



# Melt Pressure Transducer

4-20 mA Pressure Transducer

PT46X4-SIL2 & MDT4XXF-SIL2 models

PT46X4-GCX & MDT4XXF-GCX models

# Operating Manual



## Safety

The device has been self certified by Dynisco to meet the requirements of ISO 13849-1; this self-certification is based on our functional safety management plan, internal audits, internal controls and third party FMEDA analysis by exida. Improper use of the equipment may consist of the following:

- Any component, technical or electrical modifications to the product
- Use of the product outside the areas described in this manual
- Use of the product outside its specifications (See Specifications section)

The pressure transducer (PT) may contain a very small amount of mercury (Hg) as its transmission medium. If the diaphragm is damaged, mercury may escape. NaK is used in the PT series with the B171 or B628 options. NaK is also available as an option for other pressure transducers.

If mercury is inhaled or swallowed, seek medical attention immediately.

Mercury is hazardous waste and must be disposed of in accordance with applicable laws. DYNISCO will accept defective PTs.

If mercury escapes, use airtight packaging!

Never transport or store the PT without the protective cap secured over the sensor diaphragm. Remove the cap shortly before installation.

ESD sensitive components. Electrostatic discharge may damage the PT. Take ESD precautions.

## User's obligations

The operator or owner of the larger overall system, e.g. a machine, is responsible for following the safety and accident prevention regulations that apply to the specific application.

### Warranty and liability

All claims to warranty and liability will be rendered invalid if:

- The product was used contrary to the purpose for which it is intended
- Damage can be attributed to not having followed the guidelines in the manual
- Operating personnel are not suitably qualified
- Any type of modification has been made (e.g. Exchanging components on the PCB boards, solder work etc.)

### Disposal

The product must be disposed of properly when it reaches the end of its service life.



## Functional description

Through a closed liquid-filled pressure transmission system, the transducer furnishes an electrical signal that is proportional to the pressure of the melt.

The pressure applied by the medium is forwarded to the measuring diaphragm via the separating diaphragm and the transmission medium (standard configuration: mercury) in the capillary. The deflection of the measuring diaphragm changes the resistance of the strain gage bonded to the measuring diaphragm. The strain gauge is a Wheatstone bridge.

The integrated amplifier generates an electrical signal (mA) proportional to the pressure.

## Specifications

### ELECTRICAL DATA

Configuration:	4-arm Wheatstone bridge strain gauge with integral amplifier
Output signal:	2-wire 4 - 20 mA
Supply voltage:	24 VDC (>25mA for SIL2 units; >30mA for Guardian)
Calibration functions:	80% +/- 0.5% of full scale output by externally connecting pins E = CAL and F = GND. Rezero +/- 0.6% of full scale output by externally connecting pins D = REZERO and F = GND

### TEMPERATURE INFLUENCE

#### Electronics housing

Max. housing temperature:	-25°C to +85°C
Compensated temperature:	0°C to +70°C range
Zero shift due to temperature:	0.02% f.s./10°C typical change on electronics housing

#### Zero shift due to temperature change on the diaphragm

MDT420F, MDT460F XPT46X4 (NaK):	25 psi/100°F typical (45 psi/100°C)
XPT4184, XPT4194:	36 psi/100°F typical (65 psi/100°C)
T80 Option code:	100 psi/100°F typical (180 psi/100°C)

#### Maximum Diaphragm Temperature Specifications (in contact with media)

MDT420F, MDT460F, DYN-X-MA, XPT46X4, EPR4, PT4674, PT4654XL,( T80 option codes)  
Maximum temperature 400°C (750°F) at the diaphragm

(B628 and B171 option codes – NAK fill)

Maximum temperature 538°C (1000°F) at the diaphragm

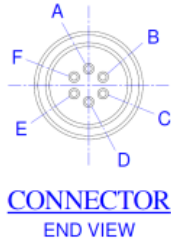
XPT4184, XPT4194 (B106 option code – OIL fill)

Maximum temperature 275°C (525°F) continuous use at the diaphragm



## Connection Assignments

### 4-20 Ma (SIL2) (6-Pin Connector)



CONNECTOR WIRING mA	
PIN	FUNCTION
A	SIGNAL+/ EXCITATION +
B	SIGNAL-/ EXCITATION -
C	N/C
D	REZERO +
E	RCAL +
F	RCAL - / REZERO -

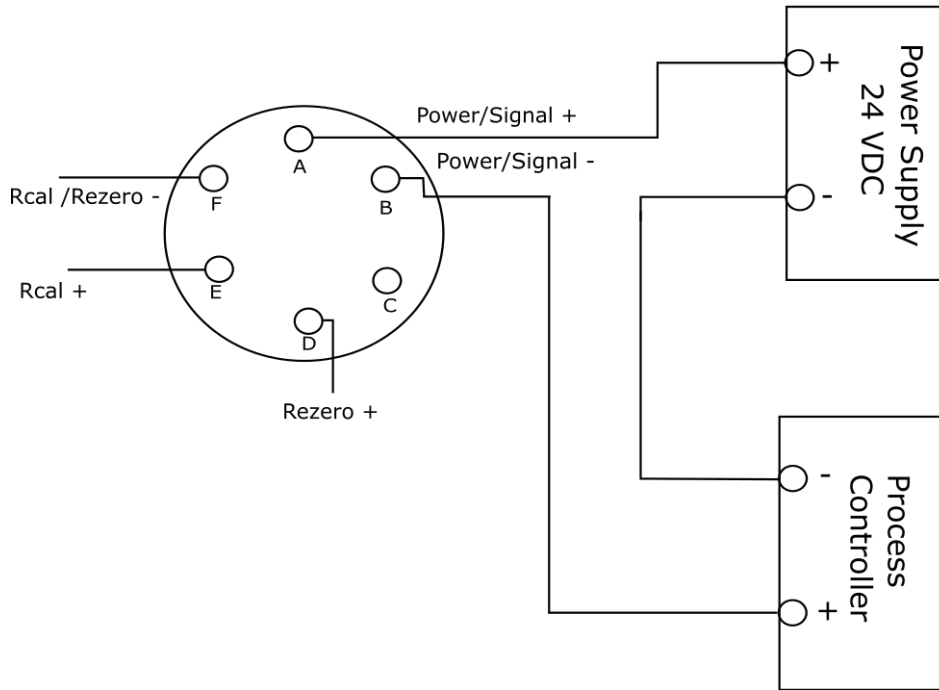
### 4-20 Ma with Guardian Relay (GCX) (8-Pin Connector)



