



DCR-WEB

Ultrasonic Web Controller

- Controller optimized for web applications
- 2 line x 8 character LCD display and keypad for easy programming
- Programmable filtering
- Programmable drive speed and ramp control
- Isolated 0-10 VDC output for drive control with invert switch (other outputs available)
- (2) Programmable 5 A dry contact relays used to activate alarms
- Perfect for roll-diameter and loop control applications

Options

- Electrostatic or ceramic transducers

■ Operational Description

The DCR-WEB is an ultrasonic position control system designed for the demands of web control applications.

The DCR-WEB operates on the principle of “time of flight” measurement of an ultrasonic signal generated by the transducer.

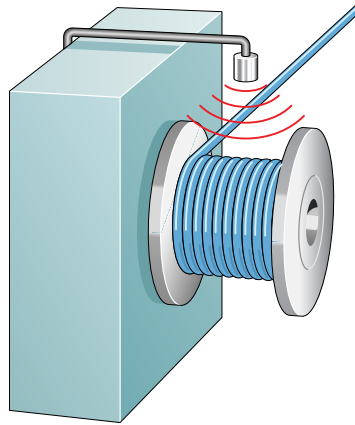
The DCR-WEB transducer can be either an electrostatic sensor for clean environments or a ceramic piezo sensor for harsh industrial environments. A variety of transducer mounting configurations are available (see dimensional drawings and ordering information for details).

The DCR-WEB controller utilizes microprocessor intelligence to allow filtering of the return signal to discriminate the desired target from unwanted false echoes and ambient noise. The controller specifically rejects difficult-to-filter noises from broad spectrum sources such as pneumatic valves and cylinders. The controller program is designed specifically to offer programmable features desired by engineers controlling web tension and roll diameter in their industrial processes.

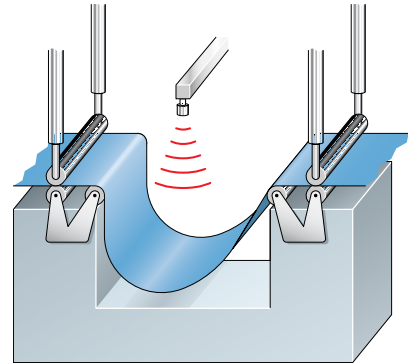
■ Applications

The DCR-WEB is designed to provide a direct interface and control signal to many types of drives used to control tension and speed on industrial web processes. The web material can be metal, plastic, paper, rubber, glass, or any other extruded or formed rolling stock. The sensor is not sensitive to changes in color, reflectiveness or web temperature, as are other sensor technologies. Ultrasonic sensors require no contact with the rolling stock and cannot damage or degrade the product.

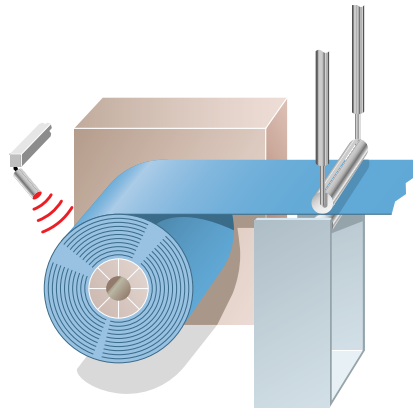
Sheet, Web or Thread Break



Slack Loop or Tension Control



Roll Diameter —
Unwind or Rewind



■ **Controller Specifications**

Performance

Range:

Electrostatic (DCR-1047, DCR-1057) —
6 to 120 in. (15 to 300 cm)

Ceramic (DCR-2017, DCR-2067) —
12 to 120 in. (30 to 300 cm)

Digital Inputs: Invert Switch (analog output),
Program Switch (save two program settings)

Digital Outputs: Relay: (2) programmable;
Isolated to 1500 Vrms; (2) SPST - 5 A @
250 VAC

Analog Outputs: 0-10 VDC isolated

Electrical: Isolation exceeds 2500 Vrms

Resolution: 0.1 in. (2.54 mm)

Accuracy: ±0.25% of range

Repeatability: 0.05% of full scale

Sample Rate: 40 to 120 msec, programmable

Display: 2 lines x 8 char. LCD alphanumeric

Adjustments: 4 button key pad – mode up,
mode down, number up and number down

Temperature Compensation: Internal, enabled
with ceramic transducers

Electrical

Supply Voltage:

AC —100/120/200/240 VAC; 50/60 Hz.

DC — 10–30 VDC

Total Current Draw: 50 mA max

Physical

Sensor Connector: coaxial “F” connector

Electrical Connector: terminal strips

Material: PVC housing with Screw Cover

Dimensions, Overall: 7.0 x 7.0 x 3.0 in.
(178 x 178 x 75 mm)

Rating: IP65/NEMA 4X

Mounting: Surface by means of (4) screws

Weight: 2 lb. approximately

Environmental

Operating Temperature: 32 to 140°F
(0 to 60°C)

Maximum Pressure: 15 psig at 68°F (20°C)
(1 bar)

Specifications are subject to change without notice.

