

HOLD THE ZONE. SWITCH IT ALL DAY. CATCH THE OPEN HEATER.

Solid state relays for the heater zones on process tools, thermal subsystems and heated equipment: chambers, chucks, lines and baths held within a degree, switched at zero cross, with versions that report the load.

4 to 125 A

single, two and three phase, zero-cross relays for resistive heating loads

24 to 600 VAC

okpac 35 to 125 A models; three-phase models to 640 VAC

5 heaters

watched by one ESUC module for open, partial break and a shorted relay

A heater zone is the busiest switching duty on the panel. The temperature loop opens and closes its relay **several times a minute for as long as the tool is up**, and the tighter the zone, the more often it switches. Whatever sits between the controller and the element is the wear item.

01 THE PROBLEM: THE LOOP NEVER STOPS SWITCHING

What goes wrong when a device built for a few operations a day runs a temperature loop:

- **The contact wears first.** A mechanical contact that cycles that often erodes, bounces and eventually sticks. The zone drifts before anyone sees it.
- **The zone cannot be held tight.** Within a degree takes switching faster than a coil and armature deliver, with no click and no arc at every operation.
- **The quiet failure.** One open element in a bank is nearly invisible to a loop that can still almost hold setpoint. It shows up at inspection, not at the panel.

02 WHY CELDUC: BUILT FOR THE HEATER

Family-owned in France since 1964, building its relays in its own two plants. Heating loads are most of what they do.

- **Zero cross, no contact.** On at the voltage zero, off at the current zero: the least stress and noise per cycle, and nothing to erode or weld.
- **Wears out open, not stuck on.** The power stage is wire bonded on a direct copper bonded substrate, so its wear-out mode is an open bond and the load drops out instead of latching on. A reliability difference, not a rated safety function: the overtemperature cutout stays in the design.
- **The relay that reports.** The controller knows it commanded the output on, not that current is flowing. SOI relays close a status contact when load current flows; the ESUC module watches up to five elements for partial break.
- **Protected and listed.** Varistor on the output, transient suppression on the input, IP20 flaps; UL (cURus) and CSA on the standard ranges, confirmed per part at quote.

03 WHERE IT FITS

CHAMBERS AND CHUCKS

Bake, anneal, cure and deposition heaters held within a degree, switched all shift.

JACKETS, LINES AND BATHS

Gas and chemical lines, cleaning baths and chiller loops held at temperature.

OVENS, FURNACES, TUNNELS

Diffusion, reflow, drying and cure zones on three-phase power, one cel3pac per zone.

BURN-IN AND THERMAL CHAMBERS

Heaters cycled for weeks; versions flag a broken element before the lot runs cold.

MULTI-ZONE HEATER BANKS

Extruder barrels, molds, hot plates, sealing bars: a relay per zone, one ESUC per bank.

PANEL BUILDS

22.5 mm DIN-rail celpac for dense panels; okpac hockey pucks on your heatsink.

04 PRODUCT LINE-UP

	SERIES AND ZONE ROLE	OUTPUT	CURRENT, AC-1	CONTROL INPUT	WHAT IT ADDS
	SU, SUL celpac 2G, 22.5 mm DIN rail; SUL with built-in heatsink	12 to 280 or 24 to 600 VAC	25 to 75 A thyristors; 20 to 29 A ready to use	3 to 32 VDC; 80 to 140 or 180 to 280 VAC	Hockey-puck footprint; takes the ESUC module
	S09 okpac, chassis mount on your heatsink	12 to 280 or 24 to 600 VAC	12 to 125 A, nine ratings	3 to 32 VDC; 20 to 265 VAC/DC	IP20 covers; SOB version puts two zones in one housing
	SGT 2G cel3pac three phase, 100 mm; ready-to-use with heatsink	24 to 640 VAC; 660 VAC models	25 to 75 A per phase with heatsink	4 to 30 VDC; 24 to 255 or 90 to 280 VAC/DC	SGT9 zero cross for heaters; SGT7 random for motors
	SOI Zero-cross relay with load-current status output	24 to 625 VAC	50 A (SOI885070)	3.5 to 32 VDC	Status contact closes above 0.8 A of load; NPN or PNP
	ESUC Plug-on current monitor, SU and SUL	On the relay input connector	1 to 10 A; 2 to 40 A versions	8 to 30 VDC; teach by button or logic input	Open load, partial break, open mains, shorted relay; up to 5 elements
	S04, SGTA Phase-angle controllers, 1 and 3 phase	100 to 480 VAC; SGTA 300 to 510 VAC	S04 50 to 125 A; SGTA 50 A per phase	0-10 V, 0-5 V, 4-20 mA, pot or PWM	Trims power for infrared and low-inertia loads

05 FIGURE THE HEAT. WIRE IT ONCE.

Figure roughly **one to one and a half watts per amp conducted** into the heatsink, so the heatsink is part of the part number and the panel needs the thermal budget.

- **Heatsink built in or yours.** SUL and SGT ready-to-use versions arrive on their heatsink; okpac mounts to your plate.
- **Challenge us.** Custom variants are normal business at Celduc, and if the zone also needs a lockable disconnect or a safety-chain contactor, we carry those too.
- **Fuse it for the thyristor.** A semiconductor fuse ahead of the relay protects the output; we return the I^2t pairing.

NEXT STEP: SEND US THE ZONE LIST

Zones, line voltage, amps per zone, single or three phase, controller output, and whether the relay should report. We return a selection with heatsinks and fuses.