

# GEIST

Future Thinking • Solutions Today



## Environmental Monitoring and Alarming



# GEIST MONITOR

## About Geist

Geist designs and manufactures industry leading technology and software for powering, monitoring, cooling and managing critical data center infrastructure. We produce affordable, quality products while providing our clients with superior service. Whether it's enhancing customer care services or implementing new technologies, Geist promotes innovation, quality and satisfaction in all aspects of business.

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# Environmental Monitoring

Environmental factors like heat, humidity and moisture pose a severe threat to your mission-critical infrastructure. These dangers can be minimized by incorporating a network of Geist sensors to collect data and alert users to potential threats.

Geist's monitoring solutions allow users to observe conditions from a secure Web interface and receive SNMP, email, email-to-SMS\* and/or voice alert notifications when user specified thresholds are breached.

The Web interface displays live video surveillance and environmental measurements including temperature, humidity, airflow, light, sound, power and water detection. Measurements are logged to track trends. Relay outputs can be used to trigger external devices, either automatically (via programmed alarm thresholds) or manually via the Web interface.

## Data Center



Strategically monitor data center, server room and network closet environments to protect critical infrastructure and prevent system downtime, hardware damage and data loss.

## Telecom



Monitor climate and power conditions within base transceiver stations, cell sites and technical rooms to ensure your equipment is running in optimal conditions.

## Health Care















Monitor and validate temperature among various environments within healthcare facilities including hospitals, blood and tissue banks and laboratories.

## Cold Storage



Monitor cold-storage facilities within restaurants, cafeterias, grocery stores and warehouses to protect perishable inventory, ensuring food quality and safety.

### Monitor:

- |   |   |   |  |
|---|---|---|--|
|  Temperature        |  Airflow     |  Power Failure |  Smoke   |
|  Humidity/Dew Point |  Sound       |  Door Position |  Voltage |
|  Light              |  Water Leaks |  Amperage      |  Video   |

\* Auto-dialer required

# Product Overview

		Watchdog Appliances					
		Watchdog 15	Watchdog 100	Watchdog 1000	Watchdog 1200	Watchdog 1250	Watchdog 1400
On-Board Sensor	Temperature	•	•	•	•	•	•
	Humidity / Dew point	•	•	•	•	•	•
	Airflow			•	•		
	Light Level			•	•		
	Sound Level			•	•		
External Sensor	Digital Sensor Ports	2	1	16	5	5	4
	Maximum Digital Sensor Capacity	4	4	16	16	16	16
	0-5 VDC Analog Sensor Ports	0	4	3	3	3	6
Hardware Features	Optional Built-in PoE (\$30)	•	•				•
	Built-in Alarm Buzzer				•	•	
	Dry-Contact Relay Outputs	0	1	0	0	0	3
	LCD Display w/ scrolling measurements				•	•	
	Rackmount 19" 1U		•	•	•	•	•
	Temperature Regulated Fan						
	Ethernet			10/100			
	Web Server	IPv6	•	•			
HTTP / HTTPS	•	•	•	•	•	•	
DHCP	•	•	•	•	•	•	
Network Time Protocol (NTP)	•	•	•	•	•	•	
Firmware	Real Time Sensor Data Feeds	GUI, HTTP, HTTPS, SNMP, XML					
	Sensor Data Logging & Graphing	•	•	•	•	•	•
	CSV Data Logs	•	•	•	•	•	•
	SNMP	•	•	•	•	•	•
	Email & Email-to-SMS Alerts	•	•	•	•	•	•
	Alarm Escalations	•	•	•	•	•	•
	Alarm Repeat	•	•	•	•	•	•
	Alarm Delay	•	•	•	•	•	•
	Alarm Valid Hours	•	•	•	•	•	•
	Periodic Email Status Reports			•	•	•	•
	Display in Metric or US Measurements	•	•	•	•	•	•
	Multiple Languages	•	•	•	•	•	•
	Access Account Levels	3	3	3	3	3	3
	Encryption via TLS1.2	•	•	•	•	•	•
	Support for Custom X.509 SSL Certificates			•	•	•	•
	Configuration Back-up			•	•	•	•
	Interface with IP Surveillance Cameras	•	•	•	•	•	•
Remote Firmware Updates	•	•	•	•	•	•	
Benefits	Lifetime Technical Support	•	•	•	•	•	•
	Lifetime Firmware Updates	•	•	•	•	•	•
	30 Day Money Back Guarantee	•	•	•	•	•	•
Warranty	1 Year Standard Warranty*						
Reg	Regulatory Compliance	   					



