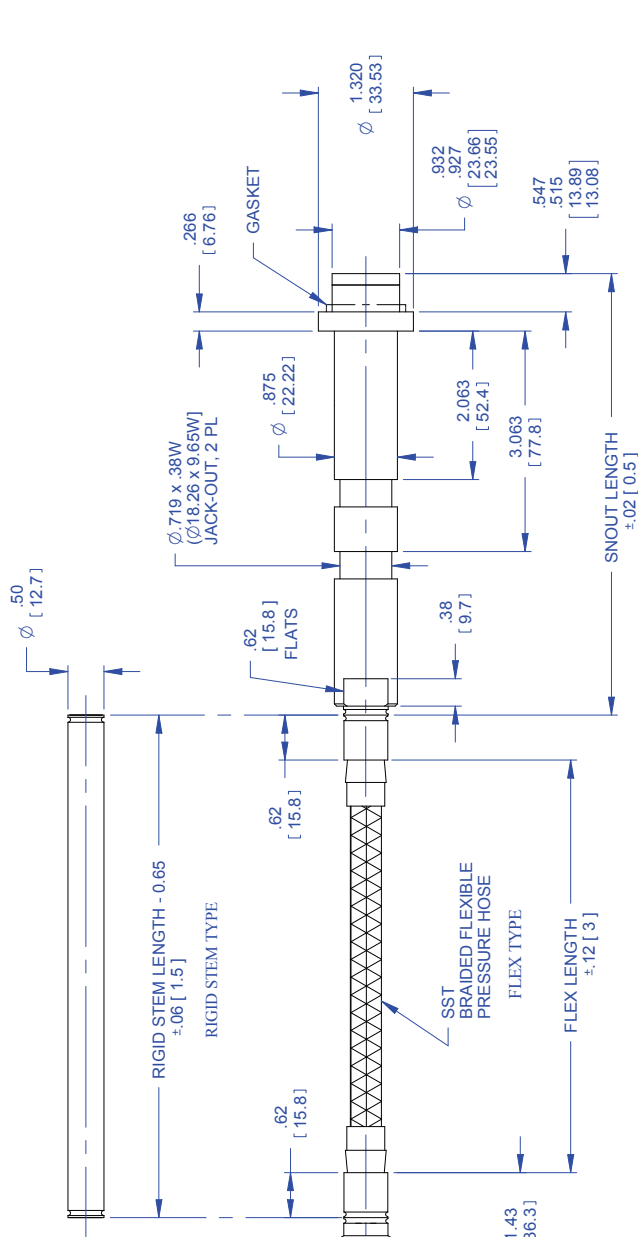
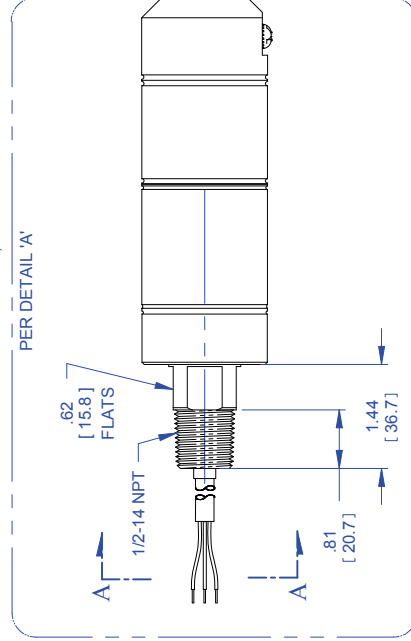
SCALE: NONE SHEET 1 OF 1

DETAIL 'A'

ELECTRICAL HOUSING, CONNECTOR



ELECTRICAL HOUSING, CONDUIT



SIGNAL	TERMINAL DESCRIPTION	CONDUIT-LEAD WIRE COLOR	6-PIN 8-PIN
PRIMARY 4-20mA	PWR+/SIG+	RED	A A
	PWR-/SIG-	BLACK	B B
	CASE	GREEN	- -
OPTIONS			
RCAL ONLY	RCAL+	ORANGE	F E
	RCAL-	BLUE	E D
RCAL WITH SECONDARY 4-20mA ONLY	RCAL+	ORANGE	- E
	RCAL-	BLUE	- D
SECONDARY 4-20mA ONLY	2ND PWR+/SIG+	VIOLET	- G
	2ND PWR-/SIG-	YELLOW	- H
DUAL RTD ONLY	2ND PWR+/SIG+	VIOLET	- G
	2ND PWR-/SIG-	YELLOW	- H
DUAL RTD ONLY	RTD (-)	WHITE	- D
	RTD (+)	GREY	- E
DUAL RTD ONLY	RTD (+)	BROWN	- F
	RTD (-)	BROWN	- F

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

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TITLE
SPX-T 3390
OUTLINE DWG

