Radio Telemetry System
For Strain Gages, Thermocouples
and Voltage Signals

OMEGA’s TX20B radio telemetry system is ideal for transmitting signals from sensors which are mounted on rotating shafts. The TX20B series miniature transmitters modulate sensor signals from thermocouples, voltage transducers, or strain gage bridge circuits onto a 46 to 49 MHz carrier and transmit them to a stationary receiver. The RX20B receiver demodulates the signal and converts it into a ±2 volt analog output. Two analog outputs signals are available simultaneously. A wide band output provides frequency response from dc to 1250 Hz. For maximum stability of the signal a filtered output is also available with a 0 to 10 Hz band width.

TX20B transmitters incorporate a crystal oscillator which is tuned to a specific frequency eliminating the need for tuning by the operator. Transmitter frequencies can be staggered allowing multiple transmitters to be operated in close proximity with no interference. Multi-channel receivers are available.

Transmitters are small enough in size to be taped or strapped to the rotating shaft and can be powered by a 9 V battery. For applications where continuous uninterrupted monitoring is necessary an inductively coupled power supply and transmitter are also available.

The TX20B operates in a 46-49 MHz band and does not require an FCC license.

$5070
Model TX20B
Complete System

✓ Eliminates Cumbersome Slip Ring Installation
✓ Does Not Require FCC License
✓ Small Size, Light Weight
✓ Wireless Sensor Interface
✓ Battery Powered or Induction Powered Models Available
System Specifications

Accuracy: ±0.25% FS
Nonlinearity: ±0.1% FS
Repeatability: ±0.05% FS
RF Frequency: 46 to 49 MHz (20 channels)
Modulation Type: FM

Transmitter Specifications

Input Types: 120 to 1 K Ohm Strain Gage Bridge, DC Voltages, J or K Thermocouples
Bridge Excitation: 5 Vdc (strain gage only)
Power Source: 9 Volt battery or Induction Power
Operating Temp: -40 to 130 °C (-40 to 266°F)
Zero Temp Drift: 0.02 %/°C
Span Temp Drift: 0.02 %/°C
Dimensions: 1.48 W x 0.80 H x 0.68” D (37.5 x 20.3 x 17.3 mm)

Receiver Specifications

Freq Response: Wide Band, dc to 1250 Hz: Filtered, dc to 10 Hz
Output Ripple: Wide Band, < 15 mV: Filtered, < 5 mV
Dimensions: 3.5 H x 8.3 W x 8” L (89 x 211 x 203 mm)

To Order Typical Battery Powered System:
1. Select Transmitter module
2. Select clamp assembly with 9 volt battery housing
3. Select Receiver

To Order Typical Induction Powered System:
1. Select transmitter module
2. Select clamp assembly with built-in inductive power supply circuitry
3. Select stationary loop induction power supply
4. Select receiver for use with stationary loop induction power supply

Ordering Guide and Specifications

To Order (Specify Model Number)

Transmitter Modules

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Input Range</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>TX20B-S1</td>
<td>0.3 mV/V</td>
<td>Strain gage transmitter</td>
<td>$1790</td>
</tr>
<tr>
<td>TX20B-S2</td>
<td>1.0 mV/V</td>
<td>Strain gage transmitter</td>
<td>1790</td>
</tr>
<tr>
<td>TX20B-S3</td>
<td>2.0 mV/V</td>
<td>Strain gage transmitter</td>
<td>1790</td>
</tr>
<tr>
<td>TX20B-S4</td>
<td>3.0 mV/V</td>
<td>Strain gage transmitter</td>
<td>1790</td>
</tr>
<tr>
<td>TX20B-E1</td>
<td>0.1 V</td>
<td>Voltage transmitter</td>
<td>1790</td>
</tr>
<tr>
<td>TX20B-E2</td>
<td>1.0 V</td>
<td>Voltage transmitter</td>
<td>1790</td>
</tr>
<tr>
<td>TX20B-E3</td>
<td>5.0 V</td>
<td>Voltage transmitter</td>
<td>1790</td>
</tr>
<tr>
<td>TX20B-E4</td>
<td>10.0 V</td>
<td>Voltage transmitter</td>
<td>1790</td>
</tr>
<tr>
<td>TX20B-J1</td>
<td>0 to 200 °F</td>
<td>Type J T/C transmitter</td>
<td>1790</td>
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<tr>
<td>TX20B-J2</td>
<td>0 to 400 °F</td>
<td>Type J T/C transmitter</td>
<td>1790</td>
</tr>
<tr>
<td>TX20B-J3</td>
<td>0 to 800 °F</td>
<td>Type J T/C transmitter</td>
<td>1790</td>
</tr>
<tr>
<td>TX20B-J4</td>
<td>0 to 1000 °F</td>
<td>Type J T/C transmitter</td>
<td>1790</td>
</tr>
<tr>
<td>TX20B-K1</td>
<td>0 to 500 °F</td>
<td>Type K T/C transmitter</td>
<td>1790</td>
</tr>
<tr>
<td>TX20B-K2</td>
<td>0 to 1000 °F</td>
<td>Type K T/C transmitter</td>
<td>1790</td>
</tr>
<tr>
<td>TX20B-K3</td>
<td>0 to 1500 °F</td>
<td>Type K T/C transmitter</td>
<td>1790</td>
</tr>
<tr>
<td>TX20B-K4</td>
<td>0 to 2000 °F</td>
<td>Type K T/C transmitter</td>
<td>1790</td>
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</table>

