ifm II5910

01 Qualify the sensing location

Define the two machine states

Establish a safe test condition in which the target can be moved without creating unintended machine motion. Identify what the controller must read when the target is absent and present. Mark the normal approach path and the nearest surrounding metal. A sensor that is already active with the intended target absent cannot provide the required transition.

Use production target material

Bring the actual production target into the sensing zone and withdraw it along the normal path. Test at several accessible working positions, selecting a position with repeatable margin rather than the furthest detectable point. If a substitute target is used for a preliminary test, repeat the acceptance with the production part before release.

Separate nominal and usable range

The steel-reference nominal range is not a guarantee for every target. Copper and aluminium produce a shorter effective range than steel. The listed correction factors help explain this behavior, but target geometry, alignment and surrounding metal still require application testing. Retain the observed ON and OFF positions instead of treating a calculated material correction as a final acceptance limit.

Test condition	Acceptance observation
Target removed	No unintended detection from bracket or nearby metal
Actual target present	Stable detection at the selected working position
Approach and withdrawal	Both transitions repeat; their difference is recorded
Final assembly	Cable support and tightened mounting do not shift the accepted position

02 Mount and protect the connection

Secure the flush installation

Install the sensor in the intended flush mounting arrangement and protect the sensing face during assembly. Use the provided mounting nuts and the specified tightening constraint; do not use the connector as a handle to torque the sensor. Recheck position after securing the assembly, because tightening can move the switching point relative to the target.

Check the complete connector assembly

Use the A-coded M12 mating connection with the required contact assignment. Inspect the sealing surfaces for damage or contamination and support the cable so that normal movement does not pull on the connector. Gold-plated sensor contacts do not compensate for a loose, wet or incorrectly wired mating connector.

Assess the local environment

Check the actual temperature and exposure at the installation location. The IP67 rating describes an ingress-protection classification; it does not by itself establish resistance to every cleaning chemical, pressure-wash procedure or cable assembly. Select mating hardware and maintenance methods for the complete installation.

Item	Check before energizing
Mounting torque	Do not exceed 50 N m; prevent rotation at the set position
Sensing face	No damage or metal debris obstructing target clearance
Connector	A coding and correct three-contact circuit
Cable support	No sustained pulling or sharp bending at the mating connector
Environment	Actual conditions remain within the sensor and cable ratings

03 Prove the PNP signal path

Identify the circuit before connecting

Use the connection drawing in the separate ifm data sheet to identify the supply, return and switched-output contacts. Trace the cable through to the receiving terminal rather than relying on wire colour alone. Check continuity with the circuit isolated, then confirm that the receiving input is suitable for a sourcing PNP signal and its return path.

Measure under the intended load

After controlled energization, measure voltage at the sensor terminals and at the input common. With a stable target present, measure the output at both ends of the field cable. Compare the receiving voltage with the input manufacturer's ON threshold and verify the total connected load against the sensor rating. Include cable drops and supply tolerance in the assessment.

Investigate protection instead of overriding it

If the output cycles with a stationary target, isolate overloads, short circuits and unstable supply conditions. Correct the cause before reconnecting the field load. Do not defeat protection or infer from an LED alone that a fault lies inside the sensor.

Measurement	Reason
Supply at sensor	Confirms the voltage arriving through the field wiring
ON voltage at receiver	Includes the sensor output drop and cable loss
OFF state at receiver	Confirms that the controller releases the signal
Output loading	All parallel loads contribute to the continuous-current requirement

04 Accept the complete acquisition chain

Start with a static state test

Move the target in and out of the qualified zone while observing the yellow sensor indication, receiving input status and the application tag. Record all three observations. If the first two agree but the application does not, inspect addressing, logic and interlocks instead of repeatedly readjusting the sensing clearance.

Test at real operating speed

Exercise the smallest target and shortest spacing that the application must detect. Capture the electrical pulse at the receiver and review input filtering, communication timing and controller sampling. The 100 Hz sensor rating does not establish a guaranteed minimum pulse duration for every target geometry or guarantee that the downstream controller records every event.

Check both normal transitions

Verify the expected command or monitoring response on arrival and departure. A successful ON test alone does not prove that a stale input, latched logic or an incorrectly configured channel returns to the intended state. Restore normal operation only after the complete signal path behaves as required.

Observed result	Next investigation
LED changes, input does not	Output voltage, common, cable continuity and input compatibility
Input changes, tag does not	Address assignment, filtering, logic and communication
Slow test passes, fast test fails	Pulse duration and full acquisition timing
Unwanted ON with target absent	Surrounding metal, debris and mounting geometry

05 Maintain an evidence-based service record

Preserve accepted settings

Retain the sensor marking, target material, mounting position, connector assignment and receiving input address. Include measured ON and OFF positions, supply under load and the fastest operating condition tested. These records make a later mechanical shift distinguishable from an electrical or software change.

Respond to a changing symptom

When behavior changes, compare the current installation with those retained observations. Inspect target replacement, bracket movement, contamination, connector condition and cable support before changing the sensing position. A different target metal or a damaged return conductor can produce a new symptom without a change to the sensor model.

Close the service task

Remove temporary test connections, restore approved interlocks and check that both normal machine states are displayed correctly. Record the cause of any fault and the verification performed after correction. Reliability statistics do not replace application-specific inspection intervals or authorize a safety function.

Technical basis: ifm II5910 Inductive Sensor, II5910-06 EN-GB.

Related product navigation

Siemens 6ES7131-4BD01-0AA0

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Digital input modules for separate platform assessment. Verify input thresholds, common wiring and timing; these are not substitutes for the sensor.