

# SEL-2505 Remote I/O Module



## Increase Reliability, Enhance Safety, Reduce Costs



*Transfer control and indication  
signals with optical fiber  
instead of wire.*



### Features and Benefits

#### ■ Protection and Monitoring

Add simple bus protection using contact inputs and outputs from existing relays. Add secure pilot communications to existing two- and three-terminal line applications. Add local or remote trip- and close-coil monitoring capability.

#### ■ Integration

Expand the I/O of SEL relays that are MIRRORED BITS® communications compatible without modification to the control panel face. Make I/O status from any relay available to SEL MIRRORED BITS communications schemes. Use with an SEL-2100 Logic Processor for high-speed control applications.

#### ■ Safety

Replace control wiring to outside cabinets with fiber-optic cable to eliminate paths for dangerous voltages.

#### ■ Dependability

Use the communications monitoring feature to alarm when fiber-optic control cabling has been damaged, disturbed, or altered.

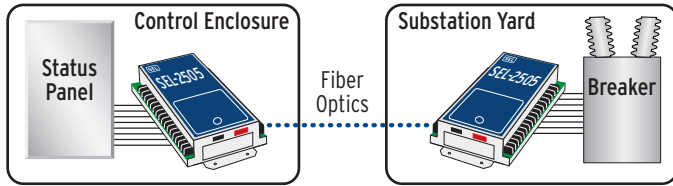
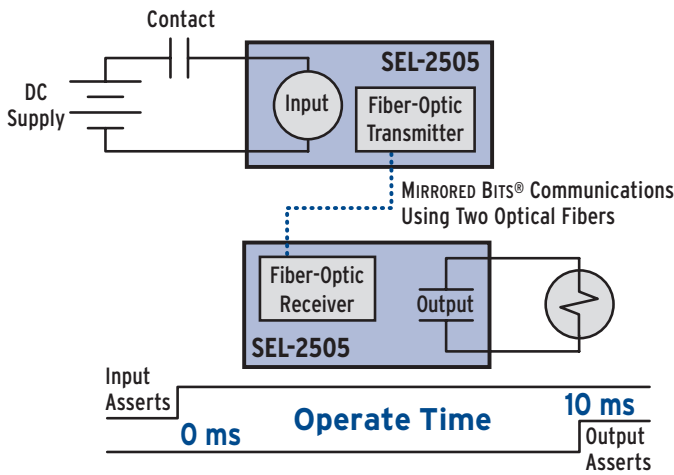
#### ■ Savings

Reduce project costs by using two fibers instead of 32 large-diameter wires, with less material expense, reduced trench and raceway requirements, and less labor for design, documentation, installation, testing, and maintenance.

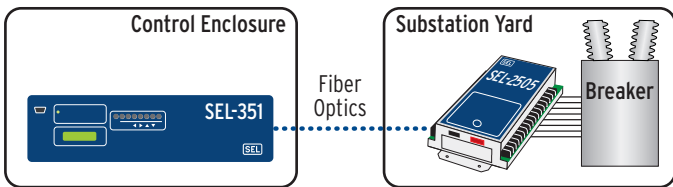
**Making Electric Power Safer, More Reliable, and More Economical®**

# SEL-2505 Remote I/O Module

## Functional Overview



Through a fiber-optic port, the SEL-2505 communicates with a remote device using MIRRORED BITS communications. Each contact input controls one of the eight transmit bits, while each of the eight receive bits controls an output contact. Use the transmitted contact input status for control and indication at the remote device. Use the remote device to control the SEL-2505 output contacts in trip, close, and other schemes. Use two optical fibers instead of 32 large-diameter wires, saving material and labor costs.



## High Reliability and Rugged Design

Built to the same high standards as SEL protective relays, the SEL-2505 withstands vibration, electrical surges, fast transients, and extreme temperatures, meeting stringent industry standards. The printed circuit boards are conformal coated to provide an additional barrier to airborne contaminants such as hydrogen sulfide, chlorine, salt, and moisture.

## General Specifications

### Communications Port Options

Connector	Optical Fiber or Wire	Compatible Transceiver	Maximum Recommended Distance (km)
V-pin	200 µm multimode <sup>1</sup>	SEL-2800	0.5
ST <sup>®</sup>	50, 62.5, or 200 µm multimode <sup>1</sup>	SEL-2812, -2814, or -9220	4
ST	50, 62.5, or 200 µm multimode <sup>2</sup>	SEL-2815	15
ST	9, 10 µm single-mode <sup>2</sup>	SEL-2830	80
9-pin D	Copper wire	EIA-232	0.015

<sup>1</sup> Class 1 LED product complies with 21 CFR 1040.10 and EN 60825-1.

<sup>2</sup> Class 1 laser product complies with 21 CFR 1040.10 and EN 60825-1.

### Data Rate (bps)

38400	10 ms
19200	12 ms
9600	18 ms

### Operate Time

### Digital Input Ratings

4 mA nominal input current

Voltage Range	On	Off
12 Vdc	9.6–15 Vdc	< 6 Vdc
24 Vdc		< 12 Vdc
48 Vdc	38.4–60 Vdc	< 28.8 Vdc
110 Vdc	88–132 Vdc	< 66 Vdc
125 Vdc	105–150 Vdc	< 75 Vdc
220 Vdc	176–264 Vdc	< 132 Vdc
250 Vdc	210–300 Vdc	< 150 Vdc

### Output Contacts

IEEE C37.90 Tripping Output Performance

Make	30 A
Carry	6 A
MOV Protected	270 Vac rms; 360 Vdc continuous

### Power Supply Ratings

12/24 V	9.6–36 Vdc, 5 W maximum
48/125 V*	36–200 Vdc or 85–140 Vac, 5 W maximum
125/250 V*	85–300 Vdc or 85–264 Vac, 5 W maximum

\* 48/125 V and 125/250 V versions are UL and CSA listed.

### Dimensions

338.6 mm H x 165.1 mm W x 55.2 mm D (13.33 in x 6.5 in x 2.175 in)

### Operating Temperature Range

–40° to +85°C (–40° to +185°F)



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