BLACK BOX®
NETWORK SERVICES

ServSensor Jr and ServSensor

ServSensor

EME108

ServSensor Jr

EME102

Key Features

▶ Supports up to 2 or 8 of our intelligent autosense sensors simultaneously

▶ Over 10 different sensors: temperature, humidity, water, air flow, smoke, motion, security, dry contact, AC and DC voltages

▶ Alerts: SNMP trap, email, or even SMS (via 3rd party provider)

▶ Web interface, Java-based

Maintaining your infrastructure keep you on the edge? Is your infrastructure designed to control the unpredictable?
You dread investing in a monitoring device because it is exorbitant?
We are here to understand your needs, safe guard your infrastructure and resources from external disaster.

Simple, accurate and rugged, ServSensor is a low cost SNMP enabled and Web based environmental monitoring device. It is based on several years of industry experience. It is ready to run right out of the box. Simply assign an IP address and connect to the embedded web server.

ServSensor has been field-proven with versatile measurement options. It can be configured to prevent specific kinds of exposure to humidity, water leakage, gas, airflow and low or high temperature, etc. It does support other sensors that can monitor voltage drop, security, analog and dry contacts. It is customizable to any other sensors like motion, gas, sound, etc.

Plug in any of our intelligent sensors and the ServSensor's autosense feature will recognize the type and automatically configure it. The ServSensor monitors your equipment's environmental variations, and notifies you through email, SMS or SNMP alerts in your network

management system in advance and prevent any disaster. The user-friendly web interface allows you to monitor and control the ServSensor from anywhere remotely. It also provides you the graphical representation of environmental conditions.

ServSensor has been tightly integrated with network management systems like HP OpenView, CA TNG Unicenter, IBM Tivoli, WhatsUp Gold.
The ServSensor is designed to run for years non-stop.

Specifications

ServSensor JR

Connections —
- 2x RJ45 sensor ports
- 1 x 10BASE-T Ethernet port
- 1 x 7.5VDC power connector (external PS included)

Engine —
- data acquisition system with A/D converters
- Linux-based OS
- Web server with Java enhancements
- Full SNMP
- Can generate and send SMS messages (subscription to SMS server needed)

Management —
- LEDs: 1x Power On, 1x Link, 1x Activity, 2x Sensor On
- Configuration software utility for IP setup, then over web browser
- Monitoring and alarms: via web browser, email, SNMP trap, SMS
- Security: password-protected login

Physical and environmental —
- Supply voltage: 110 – 240VAC autosense, external PSU
- Operating temperature: 10 – 40ºC
- Operating humidity: 30 – 70% RH non-condensing
- Size: 114.3 x 63.5 x 31.75mm
- Installation type: desktop or rackmount, 0U

ServSensor

Connections —
- 8x RJ45 sensor ports
- 1x 10BASE-T Ethernet port
- 1x 7.5VDC power connector (external PS included)

Engine —
- data acquisition system with A/D converters
- Linux-based OS
- Web server with Java enhancements
- Full SNMP
- Can generate and send SMS messages (subscription to SMS server needed)

Management —
- LEDs: 1x Power On, 1x Link, 1 x Activity, 8x Sensor On, 8x Sensor Threshold
- Configuration: software utility for IP setup, then over web browser
- Monitoring and alarms: via web browser, email, SNMP trap, SMS
- Security: password-protected login

Physical and environmental —
- Supply voltage: 110 – 240VAC autosense, external PSU
- Operating temperature: 10 – 40ºC
- Operating humidity: 30 – 70% RH non-condensing
- Size: 234 x 138 x 46mm
- Installation type: desktop or rackmount, 1U (rackmount kit included)

Intelligent Sensors

Temperature

Up to two temperature sensors can be plugged into RJ-45 jacks on the ServSensor2A, up to 8 on the ServSensor8. All ServSensors comes with a one foot temperature sensor. Optional temperature sensors can be purchased with 15 or 60 feet of cable, allowing the sensors to be positioned in hot spots. The ServSensor auto detects the presence of the sensor. Each sensor has its own SNMP oid so that data can be collected over the network and graphed.