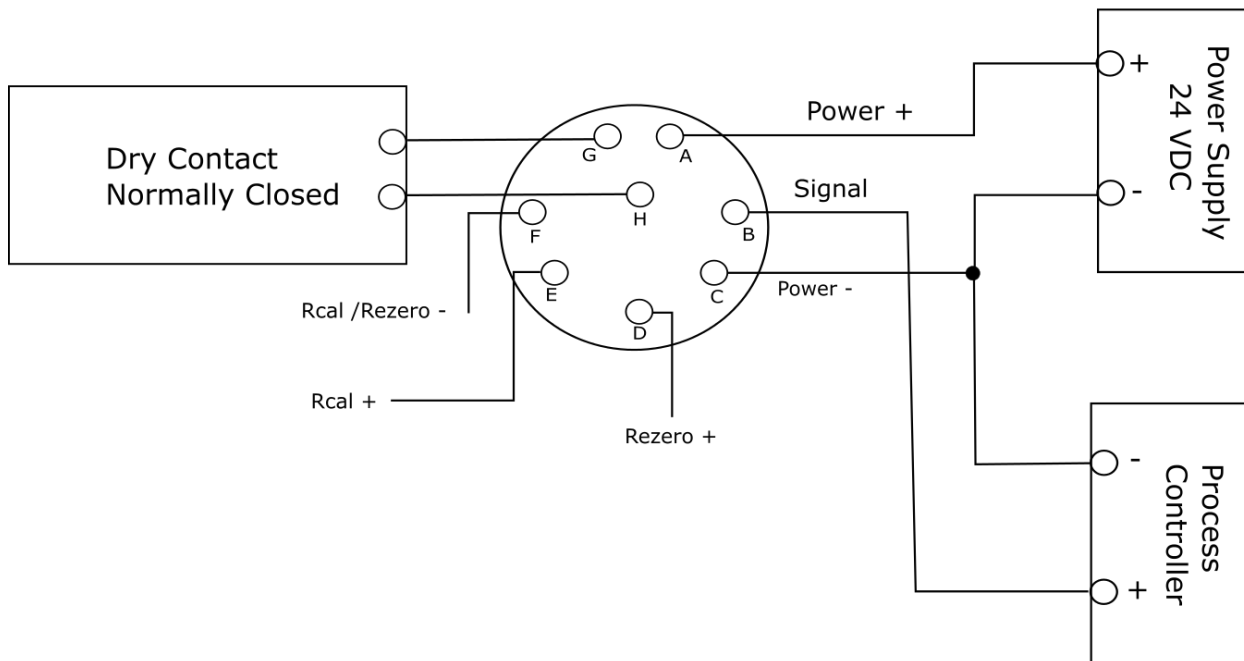
CONNECTOR WIRING 4-20mA	
PIN	FUNCTION
A	POWER +
B	SIGNAL -
C	POWER -
D	REZERO +
E	RCAL +
F	RCAL-/REZERO -
G	RELAY CONTACT
H	RELAY CONTACT

## Wiring Examples

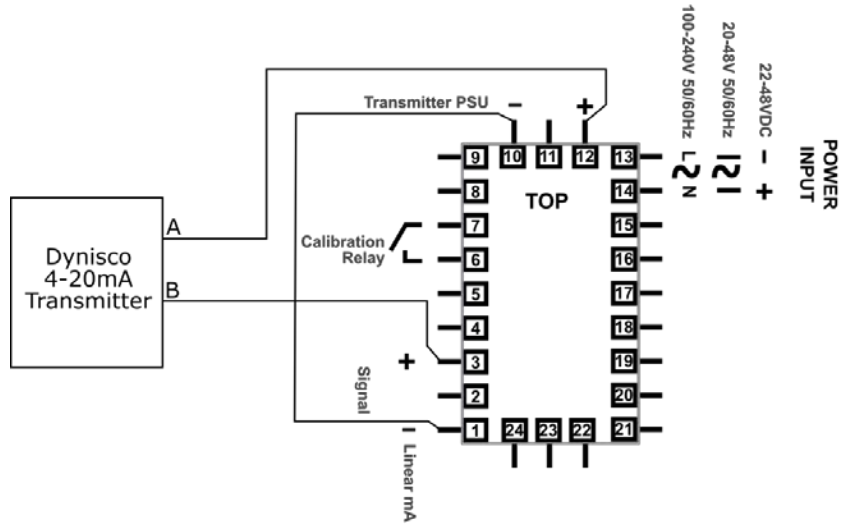
### 4-20 mA WIRING EXAMPLE (6-PIN CONNECTOR)



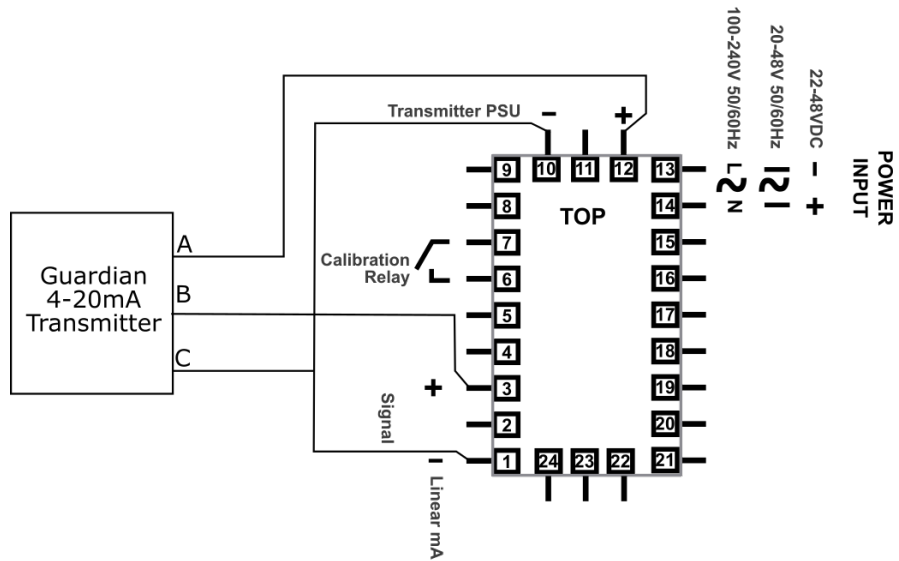
### 4-20 mA WITH GUARDIAN RELAY WIRING EXAMPLE (8-PIN CONNECTOR)



## SIL 2 Amplifier / Indicator Wiring Dynisco 1480/1490/UPR 900/ATC 990



## Guardian / Indicator Wiring





## Commissioning

### ZERO POINT CALIBRATION AFTER INSTALLATION

The sensor output must be nulled at zero pressure after installation to correct for temperature effects as well as orientation, torque, side loading, etc. All of these effects can be compensated for by resetting the zero point to 4 mA after the machine has stabilized at operating temperature. The zero procedures outlined below are only recommended after the process temperature has stabilized, the process connection has been tightened to the specified torque, and the sensor electronics housing has been permanently installed( in case of sensors with a flexible capillary ).