### Digital Sensors:

- Temperature\*
- Temperature/Humidity/Dew Point (GTHD)\*
- Temperature/Humidity/Dew Point (GT3HD)\*
- Temperature/Humidity/Dew Point/Airflow\*
- Analog-to-Digital Converter

### Analog Sensors:

- Door Position
- Power Failure Sensor
- Smoke Alarm
- Water Sensor
- Water Sensing Cable Kit
- Current Transducer 30/60/120A
- Isolated Voltage Sensor
- 60 VDC Sensor

### Accessories:

- Blanking Panels
- 5-Port Splitter
- Rack Shelves
- PoE Splitter
- PoE Injector
- In-line Power Meter 15A
- In-line Power Meter 20A
- 48 VDC Power Supply
- PSTN Auto-Dialer (Analog)
- GSM Auto-Dialer (SIM card required)

\* Extended warranties available

\* Temperature Range -40°F to 185°F (-40°C to 85°C)

## About our firmware

At Geist we strive to continually improve our product and feature set by listening to our customers and keeping up with the latest trends. Listed here are some of the major firmware features Geist environmental monitors offer.

		WD15 &100	WD 1000
Logging	Record sensor data over time. Turn data logging on or off for certain sensor measurements. Export sensor data logs in CSV file formats.	a	a
Graphing	Graph sensor data over time to view trends. Graph select sensors in relation to each other.	a	a
Email & SMS Alerts	Receive Email alerts on alarm. Configure SMS alerts via Email-to-SMS gateway. SMS messages are shortened so that you receive one text message per alarm as opposed to multiple messages.	a	a
SNMP	Support for SNMP v1, v2c, v3 with traps. Geist devices are compatible with most network management software such as What's Up Gold, Nagios, IP Sentry, OpenView and other SNMP software.	a	a
Alarms Escalations	Specify any combination of actions or recipients per alarm. Configure multiple alarm thresholds per sensor.	Up to 50	Up to 200
Alarm Repeat & Delay	Specify a 0 to 240 minute delay per alarm to get an alert only when a threshold has exceeded continuously for the set number of minutes. Alarms can repeat every 10, 30, or 60 minutes until all measurements are back to normal.	a	a
Alarm Valid Hours	Enable or disable alert notifications for selected recipients during specified time periods.	a	a
Periodic Status Reports	Schedule Emails on an hourly or weekly basis with status of the environmental monitor including all sensor data.		a
Analog Inputs	Configure analog inputs by assigning a scale range to the 0—5 VDC signal to view sensor data in meaningful units.	a	a
Friendly Names	User specifies descriptive names per sensor for easy identification.	a	a
International Support	Metric & Imperial measurements. Customizable date and time format options.	a	a
Supported Languages	English (default), Spanish, French, German and Mandarin. Switch between languages on the fly.	a	a
Security	HTTPS using SSLv3/TLSv1. Upload Custom X.509 SSL Certificates for encrypted connections (WD1000 Series only).	a	a
Access Account Levels	Administrator, Control and View Only accounts with varying privileges.	a	a
Configuration Cloning	Push and pull configuration settings from one unit to another to simplify duplicating config settings on multiple units.		a
Interface with IP Surveillance Cameras	Integrate your IP cameras with our user interface to have a single overview of your facility.	a	a
Plug and Play Sensors	Firmware automatically detects a sensor when connected.	a	a
Free Firmware Updates	Update firmware safely and easily through the web interface.	a	a



# Monitors

## Watchdog 15

The Watchdog 15 is a self-contained environment monitor with an on-board temperature and humidity sensor. Equipped with two digital sensor ports, the Watchdog can support up to four external sensors using a splitter.

