SENVA

SUPERIOR BUILDING AUTOMATION SENSORS

Higher reliability

Faster installation

Superior accuracy

Sense the difference

Higher Reliability Faster Installation Superior Accuracy

Sense the Difference

SAME DAY SHIPPING
Place your order prior to 3 pm PST, and it's on the way

EASY TO ORDER 866-660-8864
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.

LIVE TECHNICAL SUPPORT
The industry's best!

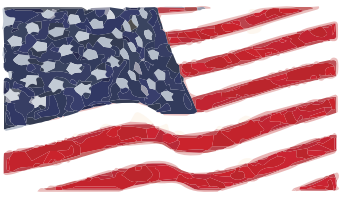
CUSTOM ORDERS
We go the extra mile—Have a special requirement? Just ask!

ONLINE ORDERING
Our online web store lets you manage all your Senva business.

Proudly Made in Beaverton, Oregon

Senva Production Facility - Beaverton, OR

Senva current sensor assembly and testing line



PROUDLY MADE IN USA

This classification of manufacturing is our promise that our products (except PR series relays, which we're moving to USA in 2022) are designed and assembled from top to bottom in our Beaverton, OR facility. Senva sensors are built with a commitment to superior quality that Senva has been known for since 2008.

TO ORDER

Ph: 866-660-8864
Fax: 503-296-2529
sales@senvainc.com

FREE SHIPPING

via UPS Ground on your first order OR any qualifying* order placed online at senvainc.com

*Online orders of $700 or more ship free in the contiguous 48 states. Online orders of $750 or more ship free to Alaska, Hawaii and Canada.

ISO Certification

As part of enhancing our management systems with the collaboration of our entire staff and Orion Registrar, Inc., we are pleased to announce our ISO 9001:2015 registration.

To view our certificate, please visit our website www.senvainc.com under the documents section or email our team at sales@senvainc.com

Warning: *This catalog is designed for reference only. Refer to installation instructions that accompany product and heed all safety instructions. Never rely on current status LED to indicate presence of power. Product improvement is a continuing process at Senva. Changes may occur to products without prior notice.*

Core Products

AUTOSET VFD/CV

Now with super low turn on for smaller VFDs. Self induced power for simplified wiring. Works on constant volume applications, too.

ECMSET

Fine turn on adjustment for run status on VFDs without false trips from stand-by ECM current. Prevents costly call backs.

PILOT RELAYS

Featuring tamper-proof hand-off-auto switch cover, current run status option, and compact 20A versions

UNIVERSAL PRESSURE

Innovative duct/remote probe coupled with selectable ranges, 0-5/10VDC and 4-20mA loop and 3-wire outputs, din/duct/ conduit ready!

NIST PRESSURE

Looking for the best value in pressure; look no further. Now featuring NIST high accuracy options!

PRO PRESSURE

Single diaphragm element provides 0.25% accuracy and rugged IP65 durability.

TOXIC GAS SENSING

Raising the bar with replaceable digital sensing elements for CO, NO2, and much more. New metal enclosure is industries toughest!

ENERGY METER

The EMX Advanced is the most user-friendly and quick installation True RMS energy meter on the market. Its line powered with a color OLED screen and data-rich user interface making setup as easy as L1, L2, L3.

MULTI-CIRCUIT/BRANCH CIRCUIT

The versatile Core Module TM system is a single monitoring solution with peripherals optimized for Branch Circuit and Multi-Circuit Monitoring applications designed to reduce the cost and complexity associated with legacy multi-circuit monitors.

Table of Contents

Humidity

Temp Recessed Value

Current Sensing

Analog Current Sensing

Energy Measurement

Relays

Remote LED Displays

WD Series Water Detection

IoT Solutions

P4 Value Series

P4 Value Dry Pressure

Range: 0.1 to 25" W.C.
0-5VDC/10VDC or 4-20 mA loop &3-wire powered versions
LCD option & LED status indication
Remote & manual zero function
PATENTED DESIGN

DESCRIPTION

The P4 dry media pressure transmitter features fixed ranges optimized for building (zone) pressure, filter measurement, and static duct applications. Innovative static probe integrates with unit or can be mounted remotely for static pressure. PATENTED DESIGN

APPLICATIONS

- Building (zone) pressure
- Filter condition measurement
- Duct/static
- OEM HVAC

Probe transforms for duct or remote applications. Made in USA. 7yr warranty!

High density DIN mounting saves valuable panel space

Conduit ready

FEATURES

- Duct, filter, and room pressure with a single unit with RP-6 probe addition
- LCD option for set-up and reference
- Non-position sensitive for easy placement accuracy
- 0-5VDC/10VDC or 4-20 mA loop or 3-wire powered versions
- DIN mount flat or side to conserve panel space
- Conduit cover for 3/8" flex connectors...no extra parts required
- LED: Power heartbeat, auto-zero complete, 110% over pressure; facilitates locating sensor in ductwork

ORDERING

P4 - ☐ - ☐ ☐ ☐ ☐ ☐

Fixed Range*

0005 = 0-0.05 "w.c.	0025Pa = 0-25 Pa
0010 = 0-0.10 "w.c.	0050Pa = 0-50 Pa
0025 = 0-0.25 "w.c.	0100Pa = 0-100 Pa
0050 = 0-0.50 "w.c.	0300Pa = 0-300 Pa
0100 = 0-1.0 "w.c.	0500Pa = 0-500 Pa
0150 = 0-1.5 "w.c.	1000Pa = 0-1000 Pa
0250 = 0-2.5 "w.c.	1600Pa = 0-1600 Pa
0300 = 0-3.0 "w.c.	2500Pa = 0-2500 Pa
0500 = 0-5.0 "w.c.	3000Pa = 0-3000 Pa
0750 = 0-7.5 "w.c.	5000Pa = 0-5000 Pa
1000 = 0-10 "w.c	
1500= 0-15 "w.c.	
2500 = 0-25 "w.c	
5000 = 0-50 "w.c.	

Output

A = 0-5VDC, 3-Wire
B = 0 - 10VDC, 3-Wire
C = 4-20mA, 2-wire
D= 4-20mA, 3-wire

Uni or Bi

U = Uni-directional
B = Bi-directional

Accuracy**

1= 1.00% of range
2 = 0.25% of range NIST
5 = 0.50% of range NIST
N = 1.00% of range NIST

Display

L = LCD
X = No Display

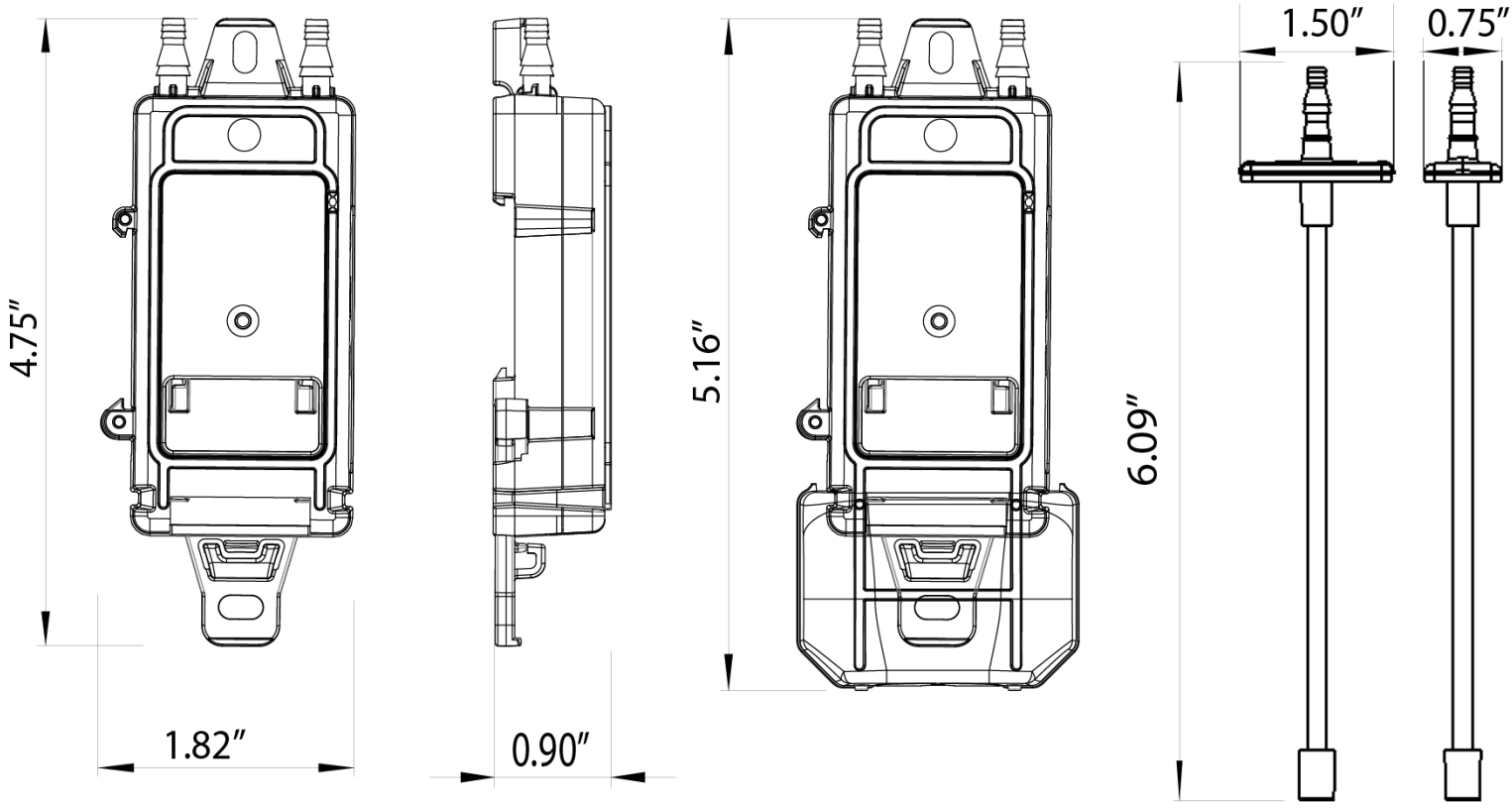
Duct Probe

P = Duct Probe
X = No Probe

Example part number P4-0500-CU2LP is 4-20mA (2-wire), 0.25% accuracy, uni-directional 0-5" WC sensor with LCD display and Duct Probe.

**Other Fixed Ranges Available Upon Request (mmwc, etc), Please Consult Factory*
***0.25% accuracies available n 0.5"w.c. and greater, 0.5% accuracy available on 0.1 "w.c. and greater (or equivalent Pa ranges)*

DIMENSIONS



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SPECIFICATIONS		
Power Supply		12-30VDC/24VAC(1), 30mA max
Output type	Outputs Available	4-20mA loop powered, 4-20 mA 3-wire, 0-5VDC, 0-10VDC
Fixed Ranges	Multiple Fixed Ranges (Inches of w.c. and Pascals)	0.05"w.c. up to 50"w.c. models
		25 Pa up to 5000 Pa models
Operating Temperature	Operating range	-4 to 140F (-20 to 60ºC)
	Compensated range	-4 to 140F (-20 to 60ºC)
Media compatibility		Dry, oil-free air, N2
Sensor Type		MEMS silicon piezoresistive; precision calibrated
Sensor Performance	Accuracy 1.00%	±1.00% of range
	Accuracy 0.25%(2)	±0.25% of range; 7-point NIST calibrated
	Accuracy 0.50%(2)	±0.50% of range; 7-point NIST calibrated
	Zero Tolerance	Included in accuracy specification
	Span Tolerance (3)	±1.00%
	Zero Drift (1 year)	0.004"WC/year max. 0.4% for units >0.5"w.c.
	Auto-zero input	Push-button and contact closure
	Thermal Shift (Zero and Span)	0.02% FSO/ºC (0.01%FSO/ºF) measured from 22ºC (72ºF
	Overpressure	up to 5" models: 41.5"w.c.; 10" models: 133"w.c.;
		25" models: 332"w.c
	Max Static Line Pressure	up to 5" models: 41.5"w.c.; 10" models: 133"w.c.; 25" models: 332"w.c.
	Burst Pressure	up to 5" models: 83"w.c.; 10" models: 166"w.c.; 25" models: 415"w.c.
	Position Sensitivity	Non-position sensitive
Agency	Compliance	CE, RoHS
Enclosure	Flammability	UL94 5VB
	Environmental	NEMA 1

(1) One side of transformer secondary is connected to signal common. Dedicated transformer is recommended.
(2) Accuracy includes non-linearity, hysteresis, and repeatability at 70ºF.
(3) Span tolerance is ±1% ±0.005inWC for models less than 0.10inWC or equivalent pressure range.

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P4 Precision Series

P4 Precision Dry Pressure

Precision calibrated 0.25% and 0.50% accuracy models
Standard industry leading 7-point NIST certification
LCD display option
LED status indication and Zero push button and contact closure
PATENTED DESIGN

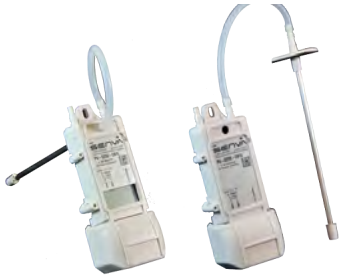
DESCRIPTION

Now with NIST calibrated 0.25% and 0.50% accuracy options, the P4 dry media pressure transmitter features fixed ranges optimized for building (zone) pressure, filter measurement, and static duct applications. Innovative static probe integrates with unit or can be mounted remotely for static pressure. PATENTED DESIGN CALL FOR SPECIAL PRICING

APPLICATIONS

- Building (zone) pressure
- Filter condition measurement
- Duct/static
- OEM HVAC
- Meets 0.25% or 0.5% accuracy specs

Precision NIST calibration



Innovative Probe transforms for duct or remote applications

Conduit Ready

Innovative Probe

High Density DIN mounting saves valuable panel space

Made in USA - 7 year warranty

FEATURES

- 7-point NIST certificate; more accuracy points than any competitor
- 0.25% and 0.50% accuracy versions available from 0.25" to 25" W.C.
- Precision calibrated, temperature compensated, non-positiion-sensitive pressure element
- Versatile duct, filter, or remote mounting; address all with a single unit with RP-6 probe addition
- DIN mount - forward for LCD panel or sideways for panel space savings
- 0-5VDC/10VDC or 4-20 mA loop & 3 wire powered versions
- Conduit cover for 3/8" flex connectors
- LED facilitates locating sensor in ductwork

ORDERING

P4 - ☐ - ☐ ☐ ☐ ☐ ☐

Fixed Range*

0005 = 0-0.05 "w.c. 0025Pa = 0-25 Pa
0010 = 0-0.10 "w.c. 0050Pa = 0-50 Pa
0025 = 0-0.25 "w.c. 0100Pa = 0-100 Pa
0050 = 0-0.50 "w.c. 0300Pa = 0-300 Pa
0100 = 0-1.0 "w.c. 0500Pa = 0-500 Pa
0150 = 0-1.5 "w.c. 1000Pa = 0-1000 Pa
0250 = 0-2.5 "w.c. 1600Pa = 0-1600 Pa
0300 = 0-3.0 "w.c. 2500Pa = 0-2500 Pa
0500 = 0-5.0 "w.c. 3000Pa = 0-3000 Pa
0750 = 0-7.5 "w.c. 5000Pa = 0-5000 Pa
1000 = 0-10 "w.c
1500= 0-15 "w.c.
2500 = 0-25 "w.c
5000 = 0-50 "w.c

Output

A = 0-5VDC, 3-Wire
B = 0 - 10VDC, 3-Wire
C = 4-20mA, 2-wire
D= 4-20mA, 3-wire

Uni or Bi

U = Uni-directional
B = Bi-directional

Accuracy**

1= 1.00% of range
2 = 0.25% of range NIST
5 = 0.50% of range NIST
N = 1.00% of range NIST

Display

L = LCD
X = No Display

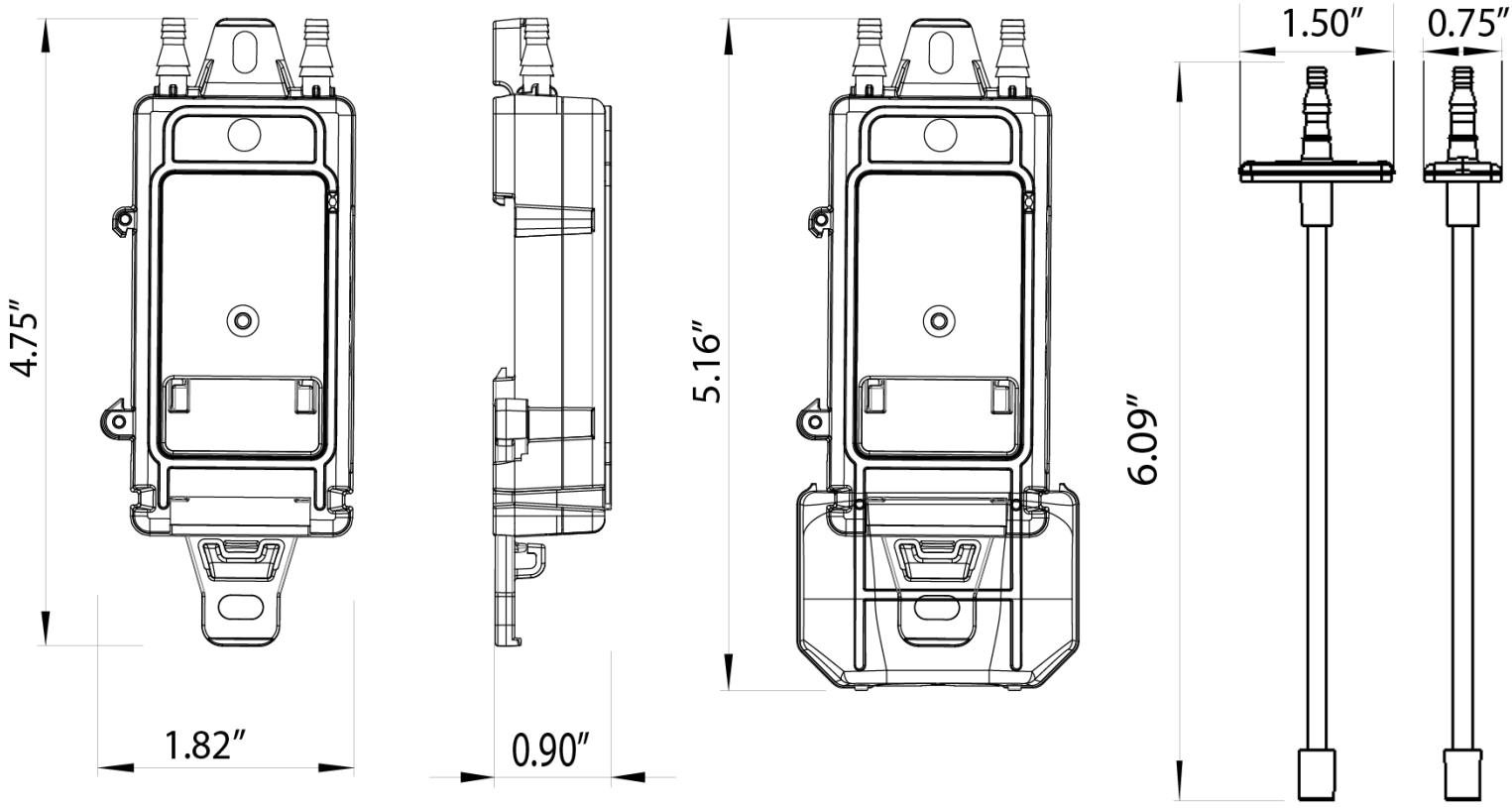
Duct Probe

P = Duct Probe
X = No Probe

Example part number P4-0500-CU2LP is 4-20mA (2-wire), 0.25% accuracy, uni-directional 0-5" WC sensor with LCD display and Duct Probe.

