

Part Number: GRSO and GRSO POE

Web-based climate monitor with output relays, digital sensor support and expanded analog input capabilities.

- Accessible through a web browser
- 3 Output relays to control external devices
- Built-in temperature sensor
- 6 analog inputs for 0-5 VDC Sensors
- 4 digital sensor ports for remote sensors
- LCD display cycles through sensor readings
- Multi level alarms with escalation
- Alarm notifications sent by email and SNMP
- Audible horn triggered by alarm

GRSO combines climate monitoring with remote relay control. The output relays can be triggered manually or tied to specific alarm settings. Includes a built-in temperature sensor and 6 analog inputs. Also available as a Power over Ethernet (POE). The built-in POE converges power and data between the switch and the GRSO POE eliminating the need for electrical wiring. A power adaptor is provided for applications without POE support. Supports up to 16 remote digital sensors and a total cable length up to 600'. Configure alarms to get alerts by email or SNMP. Access to data logs and graphs through a simple web interface, provided by a browser (FireFox, IE).

Output Relays

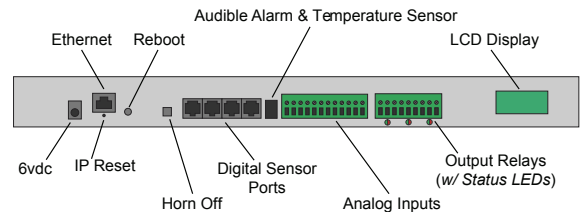
Output relays allow the GRSO to control and signal external low-voltage devices. Applications would include:

- Trigger an autodialer to alert personnel by phone
- Send a signal to a building-security system
- Control a larger relay to power external equipment
- Trigger an A/C unit with dry-contact inputs
- Activate a remote warning light or buzzer

Web Interface

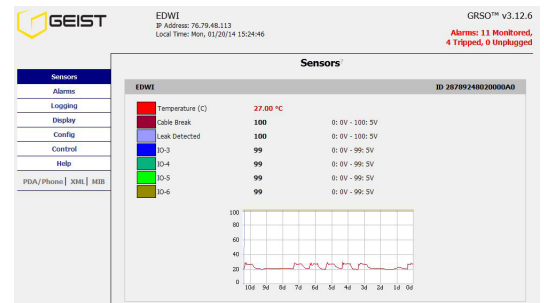
The web interface is the primary way to interact with the GRSO. This allows a user to remotely check the status of the environment, view graphs and webcam images and update the firmware. Manual relay controls are also provided.

GRSO is configured and administrated through the web interface. Access is user name and password protected. For added security, the device supports SSL encryption, provided by browsers using HTTPS.



The GRSO occupies a 1-U space, provides environment monitoring and contains output relays controlled either manually or triggered by an alarm

Web Interface-Sensors Page



View Current sensor readings and graphs on the Sensor page. The names of the analog inputs are user-defined.

Web Interface-Control Page



Use the Control page to customize relay names and relay states to fit your application.



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Other Access Methods

Besides web access, there are several ways to obtain sensor data from the unit. Meta-tagged system info is available in XML. Logged data can be downloaded as a CSV file. The device also supports SNMP (v1, v2c, v3). This allows dozens of Network Monitoring programs such as HP OpenView, IP Sentry, MRTG, or What's Up Gold (Ipswitch) to easily add the GRSO to the list of monitored devices.

There are several status indicators for local viewing. A back-lit LCD display cycles through real-time values, selected by the user. Bi-color LEDs under the relay terminals indicate relay state. Additional LED indicators show network activity and link status.

Alarms

If a sensor reading exceeds a user-defined threshold the GRSO sends alerts by email or SNMP trap. A special feature of the GRSO is to change relay status (turn on or off) according to alarm conditions. The following table summarizes alert options:

| Event | Output Relays | | Email | SNMP Trap | Buzzer |
|----------------------------|---------------|--------|----------------|--------------|--------|
| | "Latching" | Normal | | | |
| Alarm "tripped" | On | On | "trip" alert | "trip" trap | On |
| Alarm "cleared" | Stays On | Off | "clear" notice | "clear" trap | Off |
| "cleared" & "acknowledged" | OffN | /A | N/AN | /A | N/A |

Alert actions for the GRSO (including relay behavior)

Remote Sensors

Analog: Analog sensors include dry-contact and industry standard sensors providing a 0-5VDC signal. There are connections for 6 analog inputs.

Digital: Digital sensors provide sensor data through a serial protocol. Once connected, the GRSO automatically detects and identifies the sensor type. With splitters, up to 16 digital sensors can be attached.

| Relay | Status | Action |
|---------|--------------------|------------------|
| Fan | On (Forced) | Release Override |
| Relay-2 | Energized (Forced) | (Do Nothing) |
| Relay-3 | De-energized | Force Energized |

Execute

Check relay status and turn relays on or off through the Control Page.

Web Interface-Alarms Page

Relays Buzzer E-mail Traps

Temperature (F) [dropdown] [30.0]

Low Trip [dropdown]

In response to user-defined alarm states, the GRSO can energize output relays, send alerts by email or SNMP and trigger the buzzer.

Sensor Details

Built-in Sensors

Temperature: -22 to 185 °F (-30 to 85 °C), +/- 0.5 °C

Output Relays

3 SPDT dry-contact relays
 Max switching capacity: 60V, 30W
 Connectors: 3 screw terminals per relay
 3 Relay Status LEDs (bi-color, green="on", red="off")

Remote Sensor Support

Digital sensor: 4 ports (supports up to 16 with splitters)
 Analog sensor: 6 inputs (contact closure, 0-5 VDC)

Remote Sensor Support

Physical: 19" rack-mount, 1-U space
 Power: 6VDC (supplied wall transformer)
 Ethernet: 10 Mbps, RJ-45 receptacle
 2 Network Status LEDs ("Link" and "Activity")
 Real Time Clock (RTC) with power backup
 Reset IP push-button: restores factory defaults
 "Horn Off" push-button: silences alarm buzzer
 "Reboot" push-button: reboots system
 LCD Display: 2 lines x 8, back lit, cycling sensor values
 Warranty: 1 year

Software Features

HTTP / HTTPS: web access
 Control relays through web interface
 Alarms: high/low values, multiple thresholds per sensor
 Options to trigger relays or buzzer on alarm
 ESMTP / POP3: email alerts, ESMTP / POP3 auth
 SNMP (v1, v2c, v3): gets, trap and clear alerts, MIB
 Paging: email to pager proxy
 XML: meta-tagged sensor values, alarms, config, relays
 Syslog: send debug messages to Syslog server

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