The Watchdog 15 is the most cost-effective and reliable solution in the market for monitoring temperature, humidity and other environmental parameters in critical environments.



### Watchdog 15 and Watchdog 15-PoE Specifications

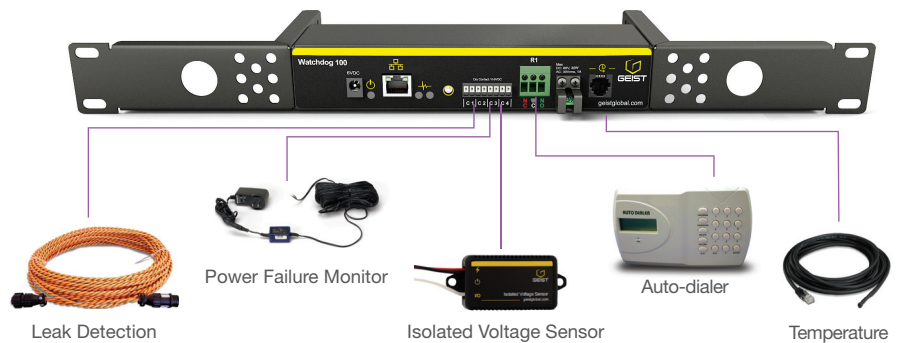
Ethernet Connection. 6-8 VDC Power Supply. Optional Power-over-Ethernet (PoE). Power On Indicator. IP Reset Button. Two Digital Sensor Ports (capacity of four external sensors). On-board Sensors. FCC Part 15 Class A Conformance.

**Temperature Range:**  
-13° F to 176° F (-25° C to 80° C), +/- 0.5° C  
**Humidity:** 5% to 95%, +/- 3%  
**Chassis Dimensions:**  
1.72" H x 5.22" W x 1.29" D

## Watchdog 100

The Watchdog 100 combines climate monitoring with remote relay control. The relay outputs can be tied to alarm settings or triggered manually. The unit comes equipped with on-board temperature, humidity sensor and optional built-in Power-over-Ethernet (PoE).

The Watchdog 100 is a compact solution perfect for tight installments. It is shipped with rack-mount brackets offering flexible wire management options.



### Watchdog 100 and Watchdog 100-PoE Specifications

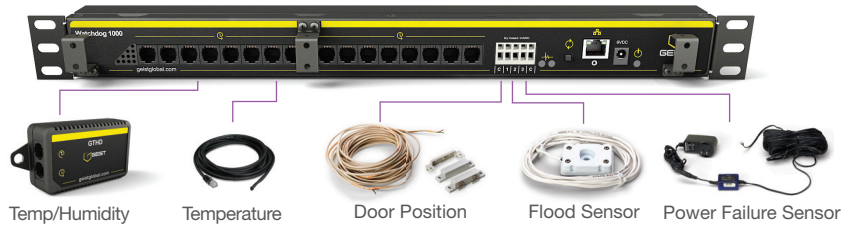
Ethernet Connection. 6 VDC Power Supply. Optional Power-over-Ethernet (PoE). Power On Indicator. Idle/Activity Indicator. IP Reset Button. One Digital Sensor Port (connect up to four using splitters). Four Analog Sensor Ports. One Output Relay. On-board Sensors. FCC Part 15 Class A Conformance.

**Max Switching Capacity:**  
DC: 60V, 30W / AC: 30V<sub>rms</sub>, 1A  
**Temperature Range:**  
-4° F to 176° F (-20° C to 80° C), +/- 0.5° C  
**Humidity:** 5% to 95%, +/- 3%  
**Chassis Dimensions:**  
1.6" H x 8.5" W x 2.5" D  
(with 19" mounting brackets)

## Watchdog 1000

With 16 digital sensor ports, the Watchdog 1000 is ideal for applications that require a low-cost climate monitor and a large number of remote sensors. The Watchdog 1000 can connect up to 16 digital and three analog sensors in a convenient 1U device.