**Other Fixed Ranges Available Upon Request (mmwc, etc), Please Consult Factory*
***0.25% accuracies available n 0.5" w.c. and greater, 0.5% accuracy available on 0.1 "w.c. and greater (or equivalent Pa ranges)*

DIMENSIONS



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SPECIFICATIONS		
Power Supply		12-30VDC/24VAC(1), 30mA max
Output type	Outputs Available	4-20mA loop powered, 4-20 mA 3-wire, 0-5VDC, 0-10VDC
Fixed Ranges	Multiple Fixed Ranges (Inches of w.c. and Pascals)	0.05"w.c. up to 50"w.c. models
		25 Pa up to 5000 Pa models
Operating Temperature	Operating range	-4 to 140F (-20 to 60ºC)
	Compensated range	-4 to 140F (-20 to 60ºC)
Media compatibility		Dry, oil-free air, N2
Sensor Type		MEMS silicon piezoresistive; precision calibrated
Sensor Performance	Accuracy 1.00%	±1.00% of range
	Accuracy 0.25%(2)	±0.25% of range; 7-point NIST calibrated
	Accuracy 0.50%(2)	±0.50% of range; 7-point NIST calibrated
	Zero Tolerance	Included in accuracy specification
	Span Tolerance (3)	±1.00%
	Zero Drift (1 year)	0.004"WC/year max. 0.4% for units >0.5"w.c.
	Auto-zero input	Push-button and contact closure
	Thermal Shift (Zero and Span)	0.02% FSO/ºC (0.01%FSO/ºF) measured from 22ºC (72ºF
	Overpressure	up to 5" models: 41.5"w.c.; 10" models: 133"w.c.;
		25" models: 332"w.c.
	Max Static Line Pressure	up to 5" models: 41.5"w.c.; 10" models: 133"w.c.; 25" models: 332"w.c.
	Burst Pressure	up to 5" models: 83"w.c.; 10" models: 166"w.c.; 25" models: 415"w.c.
	Position Sensitivity	Non-position sensitive
Agency	Compliance	CE, RoHS
Enclosure	Flammability	UL94 5VB
	Environmental	NEMA 1

(1) One side of transformer secondary is connected to signal common. Dedicated transformer is recommended.
(2) Accuracy includes non-linearity, hysteresis, and repeatability at 70ºF.
(3) Span tolerance is ±1% ±0.005inWC for models less than 0.10inWC or equivalent pressure range.

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P5 Series

P5 Universal Dry Pressure

1", 5", 5" plus, 10", and 25" W.C. versions with four selectable sub-ranges
1250, 2500, 6250 Pa versions with four selectable sub-ranges
Optional LCD display; LED indicator standard
Dual 0-5/10VDC, 4-20mA (loop and 3-wire)
PATENTED DESIGN

DESCRIPTION

The P5 universal dry media pressure transmitter accurately measures multiple ranges optimized for building (zone) pressure, filter measurement, and static duct applications. Selectable outputs and uni/bi-directional readings reduce inventory. Innovative probe integrates with unit or can be mounted remotely for static pressure. Optional LCD for panel mount readings and set up. PATENTED DESIGN

APPLICATIONS

- Building (zone) pressure
- Filter condition measurement
- Duct/static

Innovative probe. Transforms for duct or remote application.

Manual/remote zero. Selectable outputs. Uni/bi directional. Four sub-ranges.

High capacity DIN mount saves valuable panel space

Conduit Ready

Gasketed probe with integrated dampening tip for stable readings

Made in the USA and backed by a seven year limited warranty

FEATURES

- Duct, filter, and remote probe applications all in one
- Universal output reduces inventory and call-backs
- Selectable sub-ranges reduces inventory and call-backs
- Zero calibration push button and remote contact input
- Non-position sensitive for easy placement
- Dual DIN mount: Side mount density conserves valuable panel space, flat panel mount for LCD viewable panel mount.
- Conduit ready for for 3/8" flex connectors...no extra parts required
- LED: Power heartbeat, auto-zero complete, 110% over pressure; facilitates locating sensor in ductwork

ORDERING

P5 ☐ - 1 ☐ ☐

Pressure Range
-0100 = 0-1"w.c. (w/subranges)
-0500 = 0-5" w.c. (w/subranges)
-0501 = 0-5"w.c. (w/subranges)
-1000 = 0-10"w.c. (w/subranges)
-2500 = 0-25"w.c. (w/subranges)
-1250Pa = 0-1250Pa (w/subranges)
-2500Pa = 0-2500Pa (w/subranges)
-6250Pa = 0-6250Pa (w/subranges)

Accuracy
1 = 1.00% of range

Display
L = LCD
X = No Display

Duct Probe
P = Duct Probe
X = No Probe

Selectable Subranges by Pressure Range

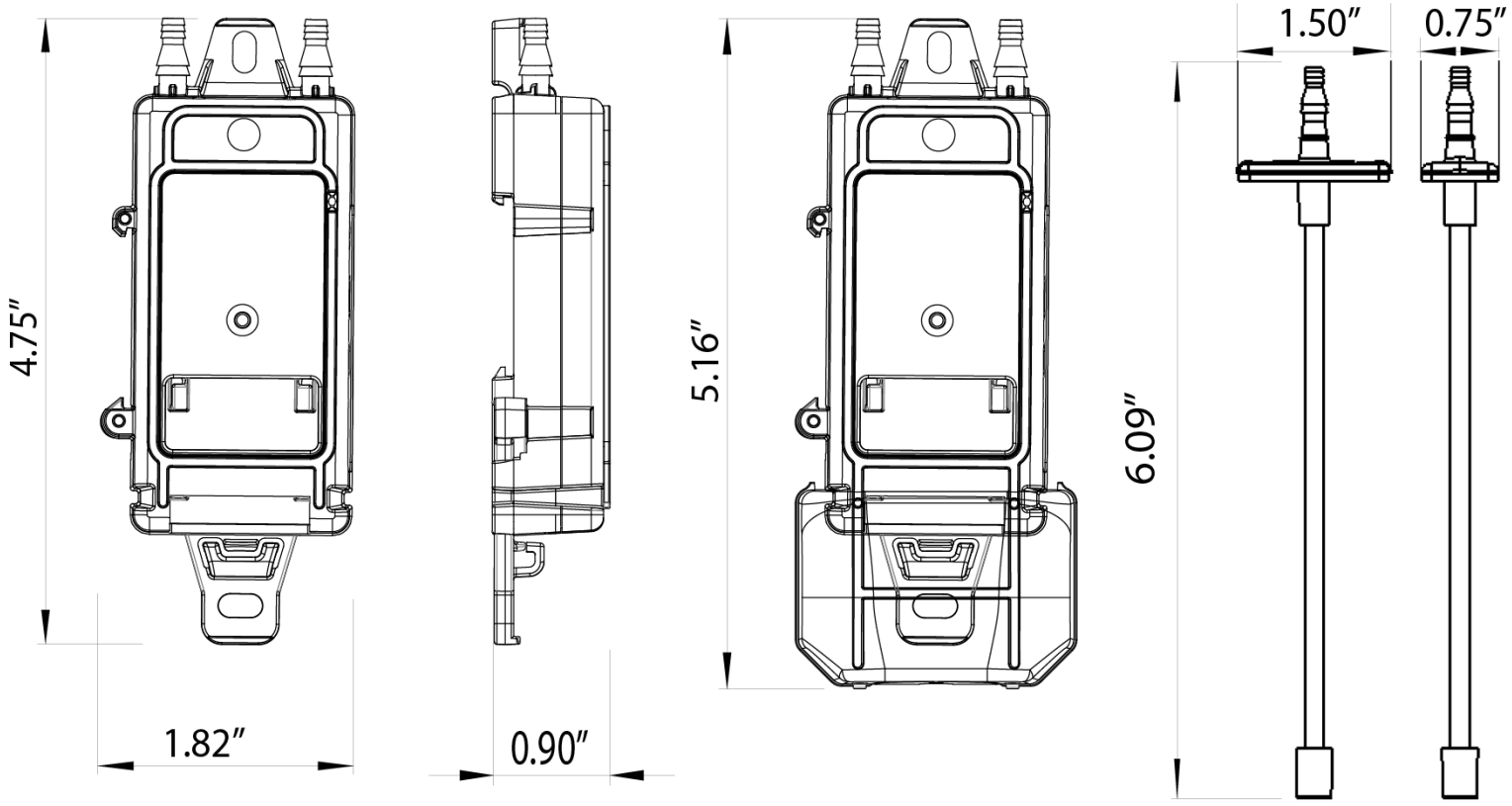
0100 = 0-1" w.c. (Selectable 0.1, 0.25, 0.5, 1.0, ±0.1, ±0.25, ±0.5, ±1.0 "WC)
0500 = 0-5" w.c. (Selectable 0.1, 0.25, 2.5, 5.0, ±0.1, ±0.25, ±2.5, ±5.0"WC)
0501 = 0-5" w.c. (Selectable 0.5, 1.0, 2.5, 5, ±0.5, ±1.0, ±2.5, ±5 "WC)
1000 = 0-10" w.c. (Selectable 1.0, 2.5 ,5.0, 10, ±1.0, ±2.5 ,±5.0, ±10"WC)
2500 = 0-25" w.c. (Selectable 5.0, 10, 15, 25, ±5.0, ±10, ±15, ±25"WC)
1250Pa = 0-1250Pa (Selectable 25, 50, 625, 1250, ±25, ±50, ±625, ±1250 Pa)
2500Pa = 0-2500Pa (Selectable 250, 625, 1250, 2500, ±250, ±625, ±1250, ±2500 Pa)
6250Pa = 0-6250Pa (Selectable 1250, 2500, 3750, 6250, ±1250, ±2500, ±3750, ±6250 Pa)

Example part number P5-0500-1LP
Universal pressure sensor, 0-5" full scale range (selectable sub-ranges) with LCD and Duct Probe.

Additional Remote Probes Available
RP-6 Remote/duct probe, 6"

- RP-6 remote probe with integrated dampener for accurate measurements.
- Accepts both 1/8" and 1/4" tubing.
- **Note:** One probe comes standard with "P" product

DIMENSIONS



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SPECIFICATIONS		
Power Supply		12-30VDC/24VAC(1), 30mA max
Output type	Selectable outputs	4-20mA loop powered, 4-20 mA 3-wire, 0-5VDC, 0-10VDC
Output scaling	P5-0100	0-1" (Selectable 0.1, 0.25, 0.5, 1.0, ±0.1, ±0.25, ±0.5, ±1.0 "WC)
	P5-0500	0-5" (Selectable 0.1, 0.25, 2.5, 5.0, ±0.1, ±0.25, ±2.5, ±5.0" WC)
	P5-0501	0-5" (Selectable 0.5, 1.0, 2.5, 5, ±0.5, ±1.0, ±2.5, ±5 "WC)
	P5-1000	0-10" (selectable 1.0, 2.5 ,5.0, 10, ±1.0, ±2.5 ,±5.0, ±10"WC)
	P5-2500	0-25" (selectable 5.0, 10, 15, 25, ±5.0, ±10, ±15, ±25" WC)
	P5-1250Pa	0-1250 Pa (selectable 25, 50, 625, 1250, ±25, ±50, ±625, ±1250 Pa)
	P5-2500Pa	0-2500 Pa (selectable 250, 625, 1250, 2500, ±250, ±625, ±1250, ±2500 Pa)
	P5-6250Pa	0-6250 Pa (selectable 1250, 2500, 3750, 6250, ±1250, ±2500, ±3750, ±6250 Pa)
Operating Temperature	Operating range	-4 to 140F (-20 to 60ºC)
	Compensated range	-4 to 140F (-20 to 60ºC)
Media compatibility		Dry, oil-free air, N2
Sensor Type		MEMS silicon piezoresistive; precision calibrated
Sensor Performance	Accuracy	±1.0% of selected range (combined linearity and hysteresis)
	Zero Tolerance	Included in accuracy specification
	Span Tolerance (3)	±1.00%
	Zero Drift (1 year)	0.004"WC/year max. 0.4% for units >0.5"w.c.
	Auto-zero input	Push-button and contact closure
	Thermal Shift (Zero and Span)	0.02% FSO/ºC (0.01%FSO/ºF) measured from 22ºC (72ºF)
	Overpressure	up to 5" models: 41.5"w.c.; 10" models: 133"w.c.; 25" models: 332"w.c.
	Max Static Line Pressure	up to 5" models: 41.5"w.c.; 10" models: 133"w.c.; 25" models: 332"w.c.
	Burst Pressure	up to 5" models: 83"w.c.; 10" models: 166"w.c.; 25" models: 415"w.c.
	Position Sensitivity	Non-position sensitive
	Auto-zero input	Push-button and N.O. contact closure
Agency	Compliance	CE, RoHS
Enclosure	Flammability	UL94 5VB
	Environmental	NEMA 1

(1) One side of transformer secondary is connected to signal common. Dedicated transformer is recommended.
(2) Accuracy includes non-linearity, hysteresis, and repeatability at 70ºF.
(3) Span tolerance is ±1% ±0.005inWC for models less than 0.10inWC or equivalent pressure range.

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P6 Pro Series

P6 Universal Nema 4 Pressure Sensor

0-5", 15", and 40" W.C. ranges; 10 selectable sub-ranges
0-1250, 3750, and 10000 Pa ranges; 10 selectable sub-ranges
LCD display and LED indicator
Nema 4X enclosure (Duct/port version)

DESCRIPTION

The P6 universal dry media pressure transmitter accurately measures multiple ranges optimized for building (zone) pressure, filter measurement, and static duct applications. Selectable outputs and uni/bi directional readings reduce inventory. Conduit ready Nema 4 enclosure for harsh environments.

APPLICATIONS

- Building (zone) pressure
- Filter condition measurement
- Duct/static
- Wash down environments

Rugged Enclosure

Select mesurement & response time. Ten selectable ranges and manual or remote zero.

