

Model MS2900L - CorrTran MV

LPR 4-20mA/HART® Transmitter

Metal Samples' CorrTran MV transmitter measures general corrosion, localized corrosion (pitting), and conductance, and transmits that information to operators via 4 to 20mA / HART® protocol in real time. The corrosion rate or pitting factor is configured as the primary variable using a standard 2-wire 4 to 20 mA output. The remaining outputs are configured as secondary and tertiary HART variables.

The CorrTran MV utilizes state-of-the-art algorithms and data analysis techniques to accurately measure general corrosion rate and pitting. Harmonic distortion analysis (HDA) is applied to improve the performance of the industry-accepted linear polarization resistance (LPR) technique used to measure corrosion rate.

To further enhance the performance, an application-specific Stern-Geary variable (B value) is calculated and updated every measuring cycle. There is no need to manually update the B value because of process changes. During the measurement cycle, CorrTran MV also performs an automated electrochemical noise (ECN) measurement, which in combination with the corrosion rate data can provide a measurement of localized corrosion (pitting).

The CorrTran MV works with Metal Samples three-electrode CorrTran style probes and electrodes. Probes are available in a variety of mounting types and materials to suit almost any type of installation.



Features

- On-line corrosion monitoring, multivariable
- 2-wire, 4 to 20 mA transmitter, HART interface
- General corrosion, localized corrosion (pitting), and conductance monitoring via HART
- Stern-Geary B value automatically updated for changes in the process



Ordering Information

Transmitter Model	
MS2900L-	CorrTran MV Transmitter
	Mounting Type
	DM Direct Mount
	06 Remote Mount with 6' (1.8m) Cable
12 Remote Mount with 12' (3.6m) Cable	
XX Special (Remote Mount with XX' of Cable)	
	Certificates
	D2 CSA, NI, Class I, Div 2, Group A-D
	Ex Explosion/Flame Proof
	GP General Purpose
	IS CSA, IS, Class I, Div. 1, Group A-D
	⊕ II 1G EEx ia IIC T4
MS2900L-	

Accessories	
ET915549	CorrTran Com Tools
ET1899	Wall or pipe mounting bracket for remote mounted transmitters
ET915548	HART modem, HART to USB interface

Intrinsic Safety Isolators	
ET231364	SMART transmitter power supply, 1-channel, IS isolator
ET229332	SMART transmitter power supply, 2-channel, IS isolator
ET255622	Transmitter supply isolator, 4 mA ... 20 mA, 1-channel, IS limit alarm
ET185535	SMART transmitter power supply, compact version, 1-channel, IS isolator

Technical Specifications

Model MS2900L CorrTran MV LPR 4-20mA/HART Transmitter

Physical Data

Instrument Weight	1.1 lb (500 g)
Instrument Dimensions	3.78" x 3.15" x 6.30" (96mm x 80mm x 160mm)
Operating Temperature	-40 to 158 °F (-40 to 70 °C)
Enclosure Material	Aluminum
Degree of Protection	IP66, NEMA 4X
Electrical Entry	¾ NPT

Electrical Data

Electrical Connection	2-wire 4-20 mA with HART
Minimum terminal voltage	11 V at 20 mA without alarm, or at 22.5 mA with alarm
Maximum terminal voltage	30 V
Current Consumption	4 to 22.5 mA
Maximum Load (at 24 V DC)	575 Ω with high alarm, or 650 Ω without high alarm

Measurement Data

Probe Type	3-Electrode LPR		
Measurement Type	General Corrosion¹	Localized Corrosion	Conductance
Measurement Unit	mpy (mils per year) or mmpy (mm per year)	Unitless	microSiemens (μS)
Measurement Range(s)	Default Range: 0 to 40 mpy (0 to 1 mmpy) Maximum ² : 1000 mpy (25 mmpy) ¹ Instantaneous corrosion rate available as a primary variable. Average corrosion rate available via HART. ² Range adjustable via HART or factory set.	Default Range: 0.0 to 1.0 Low Range: 0.0 to 0.3 High Range: 0.3 to 1.0	5 to 333,333
Maximum Measured Error	Excitation voltage < 0.05% of full span Corrosion current measurement < 0.2% of full span		
Factory Settings	B value (Stern Geary value): 25.6 mV K value (corrosion constant): 11800 (2e- in reaction)		
Measurement Cycle	4 to 21 minutes (depends on configuration)		

Output Data

Output Signal	4-20 mA with HART protocol
Alarm Events	Alarm on over-range
Alarm Types	Digital and Analog (configurable)
Analog Alarm Options	Current high (22.5 mA) with auto-reset (default), current high with manual reset, or none
Output Damping	0, 1, 2, 5, 10, 20, 50 s
Load	Minimum load for HART communication: 250 Ω

Certificates and Approvals

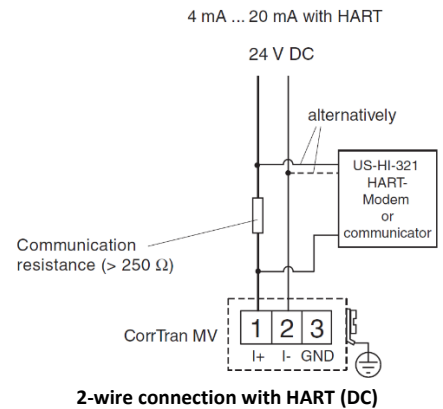
Ex Approval	LCIE 05 ATEX 6097X , for additional certificates contact Metal Samples
CSA Approval	cCSAus certified for USA and Canada; Certificate no. 1563164 IS: Cl. I, II, III; Div. 1, 2; Groups A-G EX: Cl. I; Div. 1, 2; Groups A-D NI: Cl. I, II, III; Div. 2; Groups A-G
Type of Protection	Ⓜ II 1G EEx ia IIC T4
Patents	U.S. patents: 7,239,156; 7,245,132; 7,265,559; 7,282,928

Conformity Information

Directive 94/9/EC (ATEX)	EN 50014, EN 50020, EN 50284
Degree of Protection	EN 60529

EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable. For information contact Metal Samples.

Terminal Assignments



2-wire connection with HART (DC)



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