DATE 05/01/08
DATE 05/20/08
DATE 05/20/08
DATE 05/20/08

MODEL NO. SPX-T
DRAWN MUL
CHECKED MUL
APPROVED MUL
FINISH 63

DO NOT SCALE DRAWING
MATERIAL

SCALE NONE SHEET 1 OF 1

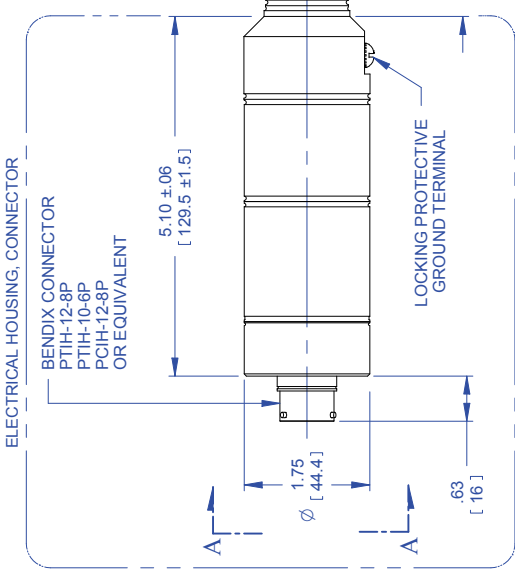
Dynisco
FORCE MAJORWAY TRAVELING SALES

REV C
690001

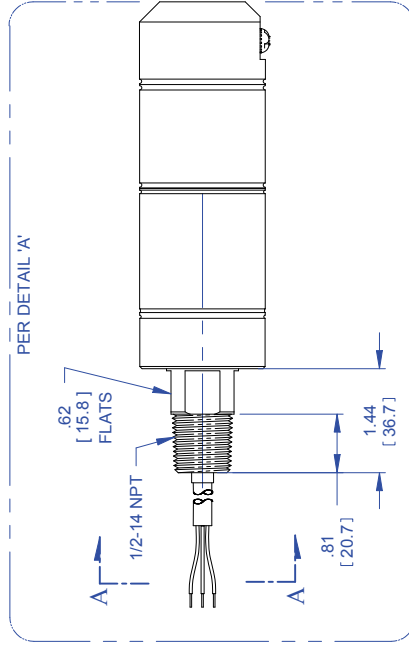
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C	46553	TP	LEB	07/29/16 R

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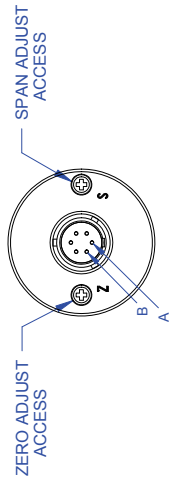
DETAIL 'A'



PER DETAIL 'A'

