NT™ Pressure Transducer
Models 4100, 4210

User Guide
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Safety Alert Symbol

![WARNING!](image.png)

Indicates a hazardous situation which, if not avoided, could result in serious injury or death.

Introduction

This manual is for use with the following standard NT Pressure Transducer 4000 Series Models 4100 and 4210. These instruments have been designed for use in high purity applications in the semiconductor industry.

These products feature no moving parts and no filled cavities, which reduces the possibility of a contaminated process. The wetted parts of these nonmetallic transducers are constructed with PTFE, PFA or other similar high purity inert materials.

![Cut-away Example: NT Single-port Pressure Transducer](image.png)

**Polypropylene electrical connector option**

**Signal conditioning circuit**

**Electronic pressure sensor**

**PTFE body**

**Process connection**

**Cut-away Example: NT Flow-through Pressure Transducer**

![Polypropylene electrical connector option](image.png)

**Signal conditioning circuit**

**Electronic pressure sensor**

**PTFE body**

**Process connection**

**WARNING!** Attempting to install or operate standard NT 4000 Series Pressure Transducers without reviewing the instructions contained in this manual could result in personal injury or equipment damage.
Installation

⚠️ WARNING! The pressure transducer has been factory sealed. Do not attempt to remove the cover of the pressure transducer. Any attempt at removal of the pressure transducer cover will void the warranty and damage the unit.

⚠️ WARNING! Do not tighten the nuts that protect the process connections during shipment. Do not tighten the nuts unless the proper tubing has been installed. Tightening these nuts may result in damage to the pressure transducer process connections.

MECHANICAL INSTALLATION

NOTE: For detailed Flaretek® and PrimeLock® tube fitting assembly instructions, visit www.entegris.com.

NOTE: For detailed Super 300 Type Pillar® tube fitting assembly instructions, contact Nippon Pillar Packaging Company, Ltd.
**ELECTRICAL INSTALLATION**

The pressure transducer provides an analog (0–5 VDC, 0–10 VDC or 4–20 mA) electrical output proportional to the pressure measured.

**NOTE:** The white wire is not required for the 4–20 mA output configuration, please refer to the wiring diagrams below.

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**POWER SUPPLY REQUIREMENTS**

The pressure transducer requires a 12–30 volt DC power supply with less than 2% ripple at 100 or 120 Hz. The required power supply voltage varies with the load resistance ($R_{\text{Load}}$), please refer to the formulas on page 5. The power supply must provide clean power and must be used only to power similar measurement-type devices. The power supply must not be used to power inductive loads, such as motors, relays or solenoids. These devices may produce transients that may affect the pressure transducer measurements when the inductive device is powered up or powered down.

**NOTE:** Be sure to ground the shield of the cable to local ground.

---

**Electrical connector information**

<table>
<thead>
<tr>
<th>WIRE</th>
<th>4–20 MA OUTPUT VERSION</th>
<th>VOLTAGE OUTPUT VERSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red VDC+</td>
<td>24 VDC (12–30 VDC)</td>
<td>24 VDC (12–30 VDC)</td>
</tr>
<tr>
<td>Black VDC–</td>
<td>Ground</td>
<td>Ground</td>
</tr>
<tr>
<td>White</td>
<td>Not used</td>
<td>0–5 VDC signal or 0–10 VDC signal</td>
</tr>
</tbody>
</table>

---

**Diagram**

- +24 VDC
- BLACK
- WHITE
- RED
- No connection
- 4–20 mA pressure signal
- Display or PLC
- +24 VDC
- BLACK
- WHITE
- RED
- Voltage pressure signal
- Display or PLC
WARNINGS AND SAFETY

⚠️ ★ WARNING! For use in Class I Division 2 Hazardous Environments, models with disconnecting cable options must be wired in accordance with the control drawing 01-1033562 on page 18.

⚠️ ★ WARNING! For use in Class I Zone 2 Hazardous Environments, models with disconnecting cable options must be wired in accordance with the control drawing 01-1033562 on page 18.

⚠️ ★ WARNING! Do not remove or replace while circuit is live unless the area is known to be free of ignitable concentrations of flammable substances.

⚠️ ★ WARNING! Do not replace components unless power has been disconnected or the area is known to be free of ignitable concentrations.

