Our mission

Senva is dedicated to becoming the standard of excellence for products and services in the automation sensor industry.

We Promise

Same day shipping
Place your order prior to 3 pm PST, and it's on the way.

Easy to order
5 am to 5 pm PST (8AM-8PM EST) or online 24.7!

7 Year Limited Warranty
We stand behind our quality. See terms and conditions. Warranty varies for certain items.

Fast account approval
Instant $1000 credit limit.

24/7 technical support
The industry's best!

Custom orders
We go the extra mile—Have a special requirement? Just ask!

Online ordering
Our online web store lets you manage all your Senva business.

FREE SHIPPING on your first order or any online order over $300 in the United States

Made in the U.S.A.

16418 SW 72nd Ave
Portland, OR 97224
Toll Free: 1-866-660-8864
Website: senvainc.com

SPRING 2012
ENGINEERS
CATALOG

SENVA SENSORS

Superior Building Automation Sensors

Sense the difference

SENVA CORE VALUES

CUSTOMER FOCUS
-Actively listen to our customer's needs and provide the best solution

INSIGHT
- Have a keen awareness of real world applications and design options

CREATIVITY
- Stress innovation to deliver superior products and services

EMPATHY
- Truly care about customers, employees, and stakeholders.

Relate with compassion—personally and professionally.

PASSION
- Be zealous about doing the right things. Have fun and exude confidence

PURSUE EXCELLENCE
- Recognize performance; never settle for mediocrity.
Act with integrity at all times

What we do

Senva provides superior sensors that make even the most challenging installation operate more reliably, accurately, and profitably.

We do this from deep customer involvement that begins by listening to application problems, possessing the insight to understand them, and then to effectively create relevant and technically superior products.

We are empathetic to both our customers' project needs and commited to their personal success. We are passionate about excellent service and high integrity and character.

Literature Revision Date 16042012

Current

Pressure

Humidity/Temperature

IAQ

CO

Specialty Sensors

Product improvement is a continual process at Senva; Product features and specifications subject to change without notice.
Consult installation instructions prior to installing--this literature for informational purposes, but does not constitute installation reference..

Sense the *difference*

"OSHA requires protection when working in energized enclosures. We avoid it and save time with Senva."

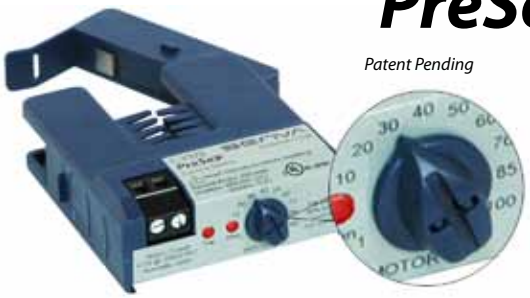
The safest, most cost-effective proof of flow for fans and pumps is with Senva sensors.

If you're calibrating current sensors in energized enclosures, you're wasting time and money.

Worse, you should be suiting up for arc flash protection (yes, it's OSHA code). If you're not, you're exposed to injury and liability. Senva makes it safe, simple, and profitable.

PreSet™

Patent Pending



Set the sensor to motor full load amps--never return to calibrate!

Our Preset sensors let you set the dial to the motor amperage. You can install the sensor and never return back to calibrate. Installers tell us they save over ½ hour per sensor. Plus, they're safe, You do the math.

Reduce the risk of arc flash with Senva.

Save over 1/2 hour per sensor install.

No guesswork. Multi-turn adjustments are a thing of the past.

OSHA 29CFR 1910.335 (a) (1)(i) requires the use of protective equipment when working where a potential electrical hazard exists.--just use Senva. Never calibrate live again!

Literature Revision Date 16042012

Current Sensors

AutoSet™
Patent Pending

Our Autoset sensors take it a step further, by automatically adjusting to the motor load. So smart, they even take into account effects of air balancing without false trips. We also have models for variable frequency drives--and they require no trained "learning".

Automatically adjusts without training and even takes into account air balancing. Models for variable frequency drives work down to 0.5A (2350L)--industry's best of class!

You can also snap on a control relay to get start/stop/ status in a single device.

Our split core has a square, not rectangular aperture, so it accepts larger conductors. You can also DIN rail mount it, or simply use the iris to hang iton a conductor.

When it comes to solid cores, ours is the industry's smallest and features low turn on, so it fits in any enclosure with ease. It also boast superior immunity to stray fields, reducing false readings.

Our analog sensors feature selectable ranges so you get accuracy without inventory. We offer 0-5VDC, 0-10VDC, and 4-20mA versions.

The industry's smallest sensor fits in any starter enclosure

Nobody knows motor status better than Senva. Our team consists of the same engineers that put current sensing in building automation on the map.

Din rail mountable without additional parts
Easy mount iris
Features a larger aperture size than most units

Product improvement is a continual process at Senva; Product features and specifications subject to change without notice.
Consult installation instructions prior to installing--this literature for informational purposes, but does not constitute installation reference..

C-2330 Split-Core
Auto Calibrating Series

2.5-135A Range I Self Calibrating
Command Relay Option

Superior labor savings and accuracy--no calibration required!

Microprocessor automatically sets the proper threshold!

- No need to open hot starter enclosures to calibrate. Save on labor as well as improve safety
- Improved performance--sensor is always properly adjusted--no call backs
- Pushbutton for manual calibration or change of operation mode to go/no go
- Automatically adjusts to air balancing without false alarms

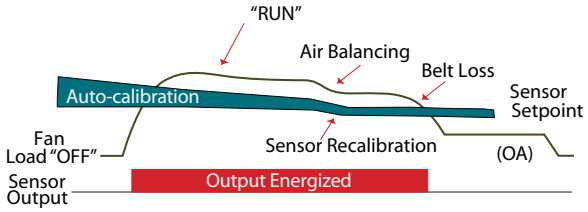
Command relay option for start/stop

- Add a command relay to start and stop the monitored motor with a single device
- Installation savings--get two devices installed for the price of one
- Removable relay facilitates service and lowers replacement cost

Cost-effective

- Reduced labor cost compared to differential pressure switches
- Split-core is ideal for both retrofit and new construction applications
- Easy to wire--polarity insensitive output eliminates wiring errors
- Industry leading 7 year warranty

Automatic calibration for installation savings and safety



The C-2330 series monitors fans and pumps up to 135A. The output trip point is microprocessor calibrated to detect belt loss or coupling failures. Our 24 Sense™ proprietary design even eliminates call backs due to air balancing and dynamically adjusts without intervention.

BE SENVA SAFE!

Literature Revision Date 16042012

p. 866-660-8864 • f. 503-296-2529

SPECIFICATIONS

Sensor only	C-2330	C-2330HV
Amperage Range	2.5A (on)-135A	2.5A (on)-135A
Sensor Output Rating	1.0A@30VAC/DC	0.2A@120VAC
Sensor Output Type	NO, solid-state FET	
Temperature Rating	-15-60 ° C	
Insulation Class	600V RMS. For use on insulated conductors only! Use minimum 75 ° C insulated conductor	
Sensor Power	Induced	
Frequency Range	50/60Hz	
Dimensions (LxWxH)	2.75" x 2.57" x 0.82" (1.49" H with optional command relay)	
Sensor Aperture	0.75"	

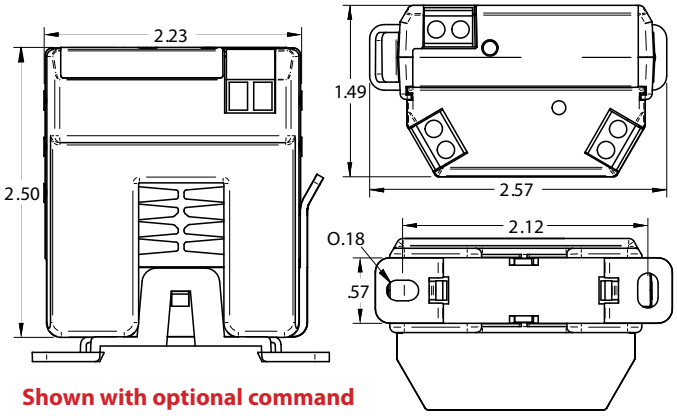
Command Relay	Command relay output	Command relay input
CR3-24	N.O. 10(5)@250VAC	24VAC/DC 10mA
CR4-24	N.C. 10(5)@250VAC	24VAC/DC 10mA
CR3-12	N.O. 10(5)@250VAC	12VDC/DC 25mA

Other coil voltages available Consult factory

Next time, I'm using Senva.

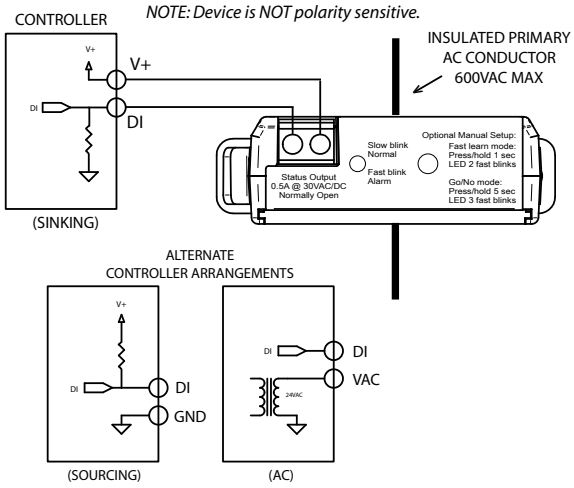
OSHA requires protection when working in energized enclosures--just use Senva never calibrate live again!

DIMENSIONS for C-2330 Autoset with Relay



Shown with optional command relay--start, stop, and status in single device

WIRING for C-2330 Autoset with Relay



Add a command relay combo for installation savings!

Snap on a command relay and get load control and status in a single compact device. Plus, it's easy to service should the relay need replacement! No more costly unsightly external relays.

Proudly Made in the U.S.A.

Product improvement is a continual process at Senva; Product features and specifications subject to change without notice. Consult installation instructions prior to installing--this literature for informational purposes, but does not constitute installation reference..

C-2350 VFD Split-Core

Auto Calibrating VFD Series

0.5-135A Ranges I Self Calibrating
Command Relay Optional

VFD PROOF OF FLOW!

2350VFD

2350VFD-L

C-2350L for small VFDs to 0.5A!

Self calibrating for variable frequency drives...no costly "forced" learning!

Microprocessor automatically sets the proper threshold--no false alarms with varying frequencies

- Works without costly "training" of sensor--our sensors are just plain smarter!
- No need to open hot starter enclosures--save on labor as well as improve safety
- Improved performance--sensor is always properly adjusted--no call backs!
- Pushbutton for manual calibration or change of operation mode to go/no
- Automatically adjusts to air balancing without false alarms

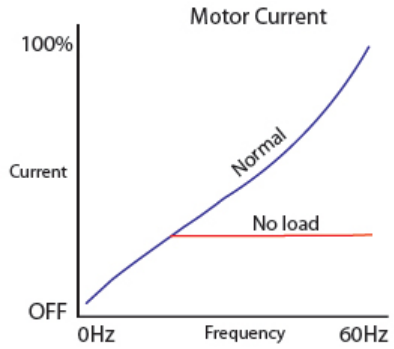
Command relay option for start/stop!

- Add a command relay to start and stop the monitored motor with a single device
- Installation savings--get two devices installed for the price of one
- Removable relay facilitates service and lowers replacement cost

Cost-effective

- Reduced labor cost compared to differential pressure switches
- Maintenance-free--no call backs
- Split-core is ideal for retrofit and new construction applications
- Easy to wire--polarity insensitive output eliminates wiring errors
- Industry leading 7 year warranty

Automatic calibration for VFDs and standard starters



The C-2350 utilizes a proprietary sensing algorithm to detect belt loss on motors operated by variable frequency drives.

Operation requires variable frequency drive to increase frequency to a minimum of 50Hz when load is lost--this typically results in static fan applications. Unit alarms at 50hz or more when current falls per algorhithm as drive responds to falling media sensor inputs (e.g. decrease in static pressure)

BE SENVA SAFE!

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SENVA SENSORS

p. 866-660-8864 • f. 503-296-2529

SPECIFICATIONS

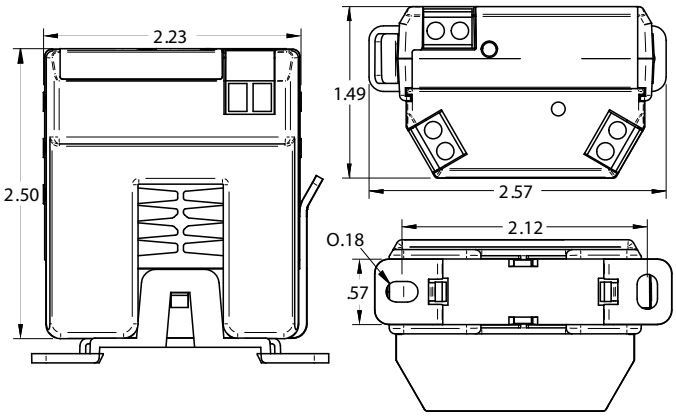
Sensor only	C-2350VFD	C-2350VFD-L	C-2350VFD-HV
Amperage Range	3.5A (on)-135A	0.5A (on)-15A	3.5A (on)-135A
Sensor Output Rating	1.0A@30VAC/DC	1.0A@30VAC/DC	0.2A@120VAC
Sensor Power	Induced	12 to 30VAC/ 24VAC	Induced
Temperature Rating	-15-60 ° C		
Sensor Output Type	NO, solid-state FET		
Insulation Class	600V RMS. For use on insulated conductors only! Use minimum 75 ° C insulated conductor		
Frequency Range	15-60hz; proof of flow loss alarm at 50hz+ (except 5-60hz for C-2350VFD-L)		
Dimensions (LxWxH)	2.75" x 2.57" x 0.82" (1.49" H with optional command relay)		
Sensor Aperture	0.75"		

Command Relay	Output rating	Input power
CR3-24	N.O. 10(5)@250VAC	24VAC/DC 10mA
CR4-24	N.C. 10(5)@250VAC	24VAC/DC 10mA
CR3-12	N.O. 10(5)@250VAC	12VDC/DC 25mA

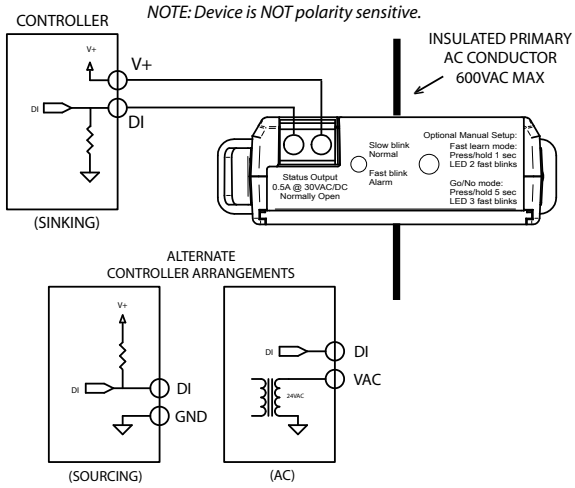
Next time, I'm using Senva.

OSHA requires protection when working in energized enclosures--just use Senva and never calibrate live again!

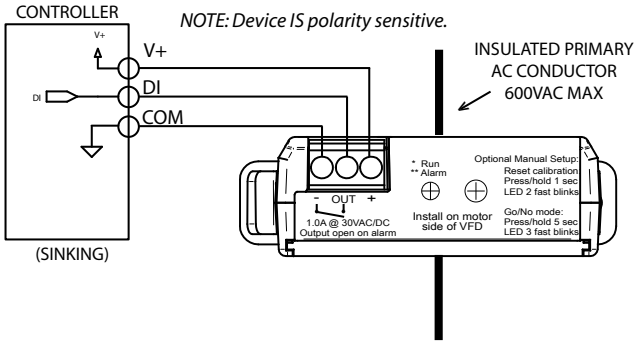
DIMENSIONS for C-2350 Autoset with Relay



WIRING for C-2350 VFD AutoSet with Relay



2350L New 3-wire version for super small VFD App



We also know motors and VFDs. Low frequency and low amperage status monitoring is possible thanks to our three-wire version.

Shown with optional command relay for start/stop/status

Proudly
Made in the U.S.A.

C-2320 Split Core
PreSet™ Series

Scaled Calibration I Adjustable Status
Optional Command Relay

PreSet™ lets you set the sensor threshold when mounting

PreSet™ dials you in for faster and more profitable installations.

- Match the sensor scale to the load monitored--the sensor is ready to detect faults, including proof of flow!
- No more returning to the job site to calibrate...Pocket up to $30 per install point on your current sensors
- Eliminates costly and unsafe multi-turn adjustments and LED guesswork
- Super low turn-on

Reduce the risk of electrical hazards!

- PreSet™ adjustment lets you set and go--no need to go back and open the enclosure while energized in order to set the sensor
- No more sticking hands in hot enclosures and fiddling with LEDs and tiny screwdrivers

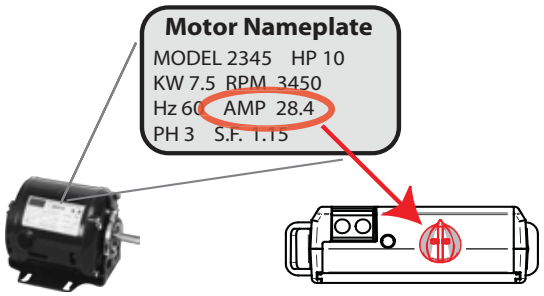
Command relay option for start /stop savings

- Installation savings--get two devices installed for the price of one. Start, stop, status in a single install
- Removable relay facilitates service and lowers replacement cost

Cost-effective and reliable

- LEDs provide visual feedback
- Screw mount or mount directly on wire with built-iris
- Split-core is ideal for retrofit and new construction applications.
- Removable mounting base allows for DIN rail mount without additional components
- Industry leading 7 year warranty

How Senva's Preset™ makes calibration easy



1. *Simply read the motor amperageon the nameplate*
2. *Set the dial to that amperage and walk away!*

You are now monitoring the load for proof of flow to detect belt loss or coupling failures.

Literature Revision Date 16042012

p. 866-660-8864 • f. 503-296-2529

SPECIFICATIONS

Sensor only	C-2320	C-2320L	C-2320H	C-2320HV
Amperage Range	1A (on)-100A	1A (on)-50A	1A (on)-150A	1A (on)-100A
Sensor Output Rating	1.0A@30VAC/DC	1.0A@30VAC/DC	1.0A@30VAC/DC	0.2A@120VAC
Sensor Output Type	NO, solid-state FET			
Temperature Rating	-15-60 ° C			
Insulation Class	600V RMS. For use on insulated conductors only! Use minimum 75 ° C insulated conductor			
Sensor Power	Induced			
Frequency Range	50/60Hz			
Dimensions (LxWxH)	2.75" x 2.57" x 0.82" (1.49" H with optional command relay)			
Sensor Aperture	0.75"			

Command Relay	Output Rating	Input Power
CR3-24	N.O. 10(5)@250VAC	24VAC/DC 10mA
CR4-24	N.C. 10(5)@250VAC	24VAC/DC 10mA
CR3-12	N.O. 10(5)@250VAC	12VDC/DC 25mA

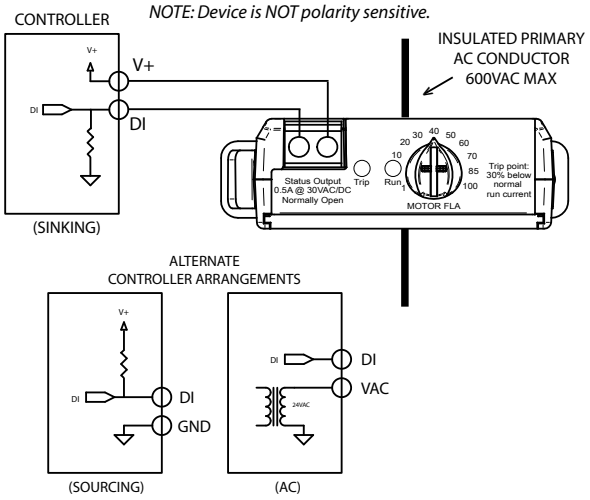
Other coil voltages available Consult factory

Next time, I'm using Senva.

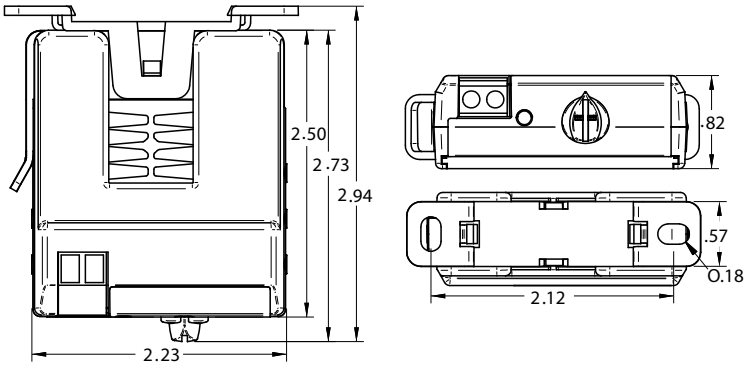
OSHA requires protection when working in energized enclosures--just use Senva never calibrate live again!

