Corrosion Protection for Fisher™ FIELDVUE™ Digital Valve Controllers

Standard Instrument Paint

Standard paints applied to instruments are formulated to withstand extreme exposures to corrosive atmospheres and are tested to confirm this benefit. Due to the excellent surface preparation and superior coatings applied to the prepared substrate, other more expensive coating systems are not necessary. The coatings used for instruments are baked-on finishes that will withstand the toughest environments and will keep on performing for years to come.

Comparisons of paints other than standard have shown no advantages in using other paints. Because of the potential impact on instrument performance, we are unable to apply coatings or paints other than our standard.

Figure 1. Fisher DVC6200 Digital Valve Controller with Standard Finish

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Table 1. Standard Instrument Paint Specifications

Technical Specifications—Standard Instrument Paint	
Surface Preparation	Clean, desmut, apply chromate conversion coating
Coating Thickness	31 to 37 microns (1.25 to 1.5 mils)
Standard Acceptance Test	Refer to the Standard Instrument Paint Panel Results in table 2
Standard Color Specifications	**Regal Gray**—Munsell #8.4 B 3.47/0.60 **Rosemount Blue**—Federal Standard 595A- #25177

Standard Instrument Paint Test-Panel Results

Standardized flat-panel tests show the effect of common chemical exposures and physical attributes. Tests were performed on chromate conversion coated aluminum alloy panels. For more information about test conditions, procedures, and results, contact your Emerson Process Management sales office.

Scan or click to access sales office information

Table 2. Standard Instrument Paint Panel Results

TEST	RESULT	TEST	RESULT	TEST	RESULT
Hot and Cold Cycle	No effect	10% NH_4OH	No effect	Mandrel Bend ASTM D522	PASSED
10% HNO_3	Slight loss of gloss to no effect	15% Xylene; 85% Mineral Spirits	Slightly lighter to no effect	Impact ASTM D2794	PASSED
10% HCL	No effect	Unleaded Gasoline	No effect	Thread-locking Sealant Resin	PASSED
3% H_2SO_4	No effect	Cross-Hatch Adhesion ASTM D3359	PASSED	Humidity, Ultraviolet, and Gravel Tests	PASSED
10% NaOH	Slight loss of gloss to no effect	Pencil Hardness ASTM D3363	PASSED	Salt Cabinet ASTM B117	PASSED

DVC6200 Stainless Steel Alternative

As an alternative to painted instruments, the FIELDVUE DVC6200 digital valve controller can be furnished with a stainless steel module base, housing and an all-stainless mounting kit. The sealed terminal box isolates field wiring connections from other areas of the instrument and keeps water and harsh atmosphere away from electronic components. The DVC6200 stainless steel version eliminates all diecast aluminum parts, which greatly increases its resistance to the tough, corrosive environments found on offshore platforms, within chemical plants, and inside refinery processing units.

Figure 2. Fisher DVC6200 Digital Valve Controller Stainless Steel Version

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Proprietary NCF (Non-Corroding Finish) Coating for Steel Fasteners

Standard steel fasteners such as bonnet bolting, actuator casing bolting, and steel fasteners for Fisher instruments have NCF (non-corroding finish) coating.

NCF coating was developed by Emerson Process Management to greatly improve resistance to corrosion from acids, bases, salts, and many other chemicals and to follow the parameters listed in ASTM F1136 (Standard Specification for Zinc/Aluminum Corrosion Protective Coatings for Fasteners). NCF coating is a polymer-based coating consisting of multiple coats applied to all surfaces of bolts, studs, and nuts. (NCF coating is not used on steel bolting for temperatures over 427°C or 800°F). NCF coating is silver or gray in color and the finish is dull when compared with zinc plating.

The effectiveness of this proprietary coating designed specifically for the control valve market has been proven by actual testing on offshore platforms and accelerated salt-spray tests in the laboratory. NCF coated fasteners remain easily maintainable after offshore exposure. Original replacement NCF bolting is only available from Emerson Process Management.

Figure 3. NCF-Coated Fasteners Exhibit Superior Performance in Accelerated Laboratory Tests

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STANDARD ZINC PLATED **NCF COATED**

Table 3. NCF Coating Specifications

Technical Specifications—NCF Coating	
Surface Preparation	**Pressure-retaining parts:** Light blast **Non pressure-retaining parts:** Light blast or zinc plating
Coating Thickness	Approximately 0.025 mm (0.001 inches)
Standard Acceptance Test	No red rust after 500 hours of ASTM B117 salt-spray test conducted on products after assembly with a pneumatic impact wrench
Color	Light silver-gray

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