Made in USA - 7 year warranty

FEATURES

- Selectable 4-20 mA loop-powered, 4-20 mA 3-wire, 0-5VDC, 0-10VDC for compatibility
- 10 field selectable pressure ranges to address a wide range of applications with high resolution
- Field selectable Pa or WC" display
- Zero calibration push button and remote contact input
- Models for duct or remote probe applications
- Selectable fast/slow response rate (2s fast, 8s slow)
- Non-position sensitive for easy placement
- Conduit ready or use included water tight cable gland
- LED: Power heartbeat, ,momentary rapid flash = autozero complete, continual rapid flash = 110% over pressure

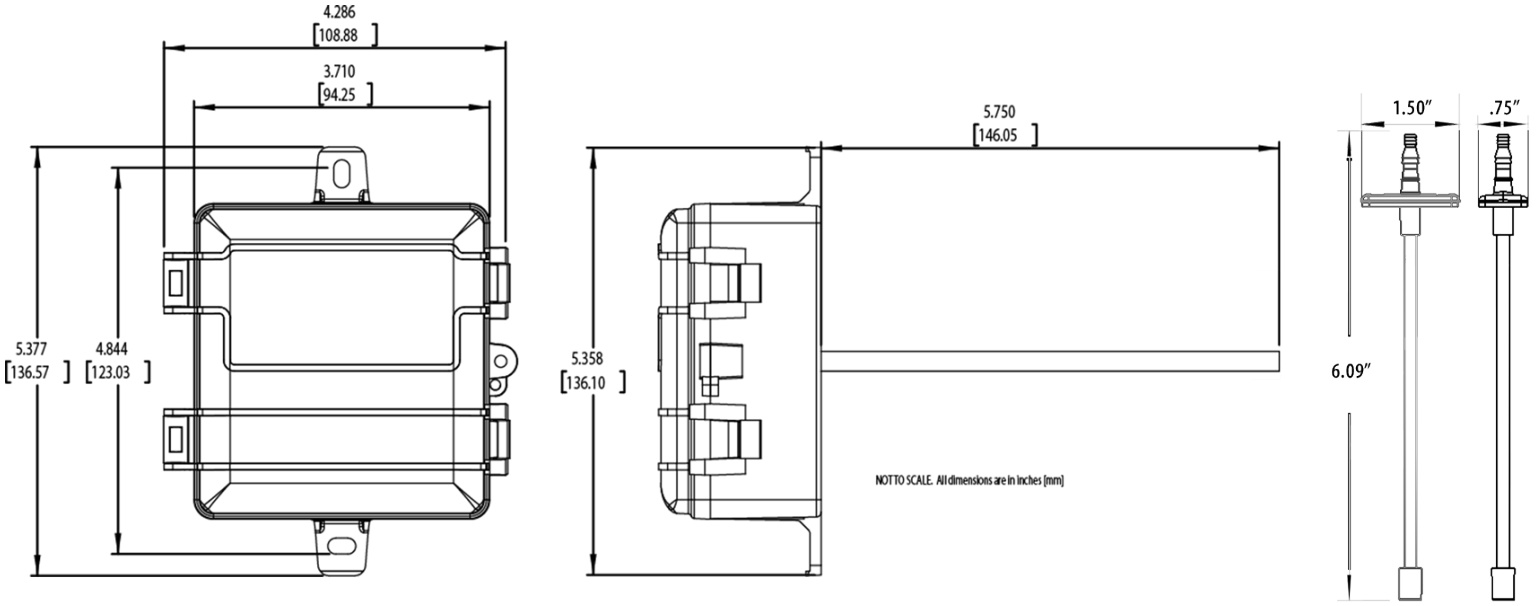
ORDERING

P6 - ☐ - ☐ ☐ ☐

Pressure Range*	Accuracy	Display	Duct Probe
0500 = 0-5″ 0-1250Pa 1500 = 0-15″ 0-3750Pa 4000 = 0-40″ 0-10000Pa	1= 1% of Range	L = LCD	P = Duct Probe X = Dual Brass

* 10 selectable sub ranges available for each range

DIMENSIONS



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SPECIFICATIONS		
Power Supply		12-30VDC/24VAC (1), 30mA max.
Output type	Selectable outputs	4-20 mA loop powered, 4-20 mA 3-wire, 0-5VDC, 0-10VDC
Output scaling	Max range	0-5" (0.1/0.25/0.5/1/1.5/2/2.5/3/4/5"wc)
	(selectable sub-ranges)	0-1250Pa (25/50/125/250/375/500/625/750/1000/1250 Pa)
		0-15" (0.25/0.5/1/2.5/3/4/5/8/10/15"wc)
		0-3750Pa (50/125/250/625/750/1000/1250/2000/2500/3750 Pa)
		0-40" (1/2.5/5/8/10/15/20/25/30/40"wc)
		0-10000Pa (250/625/1250/2000/2500/3750/5000/6250/7500/10000 Pa)
Operating Temperature	Operating range	-4 to 140F (-20 to 60ºC)
	Compensated range	-4 to 140F (-20 to 60ºC)
Media compatibility		Dry, oil-free air, N2
Sensor Type		MEMS silicon piezoresistive; precision calibrated
Sensor Performance	Accuracy(2)	±1.0% of selected range
	Zero Tolerance	Included in accuracy specification
	Span Tolerance (3)	±1.00%
	Zero Drift (1 year)	0.004"WC/year max. 0.4% for units >0.5"w.c.
	Auto-zero input	Push-button and contact closure
	Thermal Shift (Zero and Span)	0.02% FSO/ºC (0.01%FSO/ºF) measured from 22ºC (72ºF)
	Overpressure	up to 5" models: 41.5"w.c.; 10" models: 133"w.c.; 25" models: 332"w.c.
	Max Static Line Pressure	up to 5" models: 41.5"w.c.; 10" models: 133"w.c.; 25" models: 332"w.c.
	Burst Pressure	up to 5" models: 83"w.c.; 10" models: 166"w.c.; 25" models: 415"w.c.
	Position Sensitivity	Non-position sensitive
	Auto-zero input	Push-button and N.O. contact closure
Response Rate	Selectable	Fast = 2 seconds, slow = 8 seconds
Agency	Compliance	CE, RoHS
Enclosure	Flammability	UL94 5VB
	Environmental	NEMA 4X
	Dimensions	4.0"h x 3.7"w x 2.1"d

(1) One side of transformer secondary is connected to signal common. Dedicated transformer is recommended.
(2) Accuracy includes non-linearity, hysteresis, and repeatability at 70ºF.
(3) Span tolerance is ±1% ±0.005inWC for models less than 0.10inWC or equivalent pressure range.

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

P4 P5 Pressure Probe

Duct/Static pressure probe

Gasketed to ensure a reliable seal and consistent readings

Versatile duct, filter, or remote mounting

Ideal for use with a Senva P4 or P5

DESCRIPTION

Senva's RP-6 ensures minimal turbulence for accurate and dependable readings. The gasketed tip allows for secure and easy mounting to any duct. It's industry standard barb accepts any 3/32 inner diameter tubing.

APPLICATIONS

- Building (zone) pressure
- Filter condition measurement
- Duct/static
- OEM HVAC
- Meets 0.25% or 0.5% accuracy specs

Versatile probe and 6" long 1/16 tube

Probe transforms for duct or remote applications

Made in USA - 7 year warranty (probe only)

FEATURES

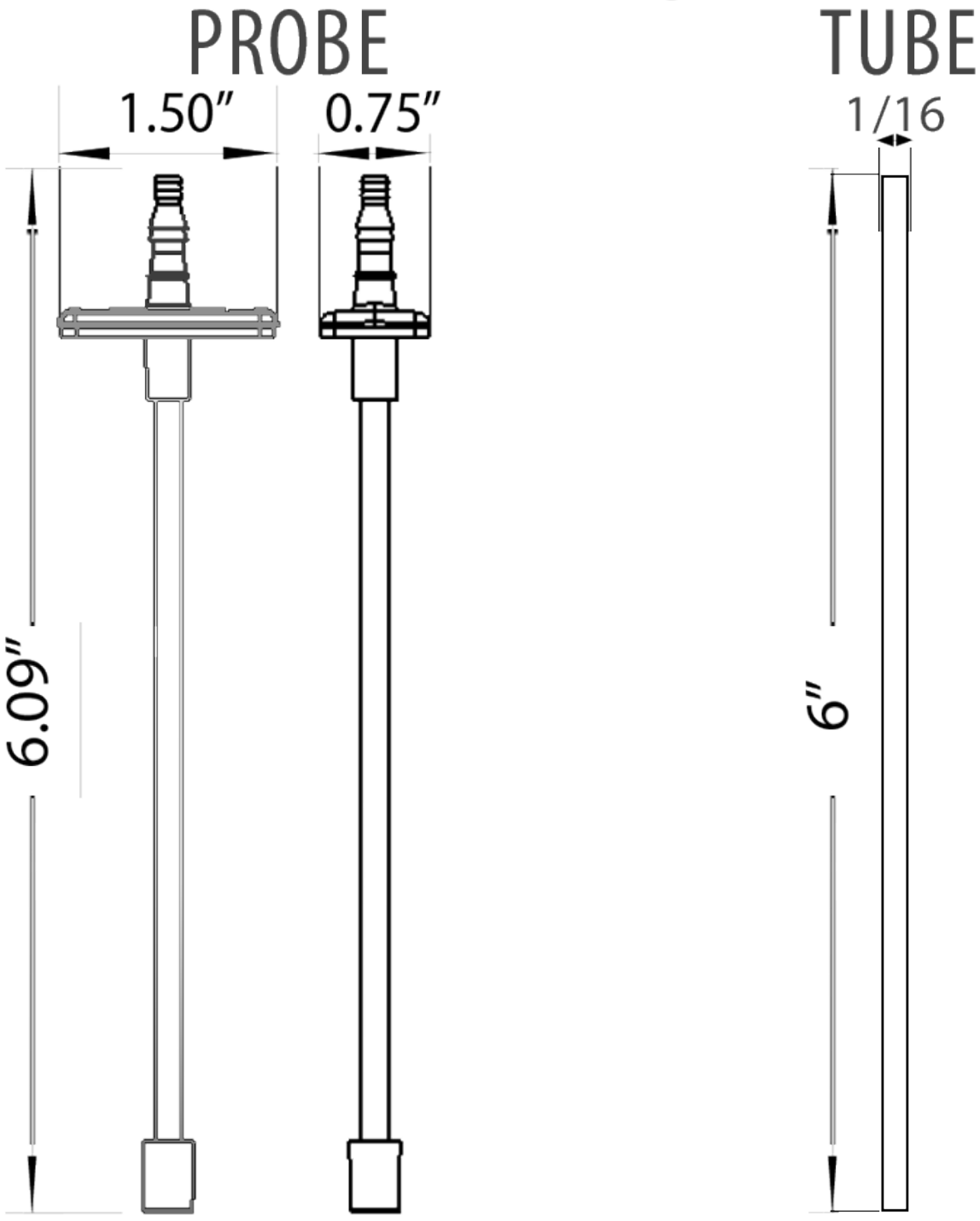
- 6" Duct/Static pressure probe
- Accepts any 3/32 ID tubing
- Easily add to any Senva P4 or P5 product
- Versatile duct, filter, or remote mounting

ORDERING

RP-6	P4/P5 DUCT PROBE KIT

DIMENSIONS

RP-6



Warning: The datasheet is designed for reference only. Refer to installation instructions that accompany the product and heed all safety instructions. Product improvement is a continuing process at Senva. Changes may occur to products without prior notice.

SPECIFICATIONS		
Media compatibility		Dry, oil-free air, N2
Agency	Compliance	CE, RoHS
Enclosure	Flammability	UL94 5VB

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PW31 Series

Single Diaphragm Wet-to-Wet Differential Pressure Sensor

±0.25% accuracy
Stand-alone transducer, 3-valve, or 5-valve options
Rugged IP65 construction for harsh environments
Optional LED display for ease of commissioning and troubleshooting

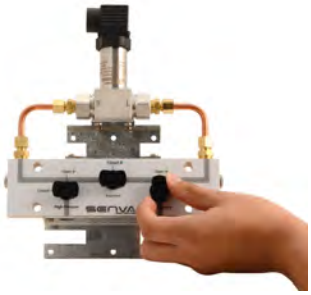
DESCRIPTION

Senva's PW31 Series is designed to streamline installation and provide maximum accuracy. Options for standalone transducer or 3-valve and 5-valve bypass assemblies allow flexibility and save time on installation and commissioning. The single-diaphragm element is temperature compensated to provides superior ±0.25% accuracy. The PW31's compact, light, and rugged structure combined with IP65 stainless steel construction make it ideal for most installations and capable of withstanding the most rugged environments. Now available with a highly visible, loop-powered LED display. Just plug it in for ease of commissioning and troubleshooting (4-20mA version only).

APPLICATIONS

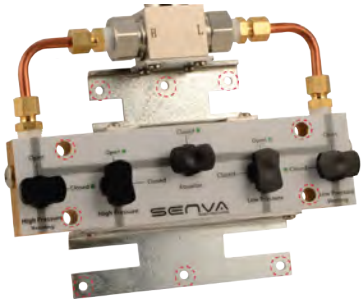
- Meet rigid accuracy and/or bypass specifications
- Demand measurement in HVAC systems for pump speed control and local indication
- Process control systems
- Measurement of gases, vapors, and liquids
- Measure pressure changes on pumps for efficiency regulation and energy savings
- Level measurement in tanks and vessels
- Filter status monitoring
- System leak detection
- Great for data center wet pressure sensing

IP65 LED display option for ease of troubleshooting



3-valve and 5-valve bypass assemblies to meet specifications

High accuracy ±0.25% single-diaphragm element



Easy-to-use bleed valves *Securely screw-mount or clamp to any pipe* *DIN43650 connection for ease of wiring*

FEATURES

- Temperature compensated element for high accuracy in any environment
- 3-valve or 5-valve bypass options available to meet specifications
- DIN 43650 connector with screw terminals - no splicing necessary
- Versatile 1/2" FNPT allows simplified conduit connections - connect to any EMT, flex, or liquid-tight conduit
- Easy-access bleed valves for quick commissioning
- Calibration certificate included with every sensing element
- Optional LED display is highly visible and makes commissioning and troubleshooting simple (IP65)

ORDERING

☐ - ☐ - ☐ ☐ - ☐

Model
PW31

Bypass
X = None
3V = 3 Valves
5V = 5 Valves

Transducer Range
005 = 0-5 PSID
010 = 0-10 PSID
025 = 0-25 PSID
050 = 0-50 PSID
100 = 0-100 PSID
150 = 0-150 PSID

Output
A = 0-5V
B = 0-10V
C = 4-20mA

Display
D = Display*
*for 4-20mA units only

Manifold Only


PWV-3 3-valve


PWV-5 5-valve

Display Only


PW31-DISPLAY

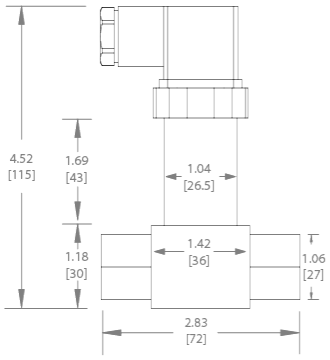
Ordering the Correct Transducer

Transducer Ordering #	PSID Range (Differential)	Expected PSIG Pressure Range (Max Line Pressure)
005	0-5 PSID	0-25 PSIG
010	0-10 PSID	0-50 PSIG
025	0-25 PSID	0-100 PSIG
050	0-50 PSID	0-250 PSIG
100	0-100 PSID	0-500 PSIG
150	0-150 PSID	0-750 PSIG

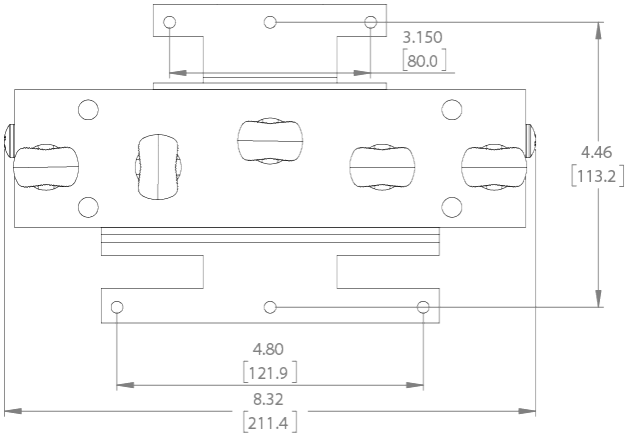
**Using a lower range PSID transducer for higher PSIG applications will result in inaccurate readings and may reduce the life span of the transducer. See "line pressure effect" in specification section.*

DIMENSIONS

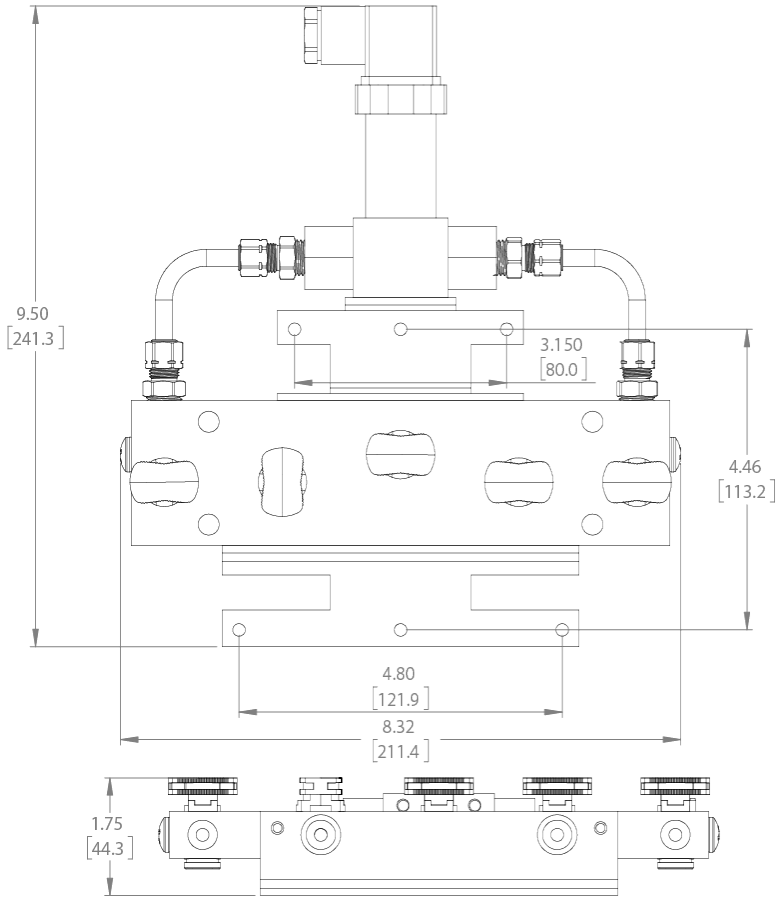
Transmitter Only



Manifold Only



3-Valve and 5-Valve Assemblies (same dimensions)



in
[mm]