⚠️ ★ WARNING! Explosion hazard. Do not connect while the circuit is live or unless the area is known to be free of ignitable concentrations.

⚠️ ★ WARNING! Substitution of components may impair suitability for Division 2 and/or Zone 2.

⚠️ ★ WARNING! Potential electrostatic charging hazard. For Hazardous Environment use, Entegris recommends using the pressure transducer in conjunction with ESD tubing, such as FluoroLine® Electrostatic Dissipative (ESD) Tubing.

---

Figure 1. Power required for a 4–20 mA loop.

Load Resistance: Current Output
(4–20 mA Configuration)

If a load resistor, $R_{Load}$, is used in series with the current output, the value of $R_{Load}$ is dependent on the supply voltage and the meter resistance and is calculated from the following formula:

$$R_{Load} = \frac{V_{PS} - 12 \, \text{V}}{20 \, \text{mA}} - R_{\text{meter}}$$

where:
- $R_{Load} = \text{maximum load resistance (ohms)}$
- $V_{PS} = \text{power supply voltage (volts)}$
- $R_{\text{meter}} = \text{meter resistance (ohms) (theoretically = 0)}$

Load Resistance: Voltage Output
(0–5, 0–10 VDC)

The output impedance is 1 kOhm. The input impedance should be $\geq 1$ megohm for $\pm 0.1\%$ load impedance error.
Unit Operation

**OPERATING ENVIRONMENT**

The pressure transducer is to be mounted in a well vented and controlled environment. Refer to the Reference section on page 10 for additional specifications.

**PROCESS CONNECTION**

To avoid possible pressure leaks, make sure all process connections have been performed in accordance with the Mechanical Installation guidelines on page 3.

**PRESSURE TRANSDUCER COVER ASSEMBLY**

NT Pressure Transducer covers are factory sealed and should not be tampered with or opened. Opening the cover shall void the product warranty.

⚠️ **WARNING!** Any attempt to remove or tamper with the transducer cover will void the warranty and damage the unit.

**PRESSURE AND TEMPERATURE REQUIREMENTS**

The minimum pressure required is atmospheric pressure. The pressure transducer may be damaged if subjected to vacuum pressure (pressure that is less than atmospheric pressure).

The pressure transducer is rated for use with fluids at process temperatures between 10–65°C (50–149°F) under normal operating conditions.

⚠️ **WARNING!** NT Pressure Transducers, Models 4100 and 4210 may be damaged if the sensor is subjected to any level of vacuum pressure (pressure less than atmospheric pressure).
PRESSURE LIMITS

<table>
<thead>
<tr>
<th>TRANSDUCER RANGE</th>
<th>MAXIMUM OVER PRESSURE LIMIT @ 23°C (73°F)</th>
<th>MAXIMUM OVER PRESSURE LIMIT @ 65°C (149°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 30 psig</td>
<td>690 kPa (100 psig)</td>
<td>690 kPa (100 psig)</td>
</tr>
<tr>
<td>0 – 60 psig</td>
<td>1034 kPa (150 psig)</td>
<td>690 kPa (100 psig)</td>
</tr>
<tr>
<td>0 – 100 psig</td>
<td>1034 kPa (150 psig)</td>
<td>690 kPa (100 psig)</td>
</tr>
<tr>
<td>0 – 150 psig</td>
<td>1310 kPa (190 psig)</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Maximum over pressure can be limited by the fitting. Consult the fitting specification for maximum over pressure limits.

WARNING! The pressure limits for standard NT Pressure Transducers (4000 Series) decrease significantly for temperatures above 65°C (149°F). Exceeding these limits may result in personal injury or equipment damage.

PRESSURE REFERENCE ACCURACY

The accuracy of the pressure transducer output is ±1% of full scale. This accuracy includes the effects of linearity, hysteresis and repeatability, measured at room temperature. Accuracy specifications for non-standard product configurations might vary.
LINEAR OUTPUT SIGNAL

The output signal of the pressure transducer is a linear function proportional to the applied pressure.

![Graph showing linear relationship between pressure and output signal.](image-url)
Troubleshooting

Troubleshooting the NT Pressure Transducers may be accomplished by measuring the output signal of the pressure transducer with a battery powered current/voltage meter. The meter may be placed in series with the pressure transducer to measure the current output or it may be used to directly measure the voltage output.

