Foxboro FBM201 P0914SQ

01 Plan the transmitter loops

Define the circuit before connecting

Work from a channel schedule that identifies the transmitter, its power source, the field pair, the termination assembly and the controller point. Current-loop wiring and power selection must be resolved together; the module cannot correct an incorrectly powered field circuit.

Loop preparation

01	Identify whether the field device requires loop power or supplies its own current output.
02	Trace both conductors to the intended termination and confirm polarity.
03	Check the selected TA supports the required internal or external power arrangement.
04	Reserve a controlled test condition for the affected application before opening a live loop.

Engineering inputs

Item	Planning value
Signal requirement	0–20 mA DC; commonly a transmitter uses a 4–20 mA working interval within that span.
Loop voltage	22.8 V DC compliance must cover the field device and conductor losses.
Module burden	61.5 Ω nominal input impedance.
Supply budget	24 V DC nominal; allow 7 W maximum consumption per module.
Cabinet budget	Allow 3 W maximum module heat dissipation.

Account for all conductors

The voltage budget uses the complete outgoing and return wire resistance, together with the field-device voltage requirement. Avoid treating one conductor length or a nominal supply label as the complete available operating margin.

Foxboro FBM201 P0914SQ

02 Choose termination hardware

FBM201 termination choices

Assembly	Material	Connection
P0916AA	PVC	Compression
P0916AB	PVC	Ring lug
P0916XG	Polyamide	Compression
P0917JK	Polyamide	Ring lug

Keep power and signal assignments together

These assemblies pass the eight current-input circuits through to the module. Preserve the existing channel-to-terminal arrangement when moving conductors, and distinguish the field-device power source from the electronic-module supply.

Connection data

Connection	Requirement
Field input	Two-wire DC current per channel
Baseplate cable connector	37-pin D-subminiature
TA cable connector	25-pin D-subminiature
Compression solid wire	0.2–4 mm²
Compression stranded wire	0.2–2.5 mm²
Compression with ferrule	0.2–2.5 mm²
Ring-lug wire	0.5–4 mm²; No. 6 connector

Termination temperature

PVC assemblies are rated from -20 to +50 °C; polyamide assemblies extend to +70 °C. A module rated for +70 °C does not raise the permissible temperature of a PVC assembly installed alongside it.

Foxboro FBM201 P0914SQ

03 Select the removable Type 1 cable

Cable length and part selection

Length	P/PVC	LSZH
0.5 m	P0916DA	P0928AA
1 m	P0916DB	P0928AB
2 m	P0931RM	P0928AC
3 m	P0916DC	P0928AD
5 m	P0916DD	P0928AE
10 m	P0916DE	P0928AF
15 m	P0916DF	P0928AG
20 m	P0916DG	P0928AH
25 m	P0916DH	P0928AJ
30 m	P0916DJ	P0928AK

Cable decisions

Termination distance
Select the Type 1 TA cable within the available length options, up to 30 m.

Field-device distance
Calculate the separate transmitter-loop distance from compliance voltage, wire resistance and device voltage drop.

P/PVC construction
The jacket is polyurethane and the primary conductor insulation is semi-rigid PVC.

LSZH construction
Low-smoke, zero-halogen cable material limits smoke and halogen emissions under high heat.

Two distances, two checks

The TA-to-baseplate cable allowance and the field-device cable calculation are different boundaries. Passing one does not prove the other; retain both in the installation schedule.

Foxboro FBM201 P0914SQ

04 Verify the current loop in service

Commissioning observations

Test	Method	Result to assess
Current injection	Apply known current points within the configured measurement range.	The assigned channel follows the applied current.
Engineering scaling	Compare the controller indication with the intended process span.	The displayed physical value agrees with the configured conversion.
Loop power	Check the voltage available at the transmitter under load.	The field device remains inside its own operating requirement.
Channel separation	Exercise one circuit while observing its neighbors.	Other channel readings remain consistent with their own inputs.
Noise response	Compare stable-source readings with normal field wiring.	Investigate wiring or configured averaging if instability appears.

Configuration review

Input interpretation
Confirm that the application is configured for the intended current-to-process relationship.

Integration time
Choose the averaging interval against required response speed and interference.

Rate-of-change limits
Review any configured limit before judging a rapid test change as a hardware fault.

Alarm handling
Coordinate injected values with the process alarm and control response.

End the test deliberately

Remove temporary sources and restore the field loop. Compare the restored measurement against an independent process reference, then release the application from its agreed maintenance condition.

Foxboro FBM201 P0914SQ

05 Isolate faults and complete replacement

Symptom-led investigation

Observation	Check	Reason
One loop at zero	Check the field supply, continuity and polarity.	A missing current can originate outside the module.
Reading stops rising	Check source compliance and the complete loop resistance.	The source may have insufficient voltage to drive the requested current.
Noisy reading	Review signal routing and integration settings.	Disturbance and averaging affect the apparent current value.
Wrong engineering value	Compare injected current with controller scaling.	Correct input conversion does not guarantee correct application scaling.
Several missing channels	Inspect common power, cable and module status.	A shared connection fault differs from an individual transmitter fault.

Calibration and replacement

The module and TA do not require calibration. A replacement therefore concentrates on identity, connector engagement, power arrangement and verified loop behavior. Field termination, power and communications cabling may remain connected during the mechanical exchange.

Retain the useful test record

Keep the channel schedule, TA and cable selection, loop-power arrangement, test current values and resulting process indications. These records distinguish a future transmitter fault from a wiring or configuration change.

Explore other Foxboro catalogue pages

Foxboro FBM206 P0916CQ

Foxboro B0123HE

Technical basis

Foxboro PSS 21H-2Z1 B4, FBM201/b/c/d Analog Input Interface Modules, selected pages 1, 2, 4–11.