RADIO TELEMETRY SYSTEM
FOR STRAIN GAGES, THERMOCOUPLES, AND VOLTAGE SIGNALS

RX20B-M, receiver with display, with TX20B-S1, strain gage module, and TX-BCA-100, clamp assembly, shown smaller than actual size.

TX20B

Eliminates Cumbersome Slip Ring Installation
Does Not Require FCC License
Small, Lightweight
Wireless Sensor Interface
Battery-Powered or Induction-Powered Models Available

OMEGA's TX20B radio telemetry system is ideal for transmitting signals from sensors that are mounted on rotating shafts. The TX20B Series miniature transmitters modulate sensor signals from thermocouples, voltage transducers, or strain gage bridge circuits onto an RF carrier and transmit them to a stationary receiver. The RX20B receiver demodulates the signals and converts them into ±2V analog output. Two analog output signals are available simultaneously.

A wideband 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 bandwidth.

TX20B transmitters incorporate a crystal oscillator that is tuned to a specific frequency, eliminating the need for tuning by the operator. Transmitter frequencies can be staggered, allowing multiple transmitters to operate in proximity with no interference. Multichannel receivers are available.

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

The TX20B operates in a band that does not require an FCC license.
RADIO TELEMETRY SYSTEM
ORDERING GUIDE AND SPECIFICATIONS

SYSTEM SPECIFICATIONS
Accuracy: ±0.25% FS
Non-Linearity: ±0.1% FS
Repeatability: ±0.05% FS
Modulation Type: FM

TRANSMITTER SPECIFICATIONS
Input Types: 120 Ω to 1 kΩ strain gage bridge, DC voltages, J or K thermocouples
Bridge Excitation: 5 Vdc (strain gage only)
Power Source: 9V battery (included) 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: 37.5 W x 20.3 H x 17.3 mm D (1.48 x 0.80 x 0.68")

RECEIVER SPECIFICATIONS
Frequency Response: Wideband, DC to 1250 Hz; filtered, DC to 10 Hz
Output Ripple: Wideband, <15 mV; filtered, <5 mV
Dimensions: 89 H x 211 W x 203 mm L (3.5 x 8.3 x 8")

To Order
TRANSMITTER MODULES
MODEL NO. INPUT RANGE DESCRIPTION
TX20B-S1 0.3 mV/V Strain gage transmitter
TX20B-S2 1.0 mV/V Strain gage transmitter
TX20B-S3 2.0 mV/V Strain gage transmitter
TX20B-S4 3.0 mV/V Strain gage transmitter
TX20B-E1 0.1 V Voltage transmitter
TX20B-E2 1.0 V Voltage transmitter
TX20B-E3 5.0 V Voltage transmitter
TX20B-E4 10.0 V Voltage transmitter
TX20B-J1 -17 to 93°C (0 to 200°F) Type J T/C transmitter
TX20B-J2 -17 to 204°C (0 to 400°F) Type J T/C transmitter
TX20B-J3 -17 to 427°C (0 to 800°F) Type J T/C transmitter
TX20B-J4 -17 to 538°C (0 to 1000°F) Type J T/C transmitter
TX20B-K1 -17 to 260°C (0 to 500°F) Type K T/C transmitter
TX20B-K2 -17 to 538°C (0 to 1000°F) Type K T/C transmitter
TX20B-K3 -17 to 816°C (0 to 1500°F) Type K T/C transmitter
TX20B-K4 -17 to 1093°C (0 to 2000°F) Type K T/C transmitter

CLAMP ASSEMBLIES
BATTERY POWER INDUCTIVE DESCRIPTION mm (in)
TX-BCA-100 TX-ICA-100 Clamp assembly for 25.4 (1) shafts
TX-BCA-125 TX-ICA-125 Clamp assembly for 31.8 (1 1/4) shafts
TX-BCA-150 TX-ICA-150 Clamp assembly for 38.1 (1 1/2) shafts
TX-BCA-175 TX-ICA-175 Clamp assembly for 44.5 (1 3/4) shafts
TX-BCA-200 TX-ICA-200 Clamp assembly for 50.8 (2) shafts
TX-BCA-250 TX-ICA-250 Clamp assembly for 63.5 (2 1/2) shafts
TX-BCA-300 TX-ICA-300 Clamp assembly for 76.2 (3) shafts
TX-BCA-400 TX-ICA-400 Clamp assembly for 101.6 (4) shafts
TX-BCA-500 TX-ICA-500 Clamp assembly for 127.0 (5) shafts
TX-BCA-600 TX-ICA-600 Clamp assembly for 152.4 (6) shafts

RECEIVERS
MODEL NO. DESCRIPTION
RX20B-M Receiver for battery-powered systems
RX20B-I-M Receiver for induction-powered systems
SL20 Stationary loop for induction-powered systems
RX24B-BP 4-channel plug-in receiver backplane
RX28B-BP 8-channel plug-in receiver backplane
RX22 Plug-in receiver module (battery transmitter)
RX22-I Plug-in receiver module (induction transmitter)

Comes complete with 9V battery and operator's manual.
Ordering Example: TX20B-J1 + TX-BCA-100 + SL20 + RX20B-I-M, complete induction-powered system for 1" shafts for -17 to 93°C (0 to 200°F) Type J thermocouple.

To order typical battery-powered system:
1. Select transmitter module
2. Select clamp assembly with 9V battery housing
3. Select receiver

To order typical induction-powered system:
1. Select transmitter module
2. Select clamp assembly with built-in induction power supply circuitry
3. Select stationary loop induction power supply
4. Select receiver for use with stationary loop induction power supply

DISCONTINUED