Using the battery powered current/volt meter is an effective method to determine whether the device or the on-site data acquisition system is not functioning properly.
Reference

The following lists the specifications for the NT Pressure Transducer product line. Please consult the factory for product specifications manufactured for nonstandard applications.

NOTE: Specifications are subject to change without notice.

Physical Specifications:

<table>
<thead>
<tr>
<th>Materials</th>
<th>Wetted parts</th>
<th>Body</th>
<th>PTFE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor interface</td>
<td>CTFE or PFA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>O-ring</td>
<td>Kalrez®</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonwetted parts</td>
<td>Polypropylene, polyethylene, Viton®, PVDF (in addition to materials listed above)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Connection type | Flaretek tube fitting, Super 300 Type Pillar tube fitting, NPT (PrimeLock available upon request.) |

Electrical Specifications:

<table>
<thead>
<tr>
<th>Input voltage</th>
<th>24 VDC (12–30 VDC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input current</td>
<td>20 mA maximum</td>
</tr>
<tr>
<td>Pressure signal output ranges</td>
<td>4–20 mA, 0–5 VDC, 0–10 VDC</td>
</tr>
<tr>
<td>Electrical connection</td>
<td>6', 12', 30' FEP-jacketed pigtail or polypropylene 3-pin connector</td>
</tr>
<tr>
<td>Electrical enclosure</td>
<td>IP54</td>
</tr>
</tbody>
</table>

Performance Specifications

<table>
<thead>
<tr>
<th>Reference accuracy</th>
<th>±1% of full scale (includes linearity, hysteresis and repeatability) at 23°C (73°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process temperature</td>
<td>10–65°C (50–149°F)</td>
</tr>
</tbody>
</table>
Certifications

Entegris products have been tested to various test standards required by the EMC 2014/30/EU directive. The results of this testing are on file at Entegris and are available upon request.

Please contact the factory for the latest information. The most current specifications may be found on Entegris’ Web site at: www.entegris.com

HAZARDOUS LOCATIONS AND EXPLOSIVE ATMOSPHERES

North America — Class I Division 2
Entegris has tested our standard products to the UL 61010-1, UL 12.12.01 standards for use in Class I, Division 2 Gas Groups A-D, T6 10°C ≤Ta ≤65°C (maximum 90°C \( T_{\text{process}} \)) hazardous environments.

Europe — Zone 2
Entegris has tested our standard products to the EN 60079-0, EN 60079-11 standards for use in Zone 2 Gas Group IIC, T5 10°C ≤Ta ≤65°C (maximum 90°C \( T_{\text{process}} \)) hazardous environments, in accordance with EU Directive 2014/34/EU.

International — Zone 2
Entegris has tested our standard products to the IEC 60079-0, IEC 60079-11 standards for use in Zone 2 Gas Group IIC, T5 10°C ≤Ta ≤65°C (maximum 90°C \( T_{\text{process}} \)) hazardous environments.

Korean Certificate Safety (KCs)
Entegris has tested our standard products in accordance with Article 34 of the Occupational Safety & Health Act.

The results of this testing are on file at Entegris and are available upon request.
Ordering Information
Refer to the following for the desired configuration.

Model 4100 Single-port Pressure Transducer: part number
4100-________ - ________ - ________ - ________ - ________ - ________-

- Primary/secondary seal
  U3 = Kalrez 6375 UP/Viton
  S3 = Kalrez 6375 UP/Kalrez 6375 UP

- Sensor interface
  P1 = CTFE sensor interface (default)
  P2 = PFA sensor interface

- Electrical outputs
  A = 4–20 mA (12–30 VDC input)
  B = 0–10 VDC (12–30 VDC input)
  C = 0–5 VDC (12–30 VDC input)

- Electrical connector types
  B06 = FEP-jacketed 6’ pigtail electrical cable
  B12 = FEP-jacketed 12’ pigtail electrical cable
  B30 = FEP-jacketed 30’ pigtail electrical cable
  D00 = Polypropylene connector (cable not included)
  D06 = Polypropylene connector and 6’ PVC cable
  D12 = Polypropylene connector and 12’ PVC cable
  D30 = Polypropylene connector and 30’ PVC cable

