VTX-SCR configuration guide

Screen motion, low-frequency measurement and harsh-area review

Document status - application guide and configuration review checklist. Use a controlled configuration datasheet, approved drawing and written quotation to define the delivered model, ratings, documents and commercial terms.

Define process motion before selecting the range

VTX-SCR requests cover screen-box displacement, heavy-duty velocity or acceleration. Supply operating frequency, stroke, motion direction, maximum normal motion, start/stop motion and anticipated impacts. Specify stroke as peak-to-peak displacement.

Sine-only screening example

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f = RPM / 60 = 900 / 60 = 15 Hz

xPP = 10 mm; amplitude = xPP / 2 = 5 mm

vRMS = pi x f x xPP / sqrt(2) = 333.2 mm/s
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This calculated process velocity is about 13.1 times a 25.4 mm/s full-scale range. A transmitter with that full scale would be operating beyond its measurement range. Its exact overrange current and recovery behavior require the selected model documentation.

The calculation assumes sinusoidal motion and consistent units. Complex elliptical motion, impacts and harmonics require the actual measurement definition. A displacement full scale such as 10 or 20 mm peak-to-peak must include operating and transient headroom.

Bandwidth and overload review

Specify low-frequency cutoff, integration method, acceleration input limit, recovery time, continuous shock exposure and output saturation behavior separately. Compare the required millimeter stroke against any original mil-scale displacement rating.

VTX-SCR configuration guide (continued)

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Mounting and cable survival

Use a rigid prepared mounting point with a defined direction. Support and strain-relieve the cable, allow suitable motion, respect minimum bend radius and protect connectors from debris. Provide photographs or a routing drawing for the vibrating-to-stationary transition.

VTX-420-EX hazardous-area request

Treat a hazardous-area rotating-machine request as a separate configuration review. Supply the area classification, gas or dust group, temperature class, ambient limits, jurisdiction and required certificate scheme.

Request the exact approved nameplate identity, certificate number and revision, special conditions, approved cable entries and installation drawing. Where intrinsic safety is proposed, the system review must address the sensor, barrier and cable parameters together.

Specify 1/2 NPT or M20 x 1.5 conduit entry requests independently of the machine mounting interface. The delivered approval scope and installation conditions must cover that exact assembly.

Quotation package

- Machine type, RPM, stroke, axis, normal / transient motion and exact quantity.
- Range and detector, passband, overload behavior, cable length, armor and routing.
- For classified areas, certificate and system-document requirements before acceptance.

Request the exact quantity, destination, installation schedule and required documents. Confirm unit prices, installation-kit prices, calibration scope, transport, warranty and lead time in the quotation for the selected configuration.

Machine evaluation and engineering reference

Select the applicable ISO 20816 part and adopted edition for the machine, support, speed, measurement direction and operating state. Overall housing vibration and changes from a baseline support condition trending. A diagnostic bearing assessment may need high-frequency features or waveforms.

https://www.iso.org/standard/89922.html