DYNISCO MODEL TX180
Smart Temperature Transmitter

Description
The Dynisco TX180 programmable temperature transmitter is easy to use and moderately priced – like an analog transmitter. It’s also versatile, linear, and based on microprocessor logic. The TX180 can be mounted in explosion - proof and weatherproof enclosures, as well as on a DIN rail for panel mounting applications. Local indication can be added at any time by simply plugging in one of two optional displays. One transmitter on the shelf can back up the needs of an entire facility. The exceptional versatility of the TX180 not only lets you configure your transmitters exactly the way you want them, it also dramatically reduces back - up stock and spare parts.

Features
- Automatic self - calibration
- Digital temperature compensation
- Accepts thermocouples B, C, E, J, K, L, N, R, S, T and U grounded or ungrounded or mV inputs
- 2, 3 or 4 - wire RTDs (DIN, SAMA, Cu and Ni)
- 22 point custom linearization curve for non - standard inputs or sensor matching
- One or two line display for local indication (optional)
- On - line or off - line setup in minutes
- Two - year calibration warranty
- Configure and display in English, Spanish, French or German (LI - 2 option)

Benefits
- Repeatability and higher accuracy
- Long term stability
- Reduces spare inventory
- Greater versatility
- High accuracy on non - standard inputs
- Cost effective options
- Easy and quick set - up
- Lower life - cycle costs
- Greater flexibility

Specifications

Performance Characteristics
Accuracy: ±0.05% of reading, 100% of sensor range  
RFI/EMI: Protection to 10 V/meter  
Ambient temperature stability: Self - correcting over the operating temperature  
Dimensions: 2.35” (6 cm) diameter, 1.55” (4 cm) height, 2.15” (5.5 cm) height with LI - 1 or LI - 2 installed  
Weight: 4 oz. (electronics only)

Dynamic response:
- Turn on time: Less than 5 seconds after power up  
- Ambient temperature gradient: Automatic compensation to 20˚C/hour change  
- Update time: 0.15 seconds  
- Response to step input: 0.25 seconds, typical  
- Automatic diagnostics: Every 3 seconds the TX180 transmitter performs self - checks for zero, span, cold - junction temperature, open T/C, open RTD element, shorted RTD element, each open RTD lead and transmitter malfunction

Temperature Characteristics
Operating temperature range:
- Electronics: -40˚F to +185˚F (-40˚C to +85˚C)  
- Display: -4˚F to +158˚F (-20˚C to +70˚C)  
- Storage temperature range: -58˚F to +185˚F (-50˚C to +85˚C)

Automatic self - calibration every 3 seconds  
Cold junction compensation: Self - correction to ±0.5˚C

Electrical Characteristics
- Input voltage: 12 to 42 Vdc  
- Output: 4 to 20 mA, 2 - wire  
- FailSafe: User settable from 3.6 mA to 23.0 mA, or OFF  
- Interchangeability: All units interchangeable without field calibration  
- EMI/RFI immunity: <0.5% of reading (SAMA PMC 33.1c test method)  
- 20 KHz to 1000MHz, 10 V/meter  
- Isolation: 250 Vac rms or 800 Vdc

Full 500 V isolation  
Non - interlacing zero and full scale  
Reverse polarity protection: 42 Vdc applied with either polarity  
Power and load:
- Supply voltage (no load resistance): 12 to 42 Vdc (30 Vdc for I/S version)  
- Supply voltage (with load resistance):
  - Vsupply = (12) + (IRoad in Kohm x 23 mA)  
  - Supply voltage effect: <±0.005% of span per volt
## DYNISCO MODEL TX180

**Smart Temperature Transmitter**

### Enhanced Process Measurement

Automatic self-calibration every three seconds to on-board reference standards increases process measurement reliability and significantly reduces ongoing maintenance costs. Digital ambient temperature compensation completely characterizes each transmitter for performance in ambient environments from -40° to +185°F (-40°C to +85°C), resulting in greatly reduced measurement drift. The TX180 offers dramatically improved performance and outstanding value over competitive analog, programmable and smart transmitters. Its stability, accuracy, versatility, reliability and ease-of-use yield real benefits in process industry applications.

### Local Indication

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I/S</td>
<td>Intrinsic safety</td>
</tr>
<tr>
<td>LI - 1</td>
<td>Local indicator with one line display and integral keyboard</td>
</tr>
<tr>
<td>LI - 2</td>
<td>Local Indicator with two line display and integral keyboard</td>
</tr>
<tr>
<td>XP - FG</td>
<td>NEMA 7, explosion-proof: NEMA 4x low dome housing with window</td>
</tr>
<tr>
<td>XP - FN</td>
<td>NEMA 7, explosion-proof: NEMA 4x low dome housing</td>
</tr>
<tr>
<td>XP - HEAD</td>
<td>NEMA 7, explosion-proof: raintight head mount housing</td>
</tr>
<tr>
<td>WP - HEAD</td>
<td>Weatherproof (IP66) head mount housing</td>
</tr>
</tbody>
</table>

### Approvals

FM/CSA Non-Incentive Rating; Intrinsic Safety - optional; CE approved

### Configuration/Setup Software

Dynisco’s SmartLink is a Windows-based program for configuration and setup of the Dynisco TX180 and ITX190 temperature transmitters.

### Ordering Guide

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<td>PY - 2</td>
<td>2” pipe yoke for XP-F series housing</td>
</tr>
<tr>
<td></td>
<td>DIN - KIT</td>
<td>DIN rail mounting adapter for ITX190 and TX180 series transmitters</td>
</tr>
<tr>
<td></td>
<td>SS - TAG</td>
<td>Stainless steel tag</td>
</tr>
<tr>
<td></td>
<td>PS - TAG</td>
<td>Plastic tag</td>
</tr>
<tr>
<td></td>
<td>PS - 2412</td>
<td>Power supply, 115/230 Vac to 24/28 Vdc regulated 1.2/0.8A</td>
</tr>
<tr>
<td></td>
<td>PS - 2405</td>
<td>AC adapter, 115 Vac to 24 Vdc, 0.5A, plug-in</td>
</tr>
<tr>
<td></td>
<td>Smartlink - LSK</td>
<td>Smartlink software with LSK modem cable</td>
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**Ordering Example:** TX180 - LI - 2 - XP - FG - PY2 - PS - 2405