Features & Specifications
- Never needs Calibration
- Measurement range Celsius:-55°C to +125°C
- Measurement resolution Celsius: 1°C increments.
- Measurement accuracy Celsius: ±0.5°C accuracy from -10°C to +85°C
- Communications cable: RJ45 jack to temperature sensor using UTP Cat 5 wire
- Sensor type: semiconductor microprocessor controlled
- Power source: powered by the ServSensor. No additional power needed.
- ServSensor autodetects the presence of the temperature sensor
- Measurement rate: one reading every second
- Full autosense including disconnect alarm

Dual temperature / humidity sensor

The new dual sensor has both temperature and humidity measuring capabilities in a single unit. This extends the capability of the ServSensor to measure up to 8 temperature and 8 humidity parameters, just by connecting 8 dual sensors.

The humidity sensor comes with 1 foot of cable. Optional humidity sensors can be purchased with 15 or 60 feet of cable. The humidity sensor has its own SNMP ID so that data can be collected over the network and graphed.

Temperature
- Measurement range Celsius:-40°C to +123°C
- Measurement resolution Celsius: 1°C
- Measurement accuracy Celsius: ±0.5°C accuracy from -40°C to +120°C
- Measurement range Fahrenheit: -40°F to +254°F
- Measurement resolution Fahrenheit: 1°F increments
- Measurement accuracy Fahrenheit: ±0.9°F accuracy from -40°F to +248°F

Humidity
- Measurement range: 0 to 100% relative humidity (RH)
- Sensor element is water resistant
- Resolution: 1%
- Accuracy at 25°C ±3%
- Communications cable: UTP Cat5 with RJ45 jack
- Power source: powered by the ServSensor
- No additional power needed. ServSensor autodetects the presence of the dual sensor

Water Detector

The water detector is an advanced microprocessor based design capable of detecting distilled water.

Most water detectors use a technology which measures the resistance of the water. This resistance depends upon the presence of electrolytes in the water. The water in some areas is too clean, therefore the resistance is high and the typical water detector will not work.

Our water detector is an exclusive design capable of detecting the presence of even distilled water. The water detector contains microprocessor controlled capacitance measuring circuitry. This is far more precise than standard commercially available water detectors which measure the resistance of water. The resistance of water can vary depending upon the impurities in the water. Normal resistance type monitors are unable to detect the presence of distilled water due to its high resistance.

The entire circuit is encased in epoxy allowing the water detector to function while submerged in water.

The ServSensor will retain any error condition until it is read via an SNMP get. Therefore if a water detector encounters a critical condition at any time it will report that condition before it returns to a normal state

The water Detector detects water leaks and flooding with a WET/DRY indication in software. SNMP polling via snmp get available. Web browser interface available. When an alarm condition is activated the description and location of the fault can be sent via email, page.

Features & Specifications
- Measurement range - Wet or Dry (-20°C +60°C)
- Measurement accuracy - able to measure distilled water
- Sensor type - patent pending, microprocessor controlled, capacitance measurement technology
- Power source: powered by the ServSensor. No additional power needed.
- Communications cable - UTP CAT5 with RJ45 jack
- ServSensor autodetects the presence of the water detector
- Measurement rate - multiple readings every second
- Up to 2 water detectors per ServSensor Jr, up to 8 per ServSensor
- Full autosense including disconnect alarm

Security Sensor

The security sensor generates an alarm/normal indication in software. Security sensors can be used at doors and windows and the ServSensor can send SNMP traps for alarm/noral status. The status can be continuously monitored on the web browser inerface. When an alarm condition is activated, the description and location of the fault can be sent via email or pager.

Features & Specifications
- Measurement range - Alarm or Normal
- Communications cable - UTP Cat5 with RJ45 jack
- Sensor type - open/closed contact switch
- Power source: powered by the ServSensor. No additional power needed
- ServSensor autodetects the presence of the security sensor
- Measurement rate - multiple readings every second
- Full autosense including disconnect alarm
- Up to 2 security sensors per ServSensor JR, up to 8 on the ServSensor 8-port

Airflow Sensor

The BLACK BOX airflow sensor is designed for systems that generate heat in the course of their operation and a steady flow of air is necessary to dissipate this heat generated. System reliability and safety could be jeopardized if this cooling airflow stops.