WIRING for C-2320 PreSet without Relay

NOTE: Device is NOT polarity sensitive.



DIMENSIONS for C-2320 PreSet without Relay



Add a command relay combo for installation savings!

Snap on a command relay and get load control and status in a single compact device. Plus, it's easy to service should the relay need replacement! No more costly unsightly external relays.

Proudly

Made in the U.S.A.

C-1220 Solid Core

PreSet™ Series

Solid Core mini with pre-set adjustable status

PreSet™ lets you set the sensor threshold when mounting

PreSet™ dials you in for faster and more profitable installations.

- Match the sensor scale to the load monitored--the sensor is ready to detect faults, including proof of flow!
- No more returning to the job site to calibrate...Pocket up to $30 per install point over other current sensors in labor savings!
- Eliminates costly and unsafe multi-turn adjustments and LED guesswork
- Super low turn-on

Reduce the risk of electrical hazards!

- PreSet™ adjustment lets you set and go--no need to go back and open the enclosure while energized in order to set the sensor
- No more sticking hands in hot enclosures and fiddling with LEDs and tiny screwdrivers

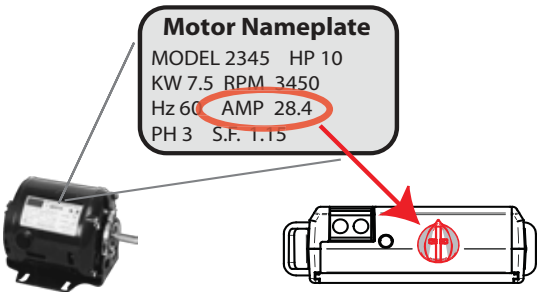
Command relay option for start /stop savings

- Installation savings--get two devices installed for the price of one. Start, stop, status in a single install
- Removable relay facilitates service and lowers replacement cost

Cost-effective & reliable

- LEDs provide visual feedback
- Screw mount or hang directly on wire--eliminates alignment issues
- Split-core is ideal for retrofit and new construction applications. Removable mounting base allows for DIN rail mount without additional components
- Industry leading 7 year warranty

How Preset™ makes calibration easy



1. *Simply read the motor amperage on the nameplate*
2. *Set the dial to that amperage and walk away!*

You are now monitoring the load for proof of flow to detect belt loss or coupling failures.

Literature Revision Date 16042012

p. 866-660-8864 • f. 503-296-2529

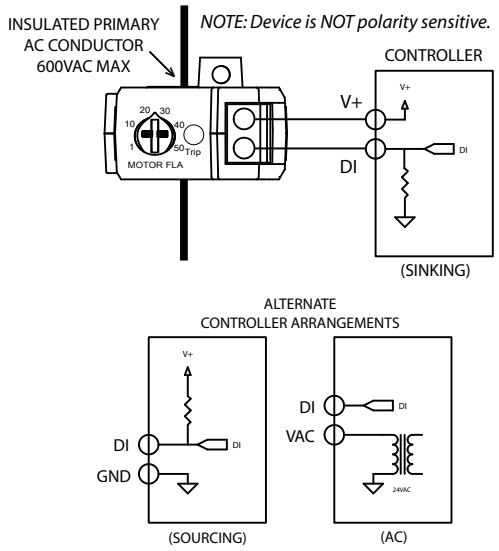
SPECIFICATIONS

Sensor only	C-1220	C-1220L	C-1220HV	C-1220HV-L
Amperage Range	.75A (on)-50A	.75A (on)-5A	.75A (on)-50A	.75A (on)-5A
Sensor Output Rating	1.0A@30VAC/DC	1.0A@30VAC/DC	0.2A@120VAC	0.2A@120VAC
Sensor Output Type	NO, solid-state FET			
Temperature Rating	-15-60 ° C			
Insulation Class	600V RMS. For use on insulated conductors only! Use minimum 75 ° C insulated conductor			
Sensor Power	Induced			
Frequency Range	50/60Hz			
Dimensions (LxWxH)	1.91" x 1.32" x 0.88"			
Sensor Aperture	0.23"			

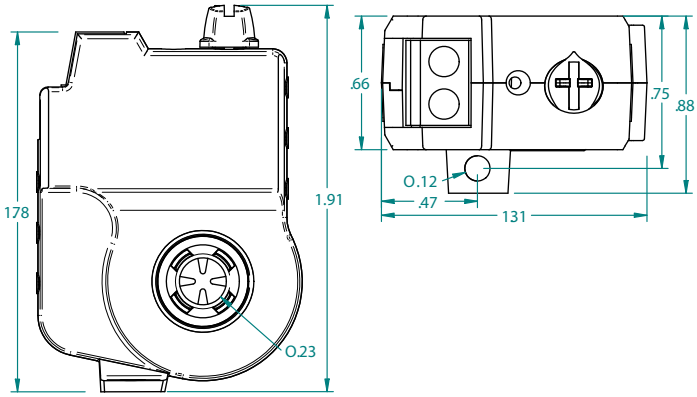
Next time, I'm using Senva.

OSHA requires protection when working in energized enclosures--just use Senva never calibrate live again!

WIRING for C-1220 PreSet PreSet



DIMENSIONS for C-1220 PreSet PreSet



Set it and forget it!

Proudly
Made in the U.S.A.

C-1320 Solid Core

PreSet™ Series

Solid Core with pre-set adjustable status

PreSet™ lets you set the sensor threshold when mounting

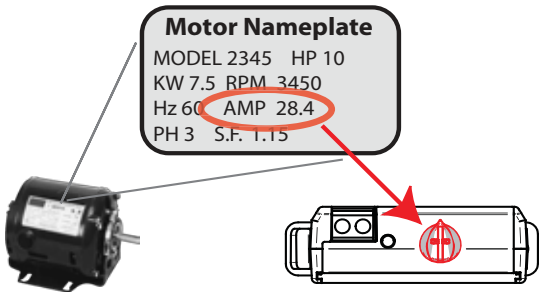
PreSet™ dials you in for faster and more profitable installations.

- Match the sensor scale to the load monitored--the sensor is ready to detect faults, including proof of flow!
- No more returning to the job site to calibrate...Pocket up to $30 per install point over other current sensors in labor savings!
- Eliminates costly and unsafe multi-turn adjustments and LED guesswork
- Super low turn-on

Reduce the risk of electrical hazards!

- PreSet™ adjustment lets you set and go--no need to go back and open the enclosure while energized in order to set the sensor
- No more sticking hands in hot enclosures and fiddling with tiny screwdrivers to adjust set point
- LED for visual feedback

How Preset™ makes calibration easy



1. *Simply read the motor amperage on the nameplate*
2. *Set the dial to that amperage and walk away!*

You are now monitoring the load for proof of flow to detect belt loss or coupling failures.

Literature Revision Date 16042012

p. 866-660-8864 • f. 503-296-2529

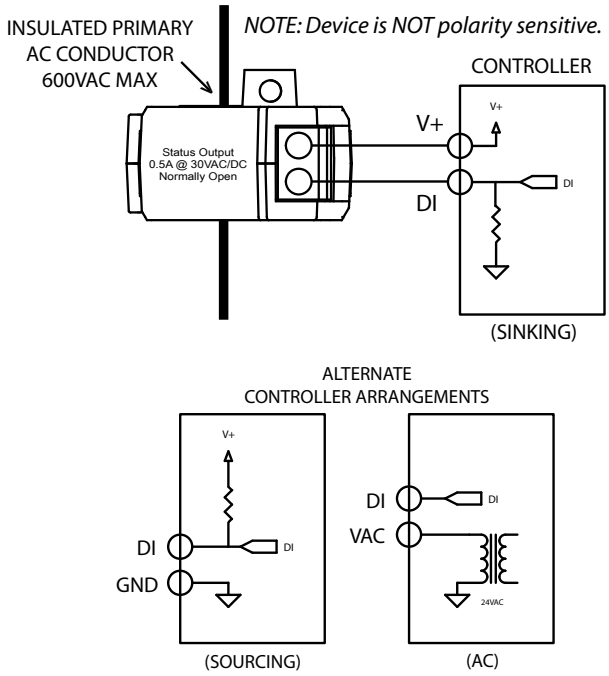
SPECIFICATIONS

Sensor only	C-1320
Amperage Range	.75A (on)-50A
Sensor Output Rating	1.0A@30VAC/DC
Sensor Output Type	NO, solid-state FET
Temperature Rating	-15-60 ° C
Insulation Class	600V RMS. For use on insulated conductors only! Use minimum 75 ° C insulated conductor
Sensor Power	Induced
Frequency Range	50/60Hz
Dimensions (LxWxH)	2.26″ x 1.61″ x 0.67″
Sensor Aperture	0.51″

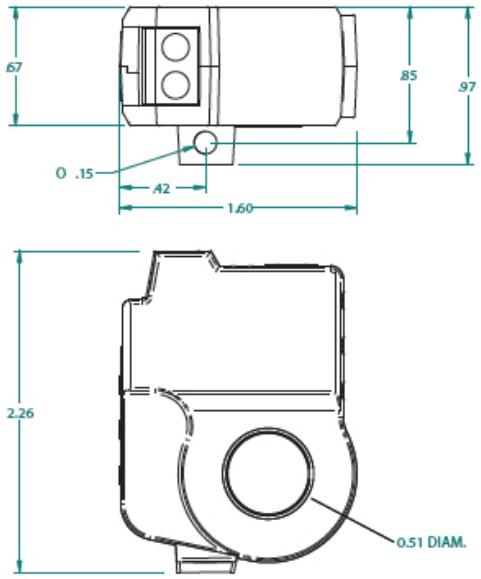
Next time, I'm using Senva.

OSHA requires protection when working in energized enclosures--just use Senva never calibrate live again!

WIRING for C-1320 PreSet PreSet



DIMENSIONS for C-1320 PreSet PreSet



Set it and forget it!

Proudly

Made in the U.S.A.

C-2300 Split Core

GO/NO Series

.50-200A range | Command relay option | Din-Rail

Split-core is ideal for retrofit and new construction applications

Fits easily in small starter enclosures

- Great for fans, pumps, and small exhaust fans when detection of mechanical failures is not needed
- Removable mounting base for easy mounting
- DIN rail mount without additional components
- Easy to wire--polarity insensitive output eliminates wiring errors

Command relay option for start /stop!

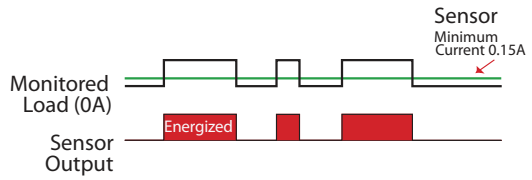
- Installation savings--get two devices installed for the price of one
- Removable relay facilitates service and lowers replacement cost
- Relay is long-life. Rated for 100,000 operations at full load
- Eliminates unsightly external control relays and associated wiring

Cost-Effective

- Reduced labor cost compared to differential pressure switches
- Maintenance-free--no call-backs

Reliable

- 100% solid state, no moving parts to fail
- Replace pressure switches and other electromechanical devices
- Industry leading 7 year warranty



The C-2300 series output changes state whenever current above 0.50A is present. This provides "go/no" status on loads that are not subject to mechanical failures.

Typical on/off status applications include:

- **Lighting circuits**
- **Heater elements**
- **Direct drive fans (e.g. exhaust fans), fans, & pumps**
- **Process motors**

Literature Revision Date 16042012

p. 866-660-8864 • f. 503-296-2529

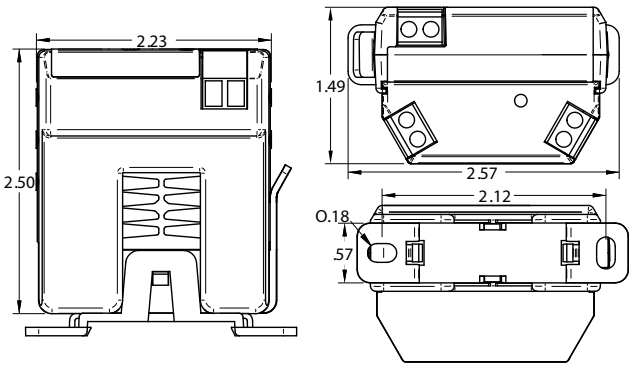
SPECIFICATIONS

Sensor only	C-2300	C-2300HV
Amperage Range	0.5A (on)-200A	0.5A (on)-200A
Sensor Output Rating	1.0A@30VAC/DC	0.2A@120VAC
Sensor Output Type	NO, solid-state FET	
Temperature Rating	-15-60 ° C	
Insulation Class	600V RMS. For use on insulated conductors only! Use minimum 75 ° C insulated conductor	
Sensor Power	Induced	
Frequency Range	50/60Hz	
Dimensions (LxWxH)	2.75″ x 2.57″ x 0.82″ (1.49″ H with optional command relay)	
Sensor Aperture	0.75″	

Command Relay	Output rating	Input power
CR3-24	N.O. 10(5)@250VAC	24VAC/DC 10mA
CR4-24	N.C. 10(5)@250VAC	24VAC/DC 10mA
CR3-12	N.O. 10(5)@250VAC	12VDC/DC 25mA

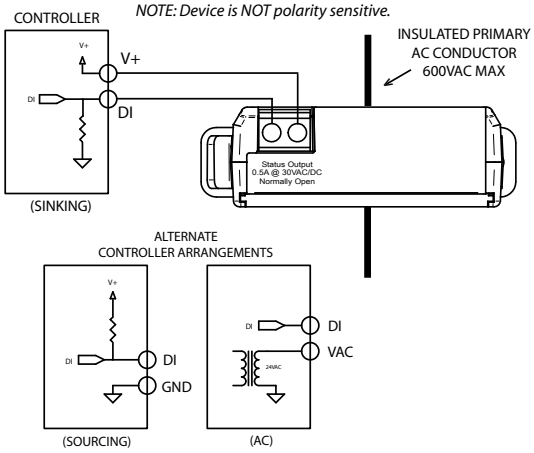
Other coil voltages available, Consult factory

DIMENSIONS for C-2300 GO/NO with Relay



Shown with optional command relay--start, stop, and status in single device

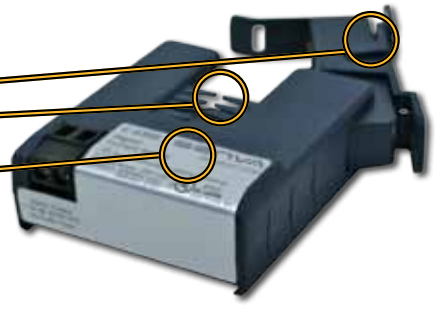
WIRING for C-2300 GO/NO with Relay



Din rail mountable without additional parts

Easy mount iris

Features a larger aperture size than most units



Proudly Made in the U.S.A.

C-1200 Solid Core

GO/NO Series

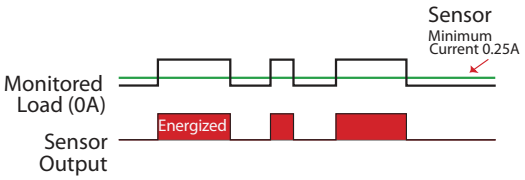
.25-50A range | Industry's Smallest Current Sensor2

GO/NO

Easy Installation--the industry's smallest sensor

- 250 mA turn-on is compatible with electronic commutated motors
- Fits in small starter enclosures typically associated with exhaust fans
- Screw mount or use plug in iris to hang directly on wire--eliminates alignment issues
- Easy to wire--polarity insensitive output eliminates wiring errors
- Cost-effective
- Reduced labor cost compared to differential pressure switches
- Less expensive than 277V relays for lighting status
- Reliable
- 100% solid state, no moving parts to fail
- Industry leading 7 year warranty

ON/OFF status of electrical apparatus

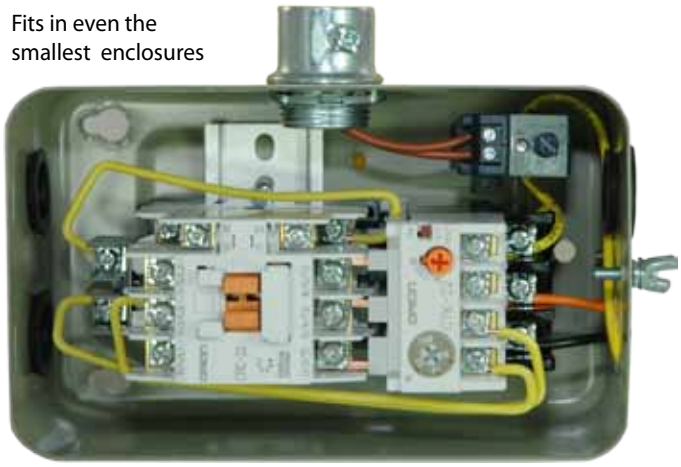


The C-1200 series output changes state whenever current above 0.25A is present. This provides "go/no" status on loads that are not subject to mechanical failures.

Typical on/off status applications include:

- **Lighting circuits**
- **Heater elements**
- **Direct drive fans (e.g. exhaust fans)**
- **Fans & Pumps**

Fits in even the smallest enclosures



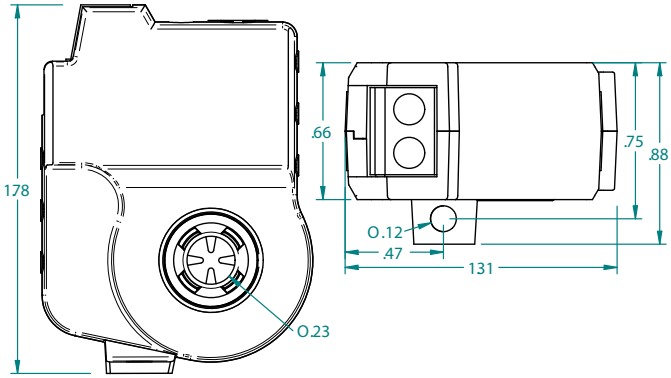
Literature Revision Date 16042012

p. 866-660-8864 • f. 503-296-2529

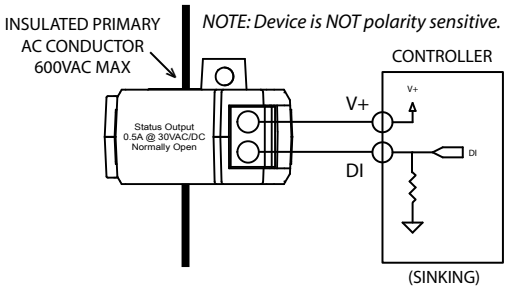
SPECIFICATIONS

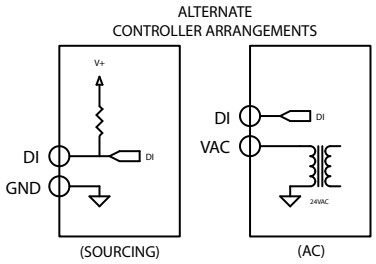
Sensor only	C-1200	C-1200HV
Amperage Range	0.25A (on)-50A	0.25A (on)-50A
Sensor Output Type	NO, solid-state FET	NC, solid-state (polarity sensitive)
Sensor Output Rating	1.0A@30VAC/DC	0.2A@120VAC
Temperature Rating	-15-60 ° C	
Insulation Class	600V RMS. For use on insulated conductors only! Use minimum 75 ° C insulated conductor	
Sensor Power	Induced	
Frequency Range	50/60Hz	
Dimensions (LxWxH)	1.78" x 1.32" x 0.88"	
Sensor Aperture	0.23"	

DIMENSIONS for C-1200 GO/NO



WIRING for C-1200 GO/NO





Size comparison to the competition

The industry mighty-mite!

Eliminates the need to mount external junction boxes and results in a professional installation.

Proudly
Made in the U.S.A.

C-1300 Solid Core

GO/NO Series

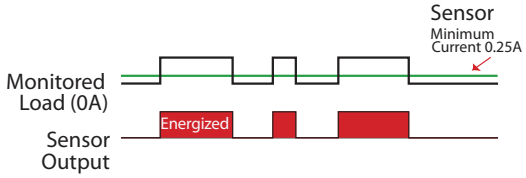
.25-50A range |Accomodating 1/2" conductor aperature

GO/NO

Economical go/no current status

- Larger 1/2" diameter aperature accomodates spade terminals found in package units
- 250 mA turn-on is compatible with electronic commutated motors
- Fits in small starter enclosures typically associated with exhaust fans
- Easy to wire--polarity insensitive output eliminates wiring errors
- Cost-effective
- Reduced labor cost compared to differential pressure switches
- Less expensive than 277V relays for lighting status
- Reliable
- 100% solid state, no moving parts to fail
- Industry leading 7 year warranty

ON/OFF status of electrical apparatus



The C-1300 series output changes state whenever current above 0.25A is present. This provides "go/no" status on loads that are not subject to mechanical failures.

