Life Is On | **Foxboro**®
by **Schneider** Electric

Foxboro® 876CR Transmitter

For Contacting Conductivity and Resistivity

Model 876CR Transmitter Description

The Foxboro® brand Model 876CR is a 2-wire loop powered intelligent transmitter that, when used with appropriate electrochemical sensors, provides measurement, local display, and transmission of contacting conductivity, resistivity or concentration. The transmitter outputs a HART digital signal and a 4 to 20 mA analog output. For contacting conductivity or resistivity applications requiring a two-wire, loop powered transmitter, the Foxboro brand Model 876CR with Foxboro sensors provides the most flexible solution for wide ranging application conditions. Unlike other contacting conductivity and resistivity measurement solutions, Foxboro's offering provides the widest choice of sensing and configuration selections, resulting in the best possible match for your application. The result is long service life, quick and easy application set changes, and savings in both material and labor costs.

Summary

The Foxboro Model 876CR is a full featured transmitter for contacting conductivity and resistivity applications. It offers easy config-urability, a rugged field-mounted enclosure for the most challenging industrial environments, and agency certifications for hazardous electrical areas. HART communications and a time saving HART Device Type Manager integrates with your plant asset management strategies.

Business Value

Unlike other contacting conductivity and resistivity measurement solutions, Foxboro's offering provides the widest choice of sensing and configuration selections, resulting in the best possible match for your application. The result is long service life, quick and easy application set changes, and savings in both material and labor costs.

876CR Transmitter

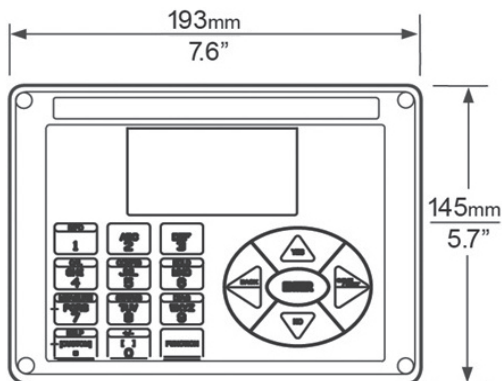## For Contacting Conductivity and Resistivity

Features / Benefits

Application Flexibility:

Transmitter can be rapidly customized to specific application requirements, including conductivity, resistivity and concentration. One basic transmitter handles all applications, simplifying inventory.
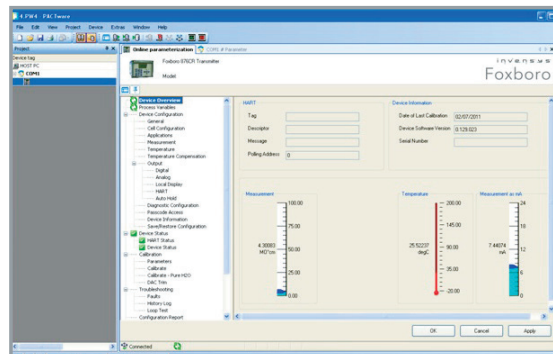
Save and Restore Configurations:

Up to two unique configuration profiles can be saved, facilitating a quick and easy change, saving operator time and cost.

Customize and Employ up to Three Applications:

Transmitter can be pre-configured for up to three different applications, each with its own display format, temperature compensation curve, chemical concentration curve (if applicable), and output configuration. Easy switching of applications saves significant time.

Auto-switching:

Applications can be auto-switched using user-programmable switch limits. For example, the transmitter can switch from a wide range conductivity application to a very sensitive one without the need to recalibrate the system for the new range. This results in tremendous time savings for operators, and eliminates common sources of error in critical applications.

HART DTM: A time-saving HART Device Type Manager (DTM) simplifies configuration, troubleshooting and provides trend graph capabilities.
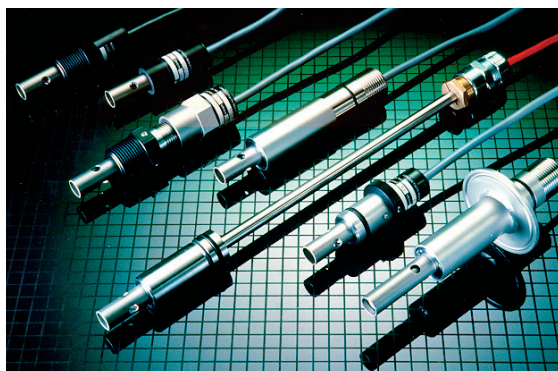
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876CR Transmitter Specifications