Satisfy ASHRAE standards by monitoring top, middle and bottom cabinet inlet temperatures on up to five cabinets with a single monitoring device. The addition of analog sensors allow additional parameter monitoring of water, smoke, power failure or room entry.



### Watchdog 1000 Specifications

Ethernet Connection. 6 VDC Power Supply. Power On Indicator. Idle/Activity Indicator. IP Reset Button. 16 Digital Ports. Three Analog Sensor Ports. On-board Sensors. FCC Part 15 Class A Conformance.

**Temperature Range:**  
-22° F to 185° F (-30° C to 85° C), +/- .5° C  
**Chassis Dimensions:**  
1.61" H x 17" W x 1.61" D

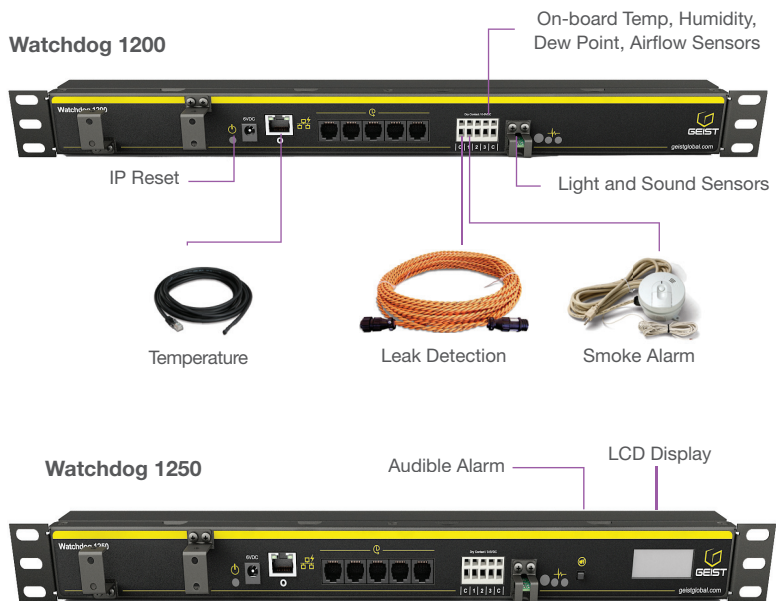
## Watchdog 1200 and Watchdog 1250

The Watchdog 1200 and Watchdog 1250 contain five on-board environmental sensors and additional sensor ports for connecting external digital and analog sensors. The Watchdog 1250 comes with an audible alarm and LCD display.

### Watchdog 1200 and Watchdog 1250 Specifications

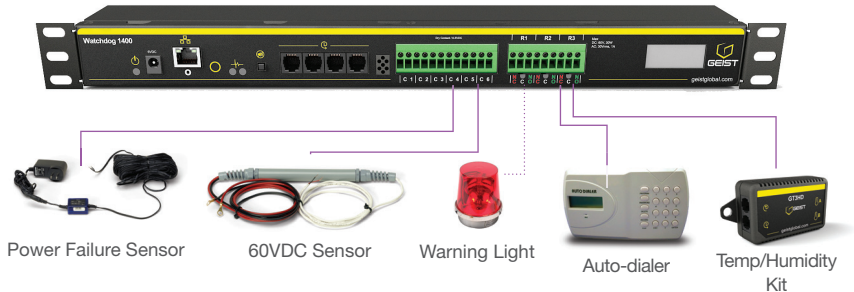
Ethernet Connection. 6 VDC Power Supply. Power On Indicator. Idle/Activity Indicator. IP Reset Button. Five Digital Sensor Ports (capacity of 16 with splitters). Three Analog Sensor Ports. LCD Display (Watchdog 1250). Audible Alarm (Watchdog 1250). On-board Sensors. FCC Part 15 Class A Conformance.