The zero function can be accomplished using one of two methods:

1. Rezero using potentiometers only, called "Local rezero"
2. Rezero by electrically shorting pins "D" and "F" on the connector, called "Remote rezero"

The two methods are NOT independent of each other. Offsets from the Local rezero adjustment are added to those from the Remote rezero.

**WARNING:** There must be no pressure applied to the sensor during rezero regardless of which method is used. Rezeroing with pressure applied may create an unsafe condition. A sensor that has been rezeroed with pressure applied will indicate no pressure in the system while that pressure is present.

Local Rezero method with zero potentiometer adjustment:

Step by Step instructions for adjusting the 4mA output at zero pressure.

1. Transmitter is screwed into pressure port, finger tight.
2. Pressure port is heated to desired operating temperature.
3. Transmitter is allowed to soak at temperature for 30 minutes.
4. Transmitter is tightened with torque wrench to 25Nm (56.5 Nm maximum.)
5. Pressure is confirmed to be zero at pressure port / sensor diaphragm.
6. mA value from pressure transducer is adjusted by zero potentiometer until reading is 4mA.

**NOTE:** If the Local rezero cannot adjust the output to 4mA, then there are two possibilities for the cause of this issue. Either the sensor is faulty or a previous remote rezero may was applied. That offset must then be cleared. Clear the remote rezero using steps 5 through 8 below.

Remote Rezero method with electrically shorting pins "D" and "F":

Step by Step instructions for adjusting the 4mA output at zero pressure.

1. Transmitter is screwed into pressure port, finger tight.
2. Pressure port is heated to desired operating temperature.
3. Transmitter is allowed to soak at temperature for 30 minutes.
4. Transmitter is tightened with torque wrench to 25Nm (56.5 Nm maximum.)
5. Pressure is confirmed to be zero at pressure port / sensor diaphragm.
6. The wires which are connected to pins D and F are connected for 1 second, then disconnected.
7. Reading at pressure display is confirmed to be 0, if not, then go to step 8.
8. mA value from pressure transducer is adjusted by zero potentiometer until reading is 4mA.





## SPAN POTENTIOMETER

**WARNING: DO NOT USE THE SPAN POTENTIOMETER WITHOUT AN APPROVED AND CERTIFIED PRESSURE SOURCE CALIBRATOR OR DEAD WEIGHT TESTER**

The SENSITIVITY or sensor span has been calibrated at the factory, and rarely requires adjustment. In the unlikely event that the full scale output is in doubt then the sensor must be checked against a calibrated pressure source or dead weight tester. Span adjustments can only be performed when applying a known calibrated full scale pressure to the sensor.

**WARNING!**

Adjusting the span potentiometer without applying a calibrated full scale pressure could result in calibration errors that will require returning the sensor to Dynisco for a full calibration.

Do not adjust the Span potentiometer while Rcal is engaged!

The span actuator should never be used without zeroing the sensor with the zero actuator first.

## ZERO AND SPAN PROCEDURE

1. Connect Power Supply and readout electronics to sensor.
2. If commissioning on the bench with a dead weight tester or calibrated pressure source, ensure pressure connection is free of leaks.
3. Apply power to the sensor and observe output with zero pressure applied. The output should indicate zero pressure. If not, proceed to step 4.
4. Performing Zero Function.
  - i. Remove zero potentiometer seal screw.
  - ii. Using a flathead jeweler's screwdriver, adjust the potentiometer.
  - iii. Replace the seal screw.

The next step should only be performed by qualified individuals. The sensor has been factory calibrated with highly accurate pressure generators. Span adjustment should only be performed on a calibrated pressure generator at 100%FS.

5. Apply Full Scale pressure and verify output. If output indication is incorrect, adjust the span potentiometer.



## Rcal OUTPUT

A shunt calibration/Rcal output is available. Rcal is a method of generating an electrical output to match the electrical output that would be given in response to an applied pressure. Rcal is normally set to 80%FS so that all similar sensors calibrate at the same point to facilitate interchangeability.

The Rcal pins on the sensor are normally left open. When the pins are electrically shorted, the sensor will simulate an applied pressure of 80% of the sensor full scale output. This eliminates the need for a cumbersome calibrated pressure source when scaling associated instrumentation.

The purpose of Rcal is to make it possible to match the sensor to the Pressure Indicator/Controller with a “two point calibration.” (Two points define a line.) Setting up the instrument in this fashion is much more accurate through a single point offset adjustment.

When the sensor is fully installed and the machine is at operating temperature and at zero pressure, the indicator may be “zeroed” using whatever mechanism nulls it. Afterward, the Rcal pins on the sensor may be shorted to simulate a pressure of 80% full scale to complete the calibration and allow the indicator span to be adjusted.

**WARNING!** Do not adjust the Span Potentiometer with Rcal activated. The Rcal signal is a fixed voltage added to the Zero Output. It is not influenced by Span potentiometer adjustments!

## AVOID COLD STARTS!

In plastics, both the sensor and extruder can be damaged if the extruder is not brought up to operating temperature before the machinery begins operating. A sufficient “soak time” must be provided for the plastic to go from its solid to molten state before the extruder drive is started.



## RECOMMENDED ACCESSORIES

Dynisco offers a wide assortment of accessories designed to help make measuring pressure or temperature easy at every stage, from adapting the machine to accept a sensor through installation to removal, storage and repair. Common accessories recommended for use with Dynisco brand sensors are listed below:

- Pressure Indicators and controllers are available, contact Dynisco or visit [www.dynisco.com](http://www.dynisco.com) for more details.
- Simulators that can be substituted for most pressure transducers are available. A simulator simplifies the on-line troubleshooting of Dynisco strain gage transducers, signal conditioners, and indicators. Contact Dynisco or visit [www.dynisco.com](http://www.dynisco.com) for more details.
- Electronics mounting bracket (Included with Flexible Stem sensors,) Dynisco p/n 200941
- Aluminum diaphragm protection cap, 1/2 - 20 UNF - 2A Dynisco p/n 598000
- Anti-seize compound, available from a variety of sources
- Gaskets and O-Rings

Description	Dynisco P/N
Flared Copper Spacer for Melt Pressure Sensor Pressure Fitting	633511
Flared Aluminum Spacer for Melt Pressure	633523
Sensor Pressure Fitting X243 Silver O – Ring	652116
Flexitallic Gasket for Superior Sensor Seal	620021

- Gauge Plugs: (Used to verify that the sensor mounting hole has been correctly machined and cleaned.)

