Siemens 6GK1105-2AB10

01 Industrial Ethernet Optical Switch Module

Siemens 6GK1105-2AB10 separates local copper device connections from the optical network backbone. Its ring and standby functions provide engineered redundancy while digital-input indications help supervise cabinet conditions.

1 **Copper devices** — 2 **OSM TP62 switching** — 3 **Multimode backbone** — 4 **Ring / standby recovery**

Physical and functional arrangement

The TP62 with digital inputs supports autonegotiation and autocrossover on its electrical ports. Optical ports operate in full duplex and use BFOC connections. Fiber type, attenuation and connector condition determine whether a planned optical run meets the link budget; the long-distance ITP62-LD figures do not apply.

Signal path and configuration

A redundant OSM/ESM ring requires exactly one redundancy manager. The sub-0.3-second reconfiguration condition applies to an OSM/ESM-only ring within its supported node limit. Mixing unrelated switches into that ring changes the assumptions and must be engineered separately.

Application boundary

The eight digital inputs belong to monitoring and management, not a safety input system. Redundant supply connections and the signaling contact should be tested independently from the data links. Preserve input polarity and configured fault reporting so a healthy Ethernet link cannot mask a missing supply or cabinet alarm.

6GK1105-2AB10 is OSM TP62 with eight digital inputs. Long-distance and no-digital-input variants have different interfaces.

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02 Technical data and engineering limits

Copper ports	6 × 10/100 Mbit/s RJ45
Optical ports	2 × 100 Mbit/s full-duplex BFOC
Digital inputs	8 × 24 V DC
Supply inputs	2 decoupled 24 V DC sources; 18–32 V DC
Input state 1	+13 to +30 V
Input state 0	−30 to +3 V
Digital-input current	8 mA maximum
Signaling contact	24 V DC / 100 mA maximum
Learnable addresses	Up to 7000
Aging time	40 s default

Additional interface data

Fiber run	Up to 3000 m with specified multimode fiber and loss budget
Digital-input cable	30 m maximum
Ring limit	50 OSM/ESM nodes for <0.3 s reconfiguration
Switching method	Store and forward
Operating ambient	0 to 60 °C
Protection	IP20; horizontal installation

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Interpreting the operating envelope

Treat the copper access network, optical backbone and monitoring inputs as three distinct interfaces. The digital-input thresholds do not describe Ethernet signaling. Fiber distance is conditional on cable attenuation and connector loss, while the ring-node limit belongs to the specified recovery condition. The signaling contact has a small DC load rating and should be interfaced accordingly rather than used as a power-switching output.

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03 Application map and integration boundaries

01 Optical plant backbone

Join local Ethernet devices to an engineered multimode backbone.

02 OSM/ESM redundant ring

Maintain an alternate network path with a single selected redundancy manager.

03 Cabinet-state monitoring

Bring non-safety DC status signals into switch supervision.

04 Redundant segment coupling

Use a supported standby pair and synchronization connection between engineered segments.

Ring closure

Close a redundant path only after confirming the manager assignment and supported topology. An unmanaged loop can disrupt the network.

Input interpretation

Input-status mode changes the meaning of front indicators; distinguish electrical signal state from port-link state.

Fiber assessment

Evaluate the complete optical path including connectors and splices. Maximum distance is conditional on the specified fiber and attenuation margin.

Configuration scope: Match optical media, port allocation, redundancy scheme and monitored inputs before replacing or migrating the switch.

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04 Technical questions that affect operation

1 What happens if two devices share ring-manager duty with 6GK1105-2AB10?

The topology violates the single-manager ring arrangement. Establish exactly one manager and verify the ring state before closing the redundant path.

2 Why can 6GK1105-2AB10 show a healthy copper link while an optical backbone path fails?

Copper access ports and optical backbone ports are separate links. Inspect the optical pair, fiber polarity and loss budget in addition to the local device connection.

3 Can the 26 km optical figure be applied to 6GK1105-2AB10?

No. That figure belongs to the long-distance ITP62-LD. TP62 uses the specified multimode link budget and corresponding maximum span.

4 How should redundant power on 6GK1105-2AB10 be verified?

Test each supply path separately under the approved maintenance procedure and confirm both continued communication and the configured fault indication.

5 Does a monitored digital input on 6GK1105-2AB10 create a safety function?

No. These inputs provide monitoring information. Any safety-related function needs its own assessed safety architecture.

6 Why can an unfamiliar switch invalidate the recovery expectation for 6GK1105-2AB10?

The stated recovery condition assumes an OSM/ESM ring. A mixed topology may use different loop-control and recovery behavior.

7 How can input-status display selection affect troubleshooting on 6GK1105-2AB10?

The LEDs can represent different display modes. Confirm the selected mode before interpreting a lamp as an Ethernet port or digital-input state.

8 What should be checked after changing a fiber patch cord on 6GK1105-2AB10?

Verify transmit/receive pairing, connector cleanliness, link indication and the complete optical loss budget, then test the required ring recovery.

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05 Selection, service planning and related equipment

Match the installed arrangement

Match the complete Siemens 6GK1105-2AB10 marking and installed configuration. Compare the 2AB10 marking, six RJ45 ports, optical connections and digital-input terminal blocks.

Support and migration

The current production and manufacturer-support stage for this exact execution is unconfirmed. Match optical media, port allocation, redundancy scheme and monitored inputs before replacing or migrating the switch.

Equipment boundary

Confirm the optical switch and terminal blocks, mounting parts and fiber accessories specifically itemized. Companion hardware and accessories are included only when itemized; the function of the complete installed arrangement depends on the correct combination.

Engineering review before intervention

Map the active topology	Record port assignments, optical direction, ring-manager selection and standby coupling. Save management settings and input alarm assignments. Identify which paths can be isolated without defeating the required network availability.
Check power and grounding	Isolate the work area as required and compare both supply circuits with the approved SELV arrangement. Inspect the signaling-contact wiring separately from the power feed. Retain cabinet grounding and horizontal ventilation orientation.

Related equipment navigation

Siemens 6ES7214-1AG40-0XB0

Siemens 6ES7972-0AA01-0XA0

Siemens 6ES7221-1BH32-0XB0

Related references support separate application assessment and do not imply replacement compatibility. Technical basis: Siemens Industrial Ethernet OSM/ESM Manual, C79000-Z8976-C068-10.