Temposonics®
Position Sensors and Systems

Temposonics II
Ordering Guide

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For 24-hour Technical Assistance Call
1-800-633-7609
How to Order Temposonics II Position Sensors

<table>
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<tr>
<th>Temposonics II Transducer, Standard</th>
<th>T</th>
<th>T</th>
<th>S</th>
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<tbody>
<tr>
<td><strong>Style</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>RB</strong> = STANDARD, 3/8 in. SST rod, screw on integral connector</td>
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<tr>
<td><strong>RC</strong> = 3/8 in. SST rod, quarter turn integral connector</td>
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<tr>
<td><strong>RO</strong> = 3/8 in. SST rod, 5 ft. integral cable, pigtail connection</td>
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The following styles (R1 - R3) are derivations of Style RO. Each style includes a 6 or 10 pin connector instead of pigtails, which provide the capability to either retrofit an original Temposonics transducer design with a Temposonics II or to connect directly to an interface module.

| **R1** = Style RO with 6 pin connector (P/N 370015) instead of pigtails STANDARD for Temposonics II transducers with integral cable and connected to an Analog Output Module with MS connectors. [Also for retrofitting original Temposonics transducer with a greater than 12 inch stroke length (+ interrogation pulse) and connected to an Analog Output Module] |
| **R2** = Style RO with 6 pin integral connector (P/N 370015) instead of pigtails Used in retrofit situations ONLY. [For retrofitting original Temposonics transducer with a less than 12 inch stroke length (- interrogation pulse) and connected to an Analog Output Module] |
| **R3** = Style RO with 10 pin connector (P/N 370160) instead of pigtails (Available for use with Personality Modules ONLY) |

**Stroke Length Units**

| **U** = Inches (U.S. Customary) |
| **M** = Millimeters (Metric), available in 5 mm increments |

**Stroke Length**

The value to enter depends on stroke length units indicated above. For example:

| **0120** = 12.0 inches or 120 mm |
| **1200** = 120.0 inches or 1200 mm |

**NOTES:**

1. All Temposonics II transducers have a positive interrogation pulse. The original Temposonics transducer had a negative interrogation pulse for stroke length of 12 inches or less and a positive interrogation pulse for stroke lengths of 12.1 inches or longer. In retrofit situations, the extension cable can be configured for a direct replacement. Contact an MTS Applications Engineer for additional details.

2. Temposonics II transducers have a 2.5 inch dead zone at the tip. Previous versions of the Temposonics transducer had either a 5 inch or a 7 inch dead zone; please consider the overall length requirement in your application.

3. Build-to-order units range from 1 to 300 inches, in 1/10th inch increments.
How to Order Temposonics II Transducer with APM

How to Order Temposonics II Transducer with APM

Tempsonics II Transducer

Style
(See "How to Order Temposonics II Transducer")

Stroke Length Units
U = Inches (U.S. Customary)
M = Millimeters (Metric), available in 5 mm increments

Stroke Length
The value to enter depends on stroke length units indicated above.
For example:
0120 = 12.0 inches or 120 mm
1200 = 120.0 inches or 1200 mm

A = Analog Personality Module

Output
S1 = 0 to +10 Vdc
S2 = -10 to +10 Vdc
S3 = 0 to -10 Vdc
S4 = 0 to +10 Vdc, reverse acting
S5 = -10 to +10 Vdc, reverse acting
S6 = 0 to -10 Vdc, reverse acting
C0 = Build-to-Order, customized set points

Set Points must be defined by customer, see below.

Performance Mode
R = Resolution Preferred Mode (0.001 in. resolution, limited to maximum stroke length of 48 inches)
B = Balanced Mode (0.003 in. resolution)
U = Update Preferred Mode (optimum update time, 0.007 in. resolution)

NOTES:
1. Standard Set Points: Null (zero) is set at 2 inches from flange; Full Scale Set Point is at 2.5 inches from tip of the transducer.

In addition to the model number, zero and full scale set points must also be provided at time of order if a customized sensing range is required. See example below for details on how to define set points.

