

# SEL-2414

## Transformer Automation Controller (TAC)



A transformer voltage and thermal regulator in one versatile, rugged device



### Key Benefits

- Reduce energy losses, and maintain bus voltages within acceptable limits.
- Optimize performance for changing load conditions, power flow directions, seasonal variations, and network demands.
- Prevent transformer overloading by controlling transformers operating in parallel.
- Extend the lifespan of your transformer by using IEEE or IEC thermal modeling and cooling stage control.

### Voltage Regulation

Set load tap changer (LTC) control modes, configure control settings, and balance load across multiple transformers in parallel operation to prevent overloading a single transformer.

### Thermal Regulation

Regulate and control thermal management systems and extend the lifespan of your transformer with IEEE or IEC thermal modeling and cooling stage control.

### Operational Awareness and Reporting

Capture and display data from your transformer system, and easily access LTC and thermal event reports. View customized diagrams and screens on the 5-inch color LCD.

### Proven Reliability

The SEL-2414 is engineered to withstand the most challenging environments in the world. Designed, manufactured, and tested to the same standards as our protective relays, every TAC is backed by a standard ten-year, worldwide warranty.

### Reliable Communications

Integrate with SCADA systems and other distributed control systems by using a wide range of supported protocols.

### LTC Retrofits

Upgrade a field-installed SEL-2414 via firmware, and retrofit other OEM solutions with adapter panels or complete turnkey solutions.



Learn more.  
[selinc.com/products/2414](https://selinc.com/products/2414)

## Specifications

|   |  |
|---|--|
| <b>Voltage Regulation</b>                   | LTC control modes: Auto, manual, local, and remote   |
|   | Configurable settings: Center band, bandwidth, and tap delays  |
|   | Line drop compensation for both resistive (R) and reactive (X) components  |
|   | Paralleling methods that include leader/follower or angle comparison, and preconfigured Ethernet settings that simplify configuration  |
| <b>Thermal Regulation</b>                   | Cooling system control with alternation and exercising   |
|   | Transformer thermal modeling that includes calculations for hotspot temperatures, daily loss of life, and total loss of life using IEEE and IEC models   |
| <b>Data Display, Capture, and Reporting</b> | On-device customizable diagrams and screens  |
|   | On-device display: Controller state, alarms, and reports   |
|   | Triggered raw and filtered oscillography   |
|   | Sequence of Events recording: 1-millisecond resolution   |
|   | Through-fault event recording  |
|   | Custom recording: 10 samples per second  |
|   | LTC event reports: 1-second resolution   |
|   | Thermal event reports: 1-minute resolution   |
|   | Thermal data records with hourly and daily reports   |
| <b>Hardware</b>                             | Operating temperature: $-40^{\circ}$ to $+85^{\circ}\text{C}$ ( $-40^{\circ}$ to $+185^{\circ}\text{F}$ )<br>Note: Front-panel display is impaired for temperatures below $-20^{\circ}\text{C}$ ( $-4^{\circ}\text{F}$ ) and above $+70^{\circ}\text{C}$ ( $+158^{\circ}\text{F}$ ). |
|   | Display options: 5-inch color touchscreen or backlit 2-line LCD  |
|   | Mounting options: Panel or surface mount   |
|   | Orderable I/O cards: Four slots, with a wide range of customizable cards available   |
|   | Dimensions of vertical panel mount: 192 mm (7.56 in) high, 144 mm (5.67 in) wide, 147.4 mm (5.8 in) deep   |
|   | Product warranty: Ten years (includes 5-inch color touchscreen)  |
|   | Kits and direct-replacement assemblies available for retrofits   |