Accuracy:	± 0.5% of absolute reading over the input range of 40 Ω to 10 MΩ
Stability (After 6 Months):	Twice the absolute measurement accuracy value
NAMUR Compliance:	NAMUR NE 43 for analog overrange and underrange
	NAMUR NE 21 for interference immunity requirements
Electromagnetic Compatibility (EMC):	Complies with European EMC Directive 2004/108/EC by conforming to EN 61326-1:2006
Display Format (Selectable):	0.9999 uS/cm to 9999 mS/cm
	0.9999 Megohm-cm to 99.99 Megohm-cm
	Available display format depends on cell factor and units of measurement selected
Temperature Inputs:	100 ohm or 1000 ohm platinum RTD
	10 kohm or 100 kohm thermistor
Temperature Compensation:	Absolute, NaCl, ultrapure water, linear, custom and several other standard types
Sensor Compatibility:	871CC and 871CR Series
Output Hold:	Hold OFF, Hold at PRESENT value, or Hold at MANUAL value
History Log:	100 most recent events stored in nonvolatile memory
Environmental and Corrosion Resistance:	IP66 and NEMA 4X
Electrical Safety Specifications:	Approved by FM, ATEX, CSA, IECEx and NEPSI. Zone 0 and Zone 2, Divisions 1 and 2

Sensors Available for the 876CR Transmitter

871CC Conductivity and Resistivity Sensors

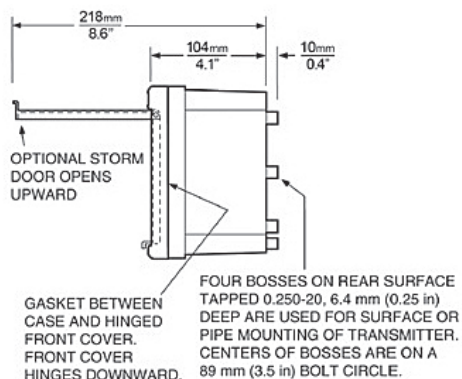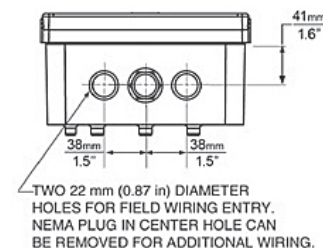871CR Conductivity and Resistivity Sensors

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Model Code Specifications

Description...Model

    Intelligent Transmitter for Contacting Conductivity and
Resistivity Measurement..876CR

Output Signal

    Intelligent; Digital HART and 4 to 20 mA ....-T

Enclosure Mounting

    Panel Mounting...W

    Surface Mounting X

    Pipe Mounting (Horizontal or Vertical Pipe) ....Y

Electrical Safety (contact Foxboro for the current status of certifications)

    ATEX intrinsically safe; II 1 G, Ex ia IIC, Zone 0 ....AA

    ATEX intrinsically safe for II 3 G, Ex ic IIC, Zone 2 ....AN

    CSA intrinsically safe; Class I, II, III, Division 1;
and Ex ia IIC, Zone 0 ....CA

    CSA for Class I, II, III, Division 2; and energy limited for
Ex nL IIC, Zone 2 ....CN

    FM intrinsically safe; Class I, II, III, Division 1;
and AEx ia IIC, Zone 0..FA

    FM nonincendive; Class I, II, III, Division 2; and energy
limited for AEx nC IIC, Zone 2 ....FN

    IECEx intrinsically safe; II 1 G, Ex ia IIC, Zone 0..............................DA

    IECEx intrinsically safe II 3 G, Ex ic IIC and Ex nL IIC, Zone 2 ....DN

    NEPSI, Ex ia IIC Ga; intrinsically safe for Zone 0 ....NA

    NEPSI, Ex ic IIC Gc; intrinsically safe for Zone 2 ....NN

    No Certification ....ZZ

Optional Selections

    Special per Engineering Order (a) ....-1

    Storm Door (b) ....-7

    Detailed Instruction Manual (c) ....-M

41mm / 1.6"

38mm / 1.5"   38mm / 1.5"

TWO 22 mm (0.87 in) DIAMETER HOLES FOR FIELD WIRING ENTRY. NEMA PLUG IN CENTER HOLE CAN BE REMOVED FOR ADDITIONAL WIRING.

218mm / 8.6"

104mm / 4.1"   10mm / 0.4"

OPTIONAL STORM DOOR OPENS UPWARD

GASKET BETWEEN CASE AND HINGED FRONT COVER. FRONT COVER HINGES DOWNWARD.

FOUR BOSSES ON REAR SURFACE TAPPED 0.250-20, 6.4 mm (0.25 in) DEEP ARE USED FOR SURFACE OR PIPE MOUNTING OF TRANSMITTER. CENTERS OF BOSSES ARE ON A 89 mm (3.5 in) BOLT CIRCLE.

(a) Provides ability to preconfigure the instrument with custom temperature compensation.
(b) Used to protect front panel controls, particularly in field mounting applications.
(c) A CD-ROM is shipped as standard with each transmitter.and Process Electrode Seal

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For more information
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