

Siemens 6DS1601-8BA

TELEPERM M 48-channel 24 V binary input module

Product scope

- Forty-eight 24 V DC inputs are arranged as six groups of eight for compact signal acquisition.
- Typical input delay is 1 ms, with clean-signal operation documented up to 100 Hz.
- Interrupt polarity can be selected for positive, negative or both signal edges.

Manufacturer source

Siemens TELEPERM M binary I/O manual C79000-G8076-C293-07.

This English web copy combines exact-model specifications with detailed function, system role, operating principle, application scenarios and installation boundaries.

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Siemens 6DS1601-8BA

TELEPERM M 48-channel 24 V binary input module

Verified technical specifications

Values below apply to the exact model or nameplate identified on this page; adjacent family variants are not merged.

Input channels	48
Nominal input voltage	24 V DC
Supply range	20 to 33 V DC
Input low level	-33 to +4.5 V
Input high level	+13 to +33 V
Input current at 24 V	Approximately 0.62 mA
Input resistance	Approximately 39 kohm
Input delay	Typical 1 ms
Maximum input frequency	100 Hz
Power dissipation	Maximum 2 W
Mass	Approximately 0.7 kg
Input grouping	6 groups of 8 non-isolated inputs
Interrupt edge	Positive, negative or both edges selectable
Front width	30.48 mm (2 SEP)
Board format	233.4 x 160 mm
Electrical safety	Safety extra-low voltage to IEC 950 / EN 60950 / VDE 0805

Product function and system role

Exact configuration

Siemens 6DS1601-8BA is a TELEPERM M module for acquiring 48 non-isolated 24 V DC binary signals. Six eight-channel groups provide high-density status input for established process automation racks.

The 6DS1601-8BA brings forty-eight contact states into one TELEPERM M slot without channel-to-channel isolation. Its six groups of eight use a common 24 V field reference, making the module suitable for dense permissive, alarm and equipment-feedback circuits in cabinets built around a shared potential.

Functional role

Voltage comparators convert each field state into a controller bit while the optional edge logic flags configured transitions.

The current order configuration is the BA high-density, non-isolated input card with a two-SEP front width.

Key operating characteristics

- Forty-eight 24 V DC inputs are arranged as six groups of eight for compact signal acquisition.
- Typical input delay is 1 ms, with clean-signal operation documented up to 100 Hz.
- Interrupt polarity can be selected for positive, negative or both signal edges.

Operating principle and application guidance

Working principle

Each input applies the published low/high thresholds, approximately 39 kohm resistance and 1 ms typical delay before a logical state is presented to the controller. Selectable positive, negative or dual-edge interrupt behavior allows the project to give special treatment to transitions that cannot wait for the ordinary scan path.

Keep the common reference, connector coding and interrupt map unchanged unless the control project is deliberately re-engineered.

Application scenarios

- Process cabinets can gather many valve and motor status contacts where all circuits share an engineered 24 V reference.
- Sequence permissives can use the fast input path for deterministic confirmation of plant conditions.
- Alarm collectors can assign selected edges to interrupt processing when event response is time-sensitive.

Integration and replacement boundary

A correct replacement depends on the rack assignment and reference topology as much as the part number. The 233.4 x 160 mm board, 30.48 mm front width, process connector and field-voltage arrangement should be matched before wiring is transferred.

Critical technical check

Because 6DS1601-8BA inputs are non-isolated, verify the shared 0 V reference and exclude unintended ground-potential differences before reconnecting long field runs.

Manufacturer evidence used

- Siemens TELEPERM M binary I/O manual C79000-G8076-C293-07.
 - Official source: <https://support.industry.siemens.com/cs/attachments/18312213/C79000-G8076-C293-07.pdf>
- Exact product identity checked: Siemens 6DS1601-8BA



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