Invensys FBM10/15

Engineering Installation, Diagnostic and Acceptance Guide

FBM10/15 denotes a Foxboro I/A Series FBM10 main module with one FBM15 expansion module. Each module provides eight 120 Vac monitored inputs and eight 120 Vac switched outputs, giving the combined pair sixteen inputs and sixteen outputs when engineered together.

01 Job scope and identity

Complete model	FBM10/15
Product type	Foxboro I/A Series 120 Vac Digital I/O Module Set
Manufacturer	Invensys
Technical source	Foxboro Product Specification PSS 21H-2C9 B4

Field decisions

1 Verify the delivered identity

Record the complete FBM10/15 marking and the installed assembly before removal.

2 Preserve the decisive interface

Preserve the FBM10 main-to-Fieldbus connection, FBM15 expansion link, 26-42 Vdc module supply and every 120 Vac termination assignment.

3 Check the selected limits

FBM10 main attaches to the redundant Fieldbus and supports one Fieldbus-dependent FBM15 expansion

4 Prove the intended function

Restore the module program and configuration, then prove FBM10 Fieldbus health and all sixteen inputs and sixteen outputs across the pair.

5 Retain the acceptance record

Record Fieldbus status and sixteen-input/sixteen-output proof.

Installation relationships

Pair identity	Record both serial labels and the physical main-to-expansion connection.
Output test	Measure connected load current and inrush while verifying overload recovery.
Configuration test	Record input filters, fail-safe states, momentary modes and pulse intervals.

Pre-work evidence

Verified field	Input channels per module: 8
Verified field	Output channels per module: 8
Verified field	Combined pair inputs: 16
Verified field	Combined pair outputs: 16
Verified field	Input ON-state: 79 to 132 Vac
Verified field	Input OFF-state: 0 to 20 Vac
Verified field	Input filter selections: 4, 8, 16 or 32 ms

02 Pre-installation readiness

Model-specific installation decisions

Exact identity

FBM10/15 and every delivered revision or approval marking must be recorded before removal.

Installed system

Foxboro I/A Series FBM10 main and FBM15 expansion modules companion components, channel assignment and approved machine reference must remain traceable.

Mechanical baseline

Record the as-found mounting datum, reach, lock position, target clearance, routing and connector support.

Electrical baseline

Record the applicable stopped-machine gap, bias, continuity or channel value together with test conditions.

As-left configuration

Document the final mechanical position, cable protection, connector condition and complete companion-component identities.

Functional release

Compare the final monitor indication and controlled operating response with the approved baseline before handover.

Installation precautions

Treat FBM15 as dependent

Do not release an FBM15 without identifying its supporting FBM10 and expansion connection.

Isolate 120 Vac circuits

Use the site lockout procedure and prove each input/output circuit de-energized before handling.

Check output inrush

Verify load inrush and external fusing; fault current above 50 A can damage the module.

Recover configuration

Archive input filter, output fail-safe, sustained/momentary mode and pulse interval.

Match termination hardware

Confirm discrete-wire, plug-connector or direct-connection block against the enclosure design.

Prove the pair

Test main Fieldbus communication and every input/output on both FBM10 and FBM15.

Pre-installation release gates

Release gate	Treat FBM15 as dependent: Do not release an FBM15 without identifying its supporting FBM10 and expansion connection.
Release gate	Isolate 120 Vac circuits: Use the site lockout procedure and prove each input/output circuit de-energized before handling.
Release gate	Check output inrush: Verify load inrush and external fusing; fault current above 50 A can damage the module.
Release gate	Recover configuration: Archive input filter, output fail-safe, sustained/momentary mode and pulse interval.
Release gate	Match termination hardware: Confirm discrete-wire, plug-connector or direct-connection block against the enclosure design.
Release gate	Prove the pair: Test main Fieldbus communication and every input/output on both FBM10 and FBM15.