Typical on/off status applications include:

- **Lighting circuits**
- **Heater elements**
- **Direct drive fans (e.g. exhaust fans)**
- **Fans & Pumps**

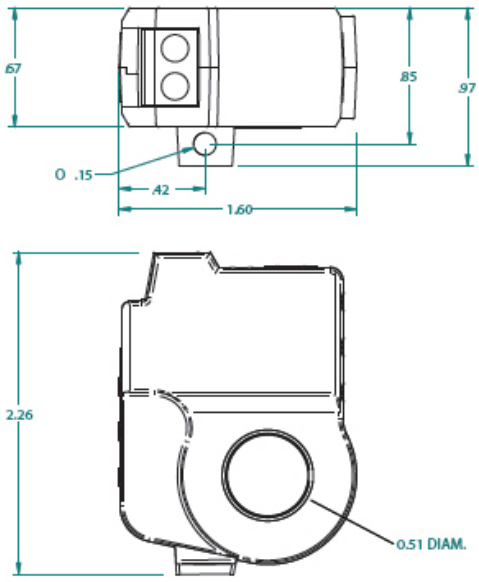
Literature Revision Date 16042012

p. 866-660-8864 • f. 503-296-2529

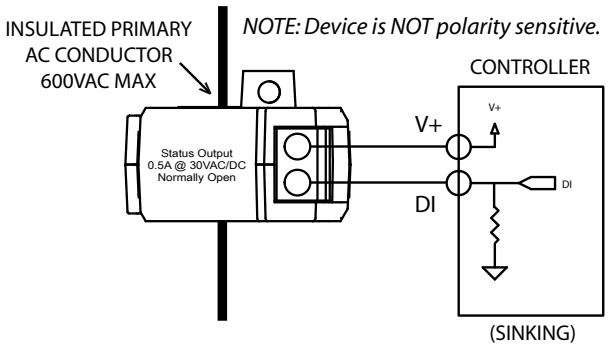
SPECIFICATIONS

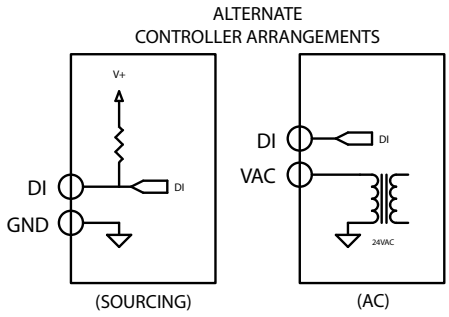
Sensor only	C-1300
Amperage Range	0.25A (on)-50A
Sensor Output Type	NO, solid-state FET
Sensor Output Rating	1.0A@30VAC/DC
Temperature Rating	-15-60 ° C
Insulation Class	600V RMS. For use on insulated conductors only! Use minimum 75 ° C insulated conductor
Sensor Power	Induced
Frequency Range	50/60Hz
Dimensions (LxWxH)	2.27" x 1.61" x 0.69"
Sensor Aperture	0.51"

DIMENSIONS for C-1200 GO/NO



WIRING for C-1200 GO/NO





Proudly
Made in the U.S.A.

C-234x Split Core
Analog Series

Selectable ranges 0-30, 60,120A
Command Relay Option

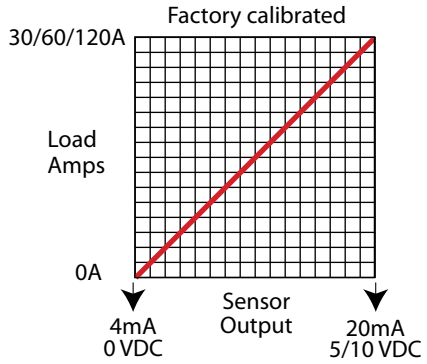
ANALOG

Versatile and easy to install

Compact package, plus add a command relay for start/stop/status in one unit!

- Switch selectable ranges for easy scaling (30, 60, 120 amp full scale ranges)
- 0-5VDC, 0-10VDC, 4-20mA loop powered versions
- Split-core is ideal for retrofit and new construction applications
- Removable mounting base for easy mounting
- DIN rail mount without additional components
- Command relay option for start /stop!
- Installation savings--get two devices installed for the price of one
- Removable relay facilitates service and lowers replacement cost
- Relay is long-life. Rated for 100,000 operations at full load
- Eliminates unsightly external control relays and associated wiring
- Cost-Effective
- Reduced labor cost compared to differential pressure switches
- Maintenance-free--no call-backs
- Reliable
- 100% solid state, no moving parts to fail
- Replace pressure switches and other electromechanical devices
- Industry leading 7 year warranty

Ideal for load trending & control



Sensor Output		
	0-5VDC	C-2343
	0-10VDC	C-2344
	4-20mA	C-2345

The C-234x series provides an output signal directly proportional to measured amperages, up to 120A. Three different output versions are available: 0-5VDC, 0-10VDC, 4-20mA loop powered.

Typical applications include:

- **Load trending**
- **Process Control**
- **Fans and pumps**

Literature Revision Date 16042012

p. 866-660-8864 • f. 503-296-2529

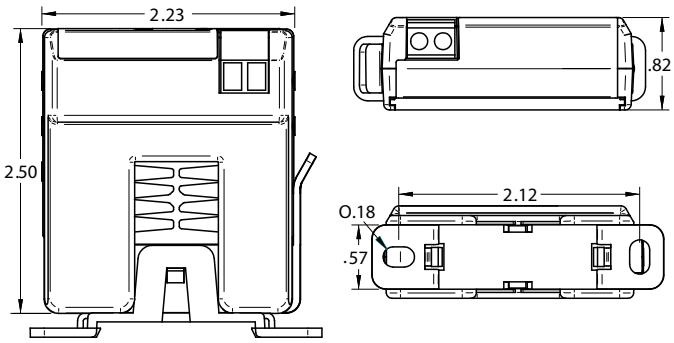
SPECIFICATIONS

Sensor only	C-2343	C-2344	C-2345	C-2343L
Amperage Range	30A, 60A, 120A Selectable	30A, 60A, 120A Selectable	30A, 60A, 120A Selectable	5A, 10A, 20A Selectable
Sensor Output Type	0 - 5 VDC	0 - 10 VDC	4 - 20mA	0 - 5 VDC
Sensor Power	Self-powered	Self-powered	Loop-powered, 30V DC max	
Temperature Rating	-15-60 ° C			
Insulation Class	600V RMS. For use on insulated conductors only! Use minimum 75 ° C insulated conductor			
Frequency Range	50/60Hz			
Dimensions (LxWxH)	2.75″ x 2.57″ x 0.82″ (1.49″ H with optional command relay)			
Sensor Aperture	0.75″			

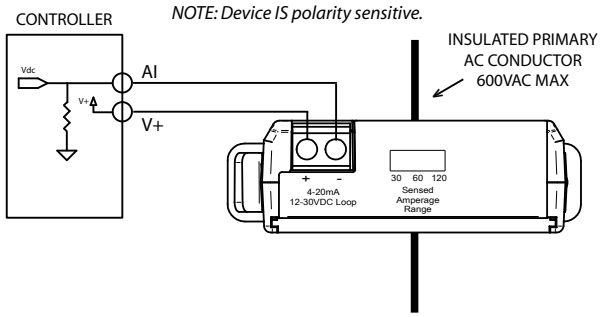
Command Relay	Output rating	Input power
CR3-24	N.O. 10(5)@250VAC	24VAC/DC 10mA
CR4-24	N.C. 10(5)@250VAC	24VAC/DC 10mA
CR3-12	N.O. 10(5)@250VAC	12VDC/DC 25mA

Other coil voltages available, Consult factory

DIMENSIONS for C-234x Analog



WIRING for C-234x Analog



Add a command relay combo for installation savings!

Snap on a command relay and get load control and status in a single compact device. Plus, it's easy to service should the relay need replacement!

No more costly unsightly relays in boc.

Proudly
Made in the U.S.A.

C-120x Solid Core

Analog Series

15A Range | 0-5 VDC, 4-20 mA

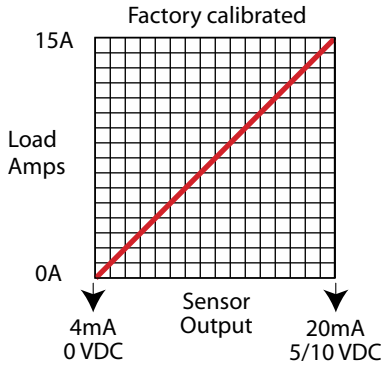
ANALOG

Easy installation--the industry's smallest sensor

- Fits in small starter enclosures typically associated with exhaust fans
- Easy to wire (polarity insensitive)
- Cost-effective
- Reduced labor cost compared to differential pressure switches
- Less expensive than 277V relays for lighting status
- Reliable
- 100% solid state, no moving parts to fail
- Industry leading 7 year warranty

The industry's smallest sensor

Ideal for load control



Sensor Output	0-5VDC	C-1203
	4-20mA	C-1205

The C-120x series provides an output signal directly proportional to measured amperages, up to 15A. Two different output versions are available: 0-5VDC,4-20mA loop powered.

Typical applications include:

- **Load trending**
- **Process Control**
- **Fan and pumps**

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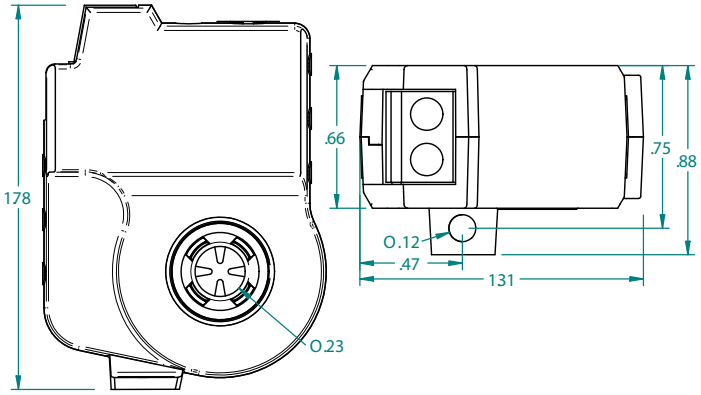
Literature Revision Date 16042012

p. 866-660-8864 • f. 503-296-2529

SPECIFICATIONS

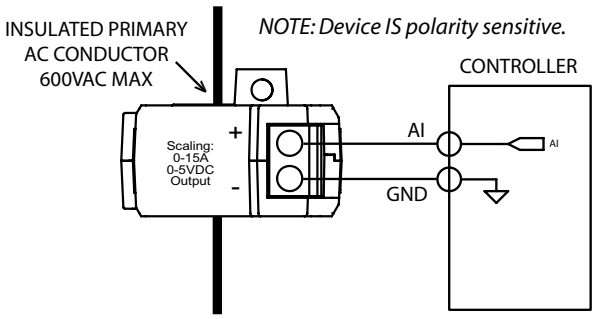
Sensor only	C-1203	C-1205
Amperage Range	15A full scale	15A full scale
Sensor Output Type	0 - 5 VDC	4 - 20mA
Sensor Power	Self-powered	Loop-powered, 30V DC max
Accuracy	+/-2% F.S. over 10 to 100% range	
Temperature Rating	-15-60 ° C	
Insulation Class	600V RMS. For use on insulated conductors only! Use minimum 75 ° C insulated conductor	
Frequency Range	50/60Hz	
Dimensions (LxWxH)	1.78″ x 1.32″ x 0.88″	
Sensor Aperture	0.75″	

DIMENSIONS for C-120X Analog

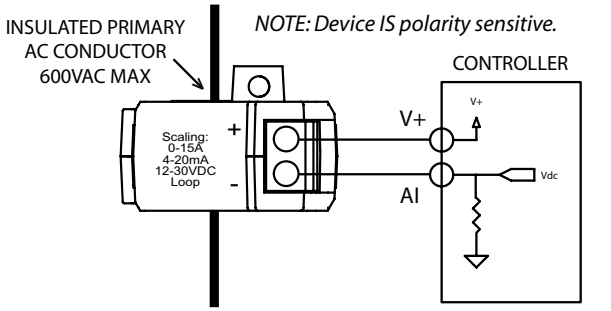


Size comparison to the competition

WIRING for C-1203 Analog



WIRING for C-1205 Analog



Proudly
Made in the U.S.A.

Pilot Duty Control Relays

Hand off Auto and Status options

Compact enclosure mounts externally for easy installation

- The nipple mount feature for mounting to any electrical enclosure
- Flexible tinned stranded wire...fits easily in tight spaces and provides secure connections to wire nuts
- UL508 Listed...designed and approved for field installation...makes electrical inspection a snap

Concealed HOA switch with screw secured cover prevents tampering (models S101/L)

- Versions with Hand Off Auto (HOA) switch feature secure screw cover door to prevent tampering
- Eliminates costly control system override and service calls

Proof of run current status for control feedback that load is operating

- True current measurement when command relay is energized

Applications

- Command contactors
- Control motors
- Isolation
- Device interlocking
- Relay logic

ORDERING

Model	Coil	HOA	Run Status Confirmation Output
S100	24VAC/DC or 120VAC		
S100L	10-15VDC		
S101	24VAC/DC or 120VAC	•	
S101L	10-15VDC	•	
S120	24VAC/DC or 120VAC		•
S120L	10-15VDC		•

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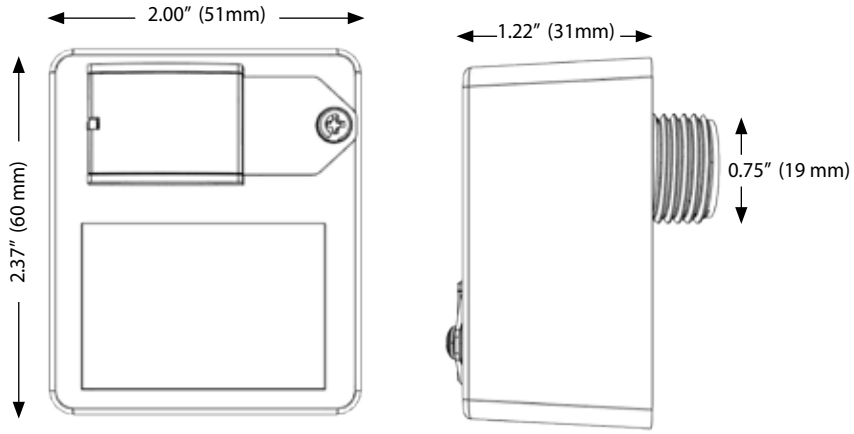
Literature Revision Date 16042012

SENVA SENSORS

p. 866-660-8864 • f. 503-296-2529

SPECIFICATIONS

General		Environmental Operating	-30C to 60C (-22F to 140F), 10-90%RH non-condensing
		Expected Relay Life	100,000 cycles electrical; 10,000,000 mechanical
		LED	ON when energized
		Wire	UL1015, 18" minimum, coil: 18AWG, contacts: 16AWG
		Approvals	UL, cUL
Relay Contact Ratings		Resistive	10A 120VAC / 7A 240VAC
			20A 125VAC
			10A 250VAC (NO)
			7A 250VAC (NC)
			12A 277VAC
			7A 30VDC
		Inductive	1/4HP 125VAC/250VAC (NO)
			1/10HP 125VAC (NC)
Relay Coil	24VAC/DC or 120VAC *(models S100, S101, S120)*	Low Input Voltage	22-30VDC (24VDC nominal) or 24VAC nominal
		Line Input Voltage	120VAC nominal
		Input Current	16mA@ 24VDC, 40mA@26VAC, 31mA@120VAC
	12VDC *(models S100L, S101L, S120L)*	Low Input Voltage	10-15VDC
		Input Current	33mA@10VDC, 41mA@12VDC, 44mA@15VDC
SPDT Relay Contact		Resistive	10A@120VAC / 7A@240VAC
			20A@125VAC
			10A@250VAC (NO)
			7A@250VAC (NC)
			12A@277VAC
		Inductive	1/4 HP 125VAC / 250VAC (NO)
			1/10 HP 125VAC (NC)
Current Status Switch		Current Sense Range	0.35A to 10A
		Current Threshold	350mA minimum
		Contact Rating	30VAC/DC, 250mA max
		Wire	UL 1015, 18" minimum, 18AWG
		Indication	LED ON when proving switch closed



Product release pending. Consult factory for availability and final specifications.

When it comes to pressure sensing, we're zeroed in.

"At last, a drift-free pressure sensor. That means fewer call-backs, saving me time and money."

Selectable pressure ranges, output type and uni/bi directional settings for easy installation

Zero drift with Senva.

Drift is a natural consequence with their pressure sensors. A traditional piezoelectric pressure sensor flexes and emits a voltage. Flex anything long enough you know what happens--it deforms and drifts.

And that's not good for keeping your system working to spec. Building envelope pressure is off. Ever met a tenant thrilled when unfiltered outside air comes unwelcome? Or doors don't swing as they should? Don't even think about serving hospitals with sensors that need zeroing. You don't have to put up with it--our sensors don't drift.

Other manufacturers think they're doing you a favor by letting you remotely reset their sensor a "zero" reference with a nominal hope and a prayer for accuracy. It's like handing out band aids in triage.

Literature Revision Date 16042012

Our intrinsic flow technoloy is superior to mechanical sensors--zero drift and up to 300% better accuracy.

Senva brings zero free pressure accuracy on all low pressure sensors.

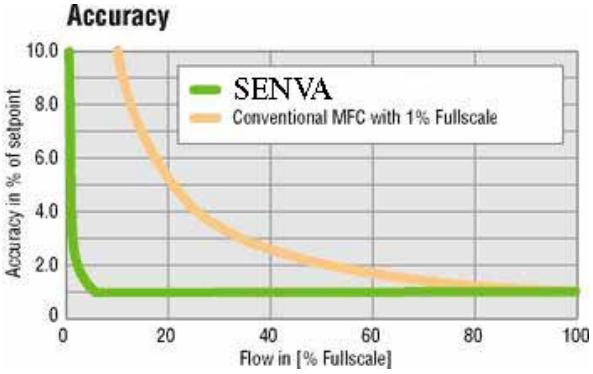
We actually measure intrinsic flow, so there are no "deflecting" parts to stress and wear. Sensing, calibration, and digital signal processing are combined for long term stability. You'll never zero again--since we don't drift. And we're not dependent on mechanical action, so you can mount our sensors in any position without fear of bad readings.

Senva's spec is 3% of reading, not +/- 1% of scale ("competition"). Don't fall for the bait: +/-1% of scale means 2% error to begin with. They also use a large scale for a misrepresentative spec. Depending on your range, we are 300% more accurate. Ask for accuracy of reading—not scale.

Our panel mount is designed to fit a panel. it's not some clumsy wall mount sensor that chews up valuable space. Imagine a pressure sensor the size of a credit card!

Inspired by installers

Our LCD display simplifies set up. Field selectable outputs ensure system compatibility. Even better, our ranges are field selectable. You can also choose uni or bi-directional on the fly .



Product improvement is a continual process at Senva; Product features and specifications subject to change without notice.
Consult installation instructions prior to installing--this literature for informational purposes, but does not constitute installation reference..

Dry Media Low Differential Pressure

PDP Series 0-1", 0-2", 0-250Pa, 0-500Pa

Zero Drift & Zero-Free

Dual output 0-5/10VDC and 4-20mA | Open Frame & NEMA 4 Versions

NEMA 4
PDP31

NEMA 4 Duct Probe
PDP32

Open Frame
DIN or screw mount
PDP30

Breakthrough integrated digital sensor.
No offset. No drift. No need to zero…. ever!

Selectable pressure ranges

Output type selection and uni/bi-directional selection

Proudly Made in the U.S.A.