- Inlet/outlet port connection
  F02 = ¼” Flaretek tube fitting
  F03 = ⅜” Flaretek tube fitting
  F04 = ½” Flaretek tube fitting
  K03 = ⅜” PrimeLock tube fitting
  K04 = ½” PrimeLock tube fitting
  W02 = ¼” Super 300 Type Pillar tube fitting
  W03 = ⅜” Super 300 Type Pillar tube fitting
  W04 = ½” Super 300 Type Pillar tube fitting
  N02 = ¼” FNPT
  N04 = ½” FNPT
  M02 = ¼” MNPT

- Pressure range
  030G = 207 kPa (30 psig)
  060G = 414 kPa (60 psig)
  100G = 690 kPa (100 psig)
  150G = 1034 kPa (150 psig)
  (150G not available with FNPT or MNPT connections)

Example: 4100-100G-F02-D06-A-P1-U3
- 4100 — Model
- 100G — Pressure range
- F02 — Inlet/outlet port connection
- D06 — Electrical connector type
- A — Electrical outputs
- P1 — Sensor interface
- U3 — Primary/secondary seal
Model 4210 Single-port Pressure Transducer: part number

4210-____-____-____-____-____

- **Primary/secondary seal**
  - U3 = Kalrez 6375 UP/Viton
  - S3 = Kalrez 6375 UP/Kalrez 6375 UP

- **Sensor interface**
  - P1 = CTFE sensor interface (default)
  - P2 = PFA sensor interface

- **Electrical outputs**
  - A = 4–20 mA (12–30 VDC input)
  - B = 0–10 VDC (12–30 VDC input)
  - C = 0–5 VDC (12–30 VDC input)

- **Electrical connector types**
  - B06 = FEP-jacketed 6' pigtail electrical cable
  - B12 = FEP-jacketed 12' pigtail electrical cable
  - B30 = FEP-jacketed 30' pigtail electrical cable
  - D00 = Polypropylene connector (cable not included)
  - D06 = Polypropylene connector and 6' PVC cable
  - D12 = Polypropylene connector and 12' PVC cable
  - D30 = Polypropylene connector and 30' PVC cable

- **Inlet/outlet port connection**
  - F02 = ¼" Flaretek tube fitting
  - F03 = ⅜" Flaretek tube fitting
  - F04 = ½" Flaretek tube fitting
  - F06 = ¾" Flaretek* tube fitting
  - F08 = 1" Flaretek* tube fitting
  - K04 = ½" PrimeLock tube fitting
  - K06 = ¾" PrimeLock tube fitting
  - K08 = 1" PrimeLock tube fitting
  - W02 = ¼" Super 300 Type Pillar tube fitting
  - W03 = ⅜" Super 300 Type Pillar tube fitting
  - W04 = ½" Super 300 Type Pillar tube fitting
  - W06 = ¾" Super 300 Type Pillar tube fitting
  - W08 = 1" Super 300 Type Pillar tube fitting

- **Pressure range**
  - 030G = 207 kPa (30 psig)
  - 060G = 414 kPa (60 psig)
  - 100G = 690 kPa (100 psig)

**Example:** 4210-100G-F02-D06-A-P1-U3
- 4100 — Model
- 100G — Pressure range
- F02 — Inlet/outlet port connection
- D06 — Electrical connector type
- A — Electrical outputs
- P1 — Sensor interface
- U3 — Primary/secondary seal

*For detailed pressure limit information on Flaretek tube fitting connections, refer to the Maximum Pressure Capabilities chart in the Flaretek fittings product section on Entegris’ website at http://www.entegrisfluidhandling.com.*
4100 Single-port Pressure Transducer

Flaretek Connection
3 conductor pigtail connection (BXX)(cable length up to 30 feet)

