SEL-2664S
Stator Ground Protection Relay

100% Stator Ground Protection, 100% of the Time

- Protect your generator against stator ground, neutral overvoltage, and grounding resistor faults for all operating conditions.
- Eliminate frequency blind spots during generator startup by using the unique multisine injection.
- Reduce cost by using the SEL-2664S Stator Ground Protection Relay as a standalone protection device or with SEL or third-party generator protection.
**Key Features**

100% Stator Winding Protection, 100% of the Time
Protect generators from stator ground faults at standstill, during startup, and while running with the multisine frequency injection and neutral overvoltage-based protection in the SEL-2664S. This solution is intended for use with high-resistance grounded generator applications.

Stator Protection for Retrofit and New Equipment Applications
Use the SEL-2664S as a standalone protection device or with SEL or third-party generator protection. The SEL-2664S is ideal for all high-resistance-grounded, synchronous-machine applications.

Rotor Field Ground Protection
Detect field ground faults by connecting the SEL-2664S to the SEL-2664 Field Ground Module to measure field insulation-to-ground resistance using a switched dc voltage injection method.

Elimination of Protection Blind Spots
Inject up to four individual frequencies using the unique multisine frequency injection to ensure that the protection does not have a blind spot during generator startup.

Rugged Design for Extreme Environments
Built to the same high standards as SEL protective relays, the SEL-2664S withstands vibration, electrical surges, fast transients, and extreme temperatures, meeting stringent industry standards. The printed circuit boards are conformally coated to provide an additional barrier to airborne contaminants, such as hydrogen sulfide, chlorine, salt, and moisture.

Flexible Communications
Easily integrate the SEL-2664S into your system with multiple communications protocols, including Modbus, DNP3, Telnet, IEC 61850, and FTP. You can implement communications-assisted tripping schemes with standard protocols, including Mirrored Bits® communications and IEC 61850 GOOSE. The SEL-2664S offers one fiber serial port, two fiber Ethernet ports, and two EIA-232 serial ports.

Redundant Operation
Use two SEL-2664S Relays in parallel to provide redundant stator ground fault protection for critical applications.
SEL-2664S Product Overview

- **Fiber-optic EIA-232 serial port**
- **Dual fiber-optic Ethernet ports**
- **Power supply:** 125/250 Vdc or 110/240 Vac
- **Neutral current input**
- **Neutral voltage VN/injection source (I_SRC)**

**Front and Side Faceplates**
- **Eight status LEDs** for an easy-to-use interface
- **Target/trip reset button**
- **Front EIA-232 serial port**

**Technical Features**
- **Two digital inputs**, optically isolated and internally wetted with 24 Vdc
- **Four digital outputs:** OUT01—Form C; OUT02, 03, 04—Form A
## SEL-2664S Specifications

### General

<table>
<thead>
<tr>
<th>Source rating: 50 VA continuous</th>
<th>Nominal injected current amplitude: 0.5–5.0 A rms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous thermal rating: 5 A rms</td>
<td>Amplifier clipping level: &gt;±20 V peak</td>
</tr>
</tbody>
</table>

### Four-Frequency Multisine Injection

- For 60 Hz nominal: 18, 24, 36, and 48 Hz
- For 50 Hz nominal: 15, 20, 30, and 40 Hz
- Maximum open-terminal voltage: 26 V peak

### Protection

- Self-protecting

### Neutral Voltage Inputs

<table>
<thead>
<tr>
<th>Rated operating voltage ($U_e$): 2.5–240 Vac</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated insulation voltage ($U_i$): 300 Vac</td>
</tr>
<tr>
<td>Maximum continuous overvoltage rating: 275 Vac</td>
</tr>
</tbody>
</table>

### Core-Balanced Current Transformer (CBCT) Current Input

<table>
<thead>
<tr>
<th>Nominal input current: 5 mA ac rms, linear to 20 mA peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous thermal rating: 1 A</td>
</tr>
<tr>
<td>Measurement clipping level: ≥22 mA peak</td>
</tr>
<tr>
<td>One-second thermal rating: 10 A</td>
</tr>
<tr>
<td>Burden rating: &lt;0.012 VA at 30 mA</td>
</tr>
<tr>
<td>Rated insulation voltage ($U_i$): Galvanically connected to 64S terminal common</td>
</tr>
</tbody>
</table>

### Output Contacts

This relay supports Form A and C outputs.

### DC Output Ratings

<table>
<thead>
<tr>
<th>Operational voltage: 24–250 Vdc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous carry: 6 A @ 70°C, 4 A @ 85°C</td>
</tr>
</tbody>
</table>

### AC Output Ratings

<table>
<thead>
<tr>
<th>Maximum operational voltage: 240 Vac</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated operational current ($I_e$): 3 A @ 120 Vac, 1.5 A @ 240 Vac</td>
</tr>
</tbody>
</table>

### Communications Protocols

SEL, Modbus, DNP3, FTP, TCP/IP, Telnet, Simple Network Time Protocol (SNTP), IEC 61850, and Mirrored Bits communications

### Operating Temperature

−40° to + 85°C (−40° to + 185°F)

### Mounting Options

Available with wall-, panel-, and rack-mount options

### Certifications

To view certifications for the SEL-2664S, please visit: selinc.com/company/certifications