G128-0001 | Complete product information

The Ultra SlimPak G128-0001 is a two-channel thermocouple limit alarm. A field-selected input span feeds separate A and B threshold decisions; each decision drives its own Form C contact. This summary maps the controls, electrical envelope and commissioning implications of the manufacturer design.

THERMOCOUPLE
T/C + / -

G128 INPUT
CJC + range

DUAL LOGIC
A / B trip

CONTACTS
PLC / alarm

Input interpretation

Input-terminal cold-junction compensation is part of the thermocouple measurement. A mismatched thermocouple type or reversed lead changes the meaning of both alarm thresholds.

Output interpretation

A and B relay circuits are independent threshold channels. The connected PLC/annunciator must identify the chosen contact leg and selected failsafe behavior.

Field configuration

SW1/SW2 selections establish the sensor type, input range, HI/LO sense, failsafe mode and burnout direction. Record these before replacement.

Document boundary

The data sheet describes the G128 design and standard preset. It does not prove the switch positions or calibration of the individual supplied module.

Reference: Eurotherm Ultra SlimPak G128-0001, 721-0654-00-H. The complete order code is G128-0001.

Thermocouple input and decision model

Stage	Manufacturer design fact	Engineering interpretation
Sensor interface	Thermocouple input with CJC at module terminals	Keep dissimilar-metal junctions and sensor polarity consistent with the configured type.
Input selection	B/E/J/K/R/S/T types, each with selectable temperature ranges	Use the G128 switch table; the actual cabinet span must fit the chosen sensor and process.
Input loading	Impedance >1 MΩ; burnout bias <1.5 µA	Check source simulator and sensor circuit without assuming zero input bias.
Limit function	Two independently adjustable HI or LO setpoints	Define A and B threshold roles in the alarm philosophy, including reset direction.
Deadband	0.25–5% of selected span per setpoint	Choose a recovery margin appropriate to process noise and thermal dynamics.
Timing	100 ms uninterrupted trip/reset qualification	Short excursions can be rejected; test with a controlled input ramp.

Default configuration is an initial setup reference

When no custom factory calibration is specified, the manufacturer describes J-type 0–350 °C, A high trip, B low trip, non-failsafe operation and minimum deadband. The exact delivered or previously installed settings take precedence in a maintenance comparison.

Do not move SW1 or SW2 with power applied. After a change, verify both the selected temperature span and the two relay transitions with a calibrated thermocouple source.

Electrical interfaces and contact envelope

Interface	Verified allocation / limit	Integration note
Thermocouple	41 (+), 42 (–)	Confirm polarity at the module, not only at the field junction.
Power	21 (+), 22 (–); 9–30 V DC	Check voltage under normal and relay-load conditions.
Relay A	52 COM, 51 NO, 53 NC	One SPDT relay controlled by setpoint A.
Relay B	12 COM, 11 NO, 13 NC	One SPDT relay controlled by setpoint B.
Unused	43 and 23 are not connected	Do not use as returns or shield terminals.
Resistive load	120 V AC 5 A; 240 V AC 2 A; 28 V DC 5 A	Inductive loads require external suppression.
Isolation	1800 V DC between contacts, input and power	Preserve physical segregation of field and control wiring.

Supply sizing

Allow for 1.5 W typical and 2.5 W maximum module consumption when selecting the DC source.

Contact protection

Place the load suppression close to an inductive coil; a diode suits DC while the data sheet illustrates MOV/RC treatment for AC.

Termination

Top-access screw terminals accept 12–22 AWG conductors. Inspect ferrule and strand retention during commissioning.

Logic proof

Record contact state for normal input, each trip and a controlled power interruption; verify the PLC response.

Performance and environmental boundaries

Domain	Published value	Use in engineering review
Normal input response	<250 ms from 10% to 90%	Do not confuse analog filtering with the additional 100 ms dynamic relay qualification.
Setpoint repeatability	0.2% above 0 °C; 0.3% below 0 °C at constant temperature	Compare actual trip repeatability only after stabilization.
Temperature stability	±0.05% of full scale per °C maximum	Account for cabinet temperature changes around tight alarms.
Common-mode rejection	120 dB, DC–60 Hz	Maintain correct sensor routing and grounding to realize the intended noise rejection.
Operating ambient	0–55 °C on horizontal DIN rail	Check enclosure hot spots during sustained operation.
Storage ambient	–15 to +70 °C	Store within the stated range before installation.
Operating humidity	15–95% noncondensing at 45 °C	Avoid condensation on the input and contact terminals.

Mounting geometry

The 17.5 mm Ultra SlimPak format mounts on TS32 or TS35 rail. For a vertical group of five or more modules, the manufacturer recommends circulating air or HS01 heat sinking. Leave access for the switch window and top-entry terminal screws.

Environmental and response values describe the documented design under the stated conditions; they do not establish the current configuration or life-cycle phase of a particular supplied unit.

Diagnostic interpretation and acceptance

Observed symptom	Separate these causes	Useful confirmation
Green INPUT lamp dark	Missing supply, wiring polarity or module fault	Measure 21/22 before changing the alarm threshold.
Fast green flash	Input above configured range	Compare thermocouple source with selected type and span.
Slow green flash	Input below range or open/reversed lead	Check field circuit and selected burnout direction.
Red trip lamp on, no plant alarm	Contact leg, wiring or PLC logic	Measure COM–NO/NC and downstream digital input.
Unexpected relay action at power loss	Failsafe selection and contact sense	Run a controlled de-energization test with the process protected.
Threshold drift or repeated trip	Thermal stabilization, sensor junction or deadband	Repeat calibrated source tests at operating temperature.

Manufacturer selectable thermocouple spans

TC type	Published selectable Celsius spans in G128 Table 1
B	0–1490; 0–1820 °C

TC type	Published selectable Celsius spans in G128 Table 1
E	0–150; 0–290; 0–660; 0–1000; –270–150; –270–290 °C
J	0–190; 0–350; 0–760; –210–190; –210–350 °C
K	0–250; 0–480; 0–1280; 0–1372; –270–250; –270–480 °C
R	0–970; 0–1690; 0–1760 °C
S	0–1050; 0–1750 °C
T	0–210; 0–390; –270–210; –270–390 °C

These are available input selections in the manufacturer range table, not the present setting of the supplied unit. Use the original switch table and a calibrated source to establish the installed configuration.

Published contact and installation details

Topic	Manufacturer data	Practical interpretation
Contact material	Gold flash over silver alloy	Keep the selected load inside the resistive contact ratings.
Electrical life	10^5 operations at rated load	Inductive loads require external suppression; do not infer the same endurance.
Mechanical life	10^7 operations	A mechanical figure is distinct from rated-load electrical life.
Input overvoltage	±10 V differential	Check the sensor simulator and field circuit before connection.
Wire termination	Top-access screw terminals, 12–22 AWG	Verify conductor size, ferrules and access in the installed cabinet.
Rail accessories	MD02 TS32 or MD03 TS35 rail; MB03 end bracket	These are referenced accessories, not automatically included supply items.
Thermal accessory	HS01 heat sink	Consider the OEM recommendation for a vertical group of five or more modules.

Release sequence

Identify the supplied G128-0001 and installed switch map; prove the thermocouple source and selected span; establish separate A/B trip and reset points; check relay legs in normal, alarm and power-loss states; then confirm the downstream annunciator or PLC response. Keep those measured observations with the panel record.

Source: Eurotherm Ultra SlimPak G128-0001, 721-0654-00-H. Apter Power product summary for identification and engineering review.