PrimeLock Connection

Super 300 Type Pillar Connection

Male Pipe Thread Connection

Female Pipe Thread Connection
<table>
<thead>
<tr>
<th>INLET/OUTLET PORT CONNECTION</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>¼&quot; Flaretek tube fitting</td>
<td>76.2 mm (3.00&quot;)</td>
<td>25.2 mm (0.99&quot;)</td>
</tr>
<tr>
<td>¼&quot; Flaretek tube fitting</td>
<td>76.2 mm (3.00&quot;)</td>
<td>26.9 mm (1.06&quot;)</td>
</tr>
<tr>
<td>½&quot; Flaretek tube fitting</td>
<td>76.2 mm (3.00&quot;)</td>
<td>29.0 mm (1.14&quot;)</td>
</tr>
<tr>
<td>¼&quot; PrimeLock tube fitting</td>
<td>76.2 mm (3.00&quot;)</td>
<td>20.3 mm (0.80&quot;)</td>
</tr>
<tr>
<td>½&quot; PrimeLock tube fitting</td>
<td>76.2 mm (3.00&quot;)</td>
<td>22.6 mm (0.89&quot;)</td>
</tr>
<tr>
<td>¼&quot; FNPT</td>
<td>82.3 mm (3.24&quot;)</td>
<td>–</td>
</tr>
<tr>
<td>½&quot; FNPT</td>
<td>88.9 mm (3.50&quot;)</td>
<td>–</td>
</tr>
<tr>
<td>¼&quot; MNPT</td>
<td>76.2 mm (3.00&quot;)</td>
<td>15.0 mm (0.59&quot;)</td>
</tr>
<tr>
<td>¼&quot; Super 300 Type Pillar tube fitting</td>
<td>76.2 mm (3.00&quot;)</td>
<td>11.0 mm (0.43&quot;)</td>
</tr>
<tr>
<td>½&quot; Super 300 Type Pillar tube fitting</td>
<td>76.2 mm (3.00&quot;)</td>
<td>15.0 mm (0.59&quot;)</td>
</tr>
<tr>
<td>⅝&quot; Super 300 Type Pillar tube fitting</td>
<td>76.2 mm (3.00&quot;)</td>
<td>17.5 mm (0.69&quot;)</td>
</tr>
</tbody>
</table>
4210 Flow-through Pressure Transducer

Flaretek Connection
Side View

PrimeLock Connection
Side View

Super 300 Type Pillar Connection
Side View

Top View

Receptacle with connector removed
<table>
<thead>
<tr>
<th>Inlet/outlet port connection</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>¼” Flaretek tube fitting</td>
<td>89.7 mm (3.53”)</td>
<td>94.7 mm (3.73”)</td>
<td>18.5 mm (0.73”)</td>
</tr>
<tr>
<td>½” Flaretek tube fitting</td>
<td>89.7 mm (3.53”)</td>
<td>98.3 mm (3.87”)</td>
<td>17.0 mm (0.67”)</td>
</tr>
<tr>
<td>⅜” Flaretek tube fitting</td>
<td>96.0 mm (3.78”)</td>
<td>102.4 mm (4.03”)</td>
<td>21.6 mm (0.85”)</td>
</tr>
<tr>
<td>¾” Flaretek tube fitting</td>
<td>104.4 mm (4.11”)</td>
<td>108.5 mm (4.27”)</td>
<td>25.4 mm (1.00”)</td>
</tr>
<tr>
<td>1” Flaretek tube fitting</td>
<td>112.5 mm (4.43”)</td>
<td>120.7 mm (4.75”)</td>
<td>30.5 mm (1.20”)</td>
</tr>
<tr>
<td>¼” PrimeLock tube fitting</td>
<td>92.2 mm (3.63”)</td>
<td>89.7 mm (3.53”)</td>
<td>17.5 mm (0.69”)</td>
</tr>
<tr>
<td>½” PrimeLock tube fitting</td>
<td>105.2 mm (4.11”)</td>
<td>103.4 mm (4.07”)</td>
<td>24.4 mm (0.96”)</td>
</tr>
<tr>
<td>1” PrimeLock tube fitting</td>
<td>113.5 mm (4.47”)</td>
<td>112.5 mm (4.43”)</td>
<td>28.4 mm (1.12”)</td>
</tr>
<tr>
<td>¼” Super 300 Type Pillar tube fitting</td>
<td>89.7 mm (3.53”)</td>
<td>66.5 mm (2.62”)</td>
<td>18.5 mm (0.73”)</td>
</tr>
<tr>
<td>½” Super 300 Type Pillar tube fitting</td>
<td>89.7 mm (3.53”)</td>
<td>74.5 mm (2.93”)</td>
<td>17.0 mm (0.67”)</td>
</tr>
<tr>
<td>⅜” Super 300 Type Pillar tube fitting</td>
<td>96.0 mm (3.78”)</td>
<td>79.5 mm (3.13”)</td>
<td>21.6 mm (0.85”)</td>
</tr>
<tr>
<td>¾” Super 300 Type Pillar tube fitting</td>
<td>104.4 mm (4.11”)</td>
<td>88.4 mm (3.48”)</td>
<td>25.4 mm (1.00”)</td>
</tr>
<tr>
<td>1” Super 300 Type Pillar tube fitting</td>
<td>111.8 mm (4.40”)</td>
<td>98.6 mm (3.88”)</td>
<td>29.7 mm (1.17”)</td>
</tr>
</tbody>
</table>

