AAT141-S00

Yokogawa / FIO thermocouple and millivolt input module

Yokogawa AAT141-S00 is a 16-channel FIO thermocouple and millivolt input module for process temperature measurement.

Product identity and system role

AAT141-S00 is a 16-channel isolated temperature-input module in the Yokogawa FIO family. Each channel can be configured for a supported thermocouple type or a millivolt signal, allowing the same module to acquire several measurement types in an engineered station.

The referenced thermocouple set includes J, K, E, B, R, S, T and N. Two millivolt ranges, –100 to +150 mV and –20 to +80 mV, are documented. The base design updates input data each second, so temperature-control logic and alarming should use the appropriate scan and filtering configuration.

Verified technical characteristics

I/O role	Temperature / millivolt input
Reference design	AAT141-S
Channels	16 isolated inputs
Thermocouple types	J, K, E, B, R, S, T and N
Millivolt ranges	–100 to +150 mV; –20 to +80 mV
Channel selection	Thermocouple or mV by channel
Update period	1 second
TC reference accuracy	±30 µV

Engineering context

Process temperature monitoring

Acquire supported thermocouple signals from furnaces, vessels or process equipment in a configured FIO station.

Mixed sensor installations

Assign supported TC types independently by channel according to the approved input schedule.

Low-level voltage acquisition

Measure a suitable millivolt source in one of the documented ranges with proper shielding and reference conditions.

Temperature I/O restoration

Replace a matching module while retaining cold-junction hardware and the saved channel configuration.

Configuration and verification

Match sensor types: Record each channel thermocouple or mV selection.

Protect low-level wiring: Preserve polarity, shielding and separation from power circuits.

Review cold junction: Check the installed compensation and terminal arrangement.

Avoid ground loops: Evaluate thermocouple grounding against the project design.

Selected engineering questions

Why can a temperature reading drift after AAT141-S00 is changed?
Check cold-junction compensation, sensor type, terminal seating and channel configuration before judging the module.

Can different thermocouple types be configured on separate channels of AAT141-S00?
The AAT141 reference permits channel-by-channel thermocouple or mV selection; the control project must retain each original assignment.

What should be checked when a reading on AAT141-S00 has reversed polarity?
Inspect the thermocouple polarity and terminal wiring against the original channel schedule.

Why should grounded thermocouples be reviewed for AAT141-S00?
Multiple ground paths can disturb low-level thermocouple measurement; use the wiring arrangement approved for the application.

How should an open-sensor indication on AAT141-S00 be diagnosed?
Check sensor continuity, cable joints, terminal seating and the configured channel type.

Can a millivolt channel on AAT141-S00 be treated as a current input?
No. The documented choices are thermocouple and specified millivolt ranges, not a general 4–20 mA input.

Source and application boundary

Yokogawa GS 33K50F60-50E, Temperature Input Modules for FIO.

AAT141-S reference data describes the base module. The S2 style, when present, is retained as the offered marking without an assumed electrical difference.

Related product references

Separate product listings for project review; confirm each order code and system fit independently.

Yokogawa VI702 S1	Yokogawa ADV551-P03 S2
Yokogawa ADV161-P00 S2	Yokogawa AAT141-S00 S2

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Send the complete model and installed-system details when requesting a quotation.