Description	Dynisco P/N
12" 1/2 - 20 UNF Gauge Plug	200908
6" 1/2 - 20 UNF Gauge Plug	200984
6" Hole Plug	201908

- Dykem Blue (Used with the gauge plug to confirm the dimensions of the hole.) Dynisco p/n 200910.

- **Transducer Mounting Hole Tool kits**

- Machining a mounting port: 1/2 - 20 UNF sensor mounting hole machining tool kit, Dynisco p/n 200925. The Transducer Mounting Hole Machining Tool Kit contains all of the necessary drills and taps to prepare a standard 1/2 - 20 UNF transducer mounting hole. The kit contains the special pilot drill required to machine the 45 degree seat. All tools included in this kit are made of premium grade, high strength tool steel. Consult factory for tool kits for other port configurations.



- Spare 29/64 Pilot Drill (included in Machining Tool Kit) Dynisco p/n200924
- Cleaning: 1/2 - 20 UNF sensor mounting hole cleaning tool kit, Dynisco p/n 200100. The cleaning tool kit was designed for use in removing excess plastic from mounting holes for pressure and temperature sensors. Installation of sensors into improperly cleaned or sized holes is one of the major causes of damage to the sensors. Consult factory for tool kits for other port configurations.



- **Cables and Connectors**



- The cable assemblies provide the electrical hookup from the sensor to the display instrumentation. The assemblies consist of a sensor mating connector and a length of shielded, 6 conductor cable with stripped leads.
- 6 pin (Bendix PT06A - 10 - 6S (SR) Connector) cable assemblies for 6-pin sensors

Length (ft)	Dynisco P/N
10	929008
20	929020
40	929022
60	929024
80	929025
100	929026

- 8 pin (Bendix PC06A - 12 - 8S (SR) Connector) cable assemblies for 8-pin sensors

Length (ft)	Dynisco P/N
10	801728
20	801729
40	802002
80	802003

For 8-pin cable drawing please refer to page 21.

- Accessories to retrofit sensor to existing cabling:
  - 1' Cable Assembly
    - To Adapt 6-pin sensors to existing Mating Connector and Wiring for 8-pin sensors, Dynisco p/n 800860
  - Connector only:
    - Cable Mounted 6 - Pin Connector, Dynisco p/n 711170
    - Cable Mounted 8 - Pin Connector, Dynisco p/n 710700

**Bulk cable:**

- 6 Conductor, 22 AWG, Braided RFI Shielded Cable, Thermoplastic Rubber Jacket, Dynisco p/n 800024
- Teflon-Coated Cable, 6 - Conductor for High Temperature Applications, Dynisco p/n 800005
- Connectors:



- Bendix PT06A - 10 - 6S (SR) 6 Socket, Cable Mount, Dynisco p/n 711600
- Thermocouple connectors:
  - Type J Thermocouple, Female Connector Only, Dynisco p/n 753000
  - Type J Thermocouple, Male Connector Only, Dynisco p/n 753001
  - Type K Thermocouple, Female Connector Only, Dynisco p/n 753007
  - Type K Thermocouple, Male Connector Only, Dynisco p/n 753008
- Thermocouple extension wire... Available from a variety of sources
- 1/2-20 Type L Adaptor  
An adaptor can be ordered which would allow mounting the 1/2-20 unit into a Button Seal (Taylor Bulb) port configuration. Consult factory as these are built to order.

# Guardian Series

## Overview

This manual is intended to cover applications per ISO 13849-1. For applications per standards IEC 61508, 61511, or 62061, please consult Dynisco. This section only covers Guardian units, which are noted by the GCX suffix in the model number.

## Unit Structure

The Guardian Series transducer consists of a pressure sensor and an integrated electronics module. The module generates a buffered output as well as a relay output that signals when an unsafe condition occurs. The Guardian series is PL 'c' rated (per ISO 13849-1) when used in architecture Category 1 and PL 'd' rated when used in architecture Category 3.

The safety relay is closed during normal operation. The relay will open when a malfunctioning gage is detected. Pressure above a certain amount (factory settable in 10% increments) or power interruption will also cause the safety relay to open.

## Intended use

The Guardian Series transducer has been designed to provide a protective measure. This has been done by the avoidance and control of systematic and random failures.

This product will:

Measure the pressure and provide a safety relay output. Since this is being used to perform a protective measure, this sensor should only be used for monitoring the pressure and not controlling the process. Best practices declare that safety and control must be independent from each other.

The Guardian Series transducer detects many hardware failures including an open or short in the measuring gage and if there is an overpressure condition. If any of these failures occur, the output relay will open. It is the user's responsibility to connect this relay to the system in such a way that when this relay opens, it brings the system to a safe state.

This fault state is not latched. It is up to the user to latch this error if desired.

## User's obligations

The operator or owner of the larger overall system, e.g. a machine, is responsible for following the safety and accident prevention regulations that apply to the specific application.



## Functional Safety Ratings (as defined in EN ISO 13849-1):

Device Type:	A
Performance Level (PL):	C- when used in architecture Category 1 D- when two are installed in a 1oo2 configuration per Category 3

## Recommended practices

This Guardian Series transducer must be installed in such a way that the opening of the output relay will bring the system to a safe state. In this safe state the instrument that is monitoring the pressure should be left operational.

This error indication is not latched. If it is necessary to latch the error until it is manually reset, this is the user's responsibility.

At startup and on a periodic basis the safety system should be tested to ensure proper operation. This will require applying a pressure to the Guardian Series transducer that is over the safe level but less than the maximum pressure. Verify that the protective measure is initiated to take the machine to a safe operating condition.

## Installation Precautions

Please ensure that the Guardian relay is connected to a device which follows these guidelines:

- max. Switching voltage 200 VDC
- max. Switching current 500 mA

Unknown reactive loads, capacitive or inductive can damage the relay.

In the case of an inductive reactive load, a diode can be placed between pins G and H as protection. The polarity of the diode must be selected according to the polarity of power supply and external safety switches.

The following list contains a selection of devices which are suitable for use with the Guardian relay. The relays in this list have a switching current of <500mA.