Note: No NPT option on Model 4210.
Nonincendive Field Wiring Required for Disconnecting Cable Options

Hazardous (Classified) Location

Class I Division 2 Groups A, B, C, D

Ground (-)

Power (+)

Pressure Output

Unclassified Location

Model 4100 or 4210 Pressure Transducer

For use in Class I Division 2 Groups A, B, C, D, the following pressure transducer models must be used with an approved associated nonincendive field wiring apparatus that meets the requirements in Table 3 with the entity parameters in Table 1.

4100-XXXX-XXX-A00-A-XX-XX
4100-XXXX-XXX-DXX-A-XX-XX
4210-XXXX-XXX-A00-A-XX-XX
4210-XXXX-XXX-DXX-A-XX-XX
4100-XXXX-XXX-A00-B-XX-XX
4100-XXXX-XXX-DXX-B-XX-XX
4210-XXXX-XXX-A00-B-XX-XX
4210-XXXX-XXX-DXX-B-XX-XX
4100-XXXX-XXX-A00-C-XX-XX
4100-XXXX-XXX-DXX-C-XX-XX
4210-XXXX-XXX-A00-C-XX-XX
4210-XXXX-XXX-DXX-C-XX-XX
4100-XXXX-XXX-XXX-B-XX-XX-PXX
4210-XXXX-XXX-XXX-B-XX-XX-TXX
4210-XXXX-XXX-XXX-C-XX-XX-TXX

Nonincendive Field Wiring Relationship

Model 4100 or 4210 Pressure Transducer Voltage Output

Table 1 - Entity Parameters for Models 4100, 4210 with 4-20mA Output (See Note 1)

<table>
<thead>
<tr>
<th>Cable Option Conduct Color</th>
<th>Signals</th>
<th>Vmax (VDC)</th>
<th>Imax (mA)</th>
<th>Pi (W)</th>
<th>Ci (nF)</th>
<th>Li (mH)</th>
<th>U (mV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red &amp; Black</td>
<td>Power &amp; Ground</td>
<td>3.0</td>
<td>120</td>
<td>0.90</td>
<td>25</td>
<td>0.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 2 - Entity Parameters for Models 4100, 4210 with Voltage Output (See Note 2)

<table>
<thead>
<tr>
<th>Cable Option Conduct Color</th>
<th>Signals</th>
<th>Vmax (VDC)</th>
<th>Imax (mA)</th>
<th>Pi (W)</th>
<th>Co (nF)</th>
<th>Li (mH)</th>
<th>U (mV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red &amp; Black</td>
<td>Power &amp; Ground</td>
<td>30</td>
<td>110</td>
<td>0.90</td>
<td>0.48</td>
<td>0.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 3 - Nonincendive Field Wiring Apparatus vs. Associated Nonincendive Field Wiring Apparatus Requirements

<table>
<thead>
<tr>
<th>Nonincendive Field Wiring Apparatus (Model 4100/4101)</th>
<th>Relationship</th>
<th>Associated Nonincendive Field Wiring Apparatus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vmax</td>
<td>&gt; = Vdc</td>
<td></td>
</tr>
<tr>
<td>Imax</td>
<td>&gt; = Isc</td>
<td></td>
</tr>
<tr>
<td>Pi</td>
<td>&gt; = Ps</td>
<td></td>
</tr>
<tr>
<td>G + C option(Ohm/ft)</td>
<td>&gt; = Oc</td>
<td></td>
</tr>
<tr>
<td>D + L cable(Ohm/m)</td>
<td>&lt;= Dl</td>
<td></td>
</tr>
</tbody>
</table>
Appendix

Table 1. Entity parameters for Models NT4100, NT4210 with 4–20 mA output (see note 1.)