**Temperature Range:**  
-22° F to 185° F (-30° C to 85° C), +/- .5° C  
**Humidity:** 0-100%, +/- 5%  
**Airflow, Sound & Light:** 0-99, relative  
**Chassis Dimensions:** 1.61" H x 17" W x 1.61" D



## Watchdog 1400

The Watchdog 1400 offers climate monitoring with three relay outputs. Equipped with an on-board temperature sensor and six analog inputs, the Watchdog 1400 supports up to 16 remote digital sensors. The relay outputs enable users to trigger external devices like auto-dialers, strobe lights or back-up A/C units on alarm or manually through the Web interface.



### Watchdog 1400 and Watchdog 1400-PoE Specifications

Ethernet Connection. 6 VDC Power Supply. Power On Indicator. Idle/Activity Indicator. Optional Power-over-Ethernet (PoE). IP Reset Button. Four Digital Sensor Ports (capacity of 16 with splitters). Six Analog Sensor Ports. Three Relay Outputs. On-board Sensors. LCD Display. Audible Alarm. FCC Part 15 Class A Conformance.

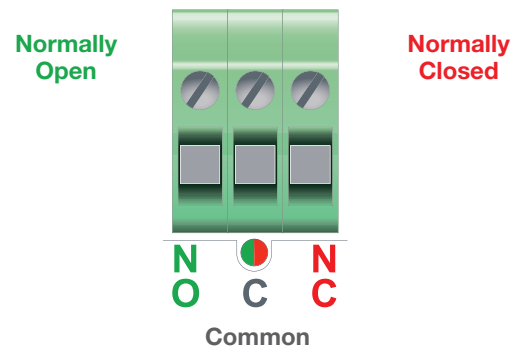
**Temperature Range:**  
-22° F to 185° F (-30° C to 85° C), +/- .5° C  
**Chassis Dimensions:**  
1.61" H x 17" W x 1.61" D

	Watchdog Appliances					
	Watchdog 15	Watchdog 100	Watchdog 1000	Watchdog 1200	Watchdog 1250	Watchdog 1400
On-Board Sensor	Temperature	•	•	•	•	•
	Humidity / Dew point	•	•	•	•	•
	Airflow			•	•	
	Light Level			•	•	
	Sound Level			•	•	
External Sensor	Digital Sensor Ports	2	1	16	5	5
	Maximum Digital Sensor Capacity	4	4	16	16	16
	0-5 VDC Analog Sensor Ports	0	4	3	3	3
Hardware Features	Optional Built-in PoE	•	•			•
	Built-in Alarm Buzzer				•	•
	Dry-Contact Relay Outputs	0	1	0	0	0
	LCD Display w/ scrolling measurements				•	•
	Rackmount 19" 1U		•	•	•	•
	Ethernet	10/100				
Web Server	IPv6	•	•			
	HTTP / HTTPS	•	•	•	•	•
	DHCP	•	•	•	•	•
	Network Time Protocol (NTP)	•	•	•	•	•
Reg	Regulatory Compliance					

### Relay Outputs

Relay outputs allow users to automate low-voltage devices such as external auto-dialers, sirens and warning lights in response to a sensor exceeding its user-adjustable thresholds.

#### Typical Relay Outputs



Relay State ● Energized ● De-Energized

The relays can be controlled directly by the user from the user interface, allowing you to turn a device on or off remotely.

Max Switching Capacity:  
DC: 60 V, 30 W / AC: 30 V<sub>rms</sub>, 1 A



# RS-Wi Wireless Monitoring System

The RS-Wi Wireless Gateway is designed for easy integration with Geist's DCIM systems. The convenient wireless design helps reduce installation costs associated with hard-wired sensors. An auto-discovery mechanism detects sensors as they are installed within the monitoring network.