The Airflow sensor is placed in the path of the air stream, where the user can monitor the status and the amount of the flowing air. The ServSensor displays this information using a graphical display via its web interface. In addition to an on/off indication, it also graphs the analog values over a period of time. If, for example, the fan slows down the user will be give an indication of change over time. This may happen if the fan close to failure or the air filter is clogged.

In addition to a web interface an SNMP interface is provided for alarm/normal status and to get the current analog value. SNMP traps sent when critical. SNMP polling via get available. Web browser interface available. When an alarm condition is activated the description and location of the fault can be sent via email, page.

Features
- On/off alarm signal of airflow
- Airflow data graphically displayed of over time
- Accurate, cost effective flow sensing
- 2 LEDs indicate the status of airflow and that the sensor is securely plugged into the ServSensor
- Electronics mounted in a small plastic case
- Sensor type - open/closed contact switch
- Power source: powered by the ServSensor. No additional power needed.
- ServSensor autodetects the presence of the airflow sensor
- Up to 2 airflow sensors per ServSensor Jr, up to 8 on the ServSensor.
- Full autosense including disconnect alarm

Specifications
- Data graphically displayed via a web page
- Data collection: via network management
- Ambient range: -20°C to 85° C
- Measurement rate: one reading each second, data logging once per minute
- Communication cable: UTP Cat5 with RJ45 jack
- Sensor type: Thermistor
- Sensor power: line power from ServSensor
- Trap information: Warning sensor number, Sensor description, Airflow (%)

Dry Contact Sensor

The dry contact sensor responds with an ALARM/NORMAL indication in software. Can have an unlimited number of dry contacts sensors. Dry contact sensors are user definable and can be used to detect many different inputs such as UPS status, security systems, air conditioning status. SNMP interface for alarm/normal status. SNMP traps sent when critical. SNMP polling via get available. Web browser interface available. When an alarm condition is activated the description and location of the fault can be sent via email, page, trap.

Features & Specifications
- Measurement range - Alarm or Normal
- Communications cable - UTP Cat5 with RJ45 jack
- Sensor type - open/closed contact switch
- Input voltage range. 0 to 5 volts DC
- Normal input voltage is settable under software
- Normally open, normally closed is settable under software
- Current Range. Can sink up to 20 mAmps
- Power source: powered by the ServSensor. No additional power needed.
- ServSensor autodetects the presence of the dry contact sensor
- Measurement rate - multiple readings every second
- Up to 2 dry contact sensors per ServSensor2A, up to 8 on the ServSensor8.
- Full autosense including disconnect alarm

AC Voltage Detector

The AC Voltage Detector indicate an ALARM/NORMAL condition in software and also via its LED. Voltage sensors can detect the presence or the absence of line voltage. Designed for use worldwide. SNMP interface for alarm/normal status. SNMP traps sent when critical. SNMP polling via get available. Web browser interface available. When an alarm condition is activated the description and location of the fault can be sent via email, page, traps.

Features & Specifications
- Measurement range - Detects voltage at 50V to 250VAC
- LED indicator on sensor shows if voltage present
- Measurement Indication - Alarm or Normal
- Communications cable - UTP Cat5 with RJ45 jack
- Sensor type - open/closed contact switch
- Power source: powered by the ServSensor. No additional power needed.
- ServSensor autodetects the presence of the voltage sensor
- Measurement rate - multiple readings every second
- Up to 2 AC voltage detectors per ServSensor2A, up to 8 on the ServSensor8.
- Full autosense including disconnect alarm

DC Voltage Sensor

The DC Voltage Sensor allows the user to integrate a custom sensor to the ServSensor while still retaining all of the features of the standard sensors. The DC Voltage sensor has the full range of functionality including snmp integration, email and trap generation upon settable limits and thresholds.

