Yokogawa SDV144-S33

Engineering Installation, Diagnostic and Acceptance Guide

Yokogawa SDV144-S33 is a 16-channel isolated safety digital input module. Its exact marking, installed interfaces and companion equipment must be verified before replacement or commissioning.

01 Work package

Complete model	SDV144-S33
Product type	16-channel isolated safety digital input module
Manufacturer	Yokogawa
Supply condition	New, original product
Technical source	Yokogawa TI 33Q01B10-01E and GS 32Q06K20-31E

Field decisions

1 Establish identity

Capture the full marking, installed companion components and baseline before disconnection.

2 Inspect interfaces

Verify mounting, cable, connector, armor, approval and environmental boundaries.

3 Fit the exact chain

Preserve the documented probe-cable-Proximitor or sensor-monitor relationship.

4 Prove response

Use the approved stopped-machine and operating acceptance procedure.

5 Record as left

Save markings, configuration, test values and operating observations.

02 Interface and configuration map

Module function	Safety digital input
Input type	No-voltage contact
Input count	16 channels
Channel isolation	Isolated
Cable interface	Yokogawa-specific cable
Specified signal cable	AKB331-M□□□
Safety classification	Safety application; SIL3 system context

Single-module power coefficient A	2
Single-module power coefficient B	2
Dual-redundant coefficient A	4
Dual-redundant coefficient B	4
Terminal-board relationship	SED4D / approved digital terminal-board arrangement
Wiring-check options	SCB100 open-circuit and SCB110 short-circuit adapters in approved designs
Acceptance boundary	Prove field contact, cable, terminal board, module and safety logic as one function

03 Installation workflow

Control bypasses

Issue, record and remove every temporary safety bypass under the site procedure.

Verify AKB331 cable

Match cable style, connector keying and terminal-board destination.

Preserve channel identity

Record all sixteen tags, terminals and safety-logic addresses before removal.

Check diagnostic adapters

Confirm any SCB100 or SCB110 devices and their intended failure coverage.

Prove every channel

Operate each source contact and verify raw state, safety logic and alarm/event record.

Close the proof test

Document restored bypasses, final healthy state and responsible approval.

Application checks

Emergency shutdown inputs

Acquire isolated dry contacts used by a documented safety-instrumented function.

Fire and gas trip inputs

Bring approved detector or relay contacts into ProSafe-RS safety logic.

Redundant safety I/O

Use the module in a manufacturer-supported redundant node arrangement.

Proof-test maintenance

Verify each sensor-to-logic path and associated cable diagnostics.

04 Diagnostic decision table

How should all safety channels of SDV144-S33 be proof-tested?	Use the approved cause-and-effect procedure to operate each field contact, verify terminal and raw input state, prove the safety-logic response and restore the normal condition.
What cable checks are required for SDV144-S33?	Confirm the AKB331 style, connector keying, continuity, insulation method and SED4D or approved terminal-board destination.
How should SCB100 and SCB110 adapters be handled with SDV144-S33?	Record whether each channel uses open- or short-circuit detection and prove the expected diagnostic without bypassing the safety function.

What must be verified before a dual-redundant SDV144-S33 change?	Confirm node capacity, paired module state, channel database, switchover procedure and the permitted maintenance bypass.

Release review

Installation relationship	Use the exact model marking and manufacturer wiring or installation information for the delivered hardware.
System boundary	Verify host equipment, companion interfaces, field wiring and configuration before energizing.
Technical reference	Yokogawa TI 33Q01B10-01E and GS 32Q06K20-31E.

Engineering questions

How should all safety channels of SDV144-S33 be proof-tested?	Use the approved cause-and-effect procedure to operate each field contact, verify terminal and raw input state, prove the safety-logic response and restore the normal condition.
What cable checks are required for SDV144-S33?	Confirm the AKB331 style, connector keying, continuity, insulation method and SED4D or approved terminal-board destination.
How should SCB100 and SCB110 adapters be handled with SDV144-S33?	Record whether each channel uses open- or short-circuit detection and prove the expected diagnostic without bypassing the safety function.
What must be verified before a dual-redundant SDV144-S33 change?	Confirm node capacity, paired module state, channel database, switchover procedure and the permitted maintenance bypass.
How can a persistent trip input on SDV144-S33 be isolated?	Check the field contact, diagnostic adapter, cable pair, terminal board and raw module state before examining application logic.
What evidence is needed for SIL-related work on SDV144-S33?	Retain the approved proof-test procedure, calibrated test equipment, per-channel results, bypass log, fault findings and final authorization.
How should unused channels on SDV144-S33 be treated?	Leave them in the approved spare configuration, maintain connector and terminal protection and ensure no unintended safety-logic mapping is active.
What closes a replacement of SDV144-S33?	All commissioned channels, diagnostics and redundancy functions must pass the approved test, with bypasses removed and the system returned to a healthy recorded state.

Acceptance and support

Retain the full marking, installed-chain identities, test readings and approved machine configuration. Confirm the exact offered item and included scope in the written quotation.

Discuss the exact marking and installed application with Apter Power.
sales13@apterpower.com | +86 18030235313

Verified related product references

Related product	CP461-10
Related product	S9400UK
Related product	AAB841
Related product	AAI841-H00

Commissioning record template

Installed asset	Machine, bearing, channel or cabinet reference
Companion identities	Probe, cable, sensor, interface or monitor markings
Mechanical datum	Mounting reference, reach, alignment or sealing condition
Electrical datum	Chain length, connector, shield, supply or input assignment
Before-work baseline	Gap, bias, vibration, continuity or channel observation
As-left result	Final measured value and functional proof
Approval basis	Applicable drawing, control requirement or site procedure
Handover	Technician, date, revision and maintenance-record location

Handover note

A replacement is complete only after the installed identity, physical interfaces, measured response and configuration record agree. Escalate any mismatch before the channel returns to protection or monitoring service.

Release checklist

Identity accepted	Complete marking agrees with the order, photographs and installed asset record.
Interfaces accepted	Mechanical fit, connector, wiring and companion components match the approved design.
Environment accepted	Temperature, contamination, vibration and route protection remain inside documented limits.