

Yokogawa EA1*B

Two-Wire Transmitter Input Card

Product scope

- Powers and measures a two-wire 4 to 20 mA transmitter loop.
- Converts the loop current into two isolated 1 to 5 V DC outputs.
- Limits the field-supply current to protect the connected loop.

Manufacturer source

Exact-model technical record

Verified model-specific overview, function, operating principle, applications and technical data.

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Yokogawa EA1*B

Two-Wire Transmitter Input Card

Product overview

Yokogawa EA1*B accepts a 4 to 20 mA two-wire transmitter loop, supplies the field transmitter and produces two isolated 1 to 5 V DC outputs. It is used to condition powered process signals for CENTUM control inputs.

EA1*B combines loop power and signal conversion for a two-wire 4 to 20 mA transmitter. Its 250 ohm input develops the measurement voltage while the card supplies the connected field device from a protected 25 to 28 V DC source.

The conditioned value appears on two 1 to 5 V DC outputs, allowing one process variable to feed separate system destinations. Galvanic separation keeps the field loop, outputs, power and ground from sharing an unintended current path.

Transmitter current demand, polarity and cable shield termination must be verified before connection. The card cannot be substituted blindly for an externally powered current-input conditioner because its loop-supply function changes the wiring arrangement.

Technical specifications

Input signal	4 to 20 mA DC, two-wire transmitter
Input resistance	250 Ω
Transmitter supply	25 to 28 V DC
Supply current limit	25 to 35 mA
Output signal	1 to 5 V DC, two outputs
Isolation	Input/output/power/ground isolated
Card supply	24 V DC $\pm 10\%$
Maximum current consumption	80 mA
Operating temperature	0 to 50 °C
Relative humidity	5 to 90% RH, non-condensing
Dimensions	73 x 24 x 115 mm including knob
Mass	Approximately 70 g
Style code	B

EA1*B function and operating principle

Ordered configuration

The B-style card includes an integral transmitter supply as part of its ordered function.

System role

It combines loop excitation, current sensing and isolated voltage reproduction on one conditioner channel.

Selection and installation

Field polarity and the absence of a competing external supply must be confirmed before connection.

Functional path

- Powers and measures a two-wire 4 to 20 mA transmitter loop.
- Converts the loop current into two isolated 1 to 5 V DC outputs.
- Limits the field-supply current to protect the connected loop.

Application scenarios

- Pressure and differential-pressure transmitters can be powered and conditioned for the control system.
- Flow, level and analytical instruments using two-wire loops can feed dual voltage destinations.
- Legacy CENTUM cabinets can maintain established transmitter wiring through an exact-style card exchange.

EA1*B engineering checks

Monitoring

- The 250 ohm input converts the 4 to 20 mA loop current into a measurable internal signal.
- Two voltage outputs reproduce the same process variable for separate receiving circuits.
- A current-limited transmitter supply supports the field device and restricts fault energy.

Connectivity

- The field side is wired as a powered two-wire current loop.
- System-side outputs use the documented 1 to 5 V DC connections.
- Shield and return conductors should follow the installed cabinet grounding practice.

Protection

- The built-in field supply is limited between 25 and 35 mA.
- Galvanic isolation separates input, outputs, power and ground domains.
- Loop polarity checks prevent reverse connection of the transmitter electronics.

Critical technical note

Observe loop polarity on Yokogawa EA1*B and never parallel an external transmitter supply with the card's protected 25 to 28 V source.

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