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SPECIFICATIONS		
Power supply		15-35vdc, 20mA max.
Outputs		2-wire 4-20mA, 3-wire 0-10V, 3-wire 0-5V
Operating Temperature (3)	Operating Temperature	-4 to 175°F (-20-80°C)
	Compensated range	30 to 158°F (0-70°C)
Media Compatibility Transmitter	Transmitter Only	316L SS compatible liquids and gases, Fluororubber O-rings
Media Compatibility Manifold	Connection	Copper tube, CW614n Brass fittings (2.5-3.5% lead content)
	Manifold O-Rings	Neoprene
	Manifold Valves	Glass filled Acetal (Polyacetal Resin)
	Manifold Material	Anodized Aluminum
Sensor Performance	Type	Micro-machined silicon strain gauge
	Temp coefficient zero	For units <25PSI: ±1.7% FS/100°F; ±1.5%FS/50°C For units >25PSI: ±1.1% FS/100°F; ±1.0%FS/50°C
	Temp coefficient span	For units <25PSI: ±1.7% FS/100°F; ±1.5%FS/50°C For units >25PSI: ±1.1% FS/100°F; ±1.0%FS/50°C
	Line Pressure Effect	Zero Shift ≤0.0035%FS/PSIG line pressure
	Differential Pressure Ranges	0-5, 0-10, 0-25, 0-50, 0-100, 0-150 PSID
	Differential Overload Pressure	150%FS
	Maximum Pressure (1)	500%FS
	Accuracy (2)	±0.25%FS
	Sensor Enclosure	Laser welded housing, IP65
	Long Term Stability	±0.5 %FS/Year
	Shock and Vibration	30G. 5G @ 50Hz; 10G peak
	EMI/RFI Protection	Per CE Requirements
Connection	Pressure Connection Transmitter	1/4" NPT Female
	Pressure Connections Manifold	1/4" NPT female
	Electrical Connection	DIN43650A
	Environmental	IP65 (Installed with water-tight fittings) 1/2" conduit adapter included
Display	Accuracy	0.1%
	Output	4-20mA
	Voltage Drop	<3.5VDC
	Sample Rate	4/s
	Environmental	IP65
Agency	Transmitter Only	CE, RoHS
	Manifold	CE

(1) This is the maximum gauge pressure to maintain 0.25% accuracy.
(2) FS is defined as the full scale of the selected range. Accuracy includes non-linearity, hysteresis, repeatability, zero, and span tolerance.

(3) Stated operating range is for electronics only; Media temperature may be considerably higher. Use of devices outside of compensated range may result in drift.

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

PW30 Series

Remote Wet-to-Wet Differential Pressure Sensor

Revolutionary design eliminates plumbing/bypass assemblies
16 selectable differential ranges in one device
LCD display for verification of high, low, and differential pressures
Swap or replace remote sensors with ease

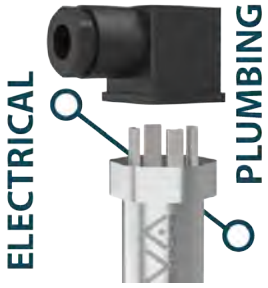
DESCRIPTION

The PW30 Series uses remote sensors to eliminate the need for costly bypass assemblies, enabling fast, cost effective installation. The remote sensors mount directly to pipe to eliminate bleeding and additional plumbing. Optional factory pre-wired harnesses also available in wire and armored cable versions. NEW! Order pre-fabricated with a 3 or 5-valve bypass assembly for easy bleeding and installation where bypass is required. Standard LCD screen and dip switches make configuration a breeze. Measure 16 differential pressure ranges from 1-500 PSID with a single device without sacrificing accuracy. Selectable output 0-5V, 0-10V, or 2 Wire 4-20mA.

APPLICATIONS

- Demand measurement in HVAC systems for pump speed control and local indication
- Process control systems
- Flow measurement of gases, vapors, and liquids compatible with 316L SS
- Filter status monitoring
- System leak detection
- Great for data center wet pressure sensing

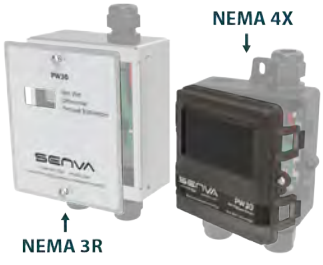
Remote sensors eliminate need for bypasses



Ease of installation - Independent installation for mechanical & electrical trades

Save on commissioning and maintenance - Order fully assembled with bypass manifold - sensors are field swappable!

Save time - Available with prewired armored cable or shielded cable



High reliability - Metal or Plastic tamper resistant enclosures provided added layer of security

Flexibility - Accepts rigid conduit and field wiring

FEATURES

- Drastically reduce plumbing needs and save installation time
- Order with pre-fabricated wireor pre-fabricated bypass assembly
- Single device for 1-500 PSID makes ordering easy
- Swap or replace remote sensors with ease
- LCD and dip switches make configuration fast and simple
- Remote sensors come standard with DIN43650 connection for easy plug-and-play, no wire twisting
- MEMS sensor technology
- Integrated surge snubber protects sensor from water hammer for reliable long term performance
- Manual and remote zero for maintained accuracy
- Port swap corrects plumbing errors
- Uni/bi directional
- Conduit and wire connection compatible

ORDERING

Transmitter		Cable		Remote Sensor		
PW30	☐ –	☐	–	☐	–	☐
Enclosure W = Rugged Plastic M = Metal		**User Provided Cable** C = Conduit and terminal connections (for field wiring) **Optional Factory Cable (Pre-wired)** 003 = 3 feet (36in) 006 = 6 feet (72in) 009 = 9 feet (108in) 015 = 15 feet (180in) 020 = 20 feet (240in) 025 = 25 feet (300in) 030 = 30 feet (360in) 035 = 35 feet (420in) 040 = 40 feet (480in) 045 = 45 feet (540in) 050 = 50 feet (600in) 075 = 75 feet (900in) 100 = 100 feet (1200in)		**Factory Cable Type** Blank = Standard A = Armored		**Pipe Pressure Range** 050 = 0-50 PSIG 100 = 0-100 PSIG 250 = 0-250 PSIG 500 = 0-500 PSIG

Add a bypass manifold...

PWV-3 3-valve PWV-5 5-valve

Optional Service Valve

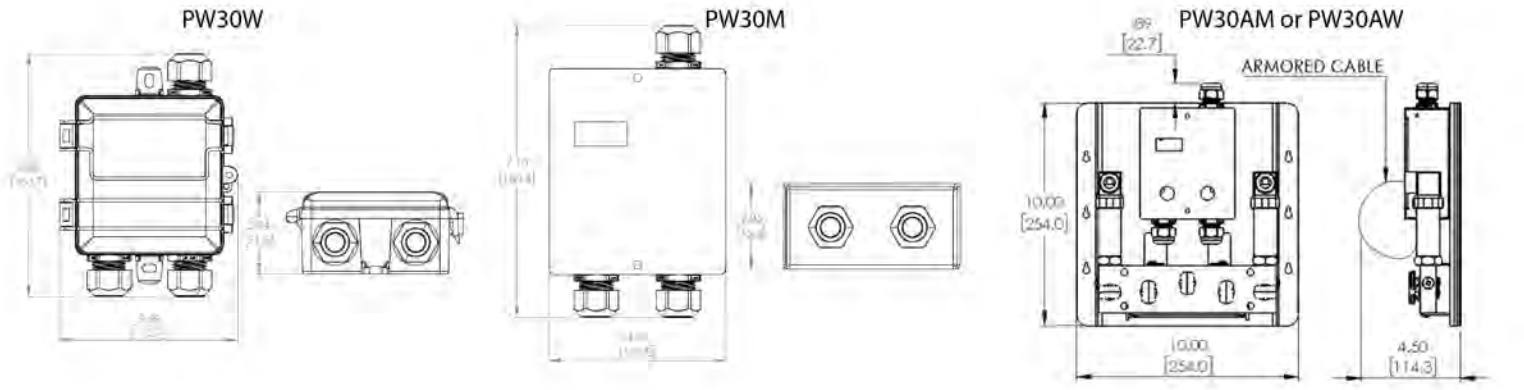
PWBV 

Optional service valve PWBV for live sensor swap

Fully Assembled with Bypass Manifold

Transmitter		Bypass		Remote Sensor
PW30	☐ –	☐	–	☐
Enclosure W = Rugged Plastic M = Metal		**Bypass** 3V = 3 Valves 5V = 5 Valves		**Range** 050 = 0-50 PSIG 100 = 0-100 PSIG 250 = 0-250 PSIG 500 = 0-500 PSIG

DIMENSIONS



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SPECIFICATIONS

Power supply	Voltage output mode (0-5v)		12-30VDC/24VAC[1] 20mA max.
	Voltage output mode (0-10v)	13-30VDC/24VAC[1] required for 10V FS output	
	Current (4-20mA) output mode	15-30VDC (0 Ohm)/16-30VDC (250 Ohm)/ 18-30VDC (500 Ohm) , 20mA max.	
Outputs	Switch selectable		2-wire 4-20mA, 3-wire 0-5V/10V
Operating Temperature	Transmitter		-22 to 158°F (-30 to 70°C)
Media Compatibility	Type		Water, other 316 SS compatible media (316L diaphragm)
	Temperature		32 to 250°F (0-125°C)
Zero adjustment	Automatic		Pushbutton, terminal block switch input
			Press button for 5 seconds to re-zero
			Hold for 10 seconds to restore factory settings
Sensor Type			Micro-machined silicon strain gauge
PW Transmitter Accuracy[2]	*Sensor PSIG*	*2% Accuracy Ranges*	*1% Accuracy Ranges*
	25 PSIG	0-1 / 0-2 PSID	0-5 / 0-10 / 0-15 / 0-20 / 0-25 PSID
	50 PSIG	0-10 / 0-15 PSID	0-20 / 0-25 / 0-30 / 0-40 / 0-50 PSID
	100 PSIG	0-15 / 0-20 / 0-25 / 0-30 PSID	0-40/ 0-50 / 0-75 / 0-100 PSID
	250 PSIG	0-30 / 0-40 / 0-50 PSID	0-75 / 0-100 / 0-125 / 0-150 / 0-250 PSID
	500 PSIG	0-75 / 0-100 / 0-125 PSID	0-150 / 0-250 / 0-500 PSID
Sensor Performance	Accuracy[3]		< ±0.25% BFSL
	Stability (1 year)	±0.25% FS, typ	
	Over-range protection	200% rated pressure	
	Pressure Cycles	> 100 Million	
	Compensated Operating Range	14 to 158°F (-10-70°C)	
	Temperature Compensation %FS/C	Zero, <±0.03(<100kPa), <±0.02(>100kPa)	
		Span, <±0.03(<100kPa), <±0.02(>100kPa)	
	Vibration	10G peak, 20 to 2000 Hz	
Enclosure	PW30M	Construction	Powder coated steel (metal)
		Rating	Nema 3R (Metal), IP65
	PW30W	Construction	PC/ABS (Plastic)
		Rating	Nema 4X (plastic), IP65
	PWT [xxx]	Construction	Stainless Steel, 304, 1/4" MNPT, 1/2" Conduit Fitting

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

(2) FS is defined as the full scale of the selected range. Accuracy includes non-linearity, hysteresis, and repeatability.

(3) Because of lower accuracy, it is not factory recommended to use an output range less than 10% of the total sensor PSIG.

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PG Series

Gauge Pressure Sensor

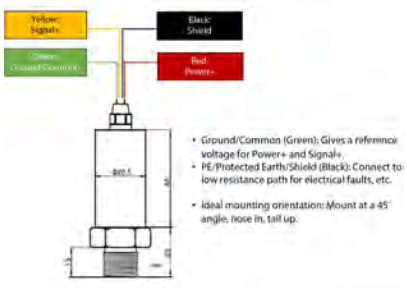
Stainless Steel Wet Media
1/4" MNPT
0-5VDC or 4-20mA outputs

DESCRIPTION

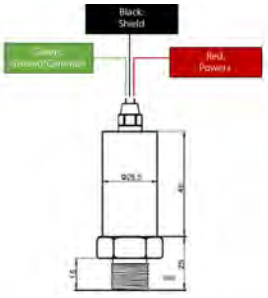
This PG Series is a rugged and accurate gauge pressure sensor. It is compatible with a wide variety of liquids and gases. The MEMS technology gives the PG series flexibility to be used in virtually any OEM application. Whether measuring hydraulic pressure in a manifold or corrosive liquids and gases such as sea water or hydrogen, the PG series industrial pressure sensor provides a thick diaphragm to maintain long-term stability.

APPLICATIONS

- Refrigeration Pump Controls
- Chillers
- Freon and Ammonia Cooling Systems
- CO2 Systems
- Building Controls
- Water Pressure Systems
- Boiler Controls
- Environmental Test Chambers
- Great for data center gauge pressure sensing



PG Voltage Output (0-5V)



PG Current Output (4-20mA)

FEATURES

- Compact, Robust Package
- 48" wire leads; 1/4" - MNPT
- Chemical Compatibilities: Any gas or liquid compatible with 17-4 stainless steel.
- Burst pressure 5X full scale
- Reverse voltage protected
- Rugged stainless steel construction
- No oil, welds or internal o-rings
- 0.25% BFSL @ room temperature (Accuracy includes non-linearity, hysteresis & non-repeatability)

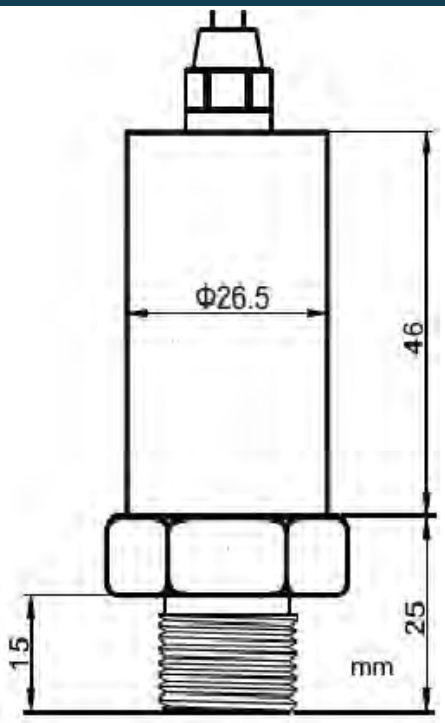
ORDERING

PG - [ ] **S** [ ]

Pressure Range	**Output Type**
15= 15 PSI	B= 0-5 VDC, 3 Wire
50= 50 PSI	C= 4-20 mA, 2 Wire
75= 75 PSI	
100= 100 PSI	
150= 150 PSI*	
200= 200PSI	
250= 250PSI*	
300= 300 PSI	
500= 500 PSI	

* 150 PSI and 250 PSI options, only available with 4-20mA, 2 Wire

DIMENSIONS



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SPECIFICATIONS

ELECTRICAL DATA		
Output	**4-20mA (2-wire loop)**	**0-5VDC**
Exitation	15-30VDC	10-30VDC
Output Impedance	>10k Ohms	
Current Consumption	20mA, typical	<10mA
Reverse Polarity Protection	Yes	Yes

ENVIRONMENTAL DATA	
Temperature	
Operating	-40 to 125°C
Storage	-40 to 125°C
Thermal Limits	
Compensated Range	-10 to 70°C
TC Zero	<±0.3% of FS/°C
TC Span	<±0.3% of FS/°C
Other	
Shock	EN 60068-2-27
Vibration	EN 60068-2-6, 60068-2-64, and IEC 68-2-32
EMI/RFI Protection	Yes
Rating	**Housing:** IP-66 **Cable:** IP-68 (No UV rating)

PERFORMANCE @ 25°C (77°F)	
Accuracy (1)	<±0.25% BFSL
Stability (1 year)	±0.25% FS, typical
Over Range Protection	2X Rated Pressure
Burst Pressure	5X or 20,000 PSI (whichever is less)
Pressure Cycles	> 100 Million

