

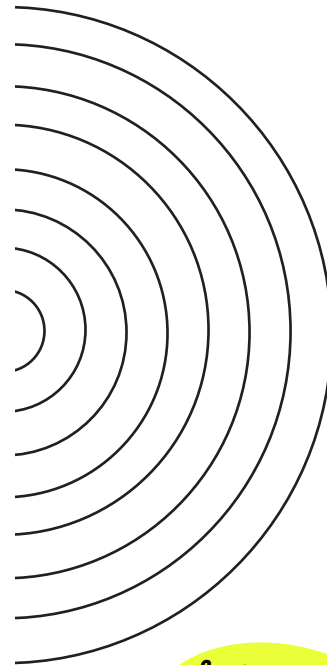
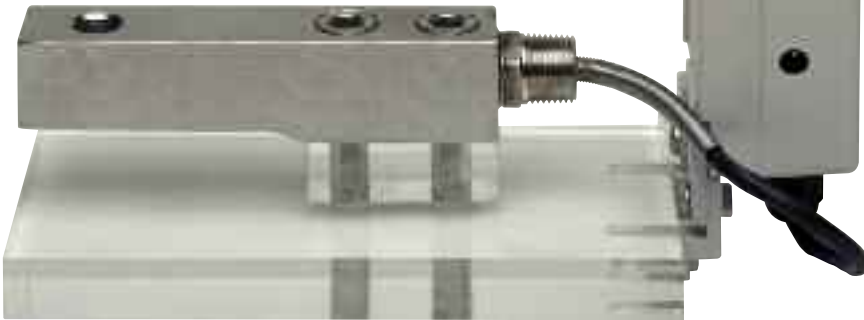
RADIO TELEMETRY SYSTEM FOR mV AND BRIDGE TYPE SENSORS

RT400 Series Radio Telemetry System for Sensors



Starts at
\$370

LC501, load cell, \$340, shown smaller than actual size, see page F-62 for details.



TRANSMIT—RECEIVE—DISPLAY

- ✓ Up to 500 hr Battery Life
- ✓ 13-Bit Resolution
- ✓ Tough ABS Enclosures
- ✓ Interference-Free Transmission
- ✓ Individual Coding Allows Up to 256 Units
- ✓ Sensor Excitation

Applications

- ✓ Difficult-to-Wire Installations
- ✓ Remote Monitoring of Strain Gages
- ✓ Remote Stress Analysis
- ✓ Weighing Systems
- ✓ Remote Pressure Monitoring

An Innovative Solution

In difficult installations, OMEGA's remote telemetry system for mV sensors provides an innovative alternative to costly cables or wires.

The RT400 system enables remote data acquisition from sensors, without hard-wiring.

The RT400 transmitter easily interfaces with any resistor-based or strain gage-based sensor and converts the sampled analog signal to digital code. This code is sent to the receiver via FM radio transmission. There, the original analog signal is reconstructed and a scaled output signal is produced.

The built-in UHF radio transmitter and receiver circuits operate on 916 MHz and are type approved, allowing license-free use. A fixed, compact, $\frac{1}{4}$ wave helical antenna on both transmitter and receiver units enables line-of-sight operating ranges from up to 200 yards.

The compact design incorporates miniature microprocessor-based circuitry, which provides 16-bit analog-to-digital conversion and digital encoding for the radio transmission. Owing to highly reliable designs and data error-detection techniques, data transmission is safe and free from errors caused by interference.

The transmitter and receiver units are powered by rechargeable batteries. Battery life can be extended up to 500 hours by

using duty-cycle power saving (a 1000 Ω load sampled every 10 seconds). Both the transmitter and receiver units are lightweight and housed in a rugged ABS case that provides environmental protection against water or dust to IP65 standards.