Intrinsic flow measurement technology for high accuracy

- Outstanding performance as a result of measuring differential pressure using intrinsic flow measurement
- Combines the sensor element, signal processing and digital calibration on a tiny microchip (low DP sensors)
- Ideal for clean rooms, hospitals, fume hoods, computer rooms, and other very low differential pressure applications
- Applications include static pressure in duct or room, variable air volume system control, and filter status monitoring

Easy to install and maintain

- Mount in any position. No gravity effect
- LCD display for easy setup and commissioning

Switch-selectable pressure ranges

- Two psi models with three ranges each: 0-1" (0.1, 0.5, 1.0) uni or bi-directional 0-2" (0.5, 1.0, 2.0") uni or bi-directional
- Two Pa models with three ranges each: 0-250Pa (0-250/125/125 Pa) uni or bi-directional; 0-500Pa (0-500/250/125Pa) uni or bi-directional
- Jumper selectable uni or bi directional
- Dual outputs 4-20mA and jumper selectable 0-5v or 0-10v

Versatile

- Three package styles: Narrow DIN or screw-mount model for crowded control panels, robust NEMA 4 enclosure with brass

Literature Revision Date 16042012

SENVA SENSORS

p. 866-660-8864 • f. 503-296-2529

SPECIFICATIONS

Power Supply		12-30vdc/24vac(1), 30mA max. (13vdc min for 10V f.s. output)
Output Type	Dual	3-wire 0-5/10vdc and 3-wire 4-20mA
Output scaling	Model P-DP[XX]-001	0-1" (Selectable 0.1, 0.5, 1.0) uni or bi-directional
	Model P-DP[XX]-002	0-2" (Selectable 0.5, 1", 2") uni or bi-directional
	Model P-DP[XX]-250Pa	0-250Pa (0-250/125/125 Pa) uni or bi-directional
	Model P-DP[XX]-500Pa	0-500Pa (0-500/250/125Pa)uni or bi-directional
Operating Temperature	Calibrated range	32 to 122 F (0-50C)
Media compatibility		Dry, oil-free air, N2
Sensor Type		Digital CMOS intrinsic flow differential pressure
Sensor Performance	Position effects	None - position insensitive
		Zero drift
	Zero point accuracy	0.5 Pa
	Span Accuracy	3% of reading
	Zero point repeatability	0.1 Pa
	Span repeatability	0.5% of reading
	Offset shift due to temperature variation	None (less than resolution)
	Span shift due to temperature variation	< 0.5% of reading per 10°C
	Wetted materials	PBT (polybutylene terephthalate), glass (silicon nitride, silicon oxide), silicon, gold, FR4, silicone as static sealing, epoxy, copper alloy, lead-free solder

ORDERING

PDP3 ☐☐

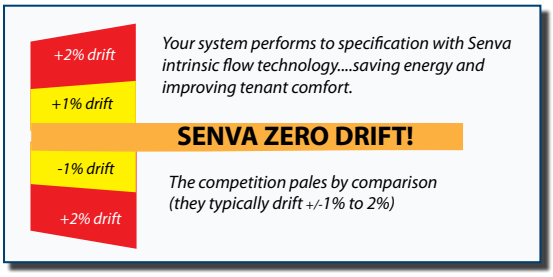
Package

0 = Open Frame
1 = NEMA 4
2 = NEMA 4 / duct probe

Pressure Range

-001 = 0-1" (0.1, 0.5, 1.0)
-002 = 0-2" (0.5, 1, 2")
-250pa = 0-250/125/125 Pa
-500pa= 0-500/250/125Pa
Selectable uni/bi-directional

As small as a credit card.



Your system performs to specification with Senva intrinsic flow technology....saving energy and improving tenant comfort.

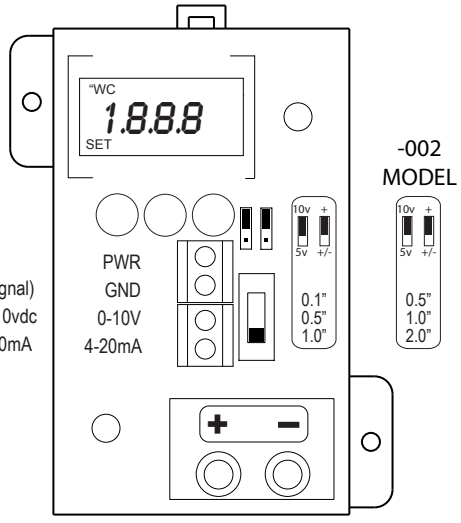
The competition pales by comparison (they typically drift +/-1% to 2%)

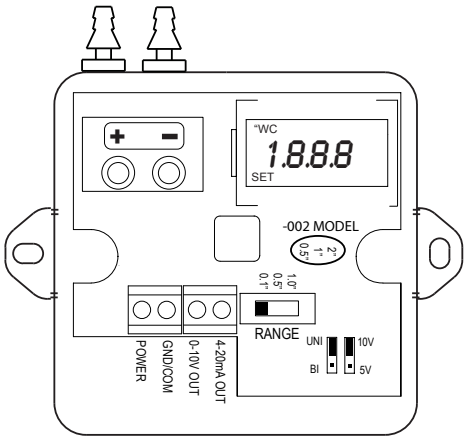
WIRING

WIRING:

PWR = Power Supply +
GND = Common (power & signal)
0-10V = Voltage output 5v/10vdc
4-20mA = Current output 4-20mA

(PWR and GND required for both Voltage and Current output operation)





WIRING:
POWER = Power Supply +
GND/COM = Common (power & signal)
0-10V OUT = Voltage output 5v/10vdc
4-20mA OUT = Current output 4-20mA

(PWR and GND required for both Vdc and mA operation)

Dy Media Low Differential/Static Pressure

PDP Series 0-10", 0-25", 0-2500Pa, 0-7000Pa

High Accuracy | Dual 0-5/10VDC and 4-20mA | NEMA 4 Versions mA

NEMA 4
PDP31

NEMA 4 Duct
Probe PDP32

Open Frame
DIN or screw mount
PDP30

Selectable ranges, outputs and stable operation

- Integrated, micromachined silicon piezoresistive sensor
- Three WC models with three ranges each: 0-10" (Selectable 2.5, 5.0, 10.0"WC) or 0-25" (Selectable 10, 15, 25"WC)
- Three Pa modelswith three ranges each: 0-2500Pa (0-2500/1250/250"Pa uni-directional only) or 0-7000Pa (Selectable 0-7000 (7000/5000/2500 Pa uni-directional)
- Applications include duct static pressure and air-flow stations

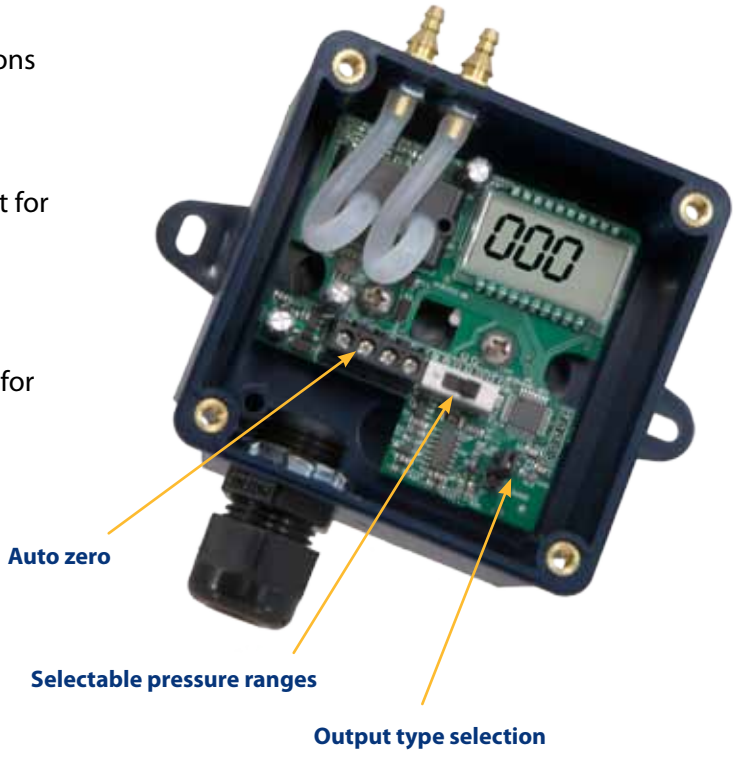
Easy to install and maintain

- LCD display for easy setup and commissioning
- Auto zero push button input and auto zero control contact for system accuracy
- Dual outputs 4-20mA and jumper selectable 0-5v or 0-10v

Versatile

- Three package styles: Narrow DIN or screw-mount model for

Easy installation and set up



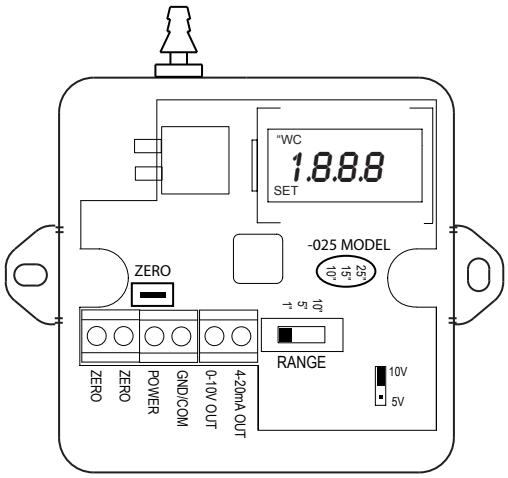
Literature Revision Date 16042012

p. 866-660-8864 • f. 503-296-2529

SPECIFICATIONS

Power Supply		12-30vdc/24vac(1), 30mA max. (13vdc min for 10V f.s. output)
Output type	Dual outputs	3-wire 0-5/10vdc and 3-wire 4-20mA
Output scaling	Model P-DP[XX]-010	0-10" (Selectable 2.5, 5, 10"WC)
	Model P-DP[XX]-025	0-25" (Selectable 10, 15, 25"WC)
	P-DP[XX]-2500Pa	0-2500Pa (Selectable 2500, 1250, 250 Pa)
	P-DP[XX]-7000Pa	0-7000Pa (Selectable 7000, 5000, 2500 Pa)
Operating Temperature	Calibrated range	50 to 140 F (10-60C)
Media compatibility		Dry, oil-free air, N2
Sensor Type		Integrated, micromachined silicon piezoresistive
Sensor Performance	Accuracy (Linearity, hysteresis, temperature)	2.5% f.s.
	Auto-zero input	Pushbutton and contact closure input provided
	P-DP30-XXX (Duct or Panel Mount)	IP65, screw mount, brass hose barb fittings

WIRING DIAGRAMS



WIRING:
POWER = Power Supply +
GND/COM = Common (power & signal)
0-10V OUT = Voltage output 5v/10vdc
4-20mA OUT = Current output 4-20mA
ZERO = Contact closure input

(PWR and GND required for both Vdc and mA operation)

ORDERING

PDP3 ☐☐☐

Package

0 = Panel Mount
1 = NEMA 4
2 = NEMA 4 with duct probe

Pressure Range

-010 = 0-10" (Selectable 1,5,10"WC)
-025 = 0-25" (Selectable 10,15,25"WC)
-2500Pa (Selectable 2500, 1250, 250 Pa)
-7000Pa (Selectable 7000, 5000, 2500 Pa)

Proudly
Made in the U.S.A.

Wet - Wet with installation saving remote sensors

PW Series 25-250 PSIG

Selectable features | LCD display with menu | Micro-Machined Sensor

Universal transmitter

High Reliabilty

- Stainless steel sensor construction. No welds or o-rings or oil.
- Wide operating temperature range
- MEMS sensor technology

Revolutionary transducer design eliminates costly field plumbing

- Run sensors to the pipe instead of costly piping to transmitter--a Senva original idea
- Eliminates cumbersome and costly bypass valve assemblies

Universal Transmitter for easy installation

- One unit covers multiple ranges per sensor type: 25PSIG (5/10/25PSID), 50PSIG (10/25/50PSID), 100PSIG (50/75/100PSID), 250PSIG (75/150/250PSID)

Jumper selectable features for easy installation

- Absolute mode outputs absolute value of difference
- Port swap corrects plumbing errors
- Fast/slow to select desired response time
- Uni/bi directional
- Test mode – forces full-scale output
- Unit select – PSI or BAR
- Switch selectable outputs 2-wire 4-20mA, 3-wire 0-5v, and 3-wire 0-10v

User friendly display

- LCD display reads both gauge pressures and differential
- Pushbutton zero

Plug on sensors for easy installation

Optional service valve PWBV

Armored cable option

Literature Revision Date 16042012

p. 866-660-8864 • f. 503-296-2529

SPECIFICATIONS

Power Supply	Voltage output mode 0-5V	12-30vdc/24vac(1), 20mA max.
	Voltage output mode 0-10V	15-30vdc/vac required for 10v full scale output
	Current (4-20 mA) output mode	2-wire 4-20 mA, 3-wire 0-5/10V
Output type	Switch selectable	3-wire 0-5/10vdc and 3-wire 4-20mA
Pressure Ranges	Model PWS-25	25 PSIG (Select 5/10/25 PSID)
	Model PWS-50	50 PSIG (Select 10/25/50 PSID)
	Model PWS-100	100 PSIG (Select 50/75/100PSID)
	Model PWS-250	250PSIG (Select 75/150/250PSID)
Operating Temperature		32 to 130F (0-55C)
Media compatibility		Water; other 17-4 SS compatible media
Jumper Selectable Features	Sensor pressure select	25/25/100/250 (Field selectable to match pressure sensor range)
	Absolute mode	Sensor outputs absolute value of difference
	Port swap	Corrects plumbing errors
	Response time	Fast/slow modes
	Test mode	Forced full-scale output
	Display units	PSI/Bar
	Direction mode	Uni/Bi
Zero Adjustment		Pushbutton
Sensor Type		Micro-machined silicon strain gauge
Sensor Performance	Accuracy	< ±0.5% BFSL
	Stability (1 Year)	±0.25%FS, typ
	Overange Protection	2X Rated Pressure
	Burst Pressure	5X or 20,000 psi (whichever is less)
	Pressure Cycles	> 100 Million
	Compensated Range	0 to 55°C (30 to 130°F)
	Temp. Comp. Zero	<±1.5% of FS
	Temp. Comp. Span	<±1.5% of FS
	Shock	100G, 11 msec, 1/2 sine
	Vibration	10G peak, 20 to 2000 Hz.
	EMI/RFI Protection	Yes
Enclosure, PW20 Transmitter	Construction	Powdered coated steel
	Sealing	IP65 (when installed with water-tight fittings)
Enclosure, PWS (xxx) Sensor	Construction	Stainless Steel 17-4, 1/4" MNPT , Deutsch DT series connector

ORDERING

UNIVERSAL TRANSMITTER PW20 ☐☐

Sensor Cable Length (inches)

A = 36"
B = 72"
C = 108"
Consult factory for custom lengths

Sensor Cable Type

A = Armored
B =Standard plenum rated cable

PRESSURE SENSOR PWS ☐☐☐

Pressure Range

025 = 5/10/25 PSI
050 =10/25/50 PSI
100 = 50/75/100 PSI
250 = 75/150/250 PSI

IMPORTANT--Order quantity of (2) PWS sensors of same pressure range per transmitter

PRESSURE SENSOR SERVICE VALVE PWBV

Product release pending. Consult factory for availability and final specifications.

Proudly
Made in the U.S.A.

Sealed Gauge Pressure

PG Series

High Accuracy | Stainless Steel | 18" Leads

Robust, chemically compatible micro-machined sensors

Versatile

- 36" wire leads
- 1/4" - 18 NPT

High Reliability...fewer call backs

- Stainless wetted media
- Burst pressure 3X full scale
- Reverse voltage protected
- Rugged stainless steel construction

Superb Accuracy

- ±0.5% overall full scale at room temperature
- +/- 1% overall full scale over -40°C to 105°C fo 75 PSI to 200 PSI. Includes Repeatability, Hysteresis
- Custom ASIC provides signal conditioning for calibration and temperature compensation
- Compact, Robust Package
- All laser-welded stainless steel design for optimal media isolation
- Chemical Compatibilities: Any gas or liquid compatible with 304L & 316L stainless steel.

Typical applications

Ideal for industrial and commercial applications where pressure measurement, cost, compact size, robust packaging, chemical compatibility and performance are critical.

These are micro-machined, sealed gauge pressure sensors designed to work at pressure ranges with superior accuracy.

- *Water*
- *Refrigeration*
- *Fuel Cells*
- *Pumps*
- *Hydraulics*
- *Compressors*
- *Pneumatics*
- *Agriculture*
- *Process Control*
- *Flow*
- *Hydrogen Storage*
- *Robotics*

Literature Revision Date 16042012

p. 866-660-8864 • f. 503-296-2529

Reliability and Environmental Performance		
Pressure/Temperature	0 to FS @ 8Hz; and –40°C to 105°C	>1.8x106 cycles
Thermal Shock	105°C to –40°C, 0.5 hr soaks at Temp. (2s Transfer)	300 cycles
Vibration	100 to 2000 Hz, 20g Sinusoidal, 3 Axes	144 hours
EMC Compatibility4	10 Volts/meter per EN 61000-4-3	
Humidity	85°C and 90% to 95% R. H.	250 hours
Weight	Model 51 with M12 x 1.5 6g 304L Stainless Port	≤85 grams

Output Type	4-20mA	1-5Volts
Accuracy[1]	<± 0.50% FS	<± 0.50% FS
Zero & Span Error	<± 0.25% FS	<±0.25% FS
Thermal Error (-40oC to 105oC)	<± 0.50% FS	<± 0.50% FS
Total Error	<± 1.0% FS	<± 1.0% FS
Zero Pressure Offset[2]	4.0 mA	1.0 V
Full Scale Output[3]	20 mA	5.0 V
Operating Temperature	-40 to 105°C	-40 to 105°C
Storage Temperature	-40 to 105°C	-40 to 105°C
Proof Pressure	3 X FS	3 X FS
Supply Voltage[5]	8 to 30 Volts	8 to 30 Volts
Supply Current	Not Applicable	< 3 mA
Response Time	< 1 ms	< 1ms

1 Includes hysteresis, repeatability, & non-linearity (BFSL)

2 Transducer output @ 0 PSIA, 0 PSIG, or 0 PSIS (consult factory for other options)

3 Sealed Transducer output @ Pressure Range + 14.5 PSIA

4 Higher levels of EMC Compatibility are available upon request.

5 Reverse/over-voltage protection (+/- 16V over 5 minutes)

ORDERING

PG - □□□ S □

Pressure Range

15 = 15 PSIG
25 = 25 PSIG
50 = 50 PSIG
75 = 75 PSIG
100 = 100 PSIG
250 = 250 PSIG
300 = 300 PSIG
500 = 500 PSIG

Sensor Type

S = Sealed Gauge

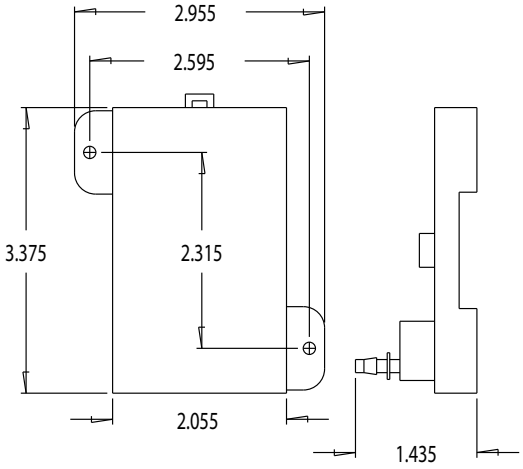
Output Type

B = 0-5 VDC
C = 4-20 mA

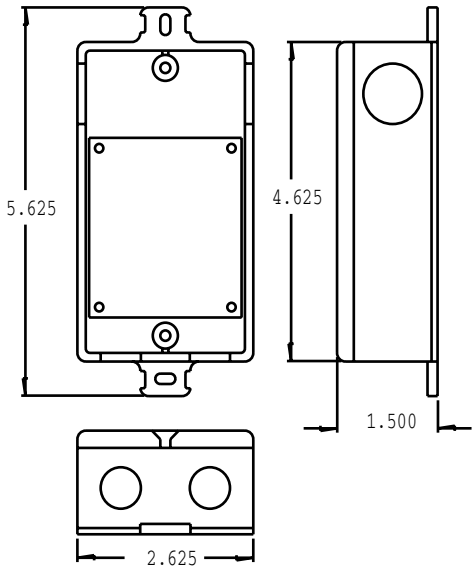
CE ISO 9001 BUREAU VERITAS Certification RoHS

Pressure Sensor Dimensions

Open Frame DIN/Screw Mount (PDP30)



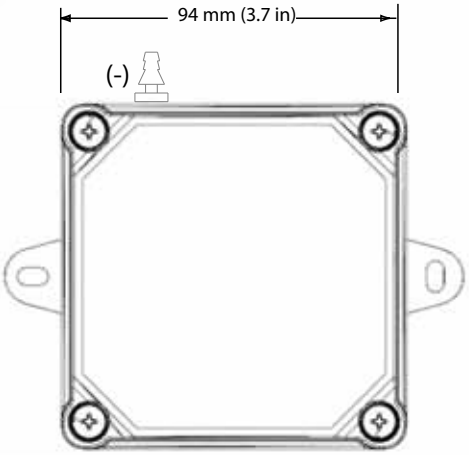
Wet-Wet PW Series Transmitter

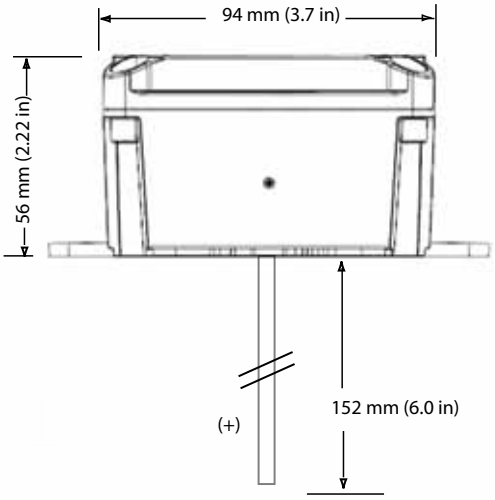


Literature Revision Date 16042012

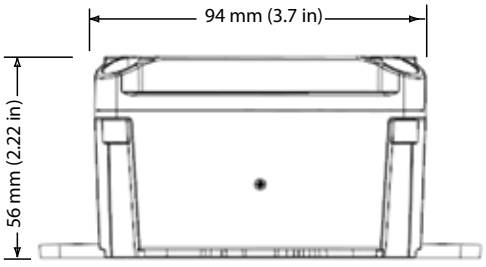
p. 866-660-8864 • f. 503-296-2529

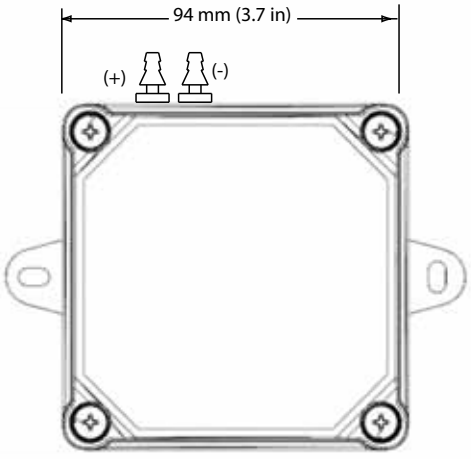
NEMA 4 with Duct Probe (PDP32)





NEMA 4 (PDP31)



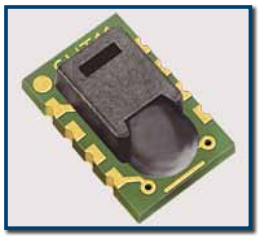


Sense the *difference*

"Field adjustability simplifies commissioning. Institutional customers have their own metrics and they want them matched."