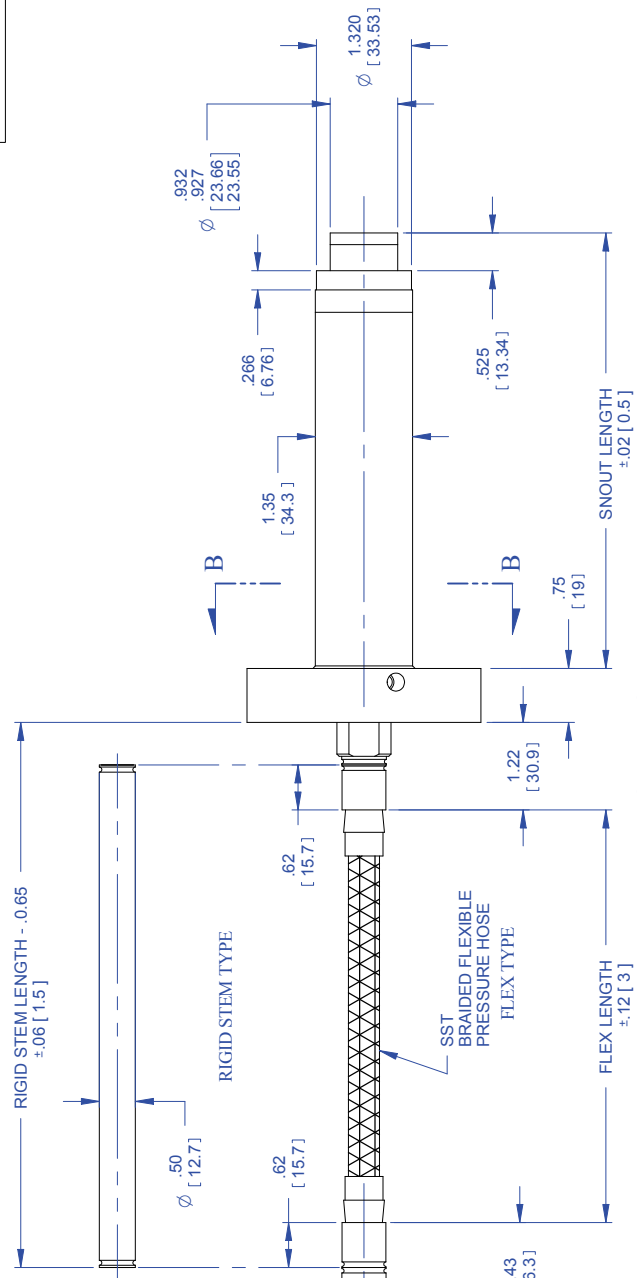


ZERO AND SPAN ADJUSTS ARE PROTECTED BY SEAL SCREWS

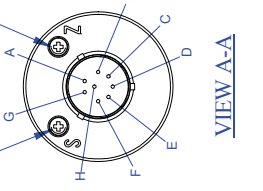


VIEW A-A

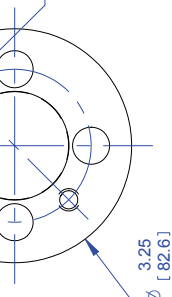
NOTES:
 1. ALL DIMENSIONS ARE INCHES [MILLIMETERS]
 2. EXPOSED SURFACES ARE STAINLESS STEEL.



VIEW A-A



VIEW B-B



VIEW B-B
MOUNTING FLANGE "S1"

SIGNAL	TERMINAL DESCRIPTION	CONDUIT-LEAD WIRE COLOR	6-PIN 8-PIN
PRIMARY 4-20mA	PWR+/SIG+	RED	A
	PWR-/SIG-	BLACK	B
	CASE	GREEN	-
OPTIONS			
RCAL ONLY	RCAL+	ORANGE	F
	RCAL-	BLUE	E
RCAL WITH SECONDARY 4-20mA ONLY	RCAL+	ORANGE	-
	RCAL-	BLUE	-
	2ND PWR+/SIG+	VIOLET	G
	2ND PWR-/SIG-	YELLOW	H
SECONDARY 4-20mA ONLY	2ND PWR+/SIG+	VIOLET	-
	2ND PWR-/SIG-	YELLOW	-
DUAL RTD ONLY	RTD (-)	WHITE	-
	RTD (+)	GREY	-
	RTD (+)	BROWN	-

1. UNLESS OTHERWISE SPECIFIED:
 1. 1/2 FLARE BEZEL 1.00
 2. 3 FLARE BEZEL 1.00
 3. 1/2 FLARE BEZEL 1.00
 4. ANGLES ±10° MAX
 5. EDGE R .005 OR CHAMFER MAX
 6. ALL DIMENSIONS ARE IN INCHES
 7. ALL DIMENSIONS ARE IN MILLIMETERS

MODEL NO. **SPX-T**

DO NOT SCALE DRAWING

MATERIAL

TITLE
SPX-T 3391
OUTLINE DWG

DRAWN DRC DATE 01/30/07
 CHECKED APPROVED M/JL DATE 5/27/08
 FINISH 63

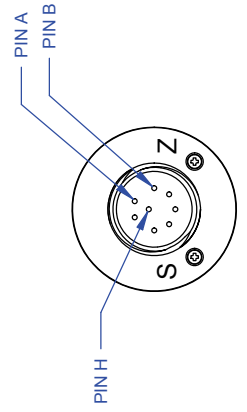
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SCALE NONE SHEET 1 OF 1

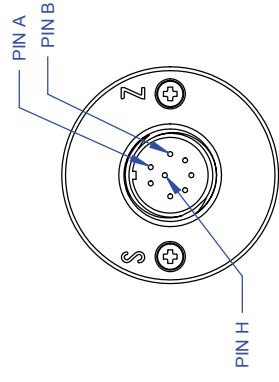


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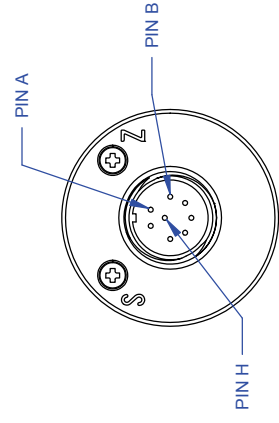
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8 - PIN PC
O-RING WITH PUSH BUTTONS
PCIH-12-8P



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. DIMENSIONS IN PARENTHESES
 2. PLACE DECIMAL ± .005
 3. FRACTIONS ± 1/32
 4. DRILLS < 0.5 DIA. ± .002 > 0.5 DIA. ± .003
 5. ANGLES ± 0.5° MAX.
 6. EDGES R .006 OR CHAMFER MAX
 7. PART TO BE FREE OF BURRS
 8. 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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Refer to www.dynisco.com for access to Operator Manual and other support documentation.
PN: DSSPX3SERIES
REV: 1116
ECO: 47068



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Product Safety
Functional Safety
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