- Wireless design
- 900MHz & 418MHz receivers
- Operates on a mesh network
- Receives transmissions up to 100 feet in open air with the 418MHz antenna
- Receives transmissions up to a quarter mile in open air with the 900MHz antenna
- Provides direct alarm notification
- Ability to output to Modbus, BACnet and SNMP

## RS-Wi Compatible Sensors

- Digital temperature sensor
- Digital temperature measurement and dry contact
- Analog input sensor
- Analog input transmitter
- Point repeater
- Digital temperature/humidity sensor



RS-Wi Wireless Temperature Sensor

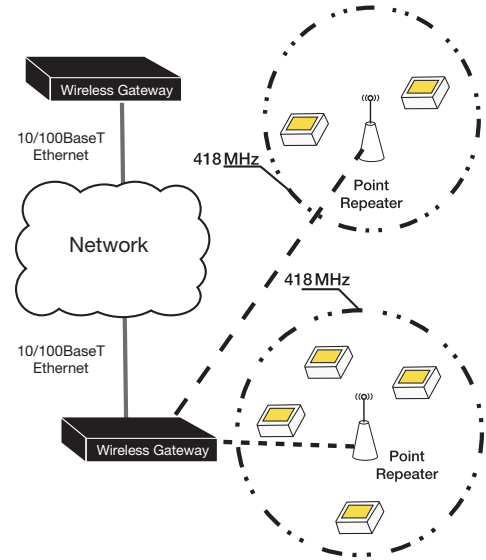


RS-Wi Wireless Gateway

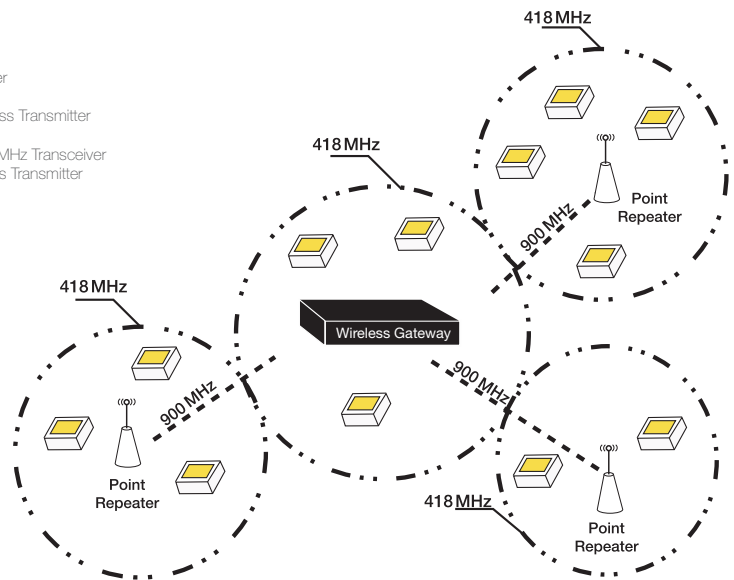
**Part #**  
 RS-Wi  
 ENV-AS1 (0-20Ma transmitter)  
 ENV-AS2 (0-5V transmitter)  
 ENV-DIT (temp + dry contact sensor)  
 ENV-MS (motion sensor)  
 ENV-PR (point repeater)  
 ENV-THS-2 (temp/hum sensor)  
 ENV-TS (temp sensor)

**Description**  
 Wireless Gateway  
 Analog Input (0-20MA), 418 MHz Wireless Transmitter  
 Analog Input 0-5V, 418 MHz Wireless Transmitter  
 Digital (DI) and Temperature Sensor, 418 MHz Wireless Transmitter  
 Motion Sensor, 418 MHz Wireless Transmitter  
 Point Repeater (Mesh), 418 MHz Receiver with 900 MHz Transceiver  
 Temperature and Humidity Sensor, 418 MHz Wireless Transmitter  
 Temperature Sensor, 418 MHz Wireless Transmitter

## RS-Wi as a mesh network



## RS-Wi as a network repeater



# Sensors

## Temperature Sensor

Part # SRT 1.25/4/10

The Temperature Sensor comes in multiple cord lengths ( 1.25", 4", 10") to monitor temperature in a variety of locations, such as refrigeration units, A/C inlet, A/C outlet and hot spots.