How To Define Customized Set Points

Given:
Stroke Length: 10 inches
Output: 0 to +10 Vdc
Set Point #1: 2 inches from the flange (standard Null) = 0.000V
Set Point #2: 12 inches from the flange = +10.000V

NOTES:
1. Express Set Point in inches or millimeters from face of transducer’s flange.
   • If Stroke Length Units are expressed in inches, define Set Point in inches and tenths (XXX.X in.)
   • If Stroke Length Units are expressed in millimeters, define Set Point in millimeters (XXX mm)
2. Define polarity of voltage at each Set Point
3. Define Set Point voltage (range: 0 to 10 Vdc), Express to 0.001 V
How to Order Temposonics II Transducer with DPM

Temposonics II Transducer
(See “How to Order Temposonics II Transducer”)

Style

Stroke Length Units
U = Inches (U.S. Customary)
M = Millimeters (Metric), available in 5 mm increments

Stroke Length
The value to enter depends on stroke length units indicated above.
For example:
0120 = 12.0 inches or 120 mm
1200 = 120.0 inches or 1200 mm

D = Digital Personality Module

Interrogation
I = Internal Interrogation
E = External Interrogation

Number of Recirculations
Range: 1 to 127 recirculations
Example:
2 recirculations = 002
32 recirculations = 032
127 recirculations = 127 (maximum)

5.4 How to Order Temposonics II Transducer with RPM

Temposonics II Transducer
(See “How to Order Temposonics II Transducer”)

Style

Stroke Length Units
U = Inches (U.S. Customary)
M = Millimeters (Metric), available in 5 mm increments

Stroke Length
The value to enter depends on stroke length units indicated above.
For example:
0120 = 12.0 inches or 120 mm
1200 = 120.0 inches or 1200 mm

R = RS422 Personality Module
How to Order Analog Output Module

Enclosure Style
- 31 = Strain relief connectors (standard)
- 32 = 5 and 6 pin MS connectors (mating connectors required, order separately)
- 35 = Plug-in card, can mount in rack (to mount, use 15-pin edge connector: P/N 370034, or edge card holder: P/N 370170)

Displacement Output
(Standard, select one)
- 10 = 0 to 10 Vdc
- 20 = 0 to 10 Vdc, reverse acting
- 30 = 0 to 5 Vdc
- 40 = 0 to 5 Vdc, reverse acting
- 50 = -10 Vdc to + 10 Vdc
- 60 = -10 Vdc to + 10 Vdc, reverse acting
- 70 = -5 to + 5 Vdc
- 80 = -5 Vdc to + 5 Vdc, reverse acting
- 91 = 0 Vdc + 10 Vdc
- 92 = 0 Vdc to -10 Vdc

Displacement Output (Options)
- 03 = 4 to 20 mA ungrounded
- 04 = 4 to 20 mA ungrounded, reverse acting
- 05 = 4 to 20 mA grounded
- 06 = 4 to 20 mA grounded, reverse acting

Displacement Output
(Standard, select one)
- 10 = 0 to 10 Vdc
- 20 = 0 to 10 Vdc, reverse acting
- 30 = 0 to 5 Vdc
- 40 = 0 to 5 Vdc, reverse acting
- 50 = -10 Vdc to + 10 Vdc
- 60 = -10 Vdc to + 10 Vdc, reverse acting
- 70 = -5 to + 5 Vdc
- 80 = -5 Vdc to + 5 Vdc, reverse acting
- 91 = 0 Vdc + 10 Vdc
- 92 = 0 Vdc to -10 Vdc

Displacement Output (Options)
- 03 = 4 to 20 mA ungrounded
- 04 = 4 to 20 mA ungrounded, reverse acting
- 05 = 4 to 20 mA grounded
- 06 = 4 to 20 mA grounded, reverse acting

Displacement Output
(Standard, select one)
- 10 = 0 to 10 Vdc
- 20 = 0 to 10 Vdc, reverse acting
- 30 = 0 to 5 Vdc
- 40 = 0 to 5 Vdc, reverse acting
- 50 = -10 Vdc to + 10 Vdc
- 60 = -10 Vdc to + 10 Vdc, reverse acting
- 70 = -5 to + 5 Vdc
- 80 = -5 Vdc to + 5 Vdc, reverse acting
- 91 = 0 Vdc + 10 Vdc
- 92 = 0 Vdc to -10 Vdc