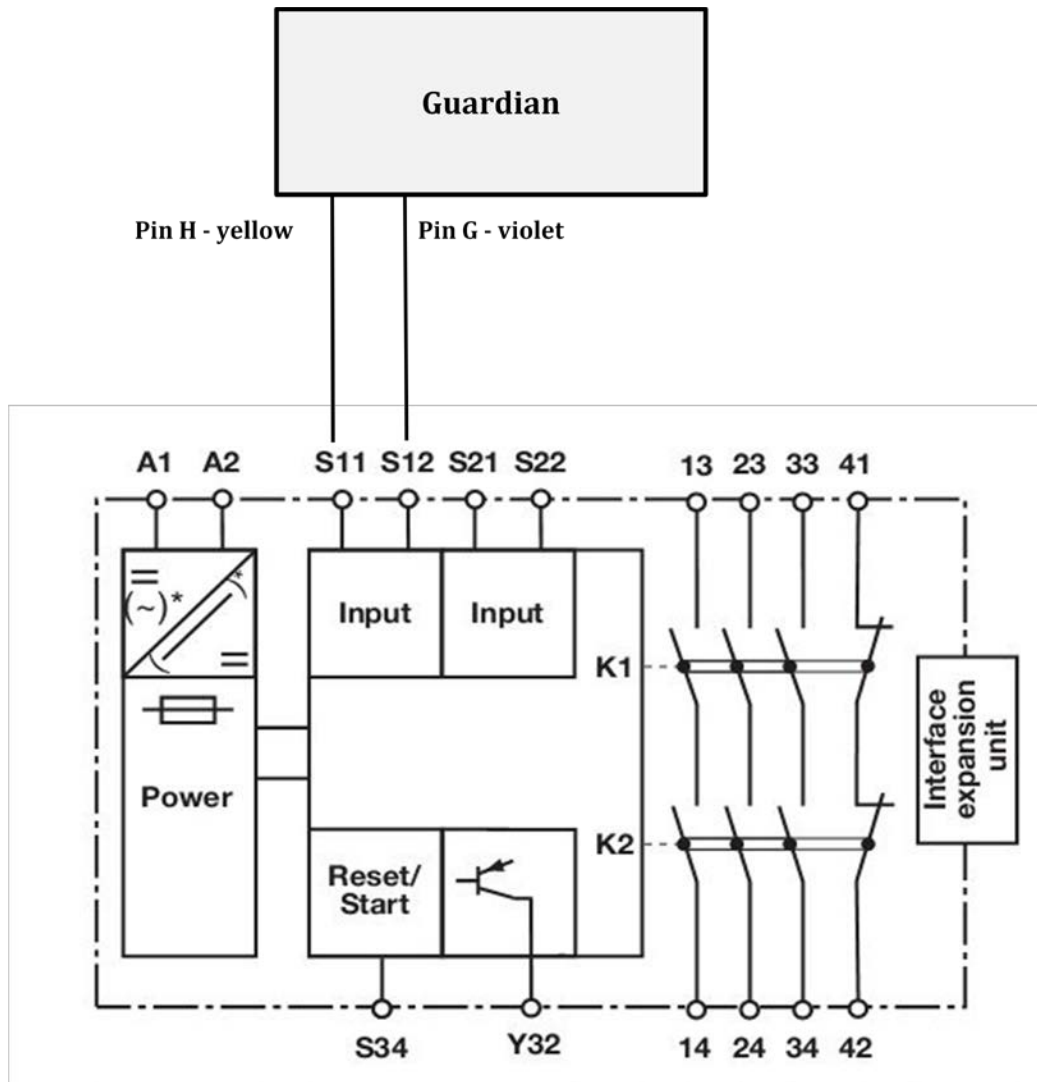




Whitelist safety relays:

Manufacturer	Series/Model	Peak Current	Notes
Pilz	PNOZ s4	200mA	
Dold	Safemaster (eg. LG5925/BG5925)	200mA	Successfully Tested
Sick	UE43-3AR/ UE43-4AR	250mA	
Riese	SAFE C SAFE Flex SAFE TN, SAFE TA, SAFE TR, SAFE TU SAFE T ON RS-NAGA RS-NAGAO SAFE 4 eco	<< 500 mA	Safe 4 series has high switching currents and damaged the Guardian relay

In case the device is not listed above, please seek confirmation from the manufacturer that the device follows our voltage and current guidelines. If in doubt, a direct interconnection in the supply line must be avoided. An indirect interconnection, as described in the installation instructions of most of the above models is preferable. (see the following example).



### Use of qualified personnel

The product may only be assembled, installed, configured, commissioned, operated and maintained by persons with proven skills. Persons with proven skills are suitably experienced to operate devices, systems, plant and machinery in accordance with the general standards and guidelines for safety technology.

It is the user's responsibility only to employ personnel who:

- Are familiar with the basic regulations concerning health and safety and accident prevention
- Have read and understood the safety guidelines given in this description
- Have a good knowledge of the generic and specialist standards applicable to the specific application



## Warranty and liability

All claims to warranty and liability will be rendered invalid if:

- The product was used contrary to the purpose for which it is intended
- Damage can be attributed to not having followed the guidelines in the manual
- Operating personnel are not suitably qualified
- Any type of modification has been made (e.g. Exchanging components on the PCB boards solder work etc.)

## Disposal

The product must be disposed of properly when it reaches the end of its service life.

## Functional description

### FMEDA parameters

MTTR	24 Hours
MTTF <sub>d</sub>	434 to 526 years or “high”

If further data is required, please contact Dynisco.

### Integrated failure detection mechanisms

- **Sensor output above set point:** If the sensor’s output increases beyond a defined set point (factory settable in 10% increments), the safety output will open.
- **Sensor open gage:** If the gage becomes open, the safety relay will open.
- **Power interruption:** If power is interrupted to the unit, it will default to a safe state (open).

### Connecting safety relay

#### Relay specs

- Max. switching voltage: 200 Vdc
- Max. switching current: 0.5 A

#### Relay protection

- 250mA fuse with 20 ohm series resistor



## Troubleshooting

Fault	Possible Cause	Resolution
No signal	<p>Cable breakage or poor contact</p> <p>No supply voltage</p>	<p>Check cable and contact, or replace</p> <p>Check supply voltage, confirm that relay trips when supply is removed</p>
Strong zero shift when screwing in	<p>Mounting hole incorrectly produced (alignment error)</p> <p>Mounting torque too high</p>	<p>Check hole with test bolt, rework with tool if necessary Adjust to max. 50 Nm mounting torque</p>
No signal change despite pressure rise	<p>Plug forming in front of diaphragm</p> <p>Diaphragm damaged</p> <p>Miswiring, Cable breakage or poor contact</p> <p>No supply voltage</p> <p>Internal failure</p>	<p>Check mounting hole; remove solidified plastic</p> <p>Send pressure transducer to DYNISCO for repair</p> <p>Check cable and wiring, and repair or replace</p> <p>If relay is open, Check supply voltage. If relay is closed then confirm that relay opens when supply is removed. If it does open then proceed per the resolution for “internal failure”</p> <p>Apply Rcal, if relay does not open then send pressure transducer to DYNISCO for repair. If Relay does open, remove sensor and press lightly on diaphragm with thumb. If output does not respond, return to Dynisco for diagnosis.</p>