Customers have added pressure transducers, Solar Power Monitors, Battery Monitors, have integrated the ServSensor into laboratory test equipment, and many other uses.

DC Voltage Sensors can be used by engineers to create their own custom data collection systems. The user can configure sensor input voltage range from 0 to 50 volts. DC Voltage Detectors can provide real time data from the world around them.

Readings are available in both raw data and as a percentage of full scale. Full scale is user programmable with both the base and top voltage from 0 to 30 volts. SNMP interface for alarm/normal status. SNMP traps sent when status changes. SNMP polling via get available. Web browser interface available. When an alarm condition is activated the description and location of the fault can be sent via email.

Features & Specifications
- Measurement range - High Warning, Low Warning, High Critical, Low Critical
- Communications cable - UTP Cat5 with RJ45 jack
- Resolution - 10 bit A/D converter
- Accuracy - ±2LSB
- Conversion time - 280uSec
- Power source: powered by the ServSensor. No additional power needed.
- ServSensor autodetects the presence of the DC Voltage sensor
- Measurement rate - multiple readings every second
- Up to 2 DC Voltage per ServSensor
- Full autosense including disconnect alarm

4-20 mAmp Converter

System Overview
The 4-20 mAmp signal converter is used to integrate the ServSensor with a 4-20 mA transmitter. 4-20 mA technology is used to communicate analog signals over long distances where electrical interference is a problem. This solution is often used in the process control industry to collect the analog values from a wide array of remote sensors. Current signals are much less susceptible to noise than voltage signals. A voltage signal can be converted to current and then broadcast over a long distance before it is converted back to voltage and read by the ServSensor.

4-20 mAmp transmitters are common in the industry for use with high quality sensors. With the 4-20 mAmp converter these sensors can mow be integrated into the ServSensor enhancing their value with the addition of graphing, web interface, email interface, thresholds, and limits.

Features
- Converters current levels from 4-20 mA to 0.8-4.0 V voltage levels
- Operates from a single +5V DC Power Supply which powered by the Serv Sensor
- Fully Rated Over the -40°C to 85°C industrial temperature range
- 2 LED show status of the current loop and the power supply
- Up to two converters per ServSensor JR, 8 per ServSensor 8-port

Specifications
- Input Connector: two terminal, lin(+) and lin(-), for current loop
- Input Current Range: +4mA to +20mA
- Output Voltage Range: + 0.8 V to + 4.0 V
- Output Connector: UTP cable with RJ45 jack
- Linearity: ± 0.9% full Scale, max.
- Accuracy: ± 0.15% full scale (± 0.3% full Scale, maximum)
- Power Supply: +5 V DC
- Power consumption: 25m W
- Operating temperature: -40°C to 85°C
- Size: 65x62x15mm
- Weight: 80g

Power Relay Board

The Power Relay Board controls the electrical power to devices over Internet. With easy configuration & integration with ServSensor product series, The Power Relay Board defines a new era in energy management.

The Power Relay Board provides 1 high-power SPDT 5V relay. It includes Metal Oxide Varistors (MOVs) and snubber cir-cuits to protect the open contact of the relays from the high voltage spikes or noise transients. It monitors the power & load and accepts a control signal which is sent from the ServSensor.

Features
- Relay contacts rated at 15A/220VAC
- Power source: powered by the ServSensor
- Metal Oxide Varistors (MOVs) and snubber circuit protect the open con tacts of the relays from high voltage spike.
- 4 LEDs indicate the status of the relay, power supply, AC line voltage and AC load voltage.
- Up to two power relay boards per ServSensor.
- Full auto sense including disconnect alarm.