Displacement Output (Options)
- 03 = 4 to 20 mA ungrounded
- 04 = 4 to 20 mA ungrounded, reverse acting
- 05 = 4 to 20 mA grounded
- 06 = 4 to 20 mA grounded, reverse acting

Velocity Option
- 0 = None (Standard)

Options:
- 1 = Forward acting voltage output
- 2 = Reverse acting voltage output
- 3 = Forward acting current output (grounded)
- 4 = Reverse acting current output (grounded)
- 5 = Forward acting current output (ungrounded)
- 6 = Reverse acting current output (ungrounded)

Maximum Velocity
- ___ ___ ___ = Maximum Velocity (range 1 to 400 inches/second or 0.01 to 9.99 meters/second)

This three digit velocity code represents either inches per second or meters per second. The code corresponds to the ‘Unit of Measurement’ selected.

Style
- (Refer to pages 13 and 14 for description of choices: RB, RC, RO, R1, R2, R3)

Unit of Measurement
- U = Inches (U.S. Customary)
- M = Millimeters (Metric), lengths available in 5 mm increments

Stroke Length
- ___ ___ ___ = Length
Range: 1 to 300.0 in. in 0.1 in. increments or 25 to 7620 mm in 5 mm increments.

For example:
- 0120 = 12.0 inches or 120 mm
- 0600 = 60.0 inches or 600 mm

Mating Connectors for Enclosure Style ’32’
- 6-pin MS connector (female): 370015
- 5-pin MS connector (female): 370017

NOTE: AOM Options
Only two (2) options may be selected per AOM.

Valid Output Combinations (Displacement & Velocity)
The chart below indicates what combinations of current output and velocity output are valid.
ACCESSORIES

Extension Cables for Temposonics II Transducers

Transducer Mating Connector — 1 or 2 characters

- **MT** = Molded (STANDARD)
  - (For use with Style RB transducers)
- **M** = Molded
  - (For use with Style RC transducers)
- **FT** = Field Installable
  - (For use with Style RB transducers)
- **F** = Field Installable
  - (For use with Style RC transducers)

Cable Lengths

- **005** = 5 ft.
- **015** = 15 ft.
- **025** = 25 ft.
- **050** = 50 ft.
- **100** = 100 ft.
- **____ ____** = Custom Length (Must use Field Installable Connector, Style FT or F)

Cable Termination

- **C1** = 6 pin female, P/N 370015
  - STANDARD connection to Analog Output Module with MS connectors.
  - [For retrofitting an original Temposonics transducer system with AOM and stroke length > 12 inches (+ interrogation pulse)]
- **C2** = 6 pin female, P/N 370015
  - Use in retrofit situations ONLY.
  - [For retrofitting an original Temposonics transducer system with AOM and stroke length ≤ 12 inches (- interrogation pulse)]
- **C3** = 10 pin, P/N 370160 [for use with Digital Personality Modules (DPM) only]
- **P0** = Pigtail Connection

Transducer Accessories

<table>
<thead>
<tr>
<th>Part</th>
<th>Description</th>
<th>Part Number</th>
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</thead>
<tbody>
<tr>
<td>Replacement Fluoroelastomer</td>
<td>Seals Temposonics transducers in hydraulic cylinders. For use on 3/4-16 thread.</td>
<td>560315</td>
</tr>
<tr>
<td>Hex Nut Jam</td>
<td>3/4-16, 303 stainless steel thin hex lock w/nylon insert</td>
<td>500015</td>
</tr>
<tr>
<td>Magnet Spacer</td>
<td>Non-ferrous aluminum spacer, 1/8 in. thickness, use with standard magnet (P/N 201542)</td>
<td>400633</td>
</tr>
<tr>
<td>Magnet Mounting Screws</td>
<td>Stainless steel #6-32 x 7/8 in. SS Phillips HD screw</td>
<td>560357</td>
</tr>
<tr>
<td>Connector Kit</td>
<td>Field Installable 10 pin female connector [For use with Style RB and RC transducers]</td>
<td>400755-3</td>
</tr>
<tr>
<td>Connector</td>
<td>Environmental, 10 pin male MS connector</td>
<td>370160</td>
</tr>
<tr>
<td>Cable</td>
<td>Low capacitance, 5 twisted pair, 24 AWG w/overall shield and drain wire</td>
<td>530018</td>
</tr>
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