03 Installation and commissioning

Controlled installation sequence

01 120 Vac field-status monitoring	Use the documented ON/OFF windows to monitor eight mains-level contacts per module.
02 120 Vac actuator switching	Switch relays or solenoids within the 2 A channel and 12 A module limits.
03 Main-plus-expansion I/O	Connect one FBM15 to the supporting FBM10 for a coordinated 16-input/16-output station.
04 Ladder Logic execution	Restore the approved Digital I/O or Ladder Logic program, filters, fail-safe and momentary-output settings.

Commissioning acceptance criteria

Acceptance point	Pair identity: Record both serial labels and the physical main-to-expansion connection.
Acceptance point	Output test: Measure connected load current and inrush while verifying overload recovery.
Acceptance point	Configuration test: Record input filters, fail-safe states, momentary modes and pulse intervals.

04 Diagnostics and escalation

What does FBM10/15 include?	It denotes an FBM10 Fieldbus main module and one FBM15 expansion module.
How many inputs are available in the FBM10/15 pair?	Each module has eight inputs, for sixteen inputs across the pair.
How many outputs are available in the FBM10/15 pair?	Each module has eight outputs, for sixteen outputs across the pair.
Can the FBM15 part of FBM10/15 connect directly to the Fieldbus?	No; the expansion is functionally dependent on its supporting FBM10 main module.

Additional diagnostic decisions

What input voltage windows apply to FBM10/15?	ON is 79-132 Vac and OFF is 0-20 Vac.
What output current limits apply to FBM10/15?	Each channel is 2 A maximum and each module is 12 A maximum, with separate inrush limits.
What configuration must be retained for FBM10/15?	Retain input filters, fail-safe/fallback, sustained or momentary mode and pulse interval.
How should FBM10/15 be accepted after replacement?	Verify main Fieldbus communication and test every input and output on both modules.

05 Handover and evidence package

Model-specific handover evidence

Source revision	Record the revision of Foxboro Product Specification PSS 21H-2C9 B4 used for the review.
Applicability	FBM10 main and FBM15 expansion module functions, 120 Vac channel data, power, environment and mounting specifications; manufacturer contact page is excluded.
Installed evidence	Preserve the FBM10 main-to-Fieldbus connection, FBM15 expansion link, 26-42 Vdc module supply and every 120 Vac termination assignment.
Functional evidence	Restore the module program and configuration, then prove FBM10 Fieldbus health and all sixteen inputs and sixteen outputs across the pair.

Model-specific application limits

Pair record	Capture FBM10 and FBM15 labels, expansion connection and mounting positions.
Termination record	Record connector-block type and all 120 Vac field assignments.
Functional record	Record Fieldbus status and sixteen-input/sixteen-output proof.

Product-specific acceptance records

Selected engineering value	Output voltage: 79 to 132 Vac; 120 Vac nominal, 50/60 Hz
Selected engineering value	Output current: 2 A maximum per channel; 12 A maximum per module
Selected engineering value	Output inrush: 24 A peak 10 ms; 12 A rms 20 ms; 3.5 A rms 1 s
Selected engineering value	Module-pair supply: 26 to 42 Vdc redundant
Selected engineering value	Power, main only: 7 W maximum
Selected engineering value	Power, main plus expansion: 11 W maximum
Acceptance record	Pair identity: Record both serial labels and the physical main-to-expansion connection.
Acceptance record	Output test: Measure connected load current and inrush while verifying overload recovery.
Acceptance record	Configuration test: Record input filters, fail-safe states, momentary modes and pulse intervals.
Lifecycle decision	Installed-system identity: FBM10/15 is a legacy Foxboro I/A Series main-plus-expansion pair documented by PSS 21H-2C9 B4.
Lifecycle decision	Support boundary: Ongoing use depends on the installed I/A Series Fieldbus, mounting structure, termination assembly and application program.
Lifecycle decision	Replacement rule: Match main/expansion role, 120 Vac I/O, termination type, filters, output modes and enclosure architecture.

Verified related product references

Related product	ABB PM5670-2ETH 1SAP151000R0278
Related product	Invensys FBM10/15
Related product	Emerson 5X00790G01
Related product	General Electric 8121-DI-DC-01

Engineering contact



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