(1) Accuracy includes non-lineartiy, hysteresis & non-repeatability

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SENVA THERMISTOR RESISTANCE-TEMPERATURE TABLES										
	C	*D*	*E*	*F*	*G*	*H*	*I*	*J*	*K*	*L*
	100Pt 385	1000Pt 385	10K T2 B=3892	10K T3 B=3694	10K T3 11K Shunt	3K B=3892	2K2 B=3976	1K8 (100 C) B0/100=4300	20K B=4262	100K B=4461
Temp F	Resistance [Ω]									
0	93.0	930	85.41K	70.40K	9513	25.62K	19.21K	327.5K	193.0K	1015K
5	94.1	941	72.96K	61.02K	9320	21.89K	16.41K	276.6K	163.5K	858.0K
10	95.2	952	62.50K	53.28K	9118	18.75K	14.06K	234.3K	139.7K	732.0K
15	96.3	963	53.69K	46.39K	8892	16.11K	12.08K	199.1K	118.8K	620.7K
20	97.4	974	46.24K	40.49K	8650	13.87K	10.41K	169.6K	101.3K	527.6K
25	98.5	985	39.93K	35.41K	8393	11.98K	8989	145.0K	86.73K	450.6K
30	99.6	996	34.57K	31.19K	8132	10.37K	7783	124.2K	74.87K	388.1K
32	**100.0**	**1000**	32.66K	29.49K	8012	9799	7352	116.8K	70.14K	362.9K
35	100.7	1007	30.01K	27.39K	7848	9004	6756	106.7K	64.43K	332.8K
40	101.7	1017	26.11K	24.11K	7554	7834	5878	91.87K	55.55K	285.1K
45	102.8	1028	22.77K	21.26K	7249	6832	5127	79.32K	48.07K	245.7K
50	103.9	1039	19.91K	18.79K	6938	5972	4482	68.66K	41.56K	212.3K
55	105.0	1050	17.44K	16.70K	6632	5233	3927	59.57K	36.31K	184.7K
60	106.1	1061	15.31K	14.81K	6312	4595	3448	51.80K	31.56K	160.0K
65	107.1	1071	13.48K	13.16K	5992	4043	3035	45.15K	27.50K	138.8K
70	108.2	1082	11.88K	11.72K	5675	3565	2676	39.44K	24.04K	120.9K
75	109.3	1093	10.50K	10.50K	5371	3150	2365	34.53K	21.17K	106.1K
77	109.7	1097	**10.00K**	**10.00K**	**5238**	**3000**	**2252**	**32.76K**	**20.00K**	**100.0K**
80	110.4	1104	9298	9375	5061	2789	2094	30.30K	18.58K	92.72K
85	111.5	1115	8249	8389	4760	2475	1858	26.64K	16.31K	80.95K
90	112.5	1125	7333	7520	4467	2200	1651	23.47K	14.38K	71.05K
95	113.6	1136	6530	6752	4184	1959	1471	20.71K	12.70K	62.47K
100	114.7	1147	5826	6094	3922	1748	1312	18.32K	11.29K	55.29K
105	115.8	1158	5207	5489	3662	1562	1173	16.24K	9993	48.71K
110	116.8	1168	4663	4951	3414	1399	1050	14.41K	8865	42.98K
115	117.9	1179	4182	4473	3180	1254	942	12.82K	7888	38.05K
120	119.0	1190	3757	4062	2966	1127	846	11.42K	7058	33.90K
125	120.0	1200	3381	3680	2758	1014	761	10.20K	6301	30.11K
130	121.1	1211	3047	3338	2561	914	686	9116	5623	26.71K
135	122.2	1222	2751	3033	2378	825	620	8164	5036	23.80K
140	123.2	1232	2487	2760	2206	746	560	7324	4518	21.24K
145	124.3	1243	2252	2522	2052	676	507	6581	4076	19.06K
150	125.4	1254	2043	2301	1903	613	460	5922	3664	17.04K

TG Series UL Wall & Duct

Dual Toxic Gas CO/NO2 Sensor/Controller

Individual UL2075 Recognized CO, NO2, or dual sensing elements in one enclosure.
BACnet/Modbus or Analog ouput models.
Operates as a sensor or stand-alone controller.
Standard LCD with intuitive set up menu.

DESCRIPTION

Senva UL Listed TG Series sensors can be ordered as individual CO or NO2 sensors or as a combination of CO&NO2 sensors in a shared enclosure. CO and NO2 sensor components are listed to UL2075. The analog output model features 2 outputs that support daisy chain wiring - multiple sensors may be used in a parallel sequence (0-10V) for cost effective coverage of large areas. The unit can also act as a stand alone controller, utilizing the relay for exhaust fan operation or the output for direct control of a VFD. The BACnet/Modbus model supports BACnet MS/TP & Modbus network communication in one unit. Standard features include network auto-configuration, a programmable fan relay, LED indicators, integrated display and audible alarm.

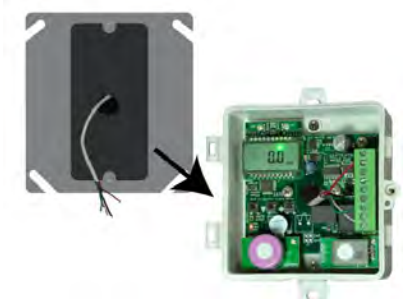
APPLICATIONS

- Ensure adequate air flow in occupied spaces.
- Ideal for parking lot garages.
- Monitor multiple toxic gases with one mounted unit.
- Alert occupants of elevated gas levels.
- Directly control exhaust fans.

TG-REM kit - mount any 2 gasses at different heights; same as a single device

TG ABS Enclosure - Available with Tinted or Solid Lid Options

Two sensing elements, buzzer, three color LEDs, and LCD for setup and calibration



Through-back hole allows for streamlined installation in a junction box

ABS version comes with handy conduit box adapter

Buy American Act Certified

FEATURES

- NEW! UL2075 Recognized CO and NO2 elements.
- NEW! Fail-open relay option
- Supports BACnet MS/TP and Modbus RTU networks.
- Integrated display, LED indicators, audible alarm.
- Analog menu selectable 0-5/10V, 1-5V and 4-20mA outputs (0-10V default).
- Analog version supports daisy chain wiring to cost-effectively sense and control large areas.
- Sensor self-test feature for added safety and reliability.
- Temperature compensated elements for maximum accuracy.
- UL listed and LADBS Approved (City of LA).
- Warning indicators alert occupants when element's lifecycle is near end for replacement.
- Field replaceable sensing elements; 7 year life expectancy on CO and NO2 elements.
- Complies with IMC 404.2.1, UMC 403.7.2, and NFPA 720.
- Great for local codes requiring CO and NO2 at different heights
- Plug-and-play; provided with pre-cut CAT-5 cable
- Single power source, single location for RS-485/analog/relay connections
- Single BACnet device; reduce devices/points on your network
- Through-the-back wiring makes junction-box-mounting easy
- No programming necessary

ORDERING

TG ☐ - ☐ ☐ ☐ - ☐ ☐

Package
W = Wall Mount
D = Duct Mount
M = Metal

Output Type
A = Analog
B = BACnet/Modbus

Gas Type 1*
C = Carbon Monoxide (CO)
N = Nitrogen Dioxide (NO_2)
D = Carbon Dioxide (CO2)
E = Dual Channel CO2
M = Methane (CH4)
P = Propane (C3H8)
H = Hydrogen (H2)
O = Oxygen (O2)
S = Hydrogen Sulphide (H2S)
A = Ammonia (NH3)
2 = R22
4 = R410A (Mulsti-Gas)
5 = R404A
6 = R407C
7 = R449A
8 = R513A
9 = 1233ZDE

Gas Type 2*
X = No second gas
N = Nitrogen Dioxide (NO_2)
D = Carbon Dioxide (CO2)
E = Dual Channel CO2
M = Methane (CH4)
P = Propane (C3H8)
H = Hydrogen (H2)
O = Oxygen (O2)
S = Hydrogen Sulphide (H2S)
A = Ammonia (NH3)

Temperature
A = None
C = 100Pt RTD
D = 1000Pt RTD
E = 10K Type 2
F = 10K Type 3
G = 10k w/11k
H = 3k
I = 2k2
J = 1k8
K = 20k

Options
Blank = None
S = Solid/Opaque Lid
W=White/Solid Lid
F = Fail Open Relay

*Refrigerant sensors may not be paired with CH4, C3H8, or H2, or paired together.

Replacement Elements
TGS-CO-ULV2 = Carbon Monoxide
TGS-NO2-ULV2 = Nitrogen Dioxide
TGS-CH4-ULV2= Methane
TGS-C3H8-ULV2 = Propane
TGS-O2-ULV2 = Oxygen
TGS-H2-ULV2 = Hydrogen
TGS-H2S-ULV2 = Hydrogen Sulfide
Call for more options

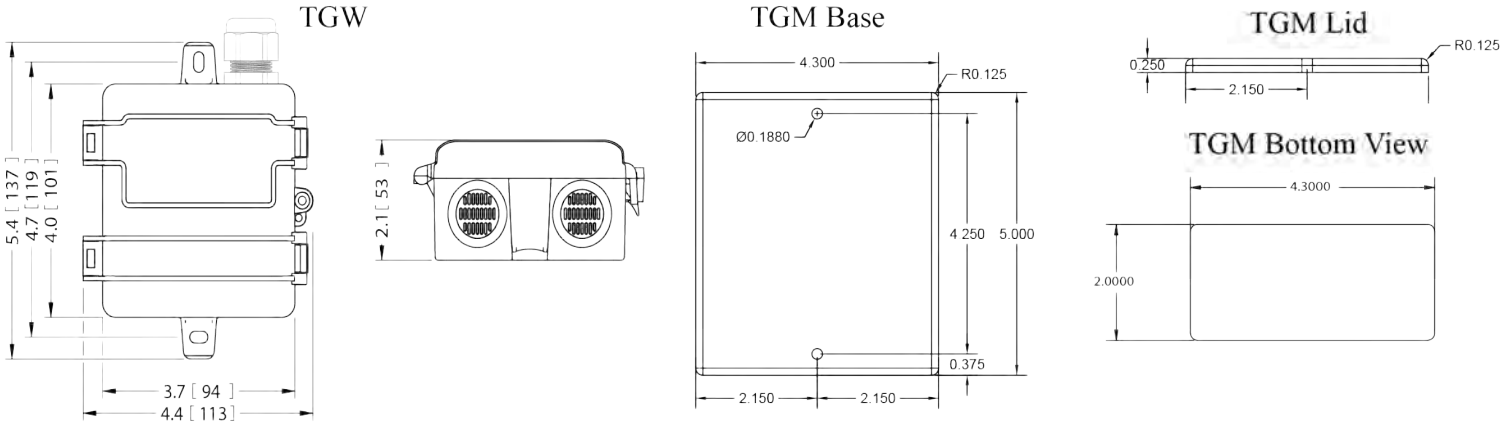
TG ☐ **- REM -** ☐

Package
W = Wall Mount
M = Metal

Cable Length
5 = 5 feet
10 = 10 feet
15 = 15 feet
20 = 20 feet

^TG-REM is a kit only and does not include gas sensing element. Purchase TGS sensor or dual-element TG separately.

DIMENSIONS



Warning: The datasheet is designed for reference only. Refer to installation instructions that accompany the product and heed all safety instructions. Product improvement is a continuing process at Senva. Changes may occur to products without prior notice.

SPECIFICATIONS

Power Supply		15-30VDC/24VAC(1), 4W max, 160mA max.
	TG-REM	Powered through CAT-5 cable, no separate power required.
Wiring	Conductor	14-24 AWG, Minimum 600V, 75°C
	Terminal Torque	0.5 N•m
Analog Outputs	2 programmable outputs	0-10V (default), 0-5V, 1-5V and 4-20mA (menu selectable)
	CO output scaling	0-200ppm (default), 0-1000ppm (menu selectable)
	NO2 output scaling	0-10ppm (default), 0-30ppm (menu selectable)
	CO2 output scaling	0-1000 ppm (default), 0-1000 ppm (menu selectable)
	Propane/Methane / Hydrogen Output Scaling	0-50% LEL (default), 0-50% LEL (menu selectable)
	Oxygen Output Scaling	0-25% Vol (default), 0-25% Vol (menu selectable)
	Refrigerant Output Scaling	0-1000 ppm (default), 0-1000 ppm (menu selectable)
	H2S Output Scaling	0-100 ppm (default), 0-100 ppm (menu selectable)
	Ammonia NH3 Output Scaling	0-100 ppm (default), 0-100 ppm (menu selectable)
	Temperature output scaling	-20 to 85°C
BACnet /Modbus	Protocol RS-485	BACnet MS/TP, Modbus RTU, Modbus ASCII
	Baud Rates	9600, 19200, 38400, 57600, 76800, 115200
	RS-485 Loading	1/4 unit
Fan Relay	Fan relay characteristics (Standard Version)	N.C. 1A@24/30VDC (50/60Hz) (no mains connection)
	Fan relay characteristics (Fail-Open Version)	N.O. 1A@24/30VDC (50/60Hz) (no mains connection)
	CO fan relay setpoint	25ppm (default), 0-1000 ppm (menu selectable)
	NO2 fan relay setpoint	1ppm (default), 0-30ppm (menu selectable)
Alarm Relay	Alarm relay characteristics (Standard Version)	N.C. 1A@24/30VDC (50/60Hz) (no mains connection)
	Alarm relay characteristics (Fail-Open Version)	N.O. 1A@24/30VDC (50/60Hz) (no mains connection)
	CO alarm relay setpoint	100ppm (default), 0-1000 ppm (menu selectable)
	NO2 alarm relay setpoint	3ppm (default), 0-30ppm (menu selectable)
Display	3-1/2 digit LCD	Indicates CO ppm, NO2 ppm (menu selectable)
LEDs	Green, Yellow, Red	Green = Normal, Yellow = Warning/Fan Relay, Red = Alarm/Alarm Relay
Audible Alarm	85dB Piezo transducer	30 minutes above alarm setpoint per UL2075
Exposure		(menu selectable)

CO Sensor Performance	Type	Electrochemical
	Accuracy	±5% of default range[2], ±5%of reading above 200ppm
	Resolution	1ppm
	Certifications	UL2075 Recognized Component
	Life expectancy	>7 years
	Recommended Calibration	Annual
	Recommended Height and Coverage Area	3 to 6 feet, coverage 5000-7500 square feet (Click for details)
NO_2 Sensor Performance	Type	Electrochemical
	Accuracy	±5% of default range[3] ±5%of reading above 20ppm
	Resolution	0.1ppm
	Certifications	UL2075 Recognized Component
	Life expectancy	>7 years
	Recommended Calibration	Annual
	Recommended Height and Coverage Area	3 to 6 feet, coverage 5000-7500 square feet (Click for details)
Carbon Dioxide (CO_2)	Type	Non-Dispersive Infrared (NDIR)
	Accuracy[4]	±(30ppm +3% of reading) (400-2000ppm), @-10-50°C
		±(50ppm +5% of reading) Standard (2000-5000ppm),
		±(50ppm+3% of reading) Dual Channel (2000-5000ppm),
		±(100ppm+10% of reading) (5000-10000ppm)
	Drift with ABC Disabled [5]	35 ppm / month [6] (Standard), 5 ppm / month [6] (Dual-Channel)
	Resolution	1 ppm
	Life Expectancy	15 years
	Response Time	30s
	Sample Rate	1s
	Recommended Height and Coverage Area	3 to 6 feet, coverage area 5000-7500 square feet (Click for details)
Methane/Propane / Hydrogen Sensor Performance	Type	Catalytic
	Detection Range	0-50% LEL (Lower Explosive Limit)
	Accuracy	±5% of Range
	Resolution	1% LEL
	Certifications	UL2075 Recognized component for Methane/Propane
	Life Expectancy	>5 years
	Response Time	<10s to 90%
	Recommended Calibration	Bump test annually, calibrate or replace if necessary. [9]
	Long Term Stability Drift	Zero: <±2mV/year
		Sensitivity: <±2mV/month
	Recommended Height and Coverage Area	Hydrogen/Methane: 1 foot from ceiling, coverage area 5000-7500 sq. ft.
		Propane: 1-3 ft. above finished floor, coverage area 5000 sq. ft.
Oxygen Sensor Performance	Type	Electrochemical
	Detection Range	0-25% Volume
	Accuracy	±5% of Range
	Resolution	0.1%
	Life Expectancy	5 years
	Recommended Calibration	Annual
	Recommended Height and Coverage Area	3 to 6 feet, 5000-7500 sq. ft.
H2S Sensor Performance	Type	Electrochemical
	Detection Range	0-100 ppm
	Accuracy	±5% of Range

	Resolution	1 ppm
	Life Expectancy	5 years
	Recommended Calibration	6 months
	Recommended Height and Coverage Area	3 to 6 feet, coverage area 5000 - 7500 sq. ft.
Ammonia NH3 Sensor Performance	Type	Electrochemical
	Detection Range	0-100 ppm
	Accuracy	±5% of Range
	Resolution	0.1 ppm
	Life Expectancy	5 years
	Recommended Calibration	6 months
	Recommended Height and Coverage Area	0.5 to 1 foot from ceiling, coverage 5000 - 7500 sq. ft.
Refrigerant Sensor Performance	Type	MOS
	Detection Range	0-1000 ppm
	Resolution	1 ppm
	R22, R134A, R410A, R404A, R407C	Calibrated for respective gas.
	R134 Sensitivity (7)	@ 300 ppm test gas: 450 ppm R410A, 425 ppm R407C, 400 ppm R404A, 370 p ppm R134A
	Other Detectable Gases (8)	R407A, R407F, R427F, R452B, R507, R448A, R454B, R455A, R455C, R422A, R422 R514A, R32. Consult factory for other A2L gases.
	Life Expectancy	10 years (typical expectation for MOS sensors)
	Recommended Calibration	6 months
	Recommended Height and Coverage Area	6 inches above floor, no more than 18 inches above lowest level of equipment leak detection, coverage 5000 - 7500 sq. ft.
Operating Environment	Temperature, Continuous	-20 to 50°C (-4 to 122°F) (CO_2 versions rated to -40°C)
	Humidity	15-95% continuous, 0-95% intermittent
	Max Elevation	2000m
Enclosure (Wall & Duct)	Material	ABS/Polycarbonate
	Dimensions	4.0"h x 4.4"w x 2.1"d (+6.8" probe for duct version)
	Conduit Opening	Tapped 1/2" NPT
	Rating	IP43 or NEMA 3R
Enclosure (Metal)	Material & Enclosure Rating	Powder-coated steel
	Dimensions	5.0"h x 4.3"w x 2.25"d
	Opening	Dual air vents on front lid of enclosure
	Mounting	Pre-drilled for 2x4" electrical box
	Rating	IP41 or NEMA 3R
Agency	Compliance	UL61010-1 Listed UL, cUL, CE, UL2075 Recognized CO and NO2 elements

(1) One side of transformer secondary is connected to signal common. Dedicated transformer is recommended. No mains circuit connection allowed. In addition, it is use an isolated power supply that is certified by a national or international standard (i.e. UL). Use of a Class 2 LPS power supply or greater is required.