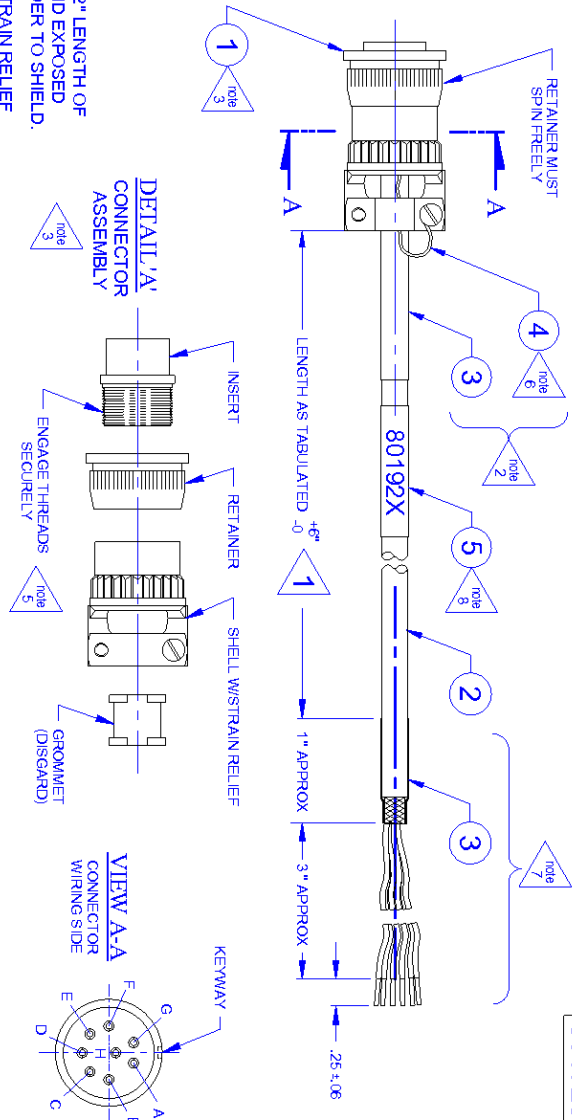


Fault	Possible Cause	Resolution
Relay open (Guardian only)	<p>Pressure above factory-defined safe level</p> <p>No supply voltage</p> <p>Pressure sensor damaged</p>	<p>Relieve pressure on PT</p> <p>If relay is open, Check supply voltage. If relay is closed then confirm that relay opens when supply is removed.</p> <p>Return for Dynisco for repair</p>

REV	ECO	BY	APP	DATE
A	37277	DRG	MPL	02/22/11

801728-729

CONNECTOR WIRING	PIN	CONDUCTOR
A	1	WHITE
B	2	RED
C	3	GREEN
D	4	BLACK
E	5	BLUE
F	6	ORANGE
G	7	VIOLET
H	8	YELLOW



NOTES:

- 1. CUT CABLE TO REQUIRED LENGTH +6".
- 2. STRIP CABLE JACKET BACK 1/2". CUT A 2" LENGTH OF BUSSWIRE (ITEM 4) WRAP ONCE AROUND EXPOSED SHIELD CLOSE TO CABLE JACKET, SOLDER TO SHIELD.
- 3. CONNECTOR (ITEM 1) SLIDE SHELL W/STRAIN RELIEF THEN RETAINER OVER CABLE AND BUSSWIRE, DISCARD GROMMET, REFER TO DETAIL 'A'.
- 4. REMOVE SHIELD BEYOND BUSSWIRE, STRIP AND TIN WIRES 1/8" AND SOLDER TO CONNECTOR PINS PER WIRING.
- 5. TIGHTEN THE INSERT INTO THE SHELL USING A GRIPPING TOOL (i.e. SOFT JAW PLIERS (DO NOT LEAVE TOOLING MARKS)). ENSURE THAT THE RETAINER SPINS FREELY.
- 6. WRAP BUSSWIRE AROUND STRAIN RELIEF SCREW OF CONNECTOR AND SECURE IN PLACE.
- 7. ON OTHER CABLE END, STRIP CABLE JACKET BACK APPROX 3-1/2", STRIP WIRE JACKET BACK 1/4" AND TIN LEADS. INSTALL A 1" LENGTH OF SHRINK TUBING OVER CABLE JACKET AND EXPOSED SHIELD AS SHOWN.
- 8. MARK CABLE MARKER WITH ASSEMBLY PART NUMBER THEN INSTALL ONTO CABLE TO WITHIN 6" OF CONNECTOR.

PART NO.	LENGTH
801728	10 ft
801729	20 ft

ITEM	PART NO.	DESCRIPTION	QTY
5	938024	CABLE MARKER	1
4	912004	BUSS WIRE, 22 AWG	3"
3	810010	HEAT SHRINK TUBING	3"
2	800775	CABLE, 8 COND, 22 GA	A/R
1	710700	CONN PC06A-12-8S (SR)	1

TOLERANCES UNLESS OTHERWISE SPECIFIED:  
 1. FRACTIONS 1/16, 1/32, 1/64  
 2. DECIMALS 0.005, 0.010, 0.015, 0.020, 0.030, 0.040, 0.050, 0.060, 0.070, 0.080, 0.090, 0.100, 0.125, 0.150, 0.175, 0.200, 0.250, 0.300, 0.375, 0.400, 0.500, 0.625, 0.750, 0.875, 1.000  
 3. ANGLES 15.0°, 30.0°, 45.0°, 60.0°, 75.0°, 90.0°, 105.0°, 120.0°, 135.0°, 150.0°, 165.0°, 180.0°  
 4. HOLE DIMENSIONS ARE IN INCHES  
 5. ALL DIMENSIONS ARE IN INCHES

TITLE  
**CABLE ASSEMBLY**  
 PC06A-12-8S(SR) 3" LEADS  
 (SHIELDED, 8 COND)

FOR THE PROPERTY OF DYNISCO, ANY REPRODUCTION OR USE OF THIS DRAWING WITHOUT PERMISSION OF DYNISCO IS PROHIBITED.