When it comes to humidity, we're not perfect. Just better.

Conventional capacitive sensors have large elements that absorb or releases water proportional to the relative environmental humidity. But they also absorb contaminants. And their bulky materials age haphazardly. Long term stability is the casualty. We set out to change that paradigm--and did.



Our microsensors are optimized for precision dewpoint measurement

Changing the game with micro-sensing

Senva's element features two calibrated micro-sensors for relative humidity and temperature coupled on the same integrated circuit. As such, they're optimized, not for signal strengths, but long-term stability

Forming a single unit, they enable precise determination of dew point. Condensation or even immersions present no problems whatsoever. But, let's be honest. It doesn't mean you'll never ever have a problem. We all know swimming pools and nitrogen rich agriculture applications (e.g. chicken @#$%) can oxidize anything—our sensors included. That's why our sensor element is conveniently replaced without disturbing the installation. No field calibration is required.

Literature Revision Date 16042012

Humidity Sensors

It's only perfect if the customer says so

We're familiar with that facilities manager whose antiquated humidity instrument "may" or may not be as accurate as our NIST traceable chamber. So we added provisions for you to quickly rescale our sensor to match their reference points. It doesn't make us wrong; the customer is always right.

You can rescale our transducers in seconds to meet customer requirements

How about the world's first solar power outside air station from Senva?

Wireless units for rooftop applications reduces installation time and permits proper location. Solar Powered--save hundreds on your install.

Outside air is one of the most challenging installations going. First, you have to get to the roof top. Then you have conduit. Then someone figures out it's not really in the shade. Like moving that conduit again? We just had a notion that a solar-powered wireless humidity temp transmitter would be a better idea. Long range Zigbee. Solar. Battery back up.

NIST traceability

Our processes are totally NIST traceable. Accurate to the last byte. If you need a certificate, we're happy to oblige with multi-point graphics.

State of the art Testing Facilities. Certification Options from 1-point to 8-piont.

Product improvement is a continual process at Senva; Product features and specifications subject to change without notice.
Consult installation instructions prior to installing--this literature for informational purposes, but does not constitute installation reference..

LCD display with selectable 5/10v outputs

Humidity/Temperature

Thermistor, set-point, override options

Versatile

- 2 or 3% Rh versions with field replaceble sensor
- Switch selectable 5V/10V Rh/T transmitter outputs
- Options for complete control including set-point and override.
- LCD display for easy set up of all parameters (cover included to conceal LCD if desired)

Easy to install and maintain

- Integrated display and pushbutton menus for field selectable scale, calibration, and operational modes
- 5/10v outputs standard. Thermistor outputs for temperature optional

Superior RH sensing

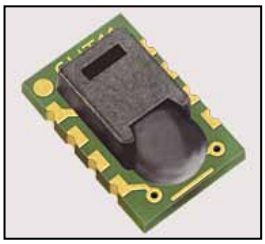
- On-board temperature compensation for RH. Excellent measurement accuracy; high repeatability and offset stability.
- Sensor on chip for eliminating noise-susceptible solder-points for small analog signals.
- State of the art testing facilities. Certification options from 1-point, 2 -point, and 8 -point (NIST traceability--consult factory)

Field adjustable with LCD display

Our sensors are very accurate, but we also know that customers occasionally have their own opinions as to what reading they "want" to see in accordance with their in house metrics (psychrometers, etc.).

To this end, our sensors can be readily rescaled in the field to keep those customers happy. (They can also be restored to factory settings with ease.)

NIST traceable calibration. Consult factory



Robust, field replaceable integrated humidity sensing

Proudly Made in the U.S.A.

Literature Revision Date 16042012

SENVA SENSORS

p. 866-660-8864 • f. 503-296-2529

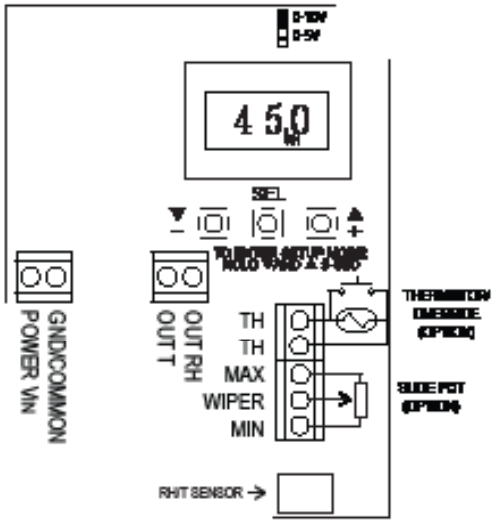
SPECIFICATIONS

Power Supply		12-30vdc/24vac[1,2], 100mA max.
Analog Outputs [2]	Rh	0-5/10v (jumper--sets both rh and temp)
	Temperature	0-5/10v standard, thermistor values optional
Relative Humidity	Type	Dual RH Temp integrated circuit
	Accuracy	2% models, +/-2% over 10 to 90%RH range 3% models, +/-3% over 20 to 80%RH range
	Resolution	0.05%RH
	Hysteresis	+/-1%RH
	Non-Linearity	factory linearized <1%RH
	Temperature coefficient	fully compensated on-board
	Response time [3]	30s
	Output update rate	2s
	Operating range	0 to 100%RH
	Long term drift	<0.5%RH per year
	Operating conditions [4]	-20° C to 60° C @ RH>90%
Temperature (*transmitter specifications; thermistors optional*)	Accuracy	2% models, <+/-1° C; 0.5° C typ @ 25° C
	Resolution	0.01° C
	Repeatability	+/-0.1° C
	Response time [3]	30s
	Output update rate	2s
	Operating range	-40° C to 120° C
Operating Environment	Temperature	32 to 122F (0 to 50C)
	Humidity	0-95% non-condensing
Enclosure	Material	ABS Plastic
	Dimensions	4.85"h x 3.25"w x 1.19"d

(1) One side of transformer , secondary is connected to signal common. Dedicated transformer is recommended.
(2) 15-30vdc/24vac power supply voltage required for 10 volt output.
(3) Time for reaching 63% of reading at 25oC and 1 m/s airflow.
(4) Long term exposures to conditions outside normal range at high humidity may temporarily offset the RH reading (+3%RH after 60 hours.)

LCD cover included

WIRING



ORDERING

HTRL - ☐☐☐☐☐

Accuracy
2 = 2%
3= 3%

Additional Thermistor
A = None
C = 100Pt (385)
D = 1000Pt (385)
E = 10k type 2
F = 10k type 3
G = 10k w/11k
H = 3k
I = 2k2
J = 1k8
K = 20k

Color
1 = White
2 = Ivory
3 = Brown
4 = Light Almond
5 = Almond
6 = Black
7 = Gray

Override
A=None
B=Push Button

Set Point
A=None
B= 1K
C=5K
D=10K
E=50K
F=100K

HR Designer Series- Slimline Humidity

Transmitter

2%, 3% accuracies | 0-5/10VDC
Full range of temperature thermistor/RTD options

Ivory | White | Light Almond | Almond | Black | Brown | Gray

High performance humidity/temp combinations in an architecturally inspired design!

Decorator plates match any environment for discriminating architects and owners

- Match colors and existing interior decor
- Fits in any standard wall plate
- No exposed screws; unobtrusive tamper resistant design

Easy to install and maintain

- Field calibratable scaled adjustment allows easy adjustment of calibrated RH value as needed to maintain certification.
- 0-5v/0-10v output--jumper selectable
- Mount vertically or horizontally

High reliability reduces call backs

- Long life thanks to fusion of sensor and evaluation circuitry on one CMOS chip.
- Choose from a range of temperature output options (Universal output transmitter: 0-5v/0-10v, RTD, or thermistor)

High accuracy for improved system performance

- On-board temperature compensation for RH eliminates temperature coefficient errors; high repeatability and offset stability.
- Sensor on chip eliminates noise-susceptible solder points for small analog signals.

Field adjustable for demanding applications

We're very accurate, but we also know that your customers occasionally have their own opinions as to what reading they "want" to see in accordance with their in house metrics (psychrometers, etc.).

To this end, our sensors can be readily rescaled in the field. That means faster commissioning as well.

Proudly Made in the U.S.A.

Literature Revision Date 16042012

SENVA SENSORS

p. 866-660-8864 • f. 503-296-2529

SPECIFICATIONS

Power Supply		12-30vdc(1), 15mA max.
Outputs	RH% and Temperature	3-wire 0-5/10VDC (jumper selectable)
Output scaling	RH%	0-100% RH
	Temperature	50-95° F (10-35° C)
Thermistor Options		Yes, see ordering table below
Media filter		PTFE membrane, IP54 protection
Relative Humidity	Accuracy	2% models, +/-2% over 10 to 90%RH range
		3% models, +/-3% over 20 to 80%RH range
	Resolution	0.05%RH
	Hysteresis	+/-1%RH
	Non-Linearity	factory linearized <1%RH
	Temperature coefficient	fully compensated by on-board temp sensor
	Response time (2)	30s
	Output update rate	2s
	Operating range	0 to 100%RH
	Long term drift	<0.5%RH per year
	Operating conditions (3)	-20° C to 60° C @ RH>90%
		-20° C to 80° C @ RH=50%
Temperature	Accuracy	2% models, <+/-1° C; 0.5° C typ @ 25° C
	(-20° C to 70° C range)	3% models, <+/-2° C; 0.5° C typ @ 25° C
	Resolution	0.01° C
	Repeatability	+/-0.1° C
	Response time (2)	30s
	Temperature Scaling	50-95° F (10-35° C)
	Output update rate	2s
	Operating range	-40° C to 120° C

(1) One side of transformer , secondary is connected to signal common. Dedicated transformer is recommended.
(2) Time for reaching 63% of reading at 25° C and 1 m/s airflow
(3) Long term exposures to conditions outside normal range at high humidity may temporarily offset the RH reading (+3%RH after 60 hours.)

ORDERING

HR - □□□

Accuracy

2 = 2%
3 = 3%

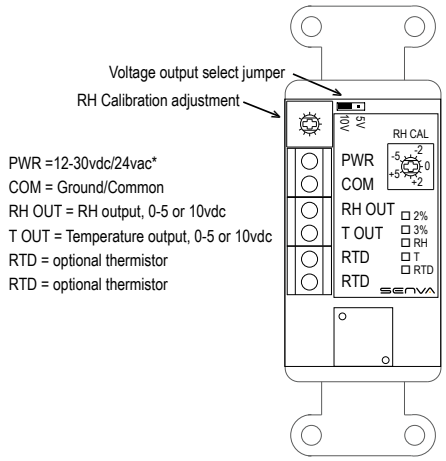
Temperature

A = None
B = Transmitter
C = 100Pt (385)
D = 1000Pt (385)
E = 10k type 2
F= 10k type 3
G = 10k type 3 w/11k shunt
H = 3k
I = 2k2
J = 1k8
K = 20k
L = 100k

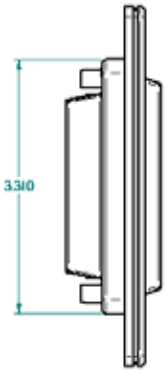
Color

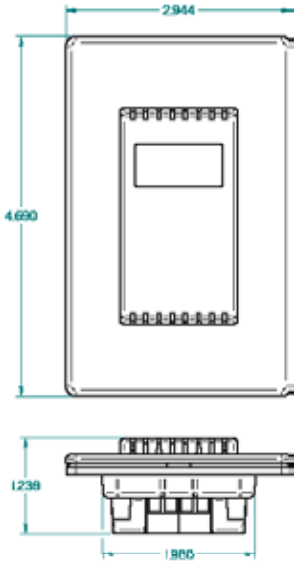
1 = White
2 = Ivory
3 = Brown
4 = Light Almond
5 = Almond
6 = Black
7 = Gray

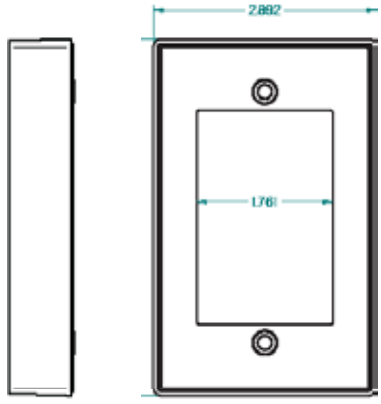
WIRING DIAGRAMS



DIMENSIONS







Optional #Trim Ring for surfact mount applications or mis-sized j-boxes

HD Duct Mount

Humidity Transmitter

2%, 3% accuracies | 0-5/10VDC 4-20 mA output
Full range of temperature output options

Accurate, reliable, serviceable humidity.

Easy to install and maintain

- Field calibratable. LCD and pushbutton menu allows easy adjustment of calibrated RH value as needed to maintain certification.
- Universal output. 2-wire 4-20mA and 3-wire 0-5v/0-10v and field selectable temperature range. One model to order.
- Replaceable sensor element without removing conduit or housing. Remove the lid and pull the tab for fast and easy service.

High reliability reduces service calls

- Long life thanks to fusion of sensor and evaluation circuitry on one CMOS chip.
- Choose from a range of temperature output options (Uni versal output transmitter: 4-20mA, 0-5v/0-10v, RTD, or thermistor)
- Sintered stainless media filter protects sensor
- Industry leading 7-year warranty/ 2-year replaceable element warranty

High accuracy for system performance

- On-board temperature compensation for RH. Eliminates temperature coefficient errors and achieves an excellent measurement accuracy as well as high repeatability and offset stability.
- Analog signal processing is performed on the same chip as sensor, eliminating noise-susceptible solder -points for small analog signals.
- State of the art testing facilities. Certification options from 1-point, 2 -point, and 8 -point (NIST traceability--consult fac-

Field adjustable with LCD display

Our sensors are very accurate, but we also know that customers occasionally have their own opinions as to what reading they "want" to see in accordance with their in house metrics (psychrometers, etc.).

To this end, our sensors can be readily rescaled in the field to keep those customers happy. (They can also be restored to factory settings with ease.)

Literature Revision Date 16042012

p. 866-660-8864 • f. 503-296-2529

SPECIFICATIONS

Power Supply	0-5v or 0-10v operation	12-30vdc/24vac(1), 15mA max.
	4-20 mA operation	12-30vdc, 30mA max.
Outputs	RH% and Temperature	3-wire 0-5/10v (jumper) or 2-wire 4-20mA,
Output scaling	RH%	0-100% RH
	Temperature	32-122° F or -40-140° F (jumper)
Thermistor Options	Yes, see ordering table	
Media filter	Sintered stainless steel	
Relative Humidity	Accuracy	2% models, +/-2% over 10 to 90%RH range 3% models, +/-3% over 20 to 80%RH range
	Resolution	0.05%RH
	Hysteresis	+/-1%RH
	Non-Linearity	factory linearized <1%RH
	Temperature coefficient	fully compensated by on-board temp sen-
	Response time (2)	30s
	Output update rate	2s
	Operating range	0 to 100%RH
	Long term drift	<0.5%RH per year
	Operating conditions (3)	-20° C to 60° C @ RH>90% -20° C to 80° C @ RH=50%
Temperature	Accuracy (-20° C to 70° C range)	2% models, <+/-1° C; 0.5° C typ @ 25° C 3% models, <+/-2° C; 0.5° C typ @ 25° C
	Resolution	0.01° C
	Repeatability	+/-0.1° C
	Response time (2)	30s
	Output update rate	2s
	Operating range	-40° C to 120° C

(1) One side of transformer , secondary is connected to signal common. Dedicated transformer is recommended.
(2) Time for reaching 63% of reading at 25° C and 1 m/s airflow
(3) Long term exposures to conditions outside normal range at high humidity may temporarily offset the RH reading (+3%RH after 60 hours.)

ORDERING

HD - □□

Accuracy

2 = 2%
3 = 3%

Temperture

A = None
B = Transmitter
C = 100Pt (385)
D = 1000Pt (385)
E = 10k type 2
F= 10k type 3
G = 10k type 3 w/11k shunt
H = 3k
I = 2k2
J = 1k8
K = 20k
L = 100k

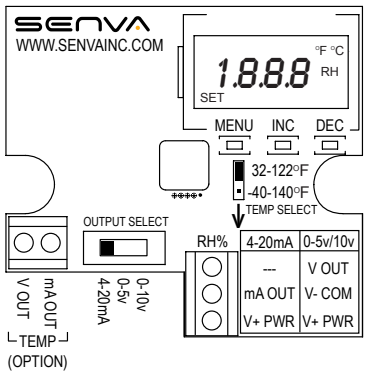
Replacement Sensor Elements

HSD-2 2% accuracy
HSD-3 3% accuracy

Consult factory for certification and point calibration options

WIRING DIAGRAMS

RH/T DUAL TRANSMITTER



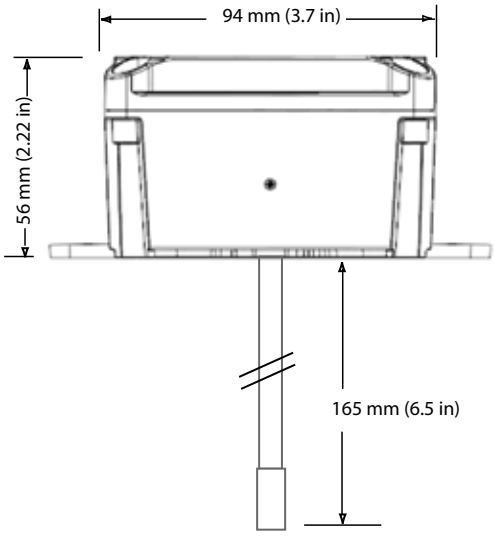
4-20mA wiring:

mA OUT = 4-20mA output return
V+ PWR = Loop supply excitation voltage

0-5v/0-10v wiring:

V OUT = Voltage output, 0-5 or 10vdc
V- COM = Ground/Common
V+ PWR = Power supply excitation voltage

DIMENSIONS



Proudly
Made in the U.S.A.

HO Outside Air

Humidity Transmitter

2%, 3% | 0-5/10VDC, 4-20 mA output
Temperature output options

Your reliable solution to outside air applications.

Easy to install and maintain

- Field calibratable. LCD and pushbutton menu allows easy adjustment of calibrated RH value as needed to maintain certification.
- Universal output. 2-wire 4-20mA and 3-wire 0-5v/0-10v and field selectable temperature range. Just one model to order.
- Replaceable sensor element without removing con duit or housing. Remove the lid and pull the tab for fast and easy service.

High reliability reduces service calls

- Molded-in cover gasket and conduit seals for improved weather resistance. Small package size and low profile screened vent plug.
- Long life thanks to fusion of sensor and evaluation circuitry on one CMOS chip.
- Industry leading 7-year warranty/ 2-year replaceable element warranty

High accuracy for system performance

- On-board temperature compensation for RH. Excellent measurement accuracy as well as high repeatability and offset stability.
- Sensor on chip for eliminating noise-susceptible solder-points for small analog signals.
- State of the art testing facilities. Certification options from 1-point, 2 -point, and 8 -point (NIST traceability--consult factory)

Field adjustable with LCD display

Our sensors are very accurate, but we also know that customers occasionally have their own opinions as to what reading they "want" to see in accordance with their in house metrics (psychrometers, etc.).

To this end, our sensors can be readily rescaled in the field to keep those customers happy. (They can also be restored to factory settings with ease.)