(2) Carbon Monoxide full scale is 1000ppm.

(3) Nitrogen Dioxide full scale is 30ppm.

(4) Accuracy of CO2 reading may be reduced at temperatures below 14ºF (-10°C). CO2 sensor is equipped with a heater to account for temperatures down to -40°C.

(5) It is not recommended to de-activate ABC (auto-calibration) except for continuously occoupied spaces or greenhouses. Drift ratings may vary based on environment.

(6) Combination CO/Methane, Co/Propane, or CO/Refrigerant sensors should be mounted according to Propane/Methane/Refrigerant recommendations. Consult factory other combinations. Mounting height recommendations may be adjusted according to installation. Ensure sensor is accessible for maintenance and target gas has unobstructed access to sensor. Mount in accordance with ANSI/NFPA 70 and NEC or CEC.

(7) R134A sensor may be used as a general purpose refrigerant detection. The sensor's response to other refrigerants will change proportionally as shown in the following note: https://www.senvainc.com/catalog/documents/downloadcenter/Refrigerant%20cross%20sensitivities.pdf Actual response may vary depending on installation. accurate response to a specific gas, a unit may be field calibrated.

(8) These gases may be detected by the sensor but sensitivity curves are not available at this time.

(9) A bump test involves exposing the sensor to a reference gas and detecting the sensor's response. If sensor response is out of accuracy range, recalibration or replacement the sensor element may be necessary.

(10) * Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.

TG Series UL Wall & Duct

Dual Combustible Gas Sensor/Controller

UL2075 recognized combustible gas sensing elements
Individual sensors or as any dual combination of gases
Detect Methane/Propane leaks and monitor for elevated CO levels
NEW! Fail-Open relay version, for integration into fire control panels

DESCRIPTION

Senva TG Series sensors can be ordered as individual CH4 sensor, C3H8 sensor, H2 sensor, O2 sensor, H2S sensor, or specify two sensing elements in one enclosure including CO and NO2. The analog output model features 2 outputs that support daisy chain wiring - multiple sensors may be used in a parallel sequence (0-10V) for cost effective coverage of large areas. The unit can also act as a stand alone controller, utilizing the relay for exhaust fan operation or the output for direct control of a VFD. Order the NEW fail-open relay version for streamlined integration into fire control panels. The BACnet/Modbus model supports BACnet MS/TP & Modbus network communication in one unit. Standard features include network auto-configuration, a programmable two-staged relays, LED indicators, integrated display and audible alarm.

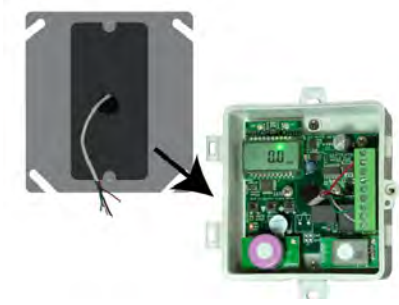
APPLICATIONS

- Boiler rooms
- Commercial kitchens
- Battery Rooms
- Battery Energy Storage Systems (BESS)
- Compressed Gas storage
- Residential and commercial heating and water heating
- Vehicle bays and garages for natural gas (LNG) or petroleum gas (LPG) vehicles
- Waste facilities

NEW! TG-REM kit - mount CO and NO2 at different heights; same functionality as a single device

TG ABS Enclosure - Available with Tinted or Solid Lid Options

Two sensing elements, buzzer, three color LEDs, and LCD for setup and calibration



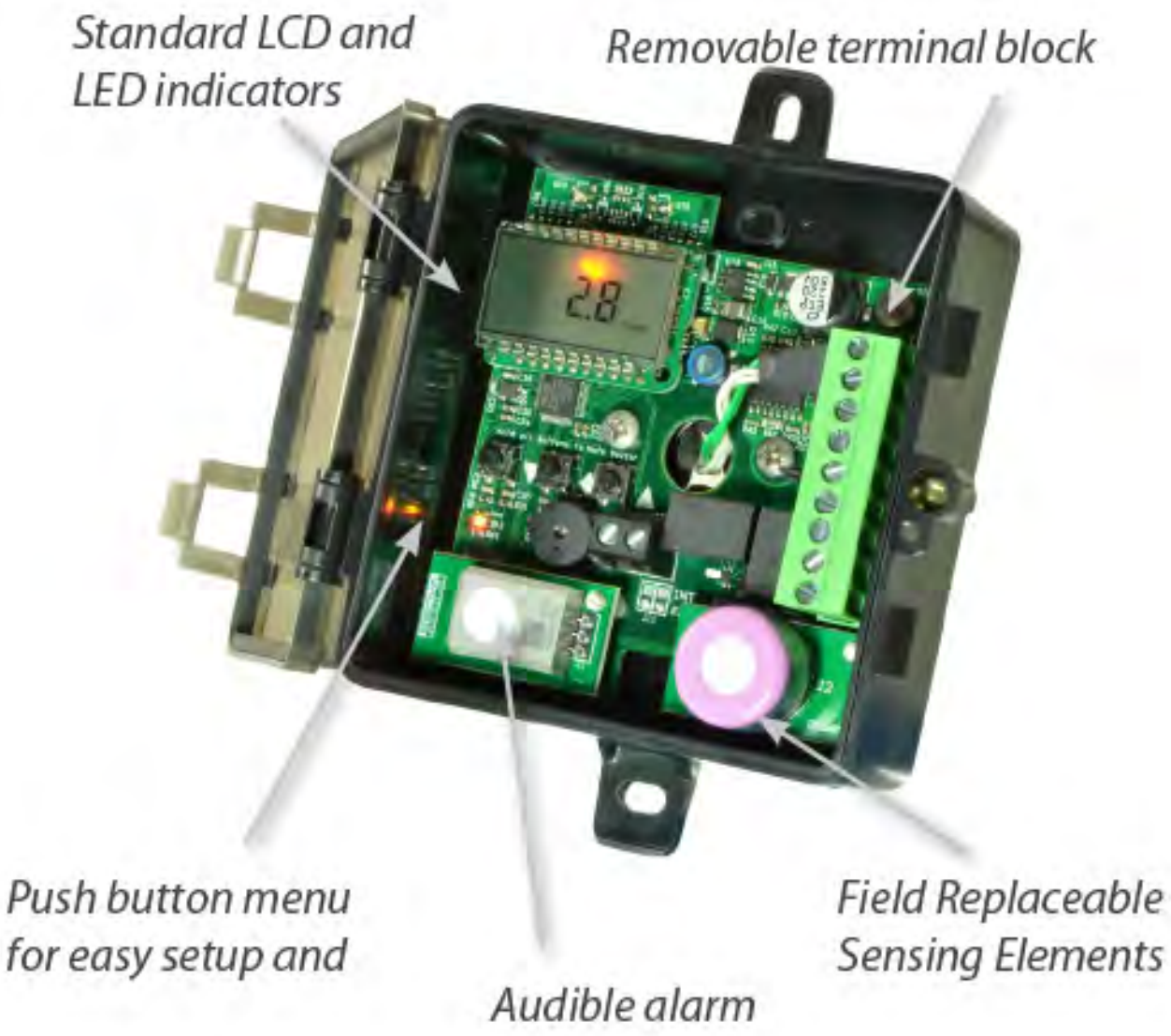
Through-back hole allows for streamlined installation in a junction box

ABS version comes with handy conduit box adapter

Buy American Act Certfified

FEATURES

- NEW! UL2075 Recognized Propane and Methane elements
- Order standard relay for direct fan control or (NEW!) fail-open version for itegration into fire panels
- Integrated display, LED indicators, audible alarm
- Menu selectable 0-5/10V, 1-5V and 4-20mA outputs (0-10V default)
- BACnet supports BACnet MS/TP and Modbus RTU networks with auto-configuration for network baud rate, serial format, protocol type and self-addressing
- Dual outputs support daisy chain wiring to cost-effectively sense and control large areas
- UL2075 recognized catalytic sensing element
- Warning indicators alert occupants when element's lifecycle is near end for replacement
- Installer-friendly circuit board makes through-the-back wiring simple
- Test mode speeds up field commissioning for verifying warning indicators and relay functions
- Push buttons and LCD to navigate setting parameters
- UL Listed (UL61010-1)
- Compliant with NFPA 111, NFPA 820, and NFPA 1, Fire Code, Chapter 38.6
- 7-year limited warranty on electronics; 2-year on elements
- Sense in two locations
- Plug-and-play; provided with pre-cut CAT-5 cable
- Single power source, single location for RS-485/analog/relay connections
- Single BACnet device; reduce devices/points on your network
- Through-the-back wiring makes junction-box-mounting easy
- No programming necessary
- Order dual hydrogen sensors - great for modular battery energy storage system


Standard LCD and
LED indicators
Removable terminal block
Push button menu
for easy setup and
Audible alarm
Field Replaceable
Sensing Elements

ORDERING

TG ☐ - ☐ ☐ ☐ -

Package
W = Wall Mount
D = Duct Mount
M = Metal

Output Type
A = Analog
B = BACnet/Modbus

Gas Type 1*
C = Carbon Monoxide (CO)
N = Nitrogen Dioxide (NO_2)
D = Carbon Dioxide (CO_2)
E = Dual Channel CO_2
M = Methane (CH_4)
P = Propane (C_3H_8)
H = Hydrogen (H_2)
O = Oxygen (O_2)
S = Hydrogen Sulphide (H_2S)
A = Ammonia (NH_3)
2 = R22
4 = R410A (Mulsti-Gas)
5 = R404A
6 = R407C
7 = R449A
8 = R513A
9 = 1233ZDE

Gas Type 2*
X = No second gas
N = Nitrogen Dioxide (NO_2)
D = Carbon Dioxide (CO_2)
E = Dual Channel CO_2
M = Methane (CH_4)
P = Propane (C_3H_8)
H = Hydrogen (H_2)
O = Oxygen (O_2)
S = Hydrogen Sulphide (H_2S)
A = Ammonia (NH_3)

Temperature
A = None
C = 100Pt RTD
D = 1000Pt RTD
E = 10K Type 2
F = 10K Type 3
G = 10k w/11k
H = 3k
I = 2k2
J = 1k8
K = 20k

Options
Blank = None
S = Solid/Opaque Lid
W=White/Solid Lid
F = Fail Open Relay

*Refrigerant sensors may not be paired with CH_4, C_3H_8, or H_2, or paired together.

Replacement Elements
TGS-CO-ULV2 = Carbon Monoxide
TGS-NO2-ULV2 = Nitrogen Dioxide
TGS-CH4-ULV2= Methane
TGS-C3H8-ULV2 = Propane
TGS-O2-ULV2 = Oxygen
TGS-H2-ULV2 = Hydrogen
TGS-H2S-ULV2 = Hydrogen Sulfide
Call for more options

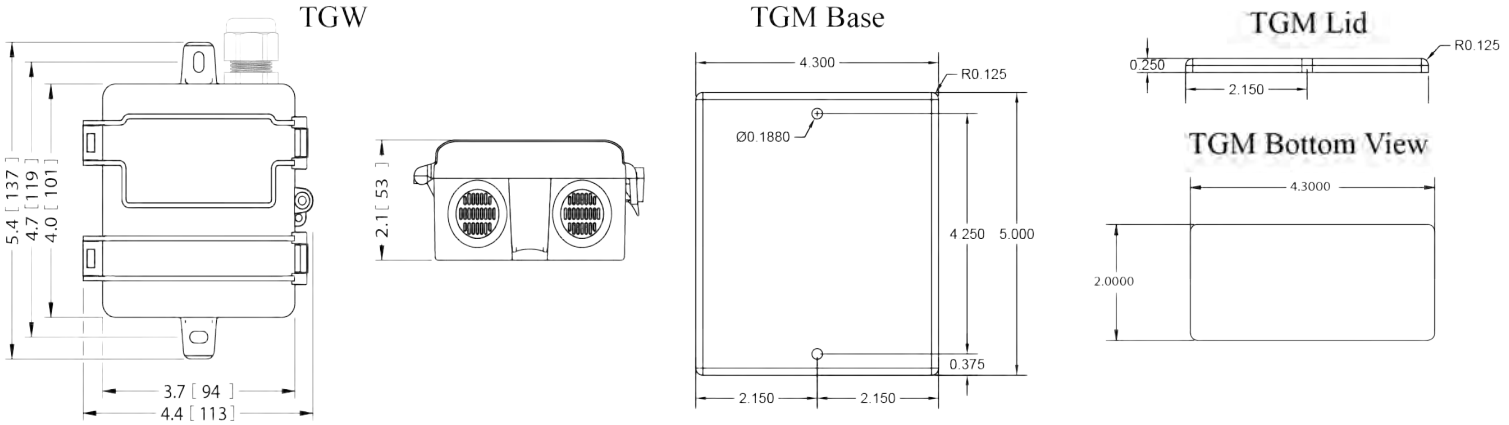
TG ☐ **- REM -** ☐

Package
W = Wall Mount
M = Metal

Cable Length
5 = 5 feet
10 = 10 feet
15 = 15 feet
20 = 20 feet

^TG-REM is a kit only and does not include gas sensing element. Purchase TGS sensor or dual-element TG separately.

DIMENSIONS



Warning: The datasheet is designed for reference only. Refer to installation instructions that accompany the product and heed all safety instructions. Product improvement is a continuing process at Senva. Changes may occur to products without prior notice.

SPECIFICATIONS

Power Supply		15-30VDC/24VAC(1), 4W max, 160mA max.
	TG-REM	Powered through CAT-5 cable, no separate power required.
Wiring	Conductor	14-24 AWG, Minimum 600V, 75°C
	Terminal Torque	0.5 N-m
Analog Outputs	2 programmable outputs	0-10V (default), 0-5V, 1-5V, 4-20mA (menu selectable)
	CO Output Scaling	0-200ppm (default), 0-1000ppm (menu selectable)
	NO_2 Output Scaling	0-10ppm (default), 0-30ppm (menu selectable)
	CO_2 Output Scaling	0-10,000ppm (default), 0-10,000 (menu selectable)
	Propane/Methane / Hydrogen Output Scaling	0-50% LEL (default), 0-50% LEL (menu selectable)
	Oxygen Output Scaling	0-25% Vol (default), 0-25% Vol (menu selectable)
	Refrigerant Output Scaling	0-1000ppm (default), 0-1000ppm (menu selectable)
	H2S Output Scaling	0-100ppm (default), 0-100ppm (menu selectable)
	Ammonia NH3 Output Scaling	0-100ppm (default), 0-100ppm (menu selectable)
	Temperature Output Scaling (optional)	-20° to 85°C
BACnet /Modbus	Protocol RS-485	BACnet MS/TP, Modbus RTU, Modbus ASCII
	Baud Rates	9600, 19200, 38400, 57600, 76800, 115200
	RS-485 Loading	1/4 unit
Fan Relay	Fan relay characteristics (Standard Version)	N.C. 1A@24/30VDC (50/60Hz) (no mains connection)
	Fan relay characteristics (Fail-Open Version)	N.O. 1A@24/30VDC (50/60Hz) (no mains connection)
Alarm Relay	Alarm relay characteristics (Standard Version)	N.C. 1A@24/30VDC (50/60Hz) (no mains conenction)
	Alarm relay characteristics (Fail-Open Version)	N.O. 1A@24/30VDC (50/60Hz) (no mains conenction)
Display	3-1/2 digit LCD	Indicates CO ppm, NO2 ppm, Temp (menu selectable)
LEDs	Green, Yellow, Red	Green = Normal, Yellow = Relay, Red = Alarm
Audible Alarm	85dB Piezo transducer	30 minutes above alarm setpoint (menu selectable)
CO Sensor Performance (4)	Type	Electrochemical