Sensor Details: Temperature: -40° C to 85° C or -40° F to 185° F; Accurate to +/-0.5°



## Temperature/Humidity/Dew Point Sensor

Part # GTHD

The Temperature, Humidity, Dew Point Sensor (THD) provides real-time measurements to the appliance for data logging and alarming. The sensor comes equipped with two 6P6C modular jacks (aka RJ12), one for output to the host device and one supplementary input for daisy-chaining an additional digital sensor. A 6P6C modular patch cable for connection from sensor to host device is included. You may mount the sensor nearly anywhere using screws or adhesive.

Sensor Details:

Temperature Range: -4° F to 176° F (-20° C to 80° C), +/- 0.5° C; Humidity: 5% to 95%, +/- 3%; Dew Point: -58° F to 185° F (-50° C to 85° C)



## Temperature/Humidity/Dew Point Sensor Kit

Part # GT3HD

The T3HD is an enhanced version of the Temperature, Humidity, Dew Point Sensor (THD) with four 6P6C modular jacks (aka RJ12), one for output to the appliance, a supplementary input for daisy-chaining and two additional inputs strictly compatible with temperature sensors. The unit comes kitted with 3' and 6' temperature sensors and is especially ideal for monitoring top, middle and bottom of a server rack.

Sensor Details:

Temperature Range: -4° F to 176° F (-20° C to 80° C), +/- 0.5° C; Humidity: 5% to 95%, +/- 3%; Dew Point: -58° F to 185° F (-50° C to 85° C)



## Temperature/Airflow/Humidity/Dew Point Combo Sensor

Part # RTAFHD3 -12/20/25/50/100

The Temperature, Humidity, Dew Point, Airflow combination sensor allows you to be sure that equipment is not overheating and helps prevent damage by condensation or static electricity using relative humidity and dew-point readings. The sensor comes in a variety of cord lengths (12', 20', 25', 50', 100').

Sensor Details: Accurate to +/-0.5° C within the normal operating range of 20° C to 45° C; Accurate to +/-2% RH within the normal operating range of 20% to 80% RH at 25° C; Extended operating range of -40° C to 85° C (-40° F to 185° F)



## Analog to Digital Converter

Part #	CCAT-CITY POWER	Part #	CCAT-DOOR
Part #	CCAT-CURRENT	Part #	CCAT-SMOKE ALARM
Part #	CCAT-DIGITAL	Part #	CCAT-WATER

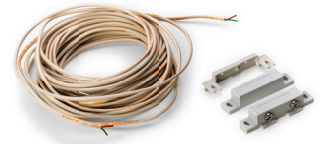
The remote interface converts analog sensor into a digital sensor that can be connected to a digital sensor port. Useful for units that don't have an analog input port or for adding additional analog sensors to any unit. The interface comes programmed for the type of analog sensor that will be connected to it.



## Door Position Sensor

Part #	RDPS (30' wire)
Part #	RDPS-50/100 (50 or 100' wire)

Detect when a door or cabinet is open or closed. Door position sensor has four components: magnet, switch with screw-terminal, cover and connection wires. The wired switch is mounted to the door frame (or cabinet) and the magnet on the door, opposite the switch. When door opens, the switch separates and sensor trips an alarm.



## Power Failure Sensor

Part # PFS-2-100 US

Detect power outages. This power sensor provides real-time notification of a power outage. Commonly used to monitor main power, UPS and 3-phase. Connects to an analog input port and comes complete with its own power adapter that plugs directly into the power source being monitored. Status LEDs indicate system state. Cord length is 100'. Input voltage range 100 to 240 VAC.



## Smoke Detector

Part # SD2

The SD2 is a low voltage Smoke Detector with built-in-interface to allow monitoring through the ports of an environmental or power + environmental monitoring unit. A power supply is attached for easy installation.



