800 Series Strain Gage Pressure Transducers and Transmitters

The following models are covered in this manual: 830, 831, 832, 850, 851, 860, 861

Operating Manual
CONTENTS

1. Description 3
2. Model Number Construction 3
3. Pressure Fitting 3
4. Electrical Connections 4
5. Electrical Characteristics and Wiring 5
6. Operation and Calibration 6
7. Repair 7
8. Warranty 7
1. DESCRIPTION
Dynisco’s 800 Series of Pressure Transducers and Transmitters are bonded foil strain gage type, designed to measure pressures up to 60,000 psi. These transducers convert changes in applied pressure into corresponding changes in output voltage or current.

2. MODEL NUMBER CONSTRUCTION
The model number designates the features of the 800 Series pressure transducers.

Model 1234X-567-8-9
1 = Pressure Reference
2 = 800 Series
3 = Full Scale Output
4 = Accuracy
X = Approval
5 = Pressure Port Thread
6 = Electrical Termination
7 = Wiring
8 = Pressure Range*
9 = Options
*Pressure range is noted on label.
For complete details, refer to the individual ordering guides for each model.

3. PRESSURE FITTING (POSITION 5 OF MODEL NUMBER)
The pressure port thread of the standard 800 Series (Code 0 in the model number) is internal 1/8 -27 NPT fabricated from high strength stainless steel.
Options available include the following:

<table>
<thead>
<tr>
<th>Code in Model No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1/4 -18 NPT, internal</td>
</tr>
<tr>
<td>2</td>
<td>7/16 -20 UNF, internal, O-ring, per MS33649-4</td>
</tr>
<tr>
<td>3</td>
<td>High Pressure, internal fitting per autoclave F-250-C</td>
</tr>
<tr>
<td>4</td>
<td>1/4 -18 NPT, external</td>
</tr>
<tr>
<td>5</td>
<td>1/2 -14 NPT, external</td>
</tr>
<tr>
<td>6</td>
<td>7/16 -20 UNF, external, per MS33656-4</td>
</tr>
<tr>
<td>7</td>
<td>R 1/4 -metric, external</td>
</tr>
<tr>
<td>8</td>
<td>3/4 -16 UNF, external, flush diaphragm**</td>
</tr>
<tr>
<td>9</td>
<td>Special (consult factory)</td>
</tr>
<tr>
<td>A</td>
<td>7/16 -14 BSP, external</td>
</tr>
<tr>
<td>B</td>
<td>7/16 -14 NPSM, external</td>
</tr>
<tr>
<td>C</td>
<td>Autoclave F-562-C</td>
</tr>
</tbody>
</table>
D .......................... 1” BSP, internal
G .......................... Autoclave F-375C

**Each flush diaphragm transducer or transmitter is shipped with a DYNASEAL™, Dynisco P/N 633014, for the pressure port seal. Recommended torque, for an adequate seal, is 100 in-lbs. Care should be exercised with the low pressure ranges. The flush diaphragm can be inadvertently overloaded with thumb pressure, which can be the equivalent of several hundred psi.

4. ELECTRICAL CONNECTIONS (POSITION 6 OF MODEL NUMBER)

**Code 0 in the model number** — Standard 800 Series models have a Bendix Connector PT02A-10-6P (or equivalent) and require mating connector PT06W-10-6S (SR) (Dynisco P/N 711600).

**Code 1 in the model number** — 800 Series Models with the weathertight option include Bendix PT02H-10-6P (or equivalent) and require mating connector PT06W-10-6S (Dynisco P/N 711610).

**Code 3 in the model number** — Option for the 1/2 -14 NPT conduit fitting with the 4 ft six conductor cable.

**WIRING CODE — Transducers**

<table>
<thead>
<tr>
<th>Function</th>
<th>Pin</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output (+)</td>
<td>A</td>
<td>Red</td>
</tr>
<tr>
<td>Output (-)</td>
<td>B</td>
<td>Black</td>
</tr>
<tr>
<td>Input (+)</td>
<td>C</td>
<td>White</td>
</tr>
<tr>
<td>Input (-)</td>
<td>D</td>
<td>Green</td>
</tr>
<tr>
<td>Shunt Cal.</td>
<td>E, F</td>
<td>Blue, Orange</td>
</tr>
</tbody>
</table>

**Code 4 in the model number** — 800 Series can come equipped with 1/2 -14 NPT conduit fitting and three 42” leads.

**WIRING CODE — Transmitters**

<table>
<thead>
<tr>
<th>Function</th>
<th>Pin</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Voltage (+)</td>
<td>A</td>
<td>Red</td>
</tr>
<tr>
<td>Supply Voltage (-)</td>
<td>B</td>
<td>Black</td>
</tr>
<tr>
<td>Case Ground</td>
<td></td>
<td>Green</td>
</tr>
</tbody>
</table>

Transmitters incorporate reverse polarity protection, but will not function if inputs are reversed.

**ALL WIRING MUST CONFORM TO NATIONAL ELECTRICAL CODE.**
5. ELECTRICAL CHARACTERISTICS AND WIRING

### MODELS 830/831/832

Transducers with 3 mV/V output require a well regulated power supply and have a nominal load of 350 ohms. The mV readout should present a high impedance input and have good common mode rejection. Use of six conductor shielded cable (like Dynisco P/N 800024) is recommended to minimize noise pickup.