Clamp Assemblies

<table>
<thead>
<tr>
<th>Battery Power</th>
<th>Price</th>
<th>Inductive Price</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TX-BCA-100</td>
<td>$990</td>
<td>TX-ICA-100 $1190</td>
<td>Clamp assembly for 1” shafts</td>
</tr>
<tr>
<td>TX-BCA-125</td>
<td>990</td>
<td>TX-ICA-125 1190</td>
<td>Clamp assembly for 1½” shafts</td>
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<tr>
<td>TX-BCA-150</td>
<td>990</td>
<td>TX-ICA-150 1190</td>
<td>Clamp assembly for 1¾” shafts</td>
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<tr>
<td>TX-BCA-175</td>
<td>990</td>
<td>TX-ICA-175 1190</td>
<td>Clamp assembly for 2” shafts</td>
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<tr>
<td>TX-BCA-200</td>
<td>990</td>
<td>TX-ICA-200 1190</td>
<td>Clamp assembly for 2¼” shafts</td>
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<tr>
<td>TX-BCA-250</td>
<td>990</td>
<td>TX-ICA-250 1190</td>
<td>Clamp assembly for 3” shafts</td>
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<tr>
<td>TX-BCA-300</td>
<td>990</td>
<td>TX-ICA-300 1190</td>
<td>Clamp assembly for 3¼” shafts</td>
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<tr>
<td>TX-BCA-400</td>
<td>990</td>
<td>TX-ICA-400 1190</td>
<td>Clamp assembly for 4” shafts</td>
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<tr>
<td>TX-BCA-500</td>
<td>990</td>
<td>TX-ICA-500 1190</td>
<td>Clamp assembly for 5” shafts</td>
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<tr>
<td>TX-BCA-600</td>
<td>990</td>
<td>TX-ICA-600 1190</td>
<td>Clamp assembly for 6” shafts</td>
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</table>

Receivers

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Description</th>
<th>Price</th>
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<tbody>
<tr>
<td>RX20B-M</td>
<td>Receiver for battery powered systems</td>
<td>$2290</td>
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<tr>
<td>RX20B-I-M</td>
<td>Receiver for inductive powered systems</td>
<td>2490</td>
</tr>
<tr>
<td>SL20</td>
<td>Stationary loop for inductive powered systems</td>
<td>1890</td>
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<tr>
<td>RX24B-BP4</td>
<td>Channel plug in receiver backplane</td>
<td>1880</td>
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<tr>
<td>RX28B-BP8</td>
<td>Channel plug in receiver backplane</td>
<td>2550</td>
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<tr>
<td>RX22</td>
<td>Plug in receiver module (battery transmitter)</td>
<td>1475</td>
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<tr>
<td>RX22-I</td>
<td>Plug in receiver module (inductive transmitter)</td>
<td>1775</td>
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<tr>
<td>LDRX22</td>
<td>Plug in receiver module (For LDTX20 transmitters)</td>
<td>1575</td>
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</tbody>
</table>

Ordering Example: TX20B-J1 + TC-ICA-100 + SL20 + RX20B-I-M, is a complete inductive powered system for 1” shafts for 0-200 F type J thermocouple. = $1790 + 1190 + 1890 + 2490 = $7360
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