Specifications
- Inut voltage: 110 - 220 VAC
- Output voltage: 110 - 220 VAC
- Dimensions: 65(W) x 62(H) x 15(D)mm
- Operating temperature: -40°C to 85°C
- Storage temperature: -40°C to 85 °C
- Weight approx. 250 g

Relay
- Contact rating: 15A@220 VAC with resistive load, 8A@220 V AC wiith inductive load (P.F=0.4, L/R=mS)
- Contact material: AgCdO
- Carry current: 16 A
- Max. operating voltage: 380 VAC, 125 VDC
- Max. operating current: 16A
- Max. switching capacity: 4000 VA, 480W with resistive load, 2000 VA, 240 W with inductive load (P.F=0.4)
- Min. permissible load: 100mA, 5V DC
- Power consumption: 5V@200mA
- Circuit breaker: 16A
- 15A fuse 380 VAC, 125 VDC

Applications
- Power switching
- On/Off control
- Activate alarms
- Process control
- Energy management systems

Smoke Detector

BLACK BOX ServSensors can now be integrated with Multipoint smoke detec-tors. These are easy to install and confi-gure.

Features
- On/Off alarm signal of smoke detec-ted
- Accurate, cost effective smoke detector
- LED indicates the status of smoke detector
- Communications cable: UTP Cat5 with RJ45 jack
- Up to 2 smoke detector sensors per ServSensor JR, and 8 per ServSensor
- Includes disconnect alarm that checks that the sensor is securely plugged into the ServSensor

Motion Detection Sensor

The motion detector is a wide angle pas-sive infrared which senses the presence of human body. Its unique mechanism design make it able to be mounted on the wall or ceiling. The adjustable sensor head provides easy mounting site selec-tion and optimum detection adjustment. The motion detector is a "plug n play" device which can be operated by simply plugging it into the ServSensor.

Features
- Wall/ceiling mount design
- Passive IP sensor
- Weatherproof protection
- Surface mount technology
- Sensor head tilt mechanism
- Superior RFI/EMI immunity
- Up to 2 motion detection sensors per ServSensor JR, up to 8 per ServSensor 8-port

Specifications
- Power supply powered by ServSensor
- Communications cable: UTP Cat5 with RJ45 jack
- Detection speed 0.15 - 3m/sec
- Mounting height 1.8 - 3.0 m (6-10 ft)
- Temperature -20°C to 50°C (4°F to 122°F)
- Dimensions 125 x 105 x 62 mm
- Detection angel 150°

▼ *Ordering information*

ITEM	CODE

Intelligent Sensors

Temperature sensor
0.3m EME1T1-001
4.5m EME1T1-015
18m EME1T1-060
30.5m EME1T1-100

Water sensor
4.5m EME1W1-015
18m EME1W1-060
0.5m EME1W1-100

Security sensor
4.5m EME1Y1-015
18m EME1Y1-060
30.5m EME1Y1-100

Airflow sensor
4ft EME1F1-004

Dry contact sensor
4.5m EME1K1-015
18m EME1K1-060
30.5m EME1K1-100

DC voltage sensor
4.5m EME1D1-015
18m EME1D1-060
30.5m EME1D1-100

AC voltage sensor
4.5m EME1A1-015
30.5m EME1A1-100

Power relay board
. . . . .EME1P01

Motion detector sensor
4.5m EME1M1-015
18m EME1M1-060
30.5m EME1M1-100

Smoke detector sensor
4.5m EME1S1-015
18m EME1S1-060
30.5m EME1S1-100

4-20mA converter 0.9m
. . . . EME1C1-003

Dual temperature and humidity sensor
0.3m EME1TH1-001
4.5m EME1TH1-015
18m EME1TH1-060
27.4m EME1TH1-090

▼

Black Box Network Services - The world's largest network services company

We are, with 25 years of experience, the world leader in network infrastructure services.

On the Phone — no charge, answer calls in less than 20 secounds, find the right product with our technical experts.

On-site — superior design and engineering, Certified installations, end-to-end service.

On-line — receive technical knowledge on-line, including technology overviews, Black Box Explains and the Knowledge Box.

Most comprehensive TECHNICAL SUPPORT — our best Product! Free hotline TECH SUPPORT!

The world's best customer service — Custom design services and products, the best warranties, money-saving discount programs.

BLACK BOX exclusives — Certification Plus. Guaranted-for-life products and services.