

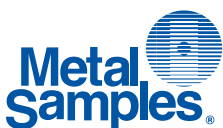
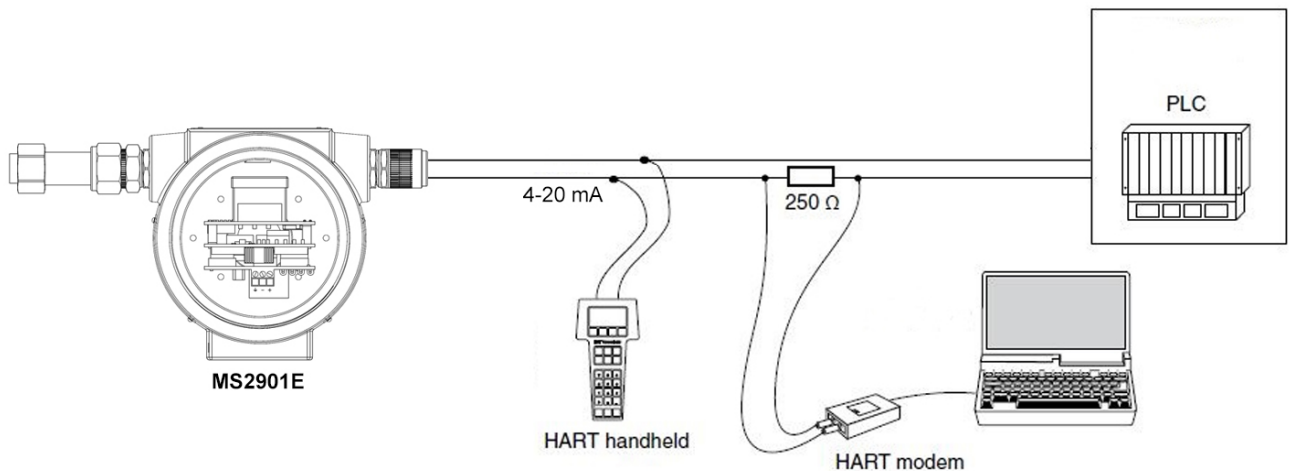
# Model MS2901E

## High Resolution ER Transmitter 4-20 mA / HART Output

Metal Samples' new compact MS2901E ER Transmitter (ERT) measures all types of electrical resistance (ER) corrosion probes using state-of-the-art algorithms and data analysis. The new high-resolution, 16-bit measurement provides faster response, obtaining corrosion rates in hours instead of days. Metal loss gets updated and transmitted after each measurement cycle in the form of 4-20mA /HART signal.

The transmitter is provided in a weather-proof (IP 66 / NEMA-4X) and explosion proof cast aluminum enclosure. It is designed to be mounted directly to the probe, but can also be mounted nearby using the optional mounting kit and a customer-supplied mounting pole.

The MS2901E is completely loop-powered with an in-built isolator, so installation is simple. No external isolator/barrier is necessary. A two-wire connection is all that is required for both instrument power and data transmission. Setup is also simple, using a set of switches to select the probe type to be measured.



### Metal Samples Company

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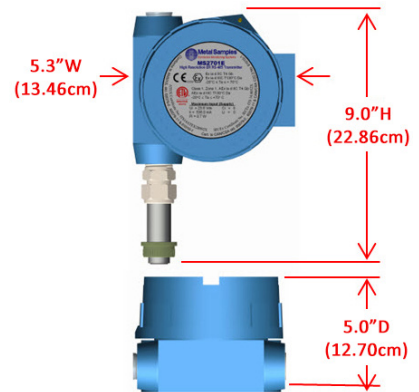
# Technical Specifications

## Model

MS2901E - High Resolution ER 4-20mA HART Transmitter, Direct Mount  
MS2901E-XX\* - High Resolution ER 4-20mA HART Transmitter, Remote Mount  
\*XX = Cable length in feet, up to 30 feet maximum, in 5-foot increments.

## Physical Data

Instrument Weight: 5.25 lb. (2.38 Kg)  
Total Weight w/ Accessories: 7.31 lb. (3.31 Kg)  
Instrument Dimensions: 9.0"H x 5.3"W x 5.0"D  
(22.86cm H x 13.46cm W x 12.70cm D)  
Operating Temperature: -40° to 158°F (-40° to 70°C)  
Storage Temperature: -40° to 176°F (-40° to 80°C)  
Enclosure Material: Cast Aluminum (Copper-Free)  
Mounting Specifications: Direct probe mount or Remote mount  
(Up to a 2.5" (6.35cm) Dia. pole)



## Performance Data

Measurement Type: ER measurement using any standard ER probe type  
(Wire Loop, Tube Loop, Cylindrical, Flush, Strip, etc.)  
Range: 0-100% of probe life  
Resolution: 0.0015% of Probe Life (16-bit)  
Cycle Time: ~1 Minute

## Electrical Data

Connection: 4 to 20 mA with HART, 2 Wire  
Power Requirements: 11 to 28 VDC  
Current Consumption: 4 to 22.5 mA  
Maximum 20mA without alarm/22.5mA with alarm  
Electrical Connection: 1/2" NPT entry with Ex Gland  
3/4" or other entries are available with adaptors\*  
Maximum Probe Cable Distance: 30 ft (9.1 m)

## Output Data

Output Signal: 4-20mA output with HART protocol  
Alarm Signal: - Current Output Configurable  
- Digital interface  
Load: - min. 250 Ohms for HART Communication

## Hazardous Location Certifications

Europe and Worldwide  
(ATEX and IECEx)  
II 2(1) G Ex db [ia Ga] IIC T6...T4 Gb  
II 2(1) D Ex tb [ia Da] IIIC T85°C ...T130°C Db  
- 40°C ≤ Tamb ≤ + 70°C  
Ex db [ia Ga] IIC T6...T4 Gb  
Ex tb [ia Da] IIIC T85°C ...T130°C Db  
- 40°C ≤ Tamb ≤ + 70°C

ATEX Certificate No: **ITS14ATEX27981X**  
IECEx Certificate No: **IECEx ITS 14.0010X**

USA and Canada  
(ETL)  
Class I, Zone 1, AEx db [ia Ga] IIC T6...T4 Gb  
Class I, Division 2, Groups A, B, C & D, T6...T4

## Hazardous Location Certifications – Enclosure

Case Specifications: Explosion Proof (FM, CSA, UL)  
IP 66, NEMA 4X, 7BCD, 9EFG

## Included Accessories (Direct-Mount Model)

Meter Prover, Operations Manual

## Included Accessories (Remote-Mount Model)

Meter Prover, Operations Manual, Probe Cable, Mounting Hardware Kit

\*Contact Metal Samples for special cables and cable entries.