Literature Revision Date 16042012

SENVA SENSORS

p. 866-660-8864 • f. 503-296-2529

SPECIFICATIONS

Power Supply	0-5v or 0-10v operation (1)	12-30vdc/12VAC, 45mA max
	4-20 mA operation	12-30vdc, 30mA max.
Outputs	RH% and Temperature	3-wire 0-5/10v (jumper) or 2-wire 4-20mA,
Output scaling	RH%	0-100% RH
	Temperature	32-122°F or -40-140°F (jumper)
Thermistor Options	Yes, see ordering table	
Media filter	Sintered Stainless Steel	
Relative Humidity	Accuracy	2% models, +/-2% over 10 to 90%RH range 3% models, +/-3% over 20 to 80%RH range
	Resolution	0.05%RH
	Hysteresis	+/-1%RH
	Non-Linearity	factory linearized <1%RH
	Temperature coefficient	fully compensated by on-board temp sen-
	Response time (2)	30s
	Output update rate	2s
	Operating range	0 to 100%RH
	Long term drift	<0.5%RH per year
	Operating conditions (3)	-20° C to 60° C @ RH>90% -20° C to 80° C @ RH=50%
Temperature	Accuracy (-20° C to 70° C range)	2% models, <+/-1° C; 0.5° C typ @ 25° C 3% models, <+/-2° C; 0.5° C typ @ 25° C
	Resolution	0.01° C
	Repeatability	+/-0.1° C
	Response time (2)	30s
	Output update rate	2s
	Operating range	-40° C to 120° C

(1) One side of transformer , secondary is connected to signal common. Dedicated transformer is recommended.
(2) Time for reaching 63% of reading at 25° C and 1 m/s airflow
(3) Long term exposures to conditions outside normal range at high humidity may temporarily offset the RH reading (+3%RH after 60 hours.)

ORDERING

HO - ☐☐

Accuracy

2 = 2%
3 = 3%

Temperature

A = None
B = Transmitter
C = 100Pt (385)
D = 1000Pt (385)
E = 10k type 2
F= 10k type 3
G = 10k type 3 w/11k shunt
H = 3k
I = 2k2
J = 1k8
K = 20k
L = 100k

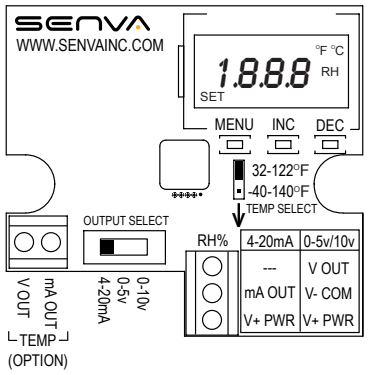
Replacement Sensor Elements

HSO-2 2% accuracy
HSO-3 3% accuracy

Consult factory for certification and point calibration options

WIRING DIAGRAMS

RH/T DUAL TRANSMITTER



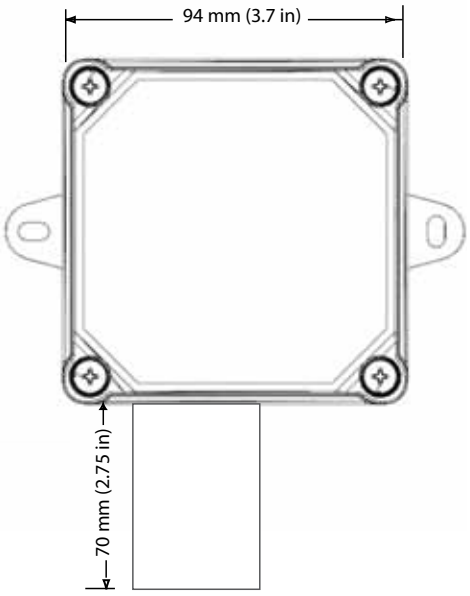
4-20mA wiring:

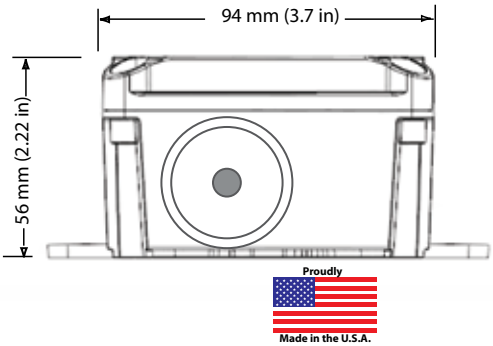
mA OUT = 4-20mA output return
V+ PWR = Loop supply excitation voltage

0-5v/0-10v wiring:

V OUT = Voltage output, 0-5 or 10vdc
V- COM = Ground/Common
V+ PWR = Power supply excitation voltage

DIMENSIONS





Wireless Outside Air

Humidity Transmitter

2%, 3% accuracies | 0-10VDC
ZigBee™ 2.4GHz wireless
300 ft line of sight

Totally wireless and self-powered. No more troublesome wire runs!

Easy to install and maintain

- 2.4 GHz ZigBee™ wireless for super fast installation--save hours!
- Solar-powered for long, reliable transmission; works even in cloudy areas (hey, we tested it here in Portland, Oregon).
- Field calibratable. LCD and pushbutton menu allows easy adjustment of calibrated RH value as needed to maintain certification.
- Replaceable sensor element without removing conduit or housing. Remove the lid and pull the tab for fast and easy service.

High reliability reduces service calls

- Molded-in cover gasket and conduit seals for improved weather resistance. Small package size and low profile screened vent plug.
- Long life thanks to fusion of sensor and evaluation circuitry on one CMOS chip
- Industry leading 7-year warranty/ 2-year replaceable element warranty

High accuracy for system performance

- On-board temperature compensation for RH. Eliminates temperature coefficient errors and achieve an excellent measurement accuracy as well as high repeatability and offset stability.
- Sensor on chip minimizes noise-susceptibility
- State of the art testing facilities. Certification options from 1-point, 2 -point, and 8 -point (NIST traceability--consult factory).

Solar powered with integral battery!

Imagine an outside air sensor without the need to bring power to it or return wires to your control.

Thanks to integral long-life battery with solar charger, you get trouble free long-term operation--without changing batteries or pulling wires!

Literature Revision Date 16042012

p. 866-660-8864 • f. 503-296-2529

SPECIFICATIONS

Power Supply	Transmitter	Long life battery with integral solar charger
	Receiver	12-30vdc/12VAC, 45mA max
Radio	Frequency/Power	2.4GHz unlicensed ISM band, ZigBee™, 60mW
	Range	300' line-of-sight
	FCC id	OUR24XBEE
	Broadcast interval	Daylight, 5-min; Dark, 30-min
Outputs	RH% and Temperature	3-wire 0-10VDC
Output scaling	RH%	0-100% RH
	Temperature	-40 to 140° F
Thermistor Options	Yes, see ordering table	
Media filter	Sintered Stainless Steel Screen	
Relative Humidity	Accuracy	2% models, +/-2% over 10 to 90%RH range 3% models, +/-3% over 20 to 80%RH range
	Resolution	0.05%RH
	Hysteresis	+/-1%RH
	Non-Linearity	factory linearized <1%RH
	Temperature coefficient	fully compensated by on-board temp sensor
	Response time (2)	30s
	Output update rate	2s
	Operating range	0 to 100%RH
	Long term drift	<0.5%RH per year
	Operating conditions (3)	-20° C to 60° C @ RH>90% -20° C to 80° C @ RH=50%
Temperature	Accuracy (-20° C to 70° C range)	2% models, <+/-1° C; 0.5° C typ @ 25° C 3% models, <+/-2° C; 0.5° C typ @ 25° C
	Resolution	0.01° C
	Repeatability	+/-0.1° C
	Response time (2)	30s
	Output update rate	2s
	Operating range	-40° C to 120° C

(1) One side of transformer , secondary is connected to signal common. Dedicated transformer is recommended.
(2) Time for reaching 63% of reading at 25° C and 1 m/s airflow
(3) Long term exposures to conditions outside normal range at high humidity may temporarily offset the RH reading (+3%RH after 60 hours.)

ORDERING

WO - ☐

Accuracy

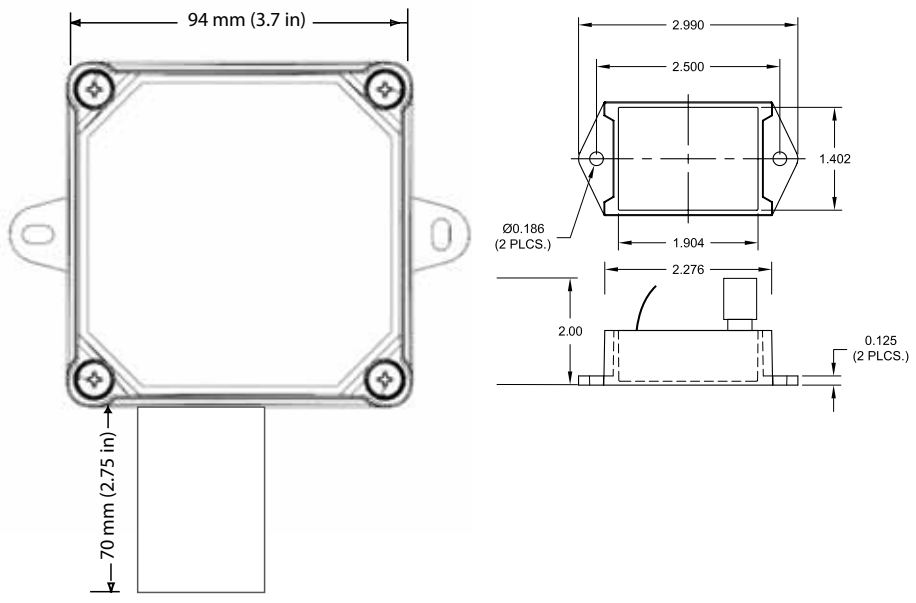
2 = 2%
3 = 3%

Replacement Sensor Elements

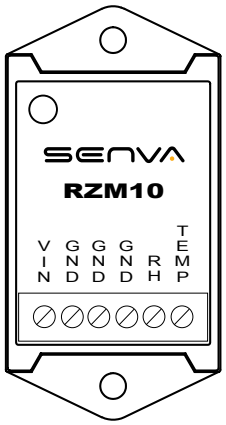
HSO-2 2% accuracy
HSO-3 3% accuracy

Consult factory for certification and point calibration options

DIMENSIONS



WIRING



VIN = Power supply excitation voltage
GND = Ground/Common
RH = RH Voltage output, 0-10vdc
TEMP = Temperature output, 0-10vdc

Proudly
Made in the U.S.A.

Low Profile
Temperature Sensor
Set-point and over-ride options

Low profile design

- The industry's best looking temp sensor.
- Fits in any standard j-box or low voltage bracket.
- No exposed screws; unobtrusive tamper resistant design
- Popular colors to match any decor
- Complements CO2 sensor installations

User Friendly

- Wide range of thermistor options
- Setpoint options
- Override options

Optional #Trim Ring for surfact mount applications or mis-sized j-boxes

SPECIFICATIONS

Enclosure	Humidity	0-95% non-condensing
	Material	ABS Plastic
	Dimensions	4.7"h x 2.9"w x 1.24"d (0.48" wall profle) (fits low-voltage bracket)

ORDERING

TR - □□□

Temperature
C = 100Pt (385)
D = 1000Pt (385)
E = 10k type 2
F= 10k type 3
G = 10k type 3 w/11k shunt
H = 3k
I = 2k2
J = 1k8
K = 20k
L = 100k

Set-point
A = None
B = 1000 ohm setpoint slider
C = 10k ohm setpoint slider

Override
A = None
B= N.O.

Color
1 = White
2 = Ivory
3 = Brown
4 = Light Almond
5 = Almond
6 = Black
7 = Gray

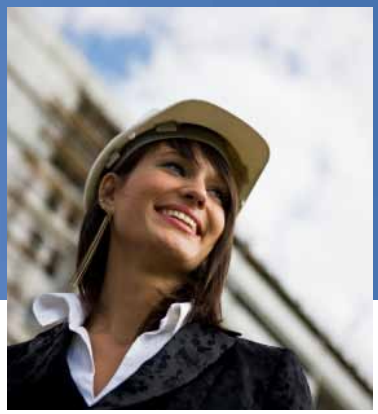
Literature Revision Date 16042012

p. 866-660-8864 • f. 503-296-2529

SENVA THERMISTOR CURVES

TEMP		C	D	E	F	G	H	I	J	K	L
		100Pt	1000Pt	10K T2	10K T3	10K T3 WITH	3K	2K2	1K8	20K	100K
C	F	385	385	B=3890	B=3575	11K SHUNT	B=3890	B=3892	B=3477	B=4247	B=4140
-50	-58	80.3	803.1	670,166	441,200	10,732	201,050	150,395	70,263	1,655,340	8,231,000
-49	-56.2	80.7	807.0	624,159	414,400	10,716	187,248	140,087	66,062	1,537,600	7,648,000
-48	-54.4	81.1	811.0	581,605	389,300	10,698	174,482	130,553	62,140	1,428,940	7,110,000
-47	-52.6	81.5	815.0	542,225	365,900	10,679	162,668	121,727	58,475	1,328,620	6,613,000
-46	-50.8	81.9	818.9	505,763	344,000	10,659	151,729	113,553	55,049	1,235,940	6,154,000
-45	-49	82.3	822.9	471,985	323,600	10,638	141,596	105,981	51,845	1,150,280	5,729,000
-44	-47.2	82.7	826.9	440,674	304,500	10,616	132,202	98,963	48,848	1,071,080	5,336,000
-43	-45.4	83.1	830.8	411,640	286,700	10,594	123,492	92,452	46,044	997,800	4,972,000
-42	-43.6	83.5	834.8	384,703	270,000	10,569	115,411	86,412	43,416	929,960	4,635,000
-41	-41.8	83.9	838.8	359,700	254,300	10,544	107,910	80,803	40,957	867,140	4,323,000
-40	-40	84.3	842.7	336,479	239,700	10,517	100,944	75,593	38,651	808,940	4,034,000
-39	-38.2	84.7	846.7	314,904	226,000	10,489	94,471	70,753	36,490	755,000	3,766,000
-38	-36.4	85.1	850.6	294,848	213,100	10,460	88,454	66,252	34,461	704,960	3,517,000
-37	-34.6	85.5	854.6	276,194	201,100	10,430	82,858	62,066	32,560	658,540	3,286,000
-36	-32.8	85.9	858.5	258,838	189,800	10,397	77,651	58,171	30,775	615,440	3,071,000
-35	-31	86.2	862.5	242,681	179,200	10,364	72,804	54,542	29,097	575,420	2,872,000
-34	-29.2	86.6	866.4	227,632	169,300	10,329	68,290	51,164	27,522	538,240	2,687,000
-33	-27.4	87.0	870.4	213,610	159,900	10,292	64,083	48,017	26,042	503,680	2,515,000
-32	-25.6	87.4	874.3	200,539	151,200	10,254	60,162	45,081	24,651	471,540	2,354,000
-31	-23.8	87.8	878.3	188,349	142,900	10,214	56,505	42,343	23,342	441,640	2,205,000
-30	-22	88.2	882.2	176,974	135,200	10,172	53,092	39,789	22,111	413,800	2,067,000
-29	-20.2	88.6	886.2	166,356	127,900	10,129	49,907	37,404	20,952	387,880	1,937,000
-28	-18.4	89.0	890.1	156,441	121,100	10,084	46,932	35,176	19,861	363,740	1,817,000
-27	-16.6	89.4	894.0	147,177	114,600	10,037	44,153	33,095	18,833	341,240	1,705,000
-26	-14.8	89.8	898.0	138,518	108,600	9,988	41,555	31,150	17,865	320,260	1,600,000
-25	-13	90.2	901.9	130,421	102,900	9,938	39,126	29,331	16,952	300,700	1,502,000
-24	-11.2	90.6	905.9	122,847	97,490	9,885	36,854	27,629	16,092	282,420	1,411,000
-23	-9.4	91.0	909.8	115,759	92,420	9,830	34,728	26,036	15,280	265,380	1,326,000
-22	-7.6	91.4	913.7	109,122	87,650	9,773	32,737	24,545	14,515	249,460	1,247,000
-21	-5.8	91.8	917.7	102,906	83,150	9,715	30,872	23,148	13,792	234,580	1,173,000
-20	-4	92.2	921.6	97,081	78,910	9,654	29,124	21,839	13,109	220,680	1,103,000
-19	-2.2	92.6	925.5	91,621	74,910	9,592	27,486	20,611	12,465	207,680	1,038,000
-18	-0.4	92.9	929.5	86,501	71,130	9,527	25,950	19,461	11,857	195,520	977,400
-17	1.4	93.3	933.4	81,698	67,570	9,460	24,509	18,381	11,281	184,140	920,600
-16	3.2	93.7	937.3	77,190	64,200	9,391	23,157	17,368	10,728	173,600	867,300
-15	5	94.1	941.2	72,957	61,020	9,320	21,887	16,416	10,220	163,500	817,500
-14	6.8	94.5	945.2	68,982	58,010	9,247	20,695	15,522	9,734	154,160	770,800
-13	8.6	94.9	949.1	65,246	55,170	9,171	19,574	14,683	9,272	145,400	727,000
-12	10.4	95.3	953.0	61,736	52,490	9,094	18,521	13,893	8,836	137,180	686,000
-11	12.2	95.7	956.9	58,434	49,950	9,015	17,530	13,151	8,422	129,480	647,500
-10	14	96.1	960.9	55,329	47,540	8,933	16,599	12,453	8,032	122,260	611,400
-9	15.8	96.5	964.8	52,407	45,270	8,850	15,722	11,796	7,659	115,460	577,400
-8	17.6	96.9	968.7	49,656	43,110	8,764	14,897	11,177	7,308	109,100	545,600
-7	19.4	97.3	972.6	47,066	41,080	8,677	14,120	10,595	6,975	103,120	515,700
-6	21.2	97.7	976.5	44,626	39,140	8,587	13,388	10,046	6,658	97,500	487,600
-5	23	98.0	980.4	42,327	37,310	8,495	12,698	9,529	6,358	92,200	461,200
-4	24.8	98.4	984.4	40,159	35,580	8,402	12,048	9,042	6,073	87,240	436,300
-3	26.6	98.8	988.3	38,115	33,930	8,307	11,435	8,582	5,801	82,560	413,000
-2	28.4	99.2	992.2	36,187	32,370	8,210	10,856	8,148	5,546	78,160	391,000
-1	30.2	99.6	996.1	34,368	30,890	8,111	10,310	7,739	5,301	74,020	370,300
0	32	**100**	**1,000**	32,650	29,490	8,012	9,795	7,353	5,069	70,140	350,800
1	33.8	100.4	1,003.9	31,029	28,160	7,910	9,309	6,988	4,846	66,600	332,400
2	35.6	100.8	1,007.8	29,498	26,890	7,807	8,849	6,643	4,637	63,000	315,100
3	37.4	101.2	1,011.7	28,052	25,690	7,702	8,416	6,318	4,437	59,800	298,800
4	39.2	101.6	1,015.6	26,685	24,540	7,595	8,006	6,010	4,248	56,800	283,400
5	41	102.0	1,019.5	25,392	23,460	7,489	7,618	5,719	4,068	53,800	268,900
6	42.8	102.3	1,023.4	24,170	22,430	7,380	7,251	5,444	3,895	51,000	255,300
7	44.6	102.7	1,027.3	23,013	21,440	7,270	6,904	5,183	3,733	48,600	242,300
8	46.4	103.1	1,031.2	21,918	20,510	7,160	6,575	4,937	3,577	46,000	230,200
9	48.2	103.5	1,035.1	20,882	19,620	7,048	6,265	4,703	3,429	43,800	218,600
10	50	103.9	1,039.0	19,901	18,780	6,937	5,970	4,482	3,289	41,560	207,800
11	51.8	104.3	1,042.9	18,971	17,980	6,825	5,691	4,273	3,152	39,520	197,500
12	53.6	104.7	1,046.8	18,090	17,210	6,711	5,427	4,075	3,024	37,560	187,800
13	55.4	105.1	1,050.7	17,255	16,480	6,597	5,177	3,886	2,902	35,740	178,600
14	57.2	105.5	1,054.6	16,463	15,790	6,483	4,939	3,708	2,785	34,000	169,900
15	59	105.8	1,058.5	15,712	15,130	6,369	4,714	3,539	2,673	32,340	161,700
16	60.8	106.2	1,062.4	14,999	14,500	6,255	4,500	3,378	2,567	30,800	153,900
17	62.6	106.6	1,066.3	14,323	13,900	6,141	4,297	3,226	2,466	29,320	146,600
18	64.4	107.0	1,070.2	13,681	13,330	6,027	4,104	3,081	2,369	27,920	139,600
19	66.2	107.4	1,074.1	13,072	12,780	5,912	3,922	2,940	2,275	26,600	133,000
20	68	107.8	1,077.9	12,493	12,260	5,798	3,748	2,814	2,189	25,340	126,800
21	69.8	108.2	1,081.8	11,942	11,770	5,686	3,583	2,690	2,102	24,160	120,800
22	71.6	108.6	1,085.7	11,419	11,290	5,572	3,426	2,572	2,021	23,040	115,200
23	73.4	109.0	1,089.6	10,922	10,840	5,460	3,277	2,460	1,944	21,980	109,900
24	75.2	109.3	1,093.5	10,450	10,410	5,348	3,135	2,353	1,870	20,960	104,800
25	77	109.7	1,097.4	**10,000**	**10,000**	**5,238**	**3,000**	**2,252**	**1,800**	**20,000**	**100,000**
26	78.8	110.1	1,101.2	9,572	9,602	5,127	2,871.6	2,155.6	1,732.3	19,090	95,480
27	80.6	110.5	1,105.1	9,165	9,226	5,018	2,749.5	2,063.9	1,667.7	18,226	91,160

Sense the *difference*



"At last, CO2 sensors that look great and deliver on performance"

The "Triple Threat Combo": CO2, RH, and temp in a compact unit

The new IAQ standard

CO2, Humidity, and Temperature in a single compact unit

Senva has packed a high accruacy NDIR, integrated humidity IC, and a full complement of temperature sensing into a stylish housing. Now you can offer a total indoor air quality solution in one easy to install unit.