	Accuracy	±5% of Default Range, ±5% of Reading Above 200 ppm
	Resolution	1 ppm
	Certifications	UL2075 Recognized component
	Life Expectancy	7 years
	Recommended Calibration	Annual
	Recommended Height and Coverage Area	3 to 6 feet, coverage 5000 to 7500 sq. ft.
NO_2 Sensor Performance [5]	Type	Electrochemical
	Accuracy	±5% of Default Range, ±5% of Reading Above 20 ppm
	Resolution	0.1 ppm
	Certifications	UL2075 Recognized component
	Life Expectancy	7 years
	Recommended Calibration	Annual
	Recommended Height and Coverage Area	3 to 6 feet, coverage 5000 to 7500 sq. ft.
Oxygen Sensor Performance	Type	Electrochemical
	Detection Range	0-25% Volume
	Accuracy	±5% of range
	Resolution	0.1%
	Life expectancy	5 years, with Annual Calibration
	Recommended Calibration	Annual
	Recommended Height and Coverage Area	3 to 6 feet off the ground; coverage of 5000-7500 square feet
Ammonia Sensor (NH_3) Performance	Type	Electrochemical
	Accuracy	±5% of default range
	Resolution	0.1 ppm
	Life expectancy	5 years
	Recommended Calibration	6 months
	Recommended Height and Coverage Area	0.5 to 1 foot from ceiling; coverage 5000-7500 square feet (Click for details)
Carbon Dioxide (CO_2)	Type	Non-Dispersive Infrared (NDIR)
	Accuracy[6]	±(30ppm +3% of reading) (400-2000ppm), @-10-50°C
		±(50ppm +5% of reading) Standard (2000-5000ppm), @-10-50°C
		±(50ppm +3% of reading) Dual Channel (2000-5000ppm), @-10-50°C
		±(100ppm +10% of reading) (5000-10000ppm), @0-50°C
	Drift with ABC disabled [7]	35 ppm/month [8] (Standard), 5 ppm/month [8] (Dual Channel)
	Range	0-2000/5000 ppm; Programmable up to 10,000 ppm
	Resolution	1 ppm
	Life expectancy	15 years
	Response Time	30s
	Sample Response	1s
	Recommended Height and Coverage Area	3 to 6 feet, coverage 5000-7500 square feet (Click for details)
Methane/Propane/Hydrogen Sensors Performance	Type	Catalytic
	Detection Range	0-50% LEL (Lower Explosive Limit)
	Accuracy	5% of range
	Certifications	UL2075 Recognized Component for Methane and Propane

	Resolution	1%LEL
	Ceritifications	UL2075 Recognized Component
	Life expectancy	>5 years
	Response Time	<10s to 90%
	Recommended Calibration	Bump test annually, calibrate or replace if necessary. (9)
	Long Term Stability Drift	Zero: <±2mV/year
		Sensitivity: <±2mV/month
	Recommended Height and Coverage Area	Methane/Hydrogen: Within 1 ft of ceiling
		Propane: 1-3 ft above finished floor;
		Coverage: Methane/Hydrogen 5000-7500 sq ft;
		Propane 5000 sq ft (Click for details)
Hydrogen Sulphide (H2S) Sensor Performance	Type	Electrochemical
	Detection Range	0-100 ppm
	Accuracy	±5% of Range
	Resolution	1 ppm
	Life expectancy	5 years with 6 month calibration
	Recommended Calibration	6 months
	Recommended Height and Coverage Area	3 to 6 foot above the ground; coverage of 5000-7500 square feet
Refrigerant Sensors Performance	Type	MOS
	Detection Range	0-1000 ppm
	Resolution	1 ppm
	R22, R134A, R410A, R404A, R407c	Calibrated for respective
	R134A Sensitivity(7)	@300ppm test gas: 450 ppm R410A, 425 ppm R407C, 400 ppm R404A, 370 ppm R22, 300 ppm R134A
	Other Detectable Gases(8)	R407A, R407F, R427A, R452B, R507, R448A, R454B, R455A, R455C, R422A, R422D, R452A, R514A, R32, Consult factory for other A2L gases
	Life Expectancy	10 years (typical expectation for MOS sensors)
	Recommended Calibration	6 months
	Recommended Height	6 inches above floor; no more than 18 inches above lowest level of equipment location for leak detection; coverage 5000-7500 sq ft.
Operating Environment	Temperature, Operational ()	-20 to 50°C (-4 to 122°F) (CO_2 versions rated to -40°C)
	Humidity	15-95% continuous, 0-95% intermittent
	Max Elevation	2000m
Enclosure (Wall & Duct)	Material	ABS/Polycarbonate
	Dimensions	4.0"h x 4.4"w x 2.1"d
	Conduit Opening	Tapped 1/2" NPT
	Rating	IP43 or NEMA 3R
Enclosure (Metal)	Material & Enclosure Rating	Powder-coated steel/acrylic
	Dimensions	5.0"h x 4.3"w x 2.25"d
	Opening	Dual air vents on bottom of enclosure
	Mounting	Pre-drilled for 2x4" electrical box
	Rating	IP41 or NEMA 3R
Agency	Compliance	UL61010-1 Listed UL, cUL, CE, UL 2075 Recognized Propane/Methane/Hydrogen/Nitrogen Dioxide/Carbon Monoxide sensor

(1) One side of transformer secondary is connected to signal common. Dedicated transformer is recommended. No mains circuit connection allowed. In addition, it is required to use an isolated power supply that is certified by a national or international standard (i.e. UL). Use of a Class 2 LPS power supply or greater is required.

(2) R134A sensor is factory calibrated to R134A gas but may be used as a general-purpose refrigerant sensor. Sensitivity to some other gases can be found in the installation manual. Actual response may vary depending on installation. For more accurate response to a specific gas, a unit may be field calibrated.
(3) These gases may be detected by the sensor but sensitivity curves are not available at this time.

(4) Carbon Monoxide full scale is 1000 ppm.

(5) Nitrogen Dioxide full scale is 30 ppm.

(6) CO_2 sensor is equipped with a heater to account for temperatures down to -40°C.

(7) It is not recommended to de-activate ABC (auto-calibration) except for continuously occupied spaces or greenhouses. Drift ratings may vary based on environment.
(8) Combination CO/Methane, CO/Propane, or CO/Refrigerant sensors should be mounted according to Propane/Methane/Refrigerant recommendations. Consult factory for other combinations. Mounting height recommendations may be adjusted according to installation. Ensure sensor is accessible for maintenance and target gas has unobstructed access to sensor. Mount in accordance with ANSI/NFPA 70 and NEC or CEC.
(9) A bump test involves exposing the sensor to a reference gas and detecting the sensor's response. If sensor response is out of accuracy range, recalibration or replacement of the sensor element may be necessary.

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

TG Series UL Wall & Duct

Refrigerant Sensor/Controller

Sense most A2L and A3 gases
Analog and BACnet/Modbus protocol options
Rugged ABS or Metal enclosure options
Operates as a stand-alone sensor or local controller

DESCRIPTION

Senva TG Series refrigerant sensors are a great solution for refrigerant leak detection in many applications. It can be ordered as individually calibrated R134A or R410A sensors or any combination with CO or NO2 sensors. Buy pre-calibrated or field calibrate to any refrigerant including R454A, R454B, R454C, R407C, R404A, R22, R123. The analog output model features 2 outputs that support daisy chain wiring - multiple sensors may be used in a parallel sequence (0-10V) for cost-effective coverage of large areas. The unit can also act as a stand-alone controller, utilizing the relay for exhaust fan operation or the output for direct control of a VFD. The BACnet/Modbus model supports one unit of MS/TP & Modbus network communication. Standard features include network auto-configuration, a programmable fan relay, LED indicators, an integrated display, and an audible alarm.

APPLICATIONS

- A2L and A3 leak detection in mechanical rooms
- Pre-calibrated for R410A or field calibrate to any refrigerant including R454A, R454B, R454C, R407C, R404A, R22, R123 and most A2L gases
- Monitor multiple gases with one mounted unit
- Alert occupants of elevated gas levels
- Directly control exhaust fans

TG Metal LED or Solid Enclosure Available

TG ABS Enclosure - Available with Tinted or Solid Lid Options

Two sensing elements, buzzer, three color LEDs, and LCD for setup and calibration

Gas shrouds secure over respective sensing elements for calibration

ABS comes with conduit box adapter

Buy American Act Certified

FEATURES

- Integrated display, LED indicators, audible alarm
- Menu selectable 0-5/10V, 1-5V and 4-20mA outputs (0-10V default)
- BACnet supports BACnet MS/TP and Modbus RTU networks with auto-configuration for network baud rate, serial format, protocol type, and self-addressing
- Dual outputs support daisy chain wiring to cost-effectively sense and control large areas
- UL2034 recognized electrochemical CO sensing element
- Warning indicators alert occupants when the element's lifecycle is near the end for replacement
- Installer-friendly circuit board makes through-the-back wiring simple
- Test mode speeds up field commissioning for verifying warning indicators and relay functions
- Push buttons and LCD to navigate setting parameters
- UL Listed (UL61010-1)
- 7-year limited warranty on electronics; 2-year on elements

ORDERING

TG ☐ - ☐ ☐ ☐ - ☐ ☐

Package
W = Wall Mount
M = Metal
D = Duct Mount

Output Type
A = Analog
B = BACnet/Modbus

Gas Type 1
A= Ammonia
2 = R22
4 = R410A (Multi-Gas)
5 = R404A
6 = R407C
7 = R449A
8 = R513A
9 = 1233ZDE
M = Methane
P = Propane (C_3H_8)
E = NDIR Dual Channel (CO_2)

Gas Type 2
X = No second gas
2 = R22
3 = R134A
4 = R410A
5 = R404A
6 = R407C
7 = R449A
8 = R513A
9 = 1233ZDE

Temperature
A = None
E = 10K Type 2
F = 10K Type 3
K = 20K

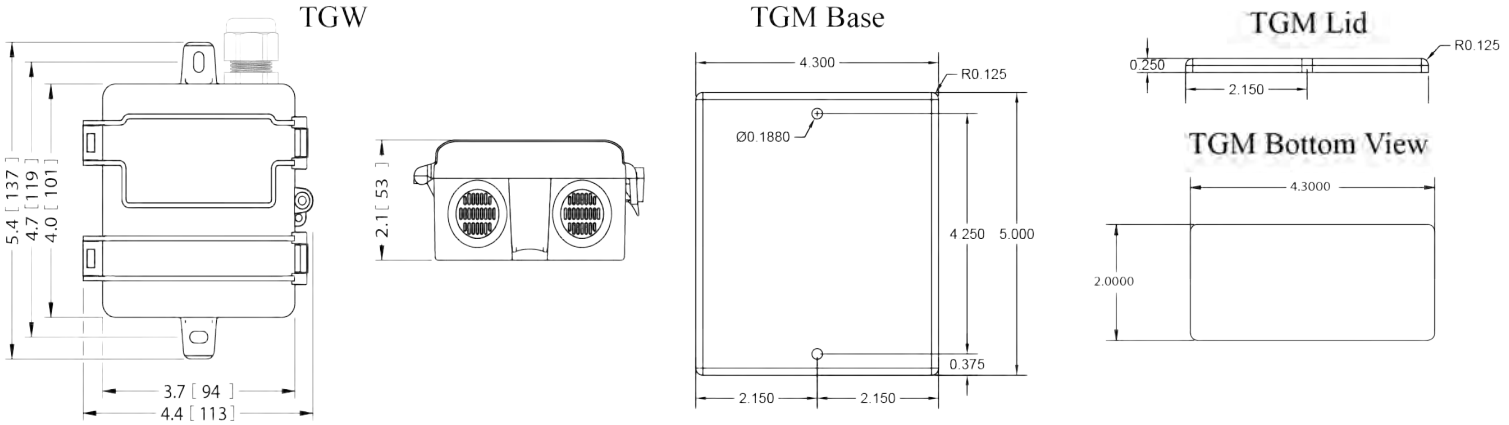
Enclosure Lid
Blank = Clear/ Tinted
S = Solid/Opaque
W = All White Solid

Scan here to see refrigerant cross-sensitivities

Replacement Elements
TGS-A-UL = Ammonia
TGS-3-UL = R134A (multi-gas)
TGS-4-UL = R410A
Consult factory for more.

* Other refrigerants available. Consult factory for details. Refrigerant gas sensors may be paired with all other TG gas offerings, except Methane, Propane, and Hydrogen. See combustibles ordering table for a list of gas options

DIMENSIONS



Warning: The datasheet is designed for reference only. Refer to installation instructions that accompany the product and heed all safety instructions. Product improvement is a continuing process at Senva. Changes may occur to products without prior notice.

SPECIFICATIONS

Power Supply		15-30VDC/24VAC(1), 4W max, 160mA max
Wiring	Conductor	14-24 AWG, Minimum 600V, 75°C
	Terminal Torque	0,5 N·m
Analog Outputs	2 programmable outputs	0-10V (default), 0-5V, 1-5V, 4-20mA (menu selectable)
	CO Output Scaling	0-200ppm (default), 0-1000ppm (menu selectable)
	NO_2 Output Scaling	0-10ppm (default), 0-30ppm (menu selectable)
	CO_2 Output Scaling	0-10,000ppm (default); 0-10,000ppm (menu selectable)
	Propane/Methane/Hydrogen Output Scaling	0-50% LEL (default), 0-50% LEL (menu selectable)
	Oxygen Output Scaling	0-25% Vol (default), 0-25% Vol (menu selectable)
	Refrigerant Output Scaling	0-1000ppm (default), 0-1000ppm (menu selectable)
	Hydrogen Sulfide (H2S) Output Scaling	0-100ppm (default), 0-100ppm (menu selectable)
	Ammonia (NH3) Output Scaling	0-100ppm (default), 0-100ppm (menu selectable)
	Temperature Output Scaling	-20 to 85°C
BACnet/Modbus	Protocol RS-485	BACnet MS/TP, Modbus RTU, Modbus ASCII
	Baud Rates	9600, 19200, 38400, 57600, 76800, 115200
	RS-485 Loading	1/4 unit
Fan Relay	Fan relay characteristics	N.C. 1A@24/30VDC (50/60Hz) (no mains connection)
	Fan relay setpoint	300 ppm (default), 0-1000 ppm (menu selectable)
Alarm Relay	Alarm relay characteristics	N.C. 1A@24/30VDC (50/60Hz) (no mains connection)
	Alarm relay setpoint	600 ppm (default), 0-1000 ppm (menu selectable)
Display	3-1/2 digit LCD	Indicates CO ppm, NO_2 ppm, Temp (menu selectable) (menu selectable)
LEDs	Green, Yellow, Red	Green = Normal, Yellow = Relay, Red = Alarm
Audible Alarm	85dB @4" Piezo transducer	30 minutes above alarm setpoint per UL2075 (menu selectable)
CO Sensor Performance (6)	Type	Electrochemical
	Accuracy	±5% of Default Range, ±5% of Reading Above 200ppm
	Resolution	1ppm
	Certifications	UL2075 Recognized component

	Life Expectancy	7 years
	Recommended Calibration	Annual
	Recommended Height and Coverage Area	3 to 6 feet; coverage 500-7500 sq. ft.
NO_2 Sensor Performance [7]	Type	Electrochemical
	Accuracy	±5% of Default Range, ±5% of Reading Above 20ppm
	Resolution	0.1ppm
	Certifications	UL2075 Recognized component
	Life Expectancy	7 years
	Recommended Calibration	Annual
	Recommended Height and Coverage Area	3 to 6 feet; coverage 5000 - 7500 sq. ft.
CO_2 Sensor Performance	Type	Non-dispersive Infrared (NDIR)
	Accuracy [8]	±(30ppm +3% of reading) (400-2000ppm), @-10-50°C
		±(50ppm +5% of reading) Standard (2000-5000ppm), @-10-50°C
		±(50ppm +3% of reading) Dual Channel (2000-5000ppm), @-10-50°C
		±(100ppm +10% of reading) (5000-10000ppm), @0-50°C
	Drift with ABC disabled [9]	35ppm/month [10] (Standard) 5ppm/month [10] (Dual Channel)
	Range	0-2000/5000ppm; Programmable up to 10,000ppm
	Resolution	1 ppm
	Life Expectancy	15 years
	Response Time	30s
	Sample Rate	1s
	Recommended Height and Coverage Area	3 to 6 feet; coverage 5000 - 7500 sq. ft.
Methane/Propane/Hydrogen Sensor Performance	Type	Catalytic
	Detection Range	0-50% LEL (Lower Explosive Limit)
	Accuracy	±5% of Range
	Resolution	1% LEL
	Certifications	UL2075 Recognized component for Methane/Propane
	Life Expectancy	>5years
	Response Time	<10s to 90%
	Recommended Calibration	Bump test annually, calibrate or replace if necessary. [11]
	Long Term Stability Drift	Zero: <±2mV/year
		Sensitivity: <±2mV/month
	Recommended Height and Coverage Area	Hydrogen/Methane: 0.5 to 1 foot from ceiling; coverage 5000-7500 sq. ft.
		Propane: 1-3 ft. above finished floor; coverage 5000 square feet.
Oxygen Sensor Performance	Type	Electrochemical
	Detection Range	0-25% Volume
	Accuracy	±5% of Range
	Resolution	0.1%
	Life Expectancy	5 years
	Recommended Calibration	Annual
	Recommended Height and Coverage Area	3 to 6 feet; coverage 5000-7500 sq. ft.