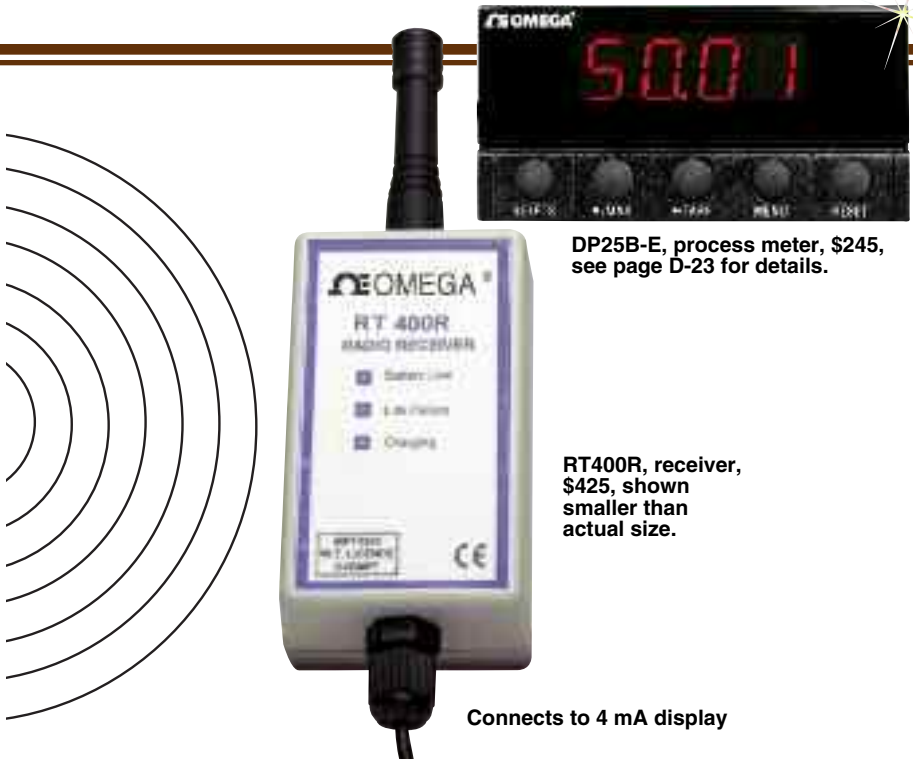
An 8-way DIP switch sets the transmitter and receiver address codes. The 8-bit address code prevents interference from adjacent sets, and up to 256 codes are available.

The RT400 transmitter will interface directly with a Wheatstone bridge sensor. An excitation voltage of 3.3 Vdc powers the sensor. The excitation signal goes on 60 ms before the sensor output is sampled, then switches off to extend battery life. Bridge sensitivities from ± 2 mV/V to ± 400 mV/V are available for maximum sampling sensitivity.

In reconstructing the signal from the transmitter, the RT400 receiver produces a scaled output of 0 to ± 2.5 Vdc.

See Section Y for a
Selection of Scientific,
Technical, and Reference
Books Available from
omega.com

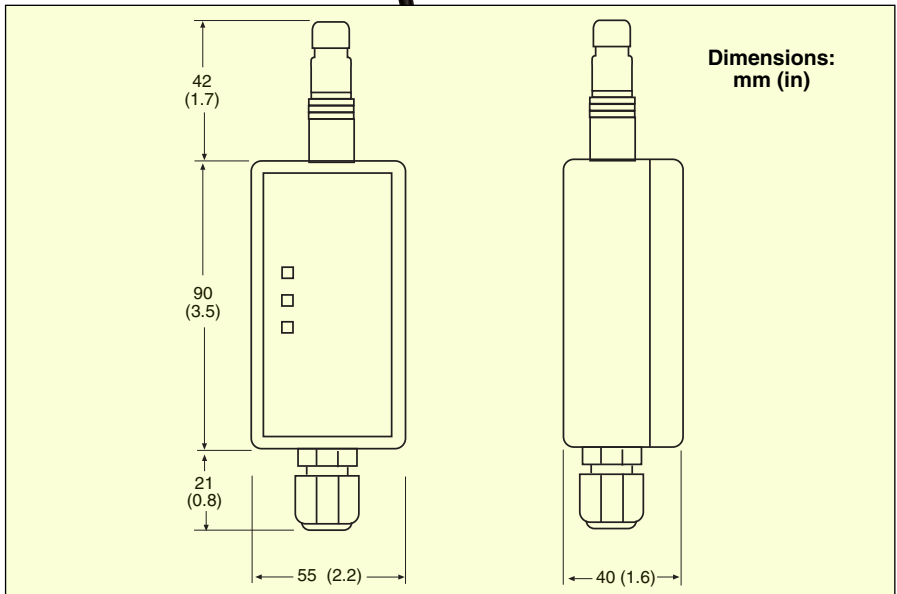
RANGES OF UP TO 200 YARDS



DP25B-E, process meter, \$245, see page D-23 for details.