Introducing the worlds only slimline CO2

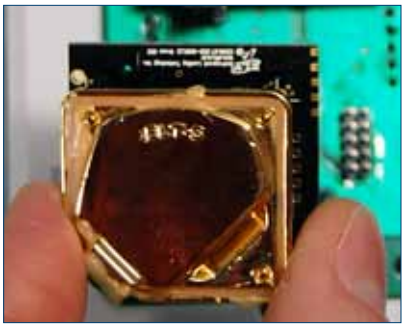
This flush mount design fits in any single-gang box and sets the new standard for attractive *and* functional CO2 sensing. It's recessed to complement the most demanding architectural standards; it also deters tampering. Available in most popular wall plate colors, the CO2R is proof that beauty is more than skin deep.

Recessed wall mount for great looks and tamper resistance in schools

Literature Revision Date 16042012

SENVA SENSORS

Indoor Air Quality CO_2



Field replaceable CO2 NDIR

Intuitive installation

Thanks to an Integrated display with pushbutton menu, it's easy to select your scale to 2000 or 5000 ppm. You can select automatic daily calibration or manual calibration to a known source. There's even a provision to offset the reading. For compatbility, 4-20mA and jumper selectable 0-5v or 0-10v outputs are provided.

LCD with menu for easy set-up and parameter sections

Gold-plated reliability

Our non-dispersive infrared sensing element (NDIR) features a gold-plated optical chamber for high performance--accurate to +/- 30 parts per million to be exact. And while you'll probably never have to change it out, it is field replaceable in case you are in a caustic environment or if the IR source should falter. And thanks to our auto calibration mode, the sensor will adapt to the environment, ensuring effects of long term drift are negligible.

Integrated set point relay for local demand ventilation

There's also a high reliability solid-state set point relay that comes standard--and the menu lets you dial in your on/off trip points for local demand ventilation applications. It's ideal for interfacing with package unit dampers.

Duct CO2, RH, Temp Combo

Triple Threat IAQ Combo Unit

CO2/Humidity/Temperature

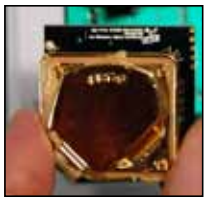
Multi-Transmitter temperature combinations

Integrated setpoint relay | set-point| override options

The solution for energy savings and IAQ

- High accuracy NDIR CO2, sensor on chip humidity and temperature transmitter in a compact, versatile package
- Options for complete control including set-point and override.
- LCD display for easy set up of all parameters (cover included to conceal LCD if desired)

- **Easy to install and maintain**
- Integrated display and pushbutton menus for field selectable scale, calibration, and operational modes
- 0-10v outputs standard. Thermistor outputs for temperature optional
- Integrated high-reliability solid-state CO2 level set-point relay is ideal for direct control applications; easy to set up thanks to LCD



Field replaceable gold-plated CO2 NDIR

High performance NDIR CO2

- Non-dispersive infrared sensing element (NDIR)
- Gold-plated optical chamber for high performance and endurance
- Field replaceable CO2 sensor

Superior RH sensing

- On-board temperature compensation for RH. Excellent measurement accuracy; high repeatability and offset stability.
- Sensor on chip for eliminating noise-susceptible solder-points for small analog signals.
- State of the art testing facilities. Certification options from 1-point, 2 -point, and 8 -point (NIST traceability--consult factory)

LCD cover included

Proudly Made in the U.S.A.

Literature Revision Date 16042012

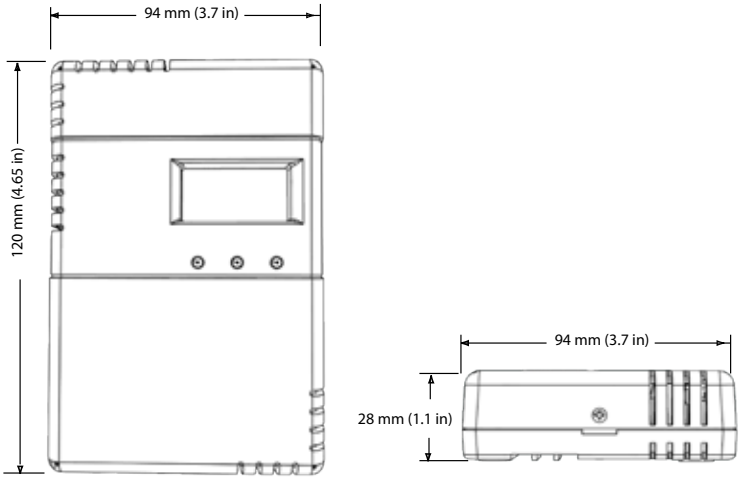
SENVA SENSORS

p. 866-660-8864 • f. 503-296-2529

SPECIFICATIONS

Power Supply		12-30vdc/24vac(1), 100mA max.
Analog Outputs	CO2 and RH Analogs	0-10v
	CO2 Output scaling	0 - 2000 or 0 - 5000 ppm (selectable)
	Temperature	0-10v standard, thermistor values optional
CO2 Set point	Programmable set point	Solid-state output, 1A @ 30VAC/DC, N.O.
CO2	Type	Non-dispersive Infrared (NDIR)
	Accuracy	+/-2% full scale to 1400 ppm. (5000 ppm f.s.)
	Response time	60 seconds to 90% reading
	Output update rate	3 seconds
Relative Humidity	Type	Dual RH Temp integrated circuit
	Accuracy	2% models, +/-2% over 10 to 90%RH range 3% models, +/-3% over 20 to 80%RH range
	Resolution	0.05%RH
	Hysteresis	+/-1%RH
	Non-Linearity	factory linearized <1%RH
	Temperature coefficient	fully compensated on-board
	Response time (2)	30s
	Output update rate	2s
	Operating range	0 to 100%RH
	Long term drift	<0.5%RH per year
	Operating conditions (3)	-20° C to 60° C @ RH>90%
Temperature (*transmitter specifications; thermistors optional*)	Accuracy	2% models, <+/-1° C; 0.5° C typ @ 25° C
	Resolution	0.01° C
	Repeatability	+/-0.1° C
	Response time (2)	30s
	Output update rate	2s
	Operating range	-40° C to 120° C
LCD Menu Setup Parameters	*SPH*, Setpoint, Hi (On)	500ppm to full-scale (700ppm default)
	SPL, Setpoint, Lo (Off)	400ppm to full-scale-50 (600ppm default)
	SCL, Scaling	0-2000ppm or 0-5000ppm (2000ppm default)
	ADJ, Adjustment	Offset adjustment +/-250ppm (0 default)
	CAL, Calibration mode	Automatic mode ON or OFF (default=ON)
	RUN, Run mode	Displays CO2 in ppm
Operating Environment	Temperature	32 to 122F (0 to 50C)
	Humidity	0-95% non-condensing
Enclosure	Material	ABS Plastic
	Dimensions	

(1) One side of transformer , secondary is connected to signal common. Dedicated transformer is recommended.
(2) Time for reaching 63% of reading at 25° C and 1 m/s airflow
(3) Long term exposures to conditions outside normal range at high humidity may temporarily offset the RH reading (+3%RH after 60 hours.)



ORDERING

CHTWL - ☐☐☐☐☐

Sensor outputs
A = CO2
B = CO2/ Temp
C = CO2/Temp/RH

Themistor
A = None
C = 100Pt (385)
D = 1000Pt (385)
E = 10k type 2
F = 10k type 3
G = 10k w/11k
H = 3k
I = 2k2
J = 1k8
K = 20k

Color
1 = White
2 = Ivory
3 = Brown
4 = Light Almond
5 = Almond
6 = Black
7 = Gray

Override
A=None
B=Push Button

Set Point
A=None
B= 1K
C=5K
D=10K
E=50K
F=100K

Triple Threat IAQ Combo Unit

CO2/Humidity/Temperature

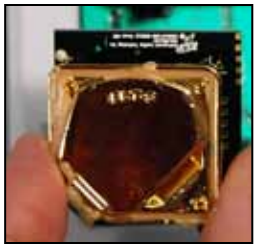
Integrated CO2 setpoint relay | LCD with menu

The total solution for energy savings and IAQ

- High accuracy NDIR CO2, sensor on chip humidity and temperature transmitter in a compact, versatile package
- LCD display for easy set up of all parameters

Easy to install

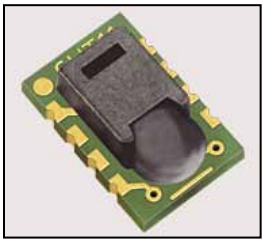
- Integrated display and pushbutton menus for field selectable scale, calibration, and operational modes
- 0-10v outputs standard.



Field replaceable gold-plated CO2 NDIR

High performance NDIR CO2

- Non-dispersive infrared sensing element (NDIR)
- Gold-plated optical chamber for high performance and endurance
- Field replaceable CO2 sensor
- Integrated high-reliability solid-state set-point relay is ideal for direct control applications; easy to set up thanks to LCD



Robust integrated humidity sensing

Superior RH sensing

- On-board temperature compensation for RH. Excellent measurement accuracy; high repeatability and offset stability.
- Sensor on chip for eliminating noise-susceptible solder-points for small analog signals.
- State of the art testing facilities. Certification options from 1-point, 2 -point, and 8 -point (NIST traceability--consult factory)

High accuracy for improved system performance

- Selectable auto-calibration mode returns sensor to baseline values
- +/-2% full scale to 1400 ppm. (5000 ppm f.s.)

Proudly Made in the U.S.A.

Literature Revision Date 16042012

SENVA SENSORS

p. 866-660-8864 • f. 503-296-2529

SPECIFICATIONS

Power Supply		12-30vdc/24vac, 100mA max.
Outputs	CO2, RH, and Temperature Transmitters	3 wire 0-5/0-10v [2] (jumper selectable)
CO2	Type	Non-dispersive Infrared (NDIR)
	Accuracy	+/-2% full scale to 1400 ppm. (5000 ppm f.s.)
	Response time	60 seconds to 90% reading
	Output update rate	3 seconds
	Output scaling	0-2000 ppm (default), 0-5000 ppm (option)
	Programmable set point	Solid-state output, 1A @ 30VAC/DC, N.O.
Relative Humidity	Type	Dual RH Temp integrated circuit
	Accuracy	+/-2% over 10 to 90%RH range
	Resolution	0.05%RH
	Hysteresis	+/-1%RH
	Non-Linearity	factory linearized <1%RH
	Temperature coefficient	fully compensated on-board
	Response time [3]	30s
	Output update rate	2s
	Operating range	0 to 100%RH
	Long term drift	<0.5%RH per year
	Operating conditions [4]	-20° C to 60° C @ RH>90% -20° C to 80° C @ RH=50%
Temperature (*transmitter specifications; thermistors optional*)	Scaling	32 to 122° F (0-50° C)
	Accuracy (-20 to 70° C range)	<+/-1° C; 0.5° C typ @ 25° C
	Resolution	0.01° C
	Repeatability	+/-0.1° C
	Response time [3]	30s
	Output update rate	2s
	Operating range	-40° C to 120° C (sensor only)
LCD Menu Setup Parameters	*SPH*, Setpoint, Hi (On) point)	500ppm to full-scale (700ppm default)
	SPL, Setpoint, Lo (Off) point)	400ppm to full-scale-50 (600ppm default)
	SCL, Scaling	0-2000ppm or 0-5000ppm (2000ppm default)
	ADJ, Adjustment	Offset adjustment +/-250ppm (0 default)
	CAL, Calibration mode	Automatic mode ON or OFF (default=ON)
	RUN, Run mode	Displays CO2 in ppm
Operating Environment	Temperature	32 to 122F (0 to 50C)
	Humidity	0-95% non-condensing
Enclosure	Material	ABS Plastic
	Dimensions	4.85' h x 3.25"w x 1.19"d

(1) One side of transformer , secondary is connected to signal common. Dedicated transformer is recommended.
(2) 15-30 vdc/24vac power supply voltage required for 10v output
(3) Time for reaching 63% of reading at 25° C and 1 m/s airflow
(4) Long term exposures to conditions outside normal range at high humidity may temporarily offset the RH reading (+3%RH after 60 hours.)

ORDERING

- ☐ ☐

Sensor outputs

C = CO2/Temp/RH (2%)

Thermistor Addition

A = None

C = 100Pt (385)

D = 1000Pt (385)

E = 10k type 2

F = 10k type 3

G = 10k w/11k shunt

H = 3k

I = 2k2

J = 1k8

K = 20k

E=50K

F=100K

Low Profile with LCD

CO2 Transmitter/switch

0 -2000/0 -5000 ppm | 4-20mA; 0-5/10VDC
Integrated setpoint relay

CO2RL

High performance in an elegant design

- The industry's best looking CO2 sensor meets demanding architectural standards. Fits in any standard j-box or low voltage bracket.
- No exposed screws; unobtrusive tamper resistant design
- Popular colors to match any decor

Easy to install and maintain

- Integrated display and pushbutton menus for field selectable scale, calibration, and operational modes
- Dual 4-20mA and 0-5v/0-10v output (jumper selectable)
- Integrated high-reliability solid-state set-point relay is ideal for direct control applications; easy to set up thanks to LCD

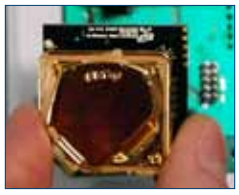
LCD simplifies install

High reliability reduces call backs

- Non-dispersive infrared sensing element (NDIR)
- Gold-plated optical chamber for high performance and endurance
- Field replaceable CO2 sensor
- Industry leading 7-year warranty on electronics; NDIR module 3 years

High accuracy for improved system performance

- Selectable auto-calibration mode returns sensor to baseline values
- +/-2% full scale to 1400 ppm. (5000 ppm f.s.)



Field replaceable gold-plated CO2 NDIR

Proudly Made in the U.S.A.

Literature Revision Date 16042012

p. 866-660-8864 • f. 503-296-2529

SPECIFICATIONS

Power Supply		12-30vdc/24vac(1), 100mA max.
Analog Outputs	Dual Analog	3-wire 4-20mA and 0-5v/0-10v (2) (jumper)
	Output scaling	0 - 2000 or 0 - 5000 ppm (selectable)
Digital Setpoint Output	Programmable	Solid-state, 1A @ 30VAC/DC, N.O.
Sensor Performance	Type	Non-dispersive Infrared (NDIR)
	Accuracy	+/-2% full scale to 1400 ppm. (5000 ppm f.s.)
	Response time	60 seconds to 90% reading
	Output update rate	3 seconds
LCD Menu Setup Parameters	SPH, Setpoint, Hi (On point)	500ppm to full-scale (700ppm default)
	SPL, Setpoint, Lo (Off point)	400ppm to full-scale-50 (600ppm default)
	SCL, Scaling	0-2000ppm or 0-5000ppm (2000ppm default)
	ADJ, Adjustment	Offset adjustment +/-250ppm (0 default)
	CAL, Calibration mode	Automatic mode ON or OFF (default=ON)
	RUN, Run mode	Displays CO2 in ppm
Operating Environment	Temperature	32 to 122F (0 to 50C)
	Humidity	0-95% non-condensing
Enclosure	Material	ABS Plastic
	Dimensions (fits low-voltage bracket)	4.7"h x 2.9"w x 1.24"d (0.48" wall profle)

(1) One side of transformer secondary is connected to signal common. Dedicated transformer is recommended.
(2) 15vdc power supply voltage required for 10 volt output.

ORDERING

CO2RL - ☐

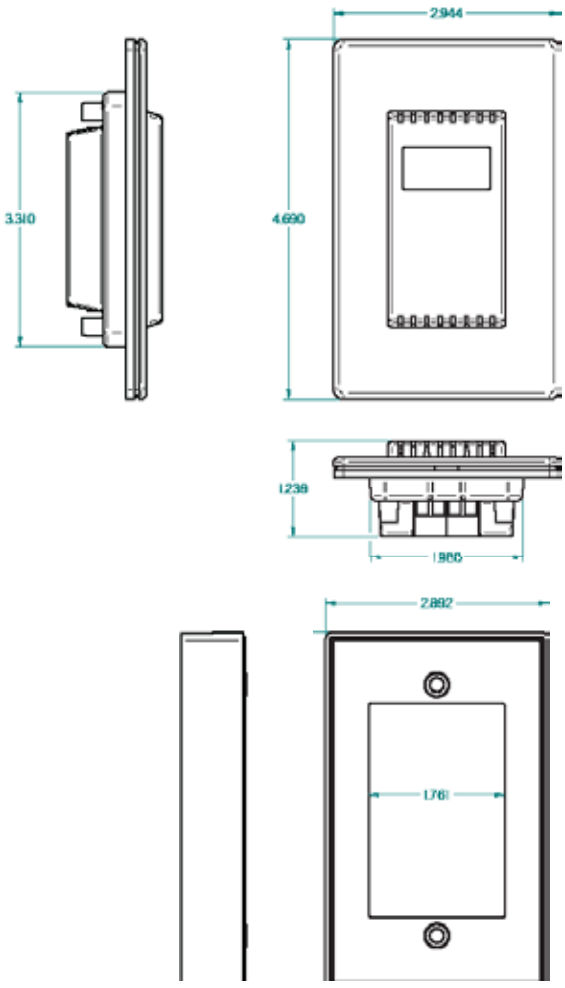
Color

1 = White
2 = Ivory
3 = Brown
4 = Light Almond
5 = Almond
6 = Black
7 = Gray

Replacement Sensor Elements

CO2-5 Replacement NDIR element

Optional # Trim Ring for surfact mount applications or mis-sized j-boxes



Duct Mount with LCD

CO2 Transmitter/switch

0 -2000/0 -5000 ppm | 4-20mA; 0-5/10VDC
Integrated setpoint relay| Temp options

Duct mount CO2 with LCD for easy operation

- Integrated display and pushbutton menus for field selectable scale, calibration, and operational modes
- Dual 4-20mA and 0-5v/0-10v output (jumper selectable)
- Integrated high-reliability solid-state set-point relay is ideal for direct control applications; easy to set up thanks to LCD

Display simplifies install

High reliability reduces call backs

- Non-dispersive infrared sensing element (NDIR)
- Gold-plated optical chamber for high performance and endurance
- Field replaceable CO2 sensor
- Industry leading 7-year warranty on electronics; NDIR module 3 years

High accuracy for improved system performance

- Selectable auto-calibration mode returns sensor to baseline values
- +/-2% full scale to 1400 ppm. (5000 ppm f.s.)

Proudly Made in the U.S.A.

Literature Revision Date 16042012

p. 866-660-8864 • f. 503-296-2529

SPECIFICATIONS

Power Supply		12-30vdc/24vac(1), 100mA max.
Analog Outputs	Dual Analog	3-wire 4-20mA and 0-5v/0-10v (2) (jumper)
	Output scaling	0 - 2000 or 0 - 5000 ppm (selectable)
Digital Setpoint Output	Programmable	Solid-state, 1A @ 30VAC/DC, N.O.
Sensor Performance	Type	Non-dispersive Infrared (NDIR)
	Accuracy	+/-2% full scale to 1400 ppm. (5000 ppm f.s.)
	Response time	60 seconds to 90% reading
	Output update rate	3 seconds
LCD Menu Setup Parameters	SPH, Setpoint, Hi (On point)	500ppm to full-scale (700ppm default)
	SPL, Setpoint, Lo (Off point)	400ppm to full-scale-50 (600ppm default)
	SCL, Scaling	0-2000ppm or 0-5000ppm (2000ppm default)
	ADJ, Adjustment	Offset adjustment +/-250ppm (0 default)
	CAL, Calibration mode	Automatic mode ON or OFF (default=ON)
	RUN, Run mode	Displays CO2 in ppm
Operating Environment	Temperature	32 to 122F (0 to 50C)
	Humidity	0-95% non-condensing
Enclosure	Material	Polycarbonate; aluminum tube
	Dimensions	3.7"h x 3.7"w x 2.24"d (+8" probe)

(1) One side of transformer secondary is connected to signal common. Dedicated transformer is recommended.
(2) 15vdc power supply voltage required for 10 volt output.