<table>
<thead>
<tr>
<th>TRANSDUCER MODEL</th>
<th>OUTPUT</th>
<th>POWER SUPPLY</th>
<th>WIRING DIAGRAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>830 831 832</td>
<td>3 mV/V</td>
<td>10 Vdc (Recommend) 15 Vdc (Maximum)</td>
<td>![Wiring Diagram for 830/831/832]</td>
</tr>
<tr>
<td>850/851 860/861</td>
<td>0 - 5 Vdc 0 - 10 Vdc</td>
<td>Single 24 spectators 32 Vdc</td>
<td>![Wiring Diagram for 850/851 860/861]</td>
</tr>
<tr>
<td>850/851 860/861</td>
<td>0 - 5 Vdc 0 - 10 Vdc</td>
<td>Split 85X 12 - 16 86X 14 - 16</td>
<td>![Wiring Diagram for 850/851 860/861]</td>
</tr>
</tbody>
</table>
MODELS 840/841/850/851/860/861

Dynisco high level output transducers and transmitters have a voltage regulator, signal conditioner, and amplified incorporated within the device. These models have accessible ZERO and SPAN adjustments. These are factory set and should not require adjustment.

Voltage output devices have a current drain of 45mA maximum at recommended minimum load of 2000 ohms.

CONDUIT FITTING — Units with the 1/2 -14 NPT conduit fitting and leads or cable, should be installed using appropriate conduit or junction box in conformance with local codes. This is essential for environmental protection of the electrical termination.

6. OPERATION AND CALIBRATION

After the transducer and the readout have been installed, the system must be calibrated using either a precision pressure source such as a dead-weight tester, or by using the shunt calibration function.
PRESSURE CALIBRATION — With no pressure applied, the signal conditioner ZERO control (or ZERO adjustment of high level output transducers) is adjusted for zero pressure indication on the readout. With a known pressure applied to the transducer (typically 80 to 100% of full scale), the signal conditioner SPAN control (or SPAN adjustment of high level output transducers) is adjusted for the correct readout of the applied pressure.

SHUNT CALIBRATION — All 800 Series pressure transducers (except 840/1 transmitters) contain an internal Shunt Calibration resistor (R-CAL) which provides a simulated output of 80% of full scale when pins E and F are shorted. Do not apply pressure to the transducer during calibration. Refer to instructions with the instrumentation for details on ZERO and SPAN adjustment.

7. REPAIR

Questions concerning warranty, repair cost, delivery, and requests for a RA# should be directed to the Dynisco Repair Department, 508-541-9400 or email: repair@dynisco.com. Please call for a return authorization number (RA#) before returning any product. Damaged products should be returned to:

DYNISCO LLC
Attn: RA # _______________
38 Forge Parkway
Franklin, MA 02038

For technical assistance please call 800-DYNISCO or 508-541-9400 or fax 508-541-9436.

8. WARRANTY

This Dynisco product is warranted under terms and conditions set forth in the Dynisco Web Pages. Go to www.dynisco.com and click on “Warranty” at the bottom of any page for complete details.
WARRANTY REGISTRATION CARD

MODEL NUMBER ____________________________________________

SERIAL NUMBER ____________________________________________

DATE PURCHASED ___________________________________________

PURCHASED FROM ____________________________________________

NAME _______________________________________________________

COMPANY ____________________________________________________

DIVISION _____________________________________________________

STREET ______________________________________________________

CITY ___________________________ STATE ___________ ZIP ________

COUNTRY ____________________________________________________

TELEPHONE ___________________________ FAX __________________

My application is _____________________________________________

Is this your first purchase from Dynisco? YES ________ NO ________

How did you first hear of Dynisco? ADVERTISING ________ REP ________

PREVIOUS USE ________ COLLEAGUE ________ DIRECTORY ________

I need further product information on ____________________________

I need application help on ______________________________________

Please send complete catalog ____________________________________

Tel.: 508-541-9400  Fax: 508-541-9436  E-mail: www.dynisco.com

PLEASE FOLD AND STAPLE OR TAPE
Dynisco
From lab to production,
providing a window into the process
Dynisco LLC
38 Forge Parkway
Franklin, MA 02038
USA

Tel: +1 508 541 9400
Fax: +1 508 541 9436
Email: InfoInst@dynisco.com

Dynisco Extrusion
1291 19th St Ln NW
Hickory, NC 28601

Tel: 828-326-9888
Fax: 828-326-8882
Email: InfoExtr@dynisco.com

Dynisco Europe GmbH
Wannenäckerstraße 24
74078 Heilbronn
Deutschland

Tel: +49 7131 2970
Fax:+49 7131 23260
Email: DyniscoEurope@dynisco.com

Dynisco Instruments S.a.r.l.
466, rue du Marché Rollay
94500 Champigny sur Marne
France

Tel: +33 1 4881 8459
Fax: +33 1 4881 8334
Email: DyniscoFrance@dynisco.com

Dynisco.s.r.l.
Via Adriatico, 2/2
20162 Milano
Italia

Tel: +39 02 661 01733
Fax: +39 02 661 02908
Email: Dyniscoltaly@dynisco.com

Dynisco UK Ltd.
Silver Birches Business Park
Aston Road, Bromsgrove
Worcestershire B60 3EU
Great Britain

Tel: +44 1527 577077
Fax: +44 1527 577070
Email: DyniscoUK@dynisco.com

Dynisco SPOL, S.R.O.
cp. 579
756 55 Dolni Becva
Czech Republic

Tel: +42 0571 647228
Fax:+42 0571 647224
Email: Dynisco_cz@ova.pvtnet.cz

Dynisco B.V.
Muziekplein 67
PO Box 666
NL-5400 AR Uden
The Netherlands

Tel: +31 413 250665
Fax: +31 413 260548
Email: Dynisco-BV@dynisco.com