RT400R, receiver, \$425, shown smaller than actual size.

Connects to 4 mA display



SPECIFICATIONS

RT400T TRANSMITTER

Frequency Range: 916 or 433 MHz

Transmitter Power: <10 mW

Transmission Interval: 500 ms to 10 s adjustable

Address ID: 0 to 255, switch selectable

User-Selectable Input Ranges:

- ±2 mV/V ±5 mV
- ±10 mV/V ±25 mV
- ±200 mV/V ±500 mV
- ±400 mV/V ±1000 mV

Resolution: >0.02% (13-bit)

Sensor Excitation: 3.3 Vdc

Power Requirement: Internal 3.6 Vdc @ 120 mAh rechargeable battery

Standby Current: 150 µA

Battery Life: 500 hr typical when fully charged

Housing: High-impact ABS

Dimensions: 55 x 90 x 40 mm (2.2 x 3.5 x 1.6")

Weight: 120 g (4.2 oz)

Operating Temperature: -10 to 55°C (26 to 131°F)

Storage Temperature: -40 to 85°C (-40 to 185°F)

Antenna: 42 mm ¼ wave helical

Sensor Connection: 4 screw terminals for 0.5 to 1.5 mm (24 to 15 AWG) wire

Cable Gland: Accepts cable diameter 3.0 to 6.5 mm (0.16 to 0.25")

RT400R RECEIVER

Frequency Range: 916 or 433 MHz

Receiver Sensitivity: -133 dBm

Communication Failure Alarm:

Adjustable time delay, open drain output (100 mA max current); LED indication

Analog Output: 0 to ±2.5 Vdc

Resolution: >0.02% (13-bit)

Power Requirement: 12 Vdc from battery pack

Internal Battery: 3.6 Vdc @ 120 mAh rechargeable battery (included)

Battery Life: 8 hr typical when fully charged

Battery Charger: 12 Vdc @ 20 mA for 7 hr or continuous float charge

Housing: High-impact ABS

Dimensions: 55 x 90 x 40 mm (2.2 x 3.5 x 1.6")

Weight: 120 g (4.2 oz)

Operating Temperature: -10 to 55°C (26 to 131°F)

Storage Temperature: -40 to 85°C (-40 to 185°F)

Antenna: 42 mm ¼ wave helical

AVAILABLE FOR FAST DELIVERY!

To Order (Specify Model Number)		
MODEL NO.	PRICE	DESCRIPTION
RT400T	\$370	Transmitter module
RT400R	425	Receiver module with rechargeable battery pack and analog output
RT400-CHARGER	50	Extra AC charger

Comes complete with AC adaptor, 3.6V rechargeable battery, and operator's manual.

Ordering Example: RT400T, transmitter, and RT400R, receiver (complete system), \$370 + 425 = \$795. An AC charging unit is standard with RT400R. Order a second charger if simultaneous charging of both units is necessary in your application.

ACCESSORIES



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www.omega.com
1-800-TC-OMEGA
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CANADA

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• pH and Conductivity

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• Data Acquisition

Auto-Dialers and Alarm Monitoring Systems, Communication Products and Converters, Data Acquisition and Analysis Software, Data Loggers Plug-in Cards, Signal Conditioners, USB, RS232, RS485 and Parallel Port Data Acquisition Systems, Wireless Transmitters and Receivers

• Pressure, Strain and Force

Displacement Transducers, Dynamic Measurement Force Sensors, Instrumentation for Pressure and Strain Measurements, Load Cells, Pressure Gauges, Pressure Reference Section, Pressure Switches, Pressure Transducers, Proximity Transducers, Regulators, Strain Gages, Torque Transducers, Valves

• Heaters

Band Heaters, Cartridge Heaters, Circulation Heaters, Comfort Heaters, Controllers, Meters and Switching Devices, Flexible Heaters, General Test and Measurement Instruments, Heater Hook-up Wire, Heating Cable Systems, Immersion Heaters, Process Air and Duct, Heaters, Radiant Heaters, Strip Heaters, Tubular Heaters