ORDERING

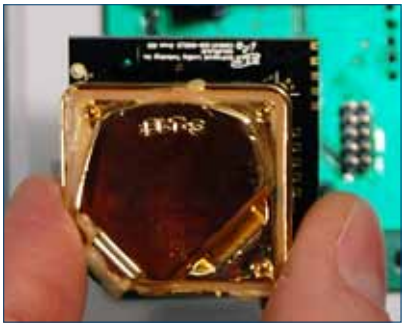
CO2D- ☐

Temperature

A = None
C = 100Pt (385)
D = 1000Pt (385)
E = 10k type 2
F= 10k type 3
G = 10k type 3 w/11k shunt
H = 3k
I = 2k2
J = 1k8
K = 20k
L = 100k

Replacement Sensor Elements

CO2-5 Replacement NDIR element



Field replaceable gold-plated CO2 NDIR

Outside Air with LCD

CO2 Transmitter/switch

0 -2000/0 -5000 ppm | 4-20mA; 0-5/10VDC

Integrated setpoint relay

Outside air mount CO2 with LCD for ease of use

- Ensure energy savings by controlling conditioning minimum amount outside air.
- Integrated display and pushbutton menus for field selectable scale, calibration, and operational modes
- Dual 4-20mA and 0-5v/0-10v output (jumper selectable)
- Integrated high-reliability solid-state set-point relay is ideal for direct control applications; easy to set up thanks to LCD

Display simplifies install

High reliability reduces call backs

- Non-dispersive infrared sensing element (NDIR)
- Gold-plated optical chamber for high performance and endurance
- Field replaceable CO2 sensor
- Industry leading 7-year warranty on electronics; NDIR module 3 years

High accuracy for improved system performance

- Selectable auto-calibration mode returns sensor to baseline values
- +/-2% full scale to 1400 ppm. (5000 ppm f.s.)
- Internal heater for reliable outdoor operation

Proudly Made in the U.S.A.

Literature Revision Date 16042012

p. 866-660-8864 • f. 503-296-2529

SPECIFICATIONS

Power Supply		12-30vdc/24vac(1), 100mA max.
Analog Outputs	Dual Analog	3-wire 4-20mA and 0-5v/0-10v (2) (jumper)
	Output scaling	0 - 2000 or 0 - 5000 ppm (selectable)
Digital Setpoint Output	Programmable	Solid-state, 1A @ 30VAC/DC, N.O.
Sensor Performance	Type	Non-dispersive Infrared (NDIR)
	Accuracy	+/-2% full scale to 1400 ppm. (5000 ppm f.s.)
	Response time	60 seconds to 90% reading
	Output update rate	3 seconds
LCD Menu Setup Parameters	SPH, Setpoint, Hi (On point)	500ppm to full-scale (700ppm default)
	SPL, Setpoint, Lo (Off point)	400ppm to full-scale-50 (600ppm default)
	SCL, Scaling	0-2000ppm or 0-5000ppm (2000ppm default)
	ADJ, Adjustment	Offset adjustment +/-250ppm (0 default)
	CAL, Calibration mode	Automatic mode ON or OFF (default=ON)
	RUN, Run mode	Displays CO2 in ppm
Operating Environment	Temperature	0 to 122F (-18 to 50C)
	Humidity	0-95% non-condensing
Enclosure	Material	Polycarbonate; aluminum tube
	Dimensions	3.7"h x 3.7"w x 2.24"d

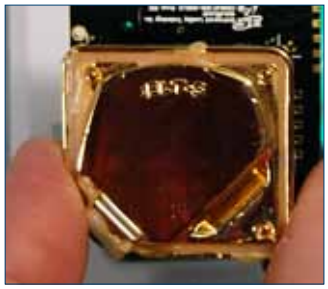
(1) One side of transformer secondary is connected to signal common. Dedicated transformer is recommended.
(2) 15vdc power supply voltage required for 10 volt output.

ORDERING

CO2OA

Replacement Sensor Elements

CO2-5 Replacement NDIR element



Field replaceable gold-plated CO2 NDIR

High reliability

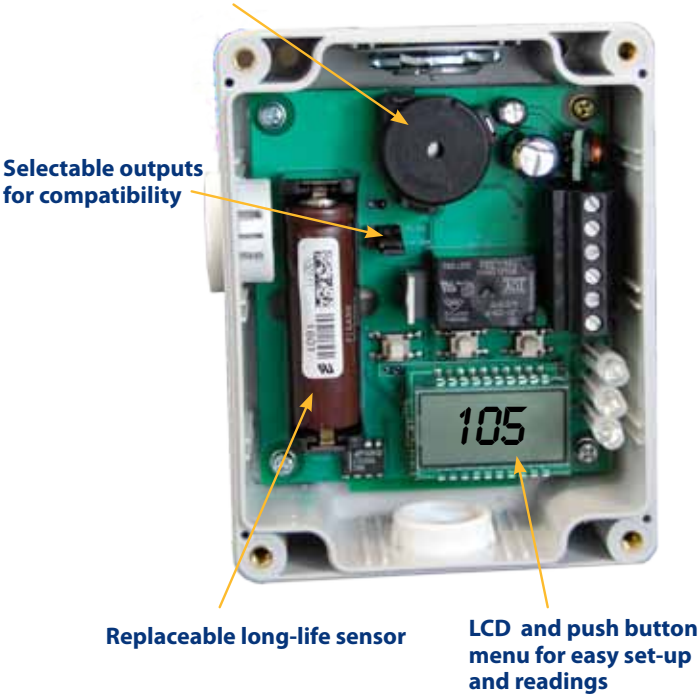
Carbon Monoxide Transmitter/switch

0 -100/0 -200 ppm | 4-20mA; 0-5/10VDC
Integrated setpoint relay

CO-EC-W
Industrial Wall Mount

CO-EC-D
Duct Mount

Long-life carbon monoxide sensing



- Ensure adequate air flow in parking lot garages
- Integrated display and pushbutton menus for field selectable scale, calibration, and operational modes
- Dual 4-20mA and 0-5v/0-10v output (jumper selectable)
- Integrated high-reliability solid-state set-point relay is ideal for direct control applications; easy to set up thanks to LCD
- Conduit ready construction

High reliability reduces call backs

- UL2034 recognized electrochemical sensor element
- 5-year, long life sensor – no consumption of sensor active materials or electrodes

High accuracy for improved system performance

- Excellent selectivity to carbon monoxide – no false alarms +/-10% full scale
- High sensitivity....accurately measure low concentrations as typically found in parking garages
- Repeatability to within +/-5%
- Fast response time meets UL requirements

Proudly Made in the U.S.A.

Literature Revision Date 16042012

p. 866-660-8864 • f. 503-296-2529

SPECIFICATIONS

Power Supply		12-30vdc/24vac(1), 100mA max.
Analog Outputs	Dual Analog	3-wire 4-20mA and 0-5v/0-10v (2) (jumper)
	Output scaling	0-100ppm (default), 0-200ppm (jumper)
Digital Setpoint Output	Programmable (10/25/35ppm)	Form A, 5A@30VAC/DC
Display	3-1/2 digit LCD	Indicates CO ppm, setup menu features
LED's	Green, Yellow, Red	Green = Normal, Yellow = Relay, Red = Alarm
Audible exposure alarm	90dB Piezo transducer	30 minutes above 100ppm per UL2034
Sensor Performance	Type	Long-life Electrochemical
	Accuracy	+/-10% full scale to 200ppm
	Response time	60 seconds to 90% reading
	Certifications	UL2034 recognized (sensor only)
	Repeatability	<+/-5%
	Life expectancy	5 years
LCD Menu Setup Parameters	SP, Setpoint (Relay ON	10/25/35ppm selectable (25ppm default)
	FC, Fan cycle time (minimum	1 to 10 minutes (3 minutes default)
	CAL, Calibration	Sensor calibration value (printed on sensor)
	RUN, Run mode	Displays CO in ppm
Operating Environment	Temperature, continous	-10 to 60°C
	Temperature, intermittent	-40 to 70°C
	Humidity	5-99% RH, non-condensing
Enclosure	Material	Polycarbonate
	Dimensions	4.53"h x 3.55"w x 2.3"d

(1) One side of transformer secondary is connected to signal common. Dedicated transformer is recommended.
(2) 15vdc power supply voltage required for 10 volt output.

ORDERING

CO-EC- ☐

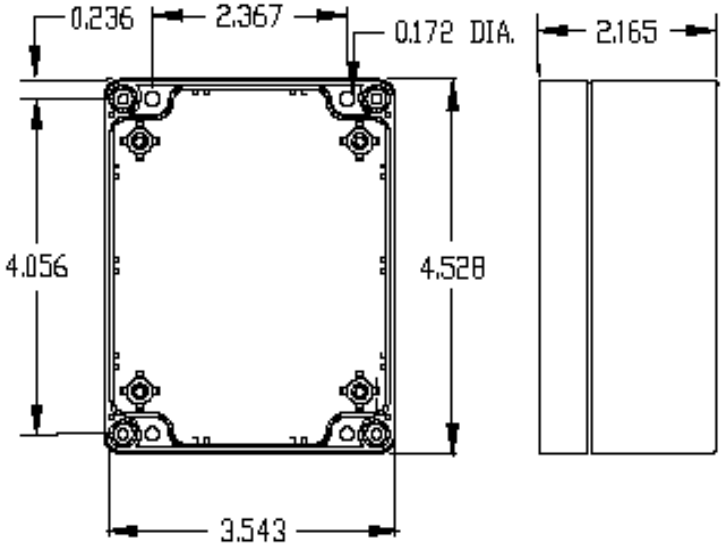
Mounting Style

D = Duct
W = Wall

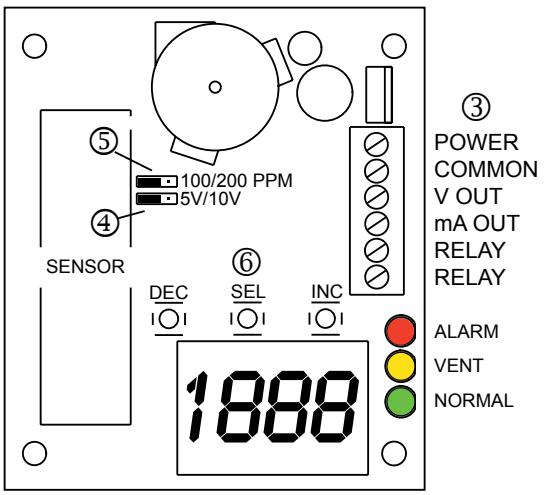
Replacement Sensor Elements

CO-EC-SEN Replacement CO element

DIMENSIONS



TERMINAL CONNECTIONS



Water Detector

9-30VAC/DC Power | Isolated NC output

Ideal for spot leak detection

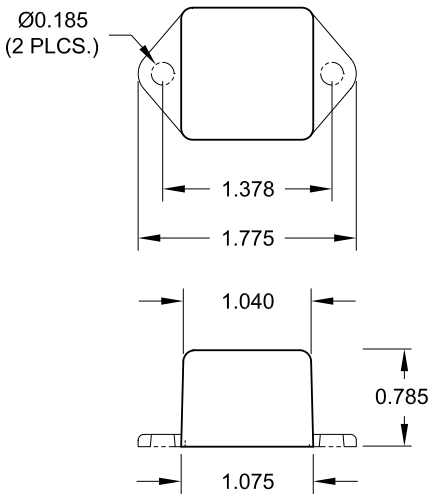
- Simple installation – screw, or ram-set to floor or drip pan
- Simple operation – no maintenance
- Solid-state design...no moving parts to fail
- Fully potted for water-proofing...maximum durability

SPECIFICATIONS

Power Supply	9-30VAC/DC, 10mA Max.
Output	N.C. (Form B) Solid State Relay,
Output Rating	30VAC/DC, 0.1A (100mA) Max.
Sensing	Gold plated electrodes
Operating Environment	-20 to 80C

ORDERING

WD-1	Water Detector, 9-30 VAC/DC



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p. 866-660-8864 • f. 503-296-2529

Room Display

High Visibility LED Display

Accepts 0-10V input | Use for humidity, temperature, pressure
Labels provided for common media

At last...super large displays for your RH, Temperature, and Pressure applications!

Applications

- Provides users with valuable visual verification of humidity and/or temperature status
- Process control feedback , including pharmaceutical, food, and coating applications

Easy to install and maintain

- Fits standard single or double gang boxes (depending on version)
- Accepts 0-10V input signal
- Pre-cut vinyl labels provided with temperature, pressure, humidity for each display ordered.
- Factory scaled; user adjustalbe zero and span

Field adjustable for demanding applications

You can adjust the scaling--both zero and span, for any application requirement.

Literature Revision Date 16042012

p. 866-660-8864 • f. 503-296-2529

SPECIFICATIONS

Power supply	12-30vdc/24vac (1), 40mA max. (per display)
Signal input range	0-10vdc
Scaling	Factory set for customer application
	Field adjustable zero and span
Display type	3-1/2 digit LED; Red, Green, or Blue
Accuracy	+/-1% F.S. +/- 2 counts
Sampling Rate	3 / second
Input Impedance	100k ohm
Operating Tempera-	32-122oF (0-50oC)

(1) One side of transformer , secondary is connected to signal common. Dedicated transformer is recommended.

ORDERING

RD- ☐☐☐

Display Type

1 = Single Gang
2 = Double Gang

Display #1 LED Color

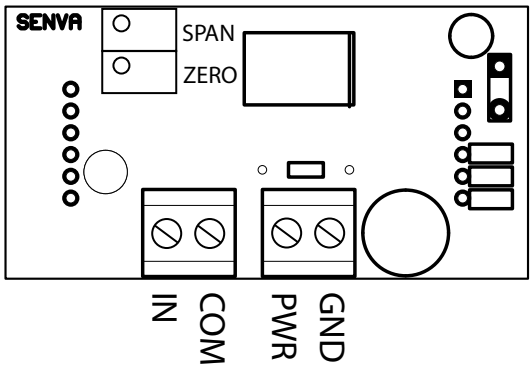
A = Blue
B = Green
C = Red

Display #2 LED Color

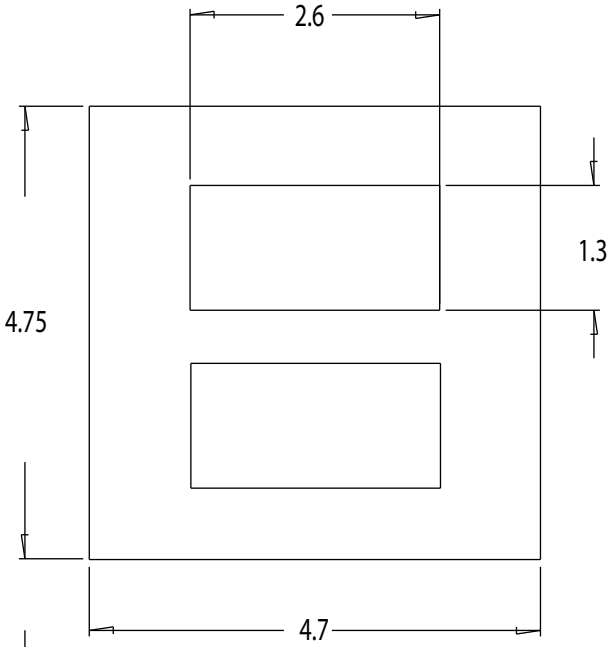
A = Blue
B = Green
C = Red
D = None

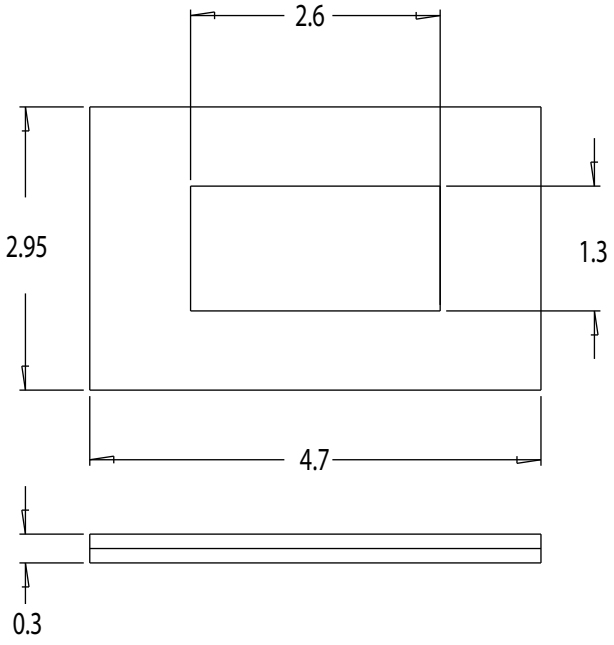
Consult factory for custom labeling and calibrations

WIRING (per display)



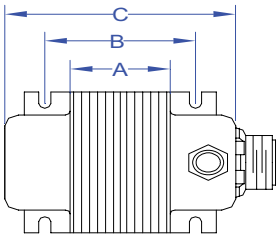
DIMENSIONS

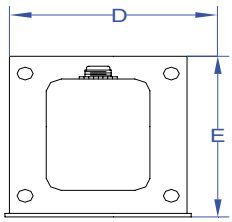


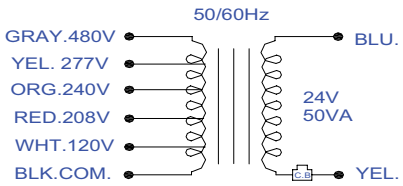


Product improvement is a continual process at Senva; Product features and specifications subject to change without notice.
Consult installation instructions prior to installing--this literature for informational purposes, but does not constitute installation reference..

SENVA Class 2 Transformers







UNIT: Inch±0.04

Model#	VA	PRI(VAC)	HZ	SEC	Over Current Protection	UL MARK	CE MARK	TYPE	A	B	C	D	E
5051MWCB	50	120/208/240/277/480	50/60	24	Circuit Breaker			A.B.C	1.26"	1.91"	3.45"	2.5"	3.06"
7551MWCB	75	120/208/240/277/480	50/60	24	Circuit Breaker			A.B.C	1.67"	2.31"	3.87"	2.5"	3.06"
10051MWCB	96	120/208/240/277/480	50/60	24	Circuit Breaker			A.B.C	2.06"	2.69"	4.25"	2.5"	3.06"

UL Component Recognized, U.S. and Canada

CE: Conformite Europende

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p. 866-660-8864 • f. 503-296-2529

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By purchasing Senva products, buyer agrees that all of the following terms and conditions apply to every purchase and supersede any conflicting terms in any purchase order or acknowledgement:

LIMITED WARRANTY:
SENVA IS PROVIDING THIS WARRANTY IN LIEU OF ALL OTHER EXPRESSED OR IMPLIED WARRANTIES, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THIS WARRANTY IS BUYER'S EXCLUSIVE REMEDY FOR ALL CLAIMS AGAINST SENVA. SENVA SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES. SENVA TOTAL LIABILITY FOR ALL CLAIMS SHALL BE LIMITED TO THE PRICE PAID FOR ITS PRODUCT.

Senva promises buyer that any standard product manufactured by Senva shall be free from material defects in design, material, or manufacturing for a period of seven (7) years from the manufacture date; provided, however, that the warranty shall not extend to ordinary wear and tear, or to normally replaceable components (e.g., batteries and humidity sensor elements). During the warranty period, Senva may repair or replace (in its sole discretion) any product suffering from a warranty defect and returned freight prepaid by buyer, with no charge to buyer for any warranty repair or replacement. The warranty shall remain in full force and effect for said 7 year period, provided that the product: (1) was installed, operated, and maintained properly; (2) has not been abused or misused; (3) has not been repaired, altered, or modified outside of Senva authorized facilities; This warranty provides specific legal rights that may be varied by local laws.

SPECIAL ORDERS:

Senva is committed to providing responsive customer service. For products designed and built to customer specifica tions, please consult with Senva.

RETURNS:

No product may be returned without a returned material authorization number assigned by Senva. All warranty claims must be delivered to Senva, attention customer service. Standard products in unopened condition (except evaluation orders) can be returned to stock subject to a charge of 15% for up to 90 days from original shipment. Items opened, or held for 90 to 180 days, may be accepted for return subject to a 30% restocking charge. Products returned for credit must be in saleable condition. If the product has been modified, damaged, or installed, we cannot accept return for credit. Non-standard products (including those having electrical modifications or private labeling) may not be returned, except for warranty service.

PAYMENT:

Payment terms are stated on each invoice. Buyer agrees to pay finance charges of 18% per annum on any past due amount. Buyer further agrees to pay any court costs, collections fees or attorney fees if legal action must be taken on any unpaid balance. For disputes, the prevailing party shall receive its costs and attorney fees (including costs and fee incurred at trial or an appeal). All legal rights shall be governed by Oregon law, excluding principles of conflict of law. Buyer consents to the jurisdiction of Oregon courts and agrees that such courts shall have personal jurisdiction over buyer. Venue shall be in Multnomah County, Oregon. Product specifi cations and pricing subject to change without any notice.

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