## Flood Sensor

Part #	RWS (15' cord)
Part #	RWS-100 (100' cord)

Detect water leakage. Sensor measures conductivity and indicates whether the sensor is dry, damp, or completely immersed in water. Most commonly place nearby, plumbing fixtures, pipes, A/C drip pans and water sprinklers. Comes in 15' and 100' lengths.

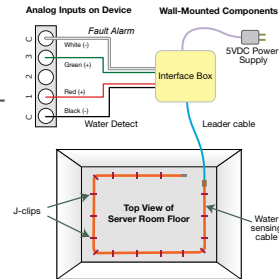


## Water Sensing Cable Kit

Part # 8706 (10' cable)                      8708 (50' cable)  
 8707 (25' cable)                              8709 (100' cable)

Water-sensing kits feature detection cables that recognize the presence of water anywhere along the cable's length. Monitor a wide area, such as the perimeter of a group of racks and cabinets.

Sensor Details: Within the normal operating environment of 32° to 167°F



## Current Transducer

Part # CT 30/60/120

Measure amperage. Monitor how much current is being drawn by a particular device or group of devices. Measures current ranges of 30, 60, 120 amps, determined by a 3-position switch. Outputs 0 to 5 VDC (proportional to current)



## Isolated Voltage Sensor

Part # IVS-DC

The Isolated Voltage Sensor monitors positive-ground DC voltages used in telecom systems through our Environmental Monitors.



## 60 VDC Voltage Sensor

Part # G60VDCM

Measure battery voltage. Continuously track the voltage of telephone batteries or cell phone system power with 60 VDC. Designed for telephony battery voltage monitoring and other applications requiring monitoring of a DC voltage.



## 5-Port Splitter

Part # SP-5

Increase the number of available sensor ports with the 5 port splitter. Chain the splitters together to connect up to 16 sensors. One RJ-11 plug, five receptacles and 5' cord.



## PoE Splitter and Injector Kit

Part # POI-2002 (Injector)  
Part # POS-1002 (Splitter)

Power any environmental monitor and/or web camera over Ethernet cable using the PoE Splitter & Injector Kit. Only a standard CAT5 cable (max 300') is required to carry both data and power to each device. The injector takes data from an Ethernet hub and power from wall outlet and outputs both data and power through the CAT5 cable. The splitter is placed at the end of the CAT5 cable, returning data and power to their respective cables. This unit is a standalone device and does not interface to an environment monitor.

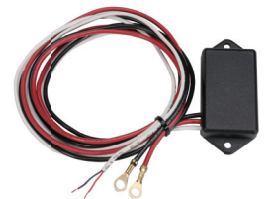


## -48 Volt DC Power Supply

Part # -48VDCPS

-48VDC Power Supply allows you to use a -48 VDC power source to power any Geist environmental monitor.

Input	Output
36 VDC to 60 VDC (max)	6 VDC
Positive to negative ground	1 Amp (max)
Ring terminal connectors	Barrel Connector (fits monitor)



## PSTN and GSM Auto-Dialers

Part # ADP-G06 (GSM auto-dialer)  
Part # ADP-T01 (PSTN auto-dialer)

The relay-controlled GSM and PSTN auto-dialers add an additional level of alert notification by dialing preprogrammed phone numbers. Battery back-up ensures the auto-dialer delivers alerts even if its power source is lost. The dialer can be programmed to call up to nine different phone numbers.



## IP Cameras

The D-Link® DCS-930L Network Camera connects to a wireless (or wired) network to provide high quality video surveillance. With its sleek compact design, the DCS-930L is an affordable network camera ideal for your critical facility.





# Monitor your Critical Facility



Light

Humidity/Dew Point

Video

Smoke

Temperature

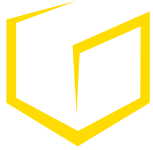
Door Position

Airflow

Water Leaks

Power Failure

*without  
being  
there*



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