<table>
<thead>
<tr>
<th>Cable option conductor color</th>
<th>A00, DXX cable option</th>
<th>Red and black</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signals</td>
<td>Power and ground</td>
<td></td>
</tr>
<tr>
<td>$V_{\text{max}}$</td>
<td>30 VDC</td>
<td></td>
</tr>
<tr>
<td>$I_{\text{max}}$</td>
<td>120 mA</td>
<td></td>
</tr>
<tr>
<td>$P_i$</td>
<td>0.9 W</td>
<td></td>
</tr>
<tr>
<td>$C_i$</td>
<td>25 nF</td>
<td></td>
</tr>
<tr>
<td>$L_i$</td>
<td>0.0 mH</td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Entity parameters for Models NT4100, NT4210 with voltage output (see note 2.)

<table>
<thead>
<tr>
<th>Cable option conductor color</th>
<th>A00, DXX cable option</th>
<th>Red and black</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signals</td>
<td>Power and ground</td>
<td></td>
</tr>
<tr>
<td>$V_{\text{max}}$</td>
<td>30 VDC</td>
<td></td>
</tr>
<tr>
<td>$I_{\text{max}}$</td>
<td>120 mA</td>
<td></td>
</tr>
<tr>
<td>$P_i$</td>
<td>0.9 W</td>
<td></td>
</tr>
<tr>
<td>$C_i$</td>
<td>0.48 nF</td>
<td></td>
</tr>
<tr>
<td>$L_i$</td>
<td>0.0 mH</td>
<td></td>
</tr>
</tbody>
</table>

Table 3. Nonincendive field wiring apparatus vs. associated nonincendive field wiring apparatus requirements

<table>
<thead>
<tr>
<th>NONINCENDIVE FIELD WIRING APPARATUS (MODEL NT4100/4200)</th>
<th>RELATIONSHIP</th>
<th>ASSOCIATED NONINCENDIVE FIELD WIRING APPARATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>$V_{\text{max}}$</td>
<td>$\geq$</td>
<td>$V_o$</td>
</tr>
<tr>
<td>$I_{\text{max}}$</td>
<td>$\geq$</td>
<td>$I_{sc}$</td>
</tr>
<tr>
<td>$P_i$</td>
<td>$\geq$</td>
<td>$P_o$</td>
</tr>
<tr>
<td>$C_i + C$ cable (60 pf/ft)</td>
<td>$\leq$</td>
<td>$C_a$</td>
</tr>
<tr>
<td>$L_i + L$ cable (0.2 uH/ft)</td>
<td>$\leq$</td>
<td>$L_a$</td>
</tr>
</tbody>
</table>
NOTES:

1. For use in Class I Division 2 or Zone 2 Groups A, B, C, D, the following pressure transducer models must be used with an approved associated nonincendive field wiring apparatus that meets the requirements in Table 3 with the entity parameters in Table 1.

   4100-XXXX-XXX-A00-A-XX-XX
   4100-XXXX-XXX-DXX-A-XX-XX
   4210-XXXX-XXX-A00-A-XX-XX
   4210-XXXX-XXX-DXX-A-XX-XX

2. For use in Class I Division 2 or Zone 2 Groups A, B, C, D, the following pressure transducer models must be used with an approved associated nonincendive field wiring apparatus that meets the requirements in Table 3 with the entity parameters in Table 2.

   4100-XXXX-XXX-A00-B-XX-XX
   4100-XXXX-XXX-DXX-B-XX-XX
   4100-XXXX-XXX-XXX-B-XX-XX-PXX
   4100-XXXX-XXX-A00-C-XX-XX
   4100-XXXX-XXX-DXX-C-XX-XX
   4210-XXXX-XXX-A00-B-XX-XX
   4210-XXXX-XXX-DXX-B-XX-XX
   4210-XXXX-XXX-XXX-B-XX-XX-TXX
   4210-XXXX-XXX-A00-C-XX-XX
   4210-XXXX-XXX-DXX-C-XX-XX
   4210-XXXX-XXX-XXX-C-XX-XX-TXX
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