■ **Transducer Specifications**

Sensor: Electrostatic or Ceramic Piezo

Range:

Electrostatic (DCR-1047, DCR-1057) —
6 to 120 in. (15 to 300 cm)

Ceramic (DCR-2017, DCR-2067) —
12 to 120 in. (30 to 300 cm)

Material:

Electrostatic: Stainless Steel and Gold
Kapton® Film

Ceramic: ABS or PVC

Dimensions:

Electrostatic: 3.5 x 2.5 x 1.5 in.
(89 x 64 x 38 mm)

Ceramic: 3 x 2 in. dia. (76 x 51 mm dia.)

Rating:

Electrostatic (DCR-1047, DCR-1057) —
NEMA 12

Ceramic (DCR-2017, DCR-2067) —
NEMA 4X

Mounting:

Electrostatic: (2) screw flange

Ceramic: (4) screw flange or 2 NPT

Operating Temperature: -4 to 140°F

(-20 to 60°C)

Maximum Pressure: 20 psig at 68°F (20°C)

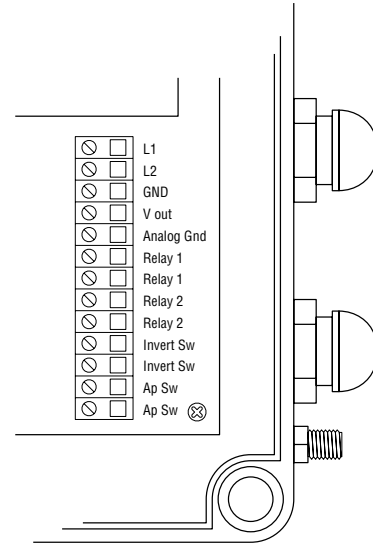
Weight:

Electrostatic (DCR-1047, DCR-1057) —
0.5 lb. (0.2 kg) approximately

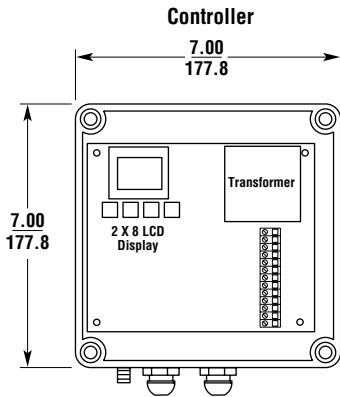
Ceramic (DCR-2017, DCR-2067) —
1.0 lb. (0.45 kg) approximately

Specifications are subject to change without notice.

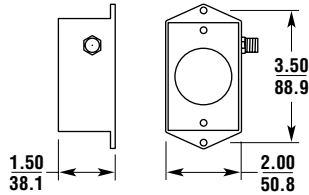
■ **Wiring**



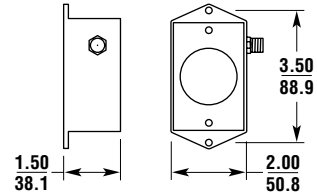
■ Dimensions — in./mm



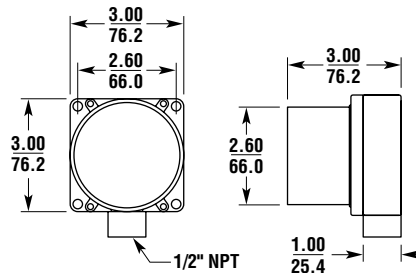
DCR-1047 Electrostatic, Back-Mount Housing



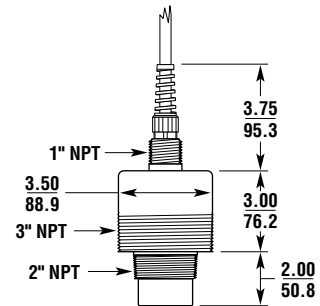
DCR-1057 Electrostatic, Front-Mount Housing



DCR-2017 Ceramic Surface-Mount Housing



DCR-2067 Ceramic, NPT Housing



■ Ordering Information

DCR -

Transducer Option

- 1047** Controller with electrostatic transducer in back-mount housing (NEMA 12 index)
- 1057** Controller with electrostatic transducer in front-mount housing (NEMA 12 index)
- 2017** Controller with ceramic transducer in ABS surface-mount housing (NEMA 4X)
- 2067** Controller with ceramic transducer in PVC 2 NPT housing (NEMA 4X)



For information on ultrasonic sensing accessories, see www.apgsensors.com