MODEL NO.	DO NOT SCALE DRAWING	DRAWN	DRG	DATE	02/17/11	CHECKED	MPL	DATE	02/22/11	APPROVED	FINISH	SCALE	NONE	SHEET	1	OF	1
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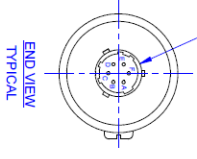


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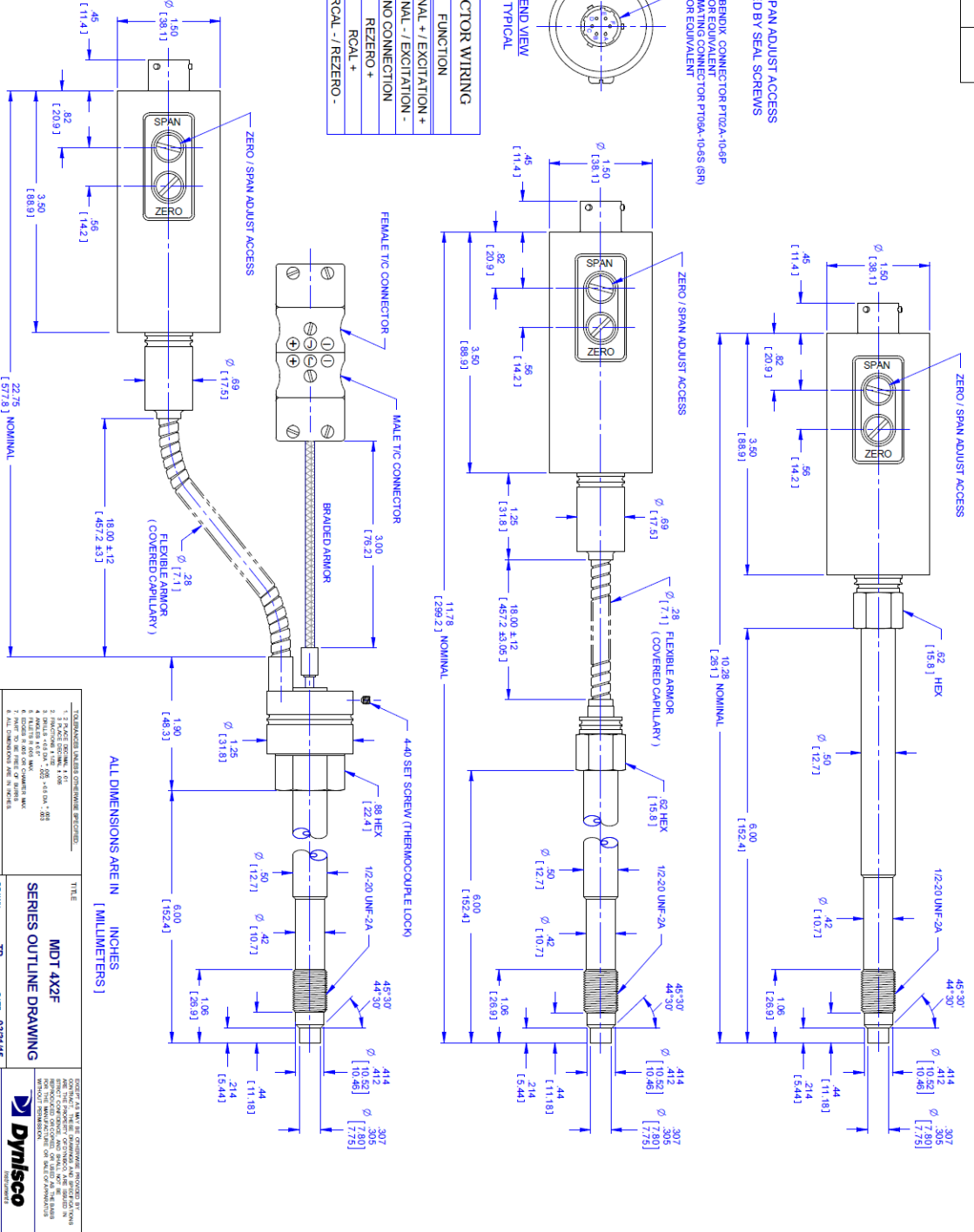
A

ZERO AND SPAN ADJUST ACCESS  
PROTECTED BY SEAL SCREWS

BENDIX CONNECTOR PRT02A-10-6P  
OR EQUIVALENT  
OR EQUIVALENT  
OR EQUIVALENT  
OR EQUIVALENT



PIN	FUNCTION
A	SIGNAL +/- EXCITATION +
B	SIGNAL +/- EXCITATION -
C	NO CONNECTION
D	REZERO +
E	RCAL +
F	RCAL - / REZERO -



ALL DIMENSIONS ARE IN INCHES  
[ MILLIMETERS ]

<p>1. UNLESS SPECIFIED, ALL DIMENSIONS ARE IN INCHES AND DECIMALS THEREOF.</p> <p>2. FINISHES ARE TO BE AS SHOWN UNLESS OTHERWISE SPECIFIED.</p> <p>3. DIMENSIONS IN PARENTHESES ARE FOR INFORMATION ONLY.</p> <p>4. DIMENSIONS IN SQUARE BRACKETS ARE FOR INFORMATION ONLY.</p> <p>5. DIMENSIONS IN BRACKETS ARE FOR INFORMATION ONLY.</p> <p>6. DIMENSIONS IN BRACKETS ARE FOR INFORMATION ONLY.</p> <p>7. DIMENSIONS IN BRACKETS ARE FOR INFORMATION ONLY.</p> <p>8. DIMENSIONS IN BRACKETS ARE FOR INFORMATION ONLY.</p> <p>9. DIMENSIONS IN BRACKETS ARE FOR INFORMATION ONLY.</p> <p>10. DIMENSIONS IN BRACKETS ARE FOR INFORMATION ONLY.</p>	
<p>TITLE: MDT 4X2F</p> <p>SERIES OUTLINE DRAWING</p>	
<p>DESIGNED BY: LEB</p> <p>CHECKED BY: ML</p> <p>DATE: 03/31/15</p>	<p>DRAWN BY: TP</p> <p>DATE: 03/31/15</p>
<p>APPROVED BY: ML</p> <p>DATE: 03/31/15</p>	<p>SCALE: NONE</p> <p>SHEET: 1 OF 1</p>
<p>DO NOT SCALE DRAWING</p>	
<p>MATERIAL: X</p>	<p>FINISH: 4/</p>

