Foxboro FBM202 P0926EQ

01 Plan the temperature measurement path

Work scope

The installation has three distinct parts: the eight sensor circuits, the temperature reference at their termination, and the module-to-controller communication path. Check each part separately so a good network connection does not conceal a field measurement error.

Trace the complete path

01	Identify the thermocouple or millivolt source and its intended channel. Preserve the positive and negative conductor assignment.
02	Locate the termination assembly and its integral four-wire platinum reference sensor. Confirm which module receives that reference.
03	Trace the removable termination cable or direct baseplate connection to the selected module slot.
04	Follow the module Fieldbus through its FCM or control processor to the application consuming the value.

Readiness decisions

Check	Preparation
Signal characteristic	Thermocouple types B, E, J, K, N, R, S and T, or an appropriate millivolt signal.
Reference arrangement	One isolated reference channel per module; the TA carries the reference sensor.
Power planning	Nominal 24 V DC with +5/-10% tolerance; allow 3 W maximum per module.
Work boundary	Coordinate any disconnection with the process application and its alarms.

Separate three tests

Sensor polarity, reference-junction compensation and controller scaling answer different questions. Verify all three before accepting a temperature loop; a plausible display alone cannot distinguish a correct sensor from an offsetting configuration error.

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02 Select and connect the termination

Termination assembly choices

Part	Construction	Connection capacity
P0916AC	PVC; compression	One module; eight signals
P0916AD	PVC; ring lug	One module; eight signals
P0916XH	PA; compression	One module; eight signals
P0917JL	PA; ring lug	One module; eight signals
P0928CN	PC/ABS; compression	Two modules; sixteen signals

Direct baseplate connection

The two-module assembly occupies paired positions 1/2, 3/4, 5/6 or 7/8. It routes sixteen two-wire inputs and includes an RTD for each of the two FBM202 modules. Keep the two eight-channel groups identifiable during wiring.

Conductor and connector data

Connection	Requirement
Compression: solid	0.2-4 mm²
Compression: stranded	0.2-2.5 mm²
Ferruled stranded	0.2-2.5 mm²
Compression AWG range	24-12 AWG
Ring lug	No. 6 connector; 0.5-4 mm²; 22-12 AWG
Baseplate cable connector	37-pin D-subminiature
TA cable connector	25-pin D-subminiature

Remote assembly connection

For a DIN-rail TA, the removable cable connects its 25-pin interface to the 37-pin field connector on the module baseplate. Use the proper Type 2 cable and retain the existing channel assignment; a mechanically similar connector is not sufficient identification.

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03 Arrange cables and enclosure conditions

Type 2 cable selection

Length	P/PVC cable	LSZH cable
0.5 m	P0916DU	P0928AL
1 m	P0916DV	P0928AM
2 m	P0931RN	P0928AN
3 m	P0916DW	P0928AP
5 m	P0916DX	P0928AQ
10 m	P0916DY	P0928AR
15 m	P0916DZ	P0928AS
20 m	P0916EA	P0928AT
25 m	P0916EB	P0928AU
30 m	P0916EC	P0928AV

Installation limits

Element	Operating boundary
PVC termination assembly	-20 to +50 °C
PA or PC/ABS assembly	-20 to +70 °C
Module humidity	5-95% RH, noncondensing
Normal module operation	-20 to +70 °C
Termination run	Up to 30 m between TA and module baseplate

Keep the weakest limit visible

Assess the TA and cable as well as the module. A PVC termination assembly remains limited to +50 °C.

Cable construction

P/PVC uses a polyurethane outer jacket and semi-rigid PVC conductor insulation. LSZH is a low-smoke, zero-halogen jacket classification. Select the installed construction against the enclosure and site requirements without changing the signal mapping.

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04 Configure and commission the channels

Commissioning sequence

Stage	Action	Acceptance
Applied input	Use a thermocouple simulator or millivolt source appropriate to the configured signal.	Correct channel responds with the intended engineering-unit value.
Low and high points	Exercise points within the selected operating span.	Response follows the source without clipping or incorrect scaling.
Reference junction	Inspect the TA RTD circuit when multiple compensated readings share an offset.	Reference measurement is credible for the termination temperature.
Open circuit	Perform a controlled sensor-disconnection test where the process permits.	The channel indicates the specified upscale burnout behavior.
Communications	Observe module status and both configured Fieldbus paths.	The process value reaches its intended controller destination.

Configuration choices

Sensor linearization
Select the characteristic appropriate to the actual thermocouple, rather than merely choosing a temperature display unit.

Input averaging
Set an integration period appropriate to process dynamics and power-line noise.

Rate-of-change processing
Review configured limits together with the application response to a changing temperature.

Process handling
Keep alarm and control actions under the approved maintenance arrangement while injecting test signals.

End-to-end acceptance

Record the source condition and the observed application value together. Confirm the physical channel, configured sensor characteristic and destination point agree before removing temporary test conditions.

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05 Diagnose the measurement and hand over

Symptom-based checks

Symptom	Investigation	Technical reason
One channel high	Inspect sensor continuity and polarity.	An open thermocouple can produce upscale indication.
Several similar offsets	Examine reference RTD wiring and terminal temperature conditions.	A shared reference affects compensated temperature values.
Reading excessively slow	Review the configured integration period.	Longer averaging trades response speed for noise suppression.
Unstable millivolt value	Review signal wiring and integration settings.	Low-level inputs are sensitive to unwanted coupled signals.
Module communication loss	Inspect baseplate power and the A/B Fieldbus path status.	Separate measurement-path faults from communication faults.

Replacement boundary

Field device termination wiring, supply wiring and communication cabling can remain connected during module exchange. This mechanical capability does not determine whether an operating process can tolerate removal; plan the affected channel behavior first.

Complete the service record

Retain channel-to-sensor mapping, TA identity, cable identity, thermocouple selection, integration settings and observed test response. Include the reference RTD condition when investigating common temperature offsets.

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Foxboro FBM2/36

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Technical basis

Foxboro PSS 21H-2Z2 B4, FBM202 Thermocouple/mV Input Interface Module, March 2013, pp. 1-9.