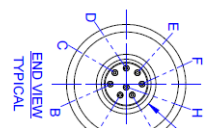


REV	ECO	BY	APP	DATE
A	44909	TP	ML	03/31/15

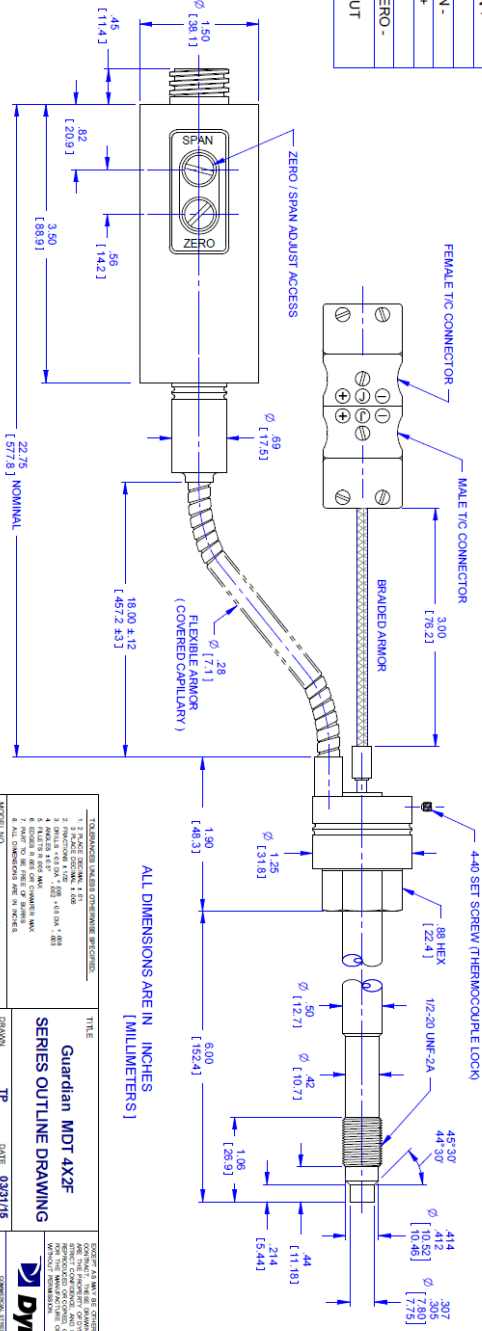
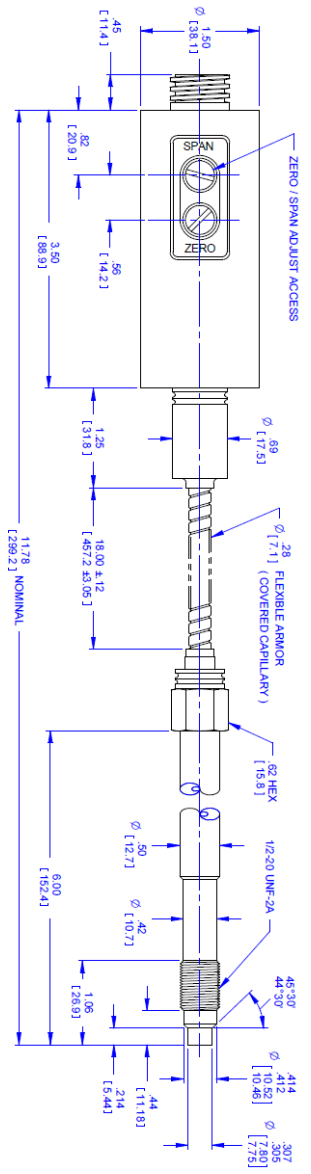
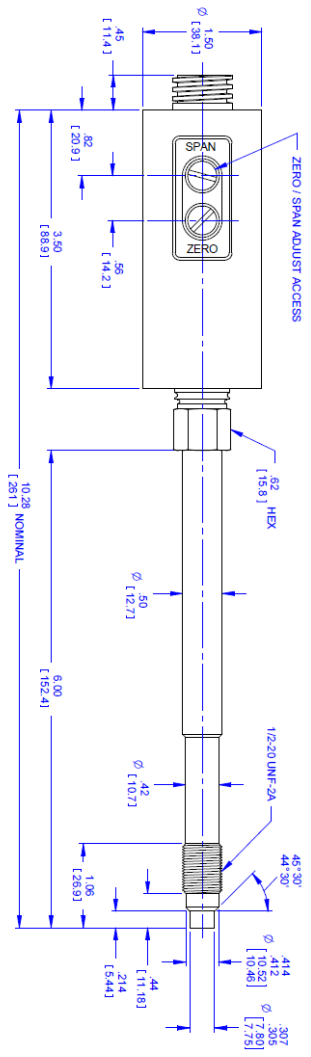
A

ZERO AND SPAN ADJUST ACCESS  
PROTECTED BY SEAL SCREWS

CONNECTOR PAGES 12-8P BENDIX OR EQUIVALENT  
BENDIX OR EQUIVALENT  
BENDIX OR EQUIVALENT



CONNECTOR WIRING	
PIN	FUNCTION
A	EXCITATION +
B	SIGNAL +
C	EXCITATION -
D	RCAL +
E	RCAL -
F	REZERO +
G	REZERO -
H	RELAY OUTPUT



ALL DIMENSIONS ARE IN INCHES  
[MILLIMETERS]

<p>1. UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES AND DECIMALS THEREOF.</p> <p>2. DIMENSIONS IN PARENTHESES ARE FOR REFERENCE ONLY.</p> <p>3. DIMENSIONS IN SQUARE BRACKETS ARE FOR REFERENCE ONLY.</p> <p>4. DIMENSIONS IN BRACKETS ARE FOR REFERENCE ONLY.</p> <p>5. DIMENSIONS IN BRACKETS ARE FOR REFERENCE ONLY.</p> <p>6. DIMENSIONS IN BRACKETS ARE FOR REFERENCE ONLY.</p> <p>7. DIMENSIONS IN BRACKETS ARE FOR REFERENCE ONLY.</p> <p>8. DIMENSIONS IN BRACKETS ARE FOR REFERENCE ONLY.</p>	
<p><b>TITLE</b> Guardian MDT 4XZF SERIES OUTLINE DRAWING</p>	
<p><b>MODEL NO</b> X</p>	<p><b>DRAWN</b> TP</p>
<p><b>CHECKED</b> LEB</p>	<p><b>DATE</b> 03/31/15</p>
<p><b>APPROVED</b> ML</p>	<p><b>DATE</b> 03/31/15</p>
<p><b>FINISH</b> X</p>	<p><b>SCALE</b> NONE</p>
<p><b>DO NOT SCALE DRAWING</b></p>	
<p><b>MATERIAL</b> X</p>	
<p><b>SIZE</b> C</p>	
<p><b>462032</b></p>	
<p><b>REV</b> A</p>	
<p><b>Dynisco</b></p>	