Hydrogen Sulfide (H_2S) Sensor Performance	Type	Electrochemical
	Detection Range	0-100 ppm
	Accuracy	±5% of Range
	Resolution	1 ppm
	Life Expectancy	5 years
	Recommended Calibration	6 months
	Recommended Height and Coverage Area	3 to 6 feet; coverage 5000 - 7500 sq. ft.
Ammonia (NH_3) Sensor Performance	Type	Electrochemical
	Detection Range	0-100 ppm
	Accuracy	±5% of Range
	Resolution	0.1 ppm
	Life Expectancy	5 years
	Recommended Calibration	6 months
	Recommended Height and Coverage Area	0.5 to 1 foot from ceiling; coverage 5000-7500 ft.
Refrigerant Sensor Performance	Type	MOS
	Detection Range	0-1000 ppm
	Resolution	1 ppm
	R22, R134A, R410A, R404A, R407C	Factory calibrated for respective gas
	Other detectable gases(3)	R407A, R407F, R427A, R452B, R507, R448A, R454B, R455A, R455C, R422A, R422D, R452A, R514A, R32, R123. Consult factory for other A2L gases
	Life expectancy	>10 years (typical life expectancy for MOS sensors)
	Recommended Calibration	6 months
	Recommended Height and Coverage Area	6 inches above floor; no more than 18 inches above lowest level of equipment location for leak detection; coverage 5000-7500 sq. ft. (Click for details)
Operating Environment	Temperature, Operational(4)	-20 to 50°C (MOS rated down to -30°C; CO_2 versions rated to -40°C)
	Humidity	15-90% continuous, 0-99% intermittent
	Max Elevation	2000m, Refrigerant 2629 m (8625 ft) (5)
Enclosure (Wall & Duct)	Material	ABS/Polycarbonate
	Dimensions	4.0"h x 4.4"w x 2.1"d
	Conduit Opening	Tapped 1/2" NPT
	Rating	IP43 or NEMA 3R
Enclosure (Metal)	Material	Powder-coated steel/acrylic
	Dimensions	5.0"h x 4.3"w x 2.25"d
	Opening	Dual air vents on bottom of enclosure
	Mounting	Pre-drilled for 2x4" electrical box
	Rating	IP41 or NEMA 3R
Agency	Compliance	UL61010-1 Listed UL, cUL, CE

(1) One side of transformer secondary is connected to signal common. Dedicated transformer is recommended. No mains circuit connection allowed. In addition, it is required to use an isolated power supply that is certified by a national or international standard (i.e. UL). Use of a Class 2 LPS power supply or greater is required.
(2) R410A sensor is factory calibrated to R410A gas but may be used as a general-purpose refrigerant sensor. Sensitivity to some other gases can be found in the installation manual. Actual response may vary depending on installation. For more accurate response to a specific gas, a unit may be field calibrated.
(3) These gases may be detected by the sensor, but sensitivity curves are not available at this time.

(4) Accuracy of CO_2 reading may be reduced at temperatures below 14ºF (-10°C).

(5) Refrigerant sensors have been tested to perform at this altitude. To maintain accuracy spec, a field calibration is recommended.

(6) Carbon Monoxide full scale is 1000ppm.

(7) Nitrogen Dioxide full scale is 30ppm.
(8) CO2 sensor is equipped with a heater to account for temperatures down to -40°C.

(9) It is not recommended to de-activate ABC (auto-calibration) except for continuously occupied spaces or greednhouses. Drift ratings may vary based on encironment.
(10) Combination CO/Methane, CO/Propane, or CO/Refrigerant sensors should be mounted according to Propane/Methane/Refrigerant recommendations. Consult factory for other comvinations. Mounting height recommendations may be adjusted according to installation. Ensure sensor is accessible for maintenance and target gas has unobstructed access to sensor. Mount in accordance with ANSI/NFPA 70 and NEC or CEC.
(11) A bump test involves exposing the sensor to a reference gas and detecting the sensor's response. If sensor response is out of accuracy range, recalibration or replacement of the sensor element may be necessary.

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TG0R Series

Value Recessed CO

Cost-effective high accuracy CO readings
0-5/10V/2 and 3-wire 4-20mA CO transmitter Relay,
Thermistor outputs for temperature optional
Sleek & functional low-profile design

DESCRIPTION

Designed to maximize safety in work and school environments, the TG0R Value Series features a UL2034-recognized CO sensor. Audible buzzer, relay output and end-of-life indication. Choose the analog output that works best for each job.

APPLICATIONS

- Detect CO in indoor environments, ideal for schools
- Alert occupants of elevated gas levels
- Ventillation control--turn off equiipment when CO is detected
- Economizer control

Warning LED alarm with capacitive touch silence

Minimalist recessed CO sensor

Affordable high-quality branding. Generate service calls for life.

Gasket seals element from wall drafts. 45 degree terminals for ease of wireing

Calibration kit available

Buy American Act Certified

FEATURES

- Cost-effective CO detection with control integration
- 0-5V, 0-10V, 2-wire and 3-wire 4-20mA options, relay output for alarm indication
- Audible buzzer alarm
- End-of-life indication for sensor element
- Buzzer test button for safety checks
- UL2034 recognized electrochemical CO sensing element
- 7 year life expectancy on CO elements
- Quick and easy calibration mode
- Fits easily in standard single gang boxes
- Thermistor outputs for temperature optional

ORDERING

TG [0R] - [ ] [ ]

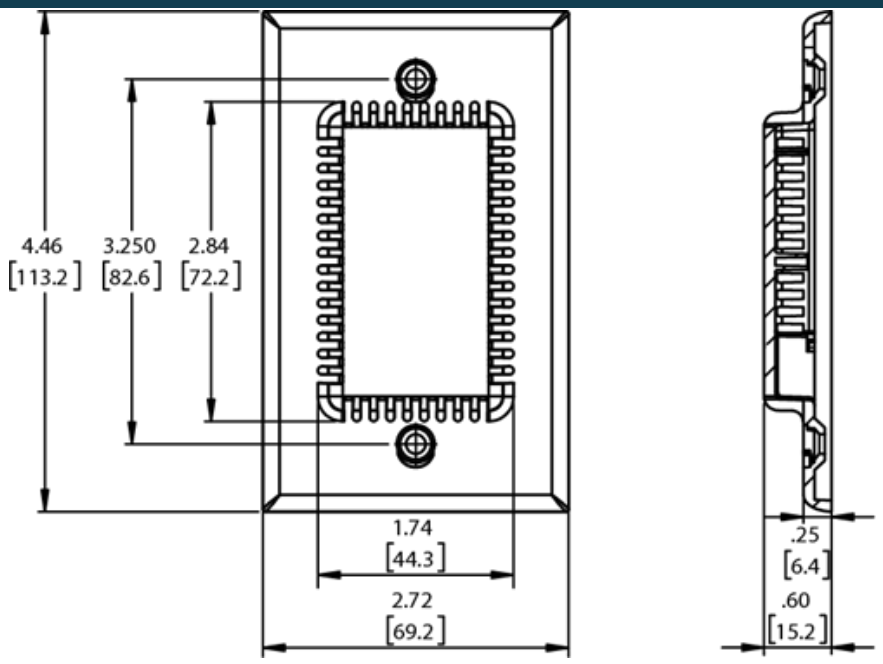
Package
0R = Wall Mount (Recessed)

Gas Type
C=CO
2= R22
4 = R410A (Multi-Gas)
5 = R404A
6 = R407C
7 = R449A
8 = R513A
9 = 1233ZDE

Output Type
A= 0-5VDC, 3 Wire
B= 0-10VDC, 3 Wire
C= 4-20mA, 2 Wire*
D= 4-20mA, 3 Wire

Scan here to see refrigerant cross-sensitivities

DIMENSIONS



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SPECIFICATIONS

Power Supply		12-30VDC/24VAC(1), 24mA max
Analog Outputs	Analog outputs	0-10V, 0-5V, 2-wire or 3-wire 4-20mA (selectable)
	CO output scaling	0-200ppm
	Refrigerant output scaling	0-1000ppm
Alarm Relay	Relay characteristics	N.C. 1A@24/30VDC (50/60Hz) (no mains connection)
	CO alarm setpoint	Activates above 30ppm for 1 hour or 70 ppm for 15 min
	Refrigerant alarm setpoint	Activates above 300ppm
LEDs	LED indicator CO	1 long blink above 30PPM, 1 short blink above 70 ppm
	LED indicator Refrigerant	1 long blink above 300PPM, 1 short blink above 600 ppm
	End-of-life Indicator	3 blinks at 30s intervals
Audible Alarm	Audible Buzzer CO	Activates above 30ppm for 1 hour or 70 ppm for 15 min
	Audible Buzzer Refrigerant	Activates above 300ppm for 1 hour or 600 ppm for 15 min
	Buzzer level	82 dB
	Alarm Test	Hidden button provided for buzzer test
CO Sensor Performance	Type	Electrochemical
	Accuracy	±5%
	Resolution	1ppm
	Certifications	UL2075 Listed Component
	Life expectancy	>7 years
	Coverage Area	5000-7500 square feet
	Calibration Interval	Annually, hold test button for 10s to enter cal mode
Refrigerant Sensor Performance	Type	MOS
	Resolution	1ppm
	Life expectancy	>10 years (typical life expectancy of MOS sensors)
	Calibration(2)	Calibrated to selected refrigerant
	Sensitivity of R134A calibrated device	@300ppm test gas: 450ppm R410A, 425 ppm R407C, 400ppm R404A, 370ppm R22, 300ppm R134A
	Other detectable gases(3)	R407A, R407F, R427A, R452B, R507, R448A, R449A, R422A, R422D, R452A, R513A, R514A, R32
	Coverage Area	5000-7500 square feet
	Calibration Interval	6 months, hold test button for 10s to enter cal mode
Operating Environment	Humidity	15-95% continuous, 0-95% intermittent
	Temperature, continuous	-40C/-40F
	Max Elevation(4)	9000 ft
Enclosure	Dimensions	4.45”h x 2.7”w x 0.5”d (depth measured from wall)
	Unit Temp Rating	-4 to 122oF (-20 to 50oC)
Compliance		CE, RoHS

(1) One side of transformer, secondary is connected to signal common. Dedicated transformer is recommended. 15-30VDC/24VAC power supply voltage required for 10 volt output.
(2) R134A sensor is factory calibrated to R134A gas but may be used as a general purpose refrigerant sensor. Sensitivity to some other gases can be found at Senva.com (see QR code on left) . Actual response may vary depending on installation. For more accurate response to a specific gas, a unit may be field calibrated.
(3) These gases my be detected by the sensor but sensitivity curves are not available at this time.

(4) High altitudes will not cause the sensor to not operate, but will affect accuracy. To maintain accuracy spec, a field calibration is recommended.

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

TG0R Series

Value Recessed Refrigerant Sensor

Local alarm with control integration for VRF systems
0-5/10V/2 and 3-wire 4-20mA CO transmitter Relay,
Thermistor outputs for temperature optional
Sleek & functional low-profile design

DESCRIPTION

Designed for your VRF systems--ideal for hotel rooms and other environments requiring local leak detection. Local audible buzzer alarm, end-of-life indication for sensor element, and test function. Features a choice 0-5V, 0-10V, and 3-wire 4-20mA and thermistor outputs. Integrated alarm relay.

APPLICATIONS

Ideal for VRF systems

- Schools
- Hotels
- Mixed-Use
- Multi-Family
- Commercial facilities

Warning LED alarm with capacitive touch silence

Minimalist concept

Your brand, your product. Affordable high-quality branding. Generate service calls for life.

Gasket seals element from wall drafts. 45 degree terminals for ease of wireing. save time and energy.

Calibration kit available

Buy American Act Certified

FEATURES

- Relay output for alarm indication
- Audible buzzer for local alarm
- Buzzer test button for safety checks
- End-of-life indication for sensor element
- 10 year life expectancy on elements
- Easy calibration mode
- Fits easily in standard single gang boxes

TG CALIBRATION: Order with CALKITHW-R to receive calibration fitting and regulator

ORDERING

TG [0R] - [ ] [ ]

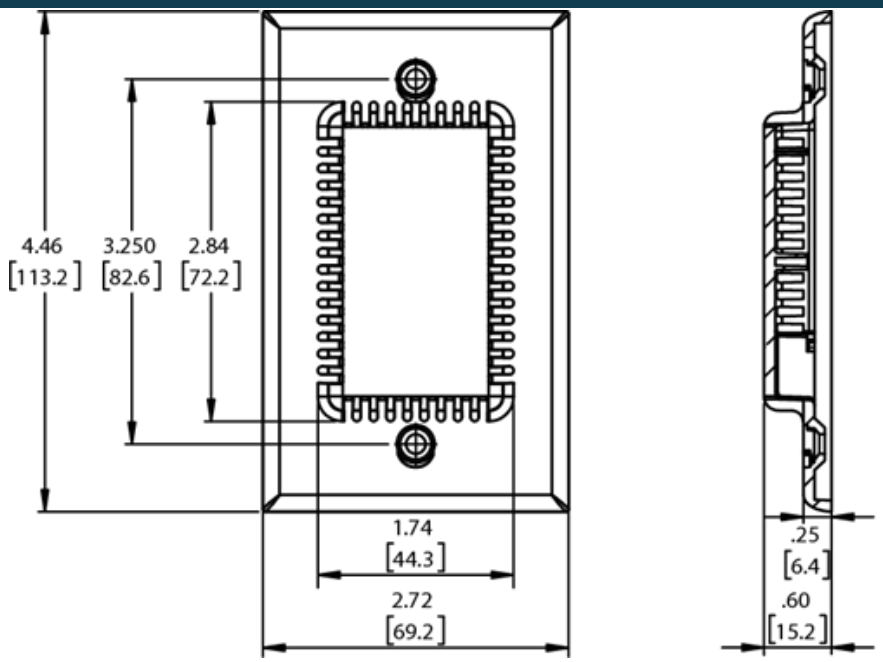
Package
0R = Wall Mount (Recessed)

Gas Type
C=CO
2= R22
4 = R410A (Multi-Gas)
5 = R404A
6 = R407C
7 = R449A
8 = R513A
9 = 1233ZDE

Output Type
A= 0-5VDC, 3 Wire
B= 0-10VDC, 3 Wire
C= 4-20mA, 2 Wire*
D= 4-20mA, 3 Wire

Scan here to see refrigerant cross-sensitivities

DIMENSIONS



Warning: The datasheet is designed for reference only. Refer to installation instructions that accompany the product and heed all safety instructions. Product improvement is a continuing process at Senva. Changes may occur to products without prior notice.

SPECIFICATIONS

Power Supply		12-30VDC/24VAC(1), 24mA max
Analog Outputs	Analog outputs	0-10V, 0-5V, 2-wire or 3-wire 4-20mA (selectable)
	CO output scaling	0-200ppm
	Refrigerant output scaling	0-1000ppm
Alarm Relay	Relay characteristics	N.C. 1A@24/30VDC (50/60Hz) (no mains connection)
	CO alarm setpoint	Activates above 30ppm for 1 hour or 70 ppm for 15 min
	Refrigerant alarm setpoint	Activates above 300ppm
LEDs	LED indicator CO	1 long blink above 30PPM, 1 short blink above 70 ppm
	LED indicator Refrigerant	1 long blink above 300PPM, 1 short blink above 600 ppm
	End-of-life Indicator	3 blinks at 30s intervals
Audible Alarm	Audible Buzzer CO	Activates above 30ppm for 1 hour or 70 ppm for 15 min
	Audible Buzzer Refrigerant	Activates above 300ppm for 1 hour or 600 ppm for 15 min
	Buzzer level	82 dB
	Alarm Test	Hidden button provided for buzzer test
CO Sensor Performance	Type	Electrochemical
	Accuracy	±5%
	Resolution	1ppm
	Certifications	UL2034 Listed Component
	Life expectancy	>7 years
	Coverage Area	5000-7500 square feet
	Calibration Interval	Annually, hold test button for 10s to enter cal mode
Refrigerant Sensor Performance	Type	MOS
	Resolution	1ppm
	Life expectancy	>10 years (typical life expectancy of MOS sensors)
	Calibration(2)	Calibrated to selected refrigerant
	Sensitivity of R134A calibrated device	@300ppm test gas: 450ppm R410A, 425 ppm R407C, 400ppm R404A, 370ppm R22, 300ppm R134A
	Other detectable gases(3)	R407A, R407F, R427A, R452B, R507, R448A, R449A, R422A, R422D, R452A, R513A, R514A, R32
	Coverage Area	5000-7500 square feet
	Calibration Interval	6 months, hold test button for 10s to enter cal mode
Operating Environment	Humidity	15-95% continuous, 0-95% intermittent
	Max Elevation(4)	2629 m (8625 ft)
Enclosure	Dimensions	4.45”h x 2.7”w x 0.5”d (depth measured from wall)
	Unit Temp Rating	-4 to 122oF (-20 to 50oC)
Compliance		CE, RoHS

(1) One side of transformer, secondary is connected to signal common. Dedicated transformer is recommended. 15-30VDC/24VAC power supply voltage required for 10 volt output.
(2) R134A sensor is factory calibrated to R134A gas but may be used as a general purpose refrigerant sensor. Sensitivity to some other gases can be found at Senva.com (see QR code on left) . Actual response may vary depending on installation. For more accurate response to a specific gas, a unit may be field calibrated.
(3) These gases my be detected by the sensor but sensitivity curves are not available at this time.

(4) Refrigerant sensors have been tested to perform at this altitude. To maintain accuracy spec, a field calibration is recommended.

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

TGR Series

Recessed Dual Toxic Gas Sensor/Controller

Choose from 14 gases: CO/NO2, combustibles, refrigerants and most A2L & A3 gasses
Choose Modbus RTU and BACnet MS/TP protocols or Analog output
Field replaceable factory-calibrated sensing elements
Integrated LED indicator, audible alarm, and two configurable relay outputs

Modbus BACnet warranty ISO RoHS

SENVA SYNC COMPATIBLE

DESCRIPTION

Senva TGR Series sensors can be ordered as individual CO or NO2 sensors or as a combination CO/NO2 sensor in a shared enclosure. Choose up to two from a variety of refrigerant gases, combustibles, or Carbon Monoxide for a combination of air quality and toxic gas detection. The analog output model features 2 outputs that support daisy chain wiring - multiple sensors may be used in a parallel sequence (0-10V) for cost effective coverage of large areas. The unit can also act as a stand alone controller, utilizing the relay for exhaust fan operation or the output for direct control of a VFD. The BACnet/Modbus model supports BACnet MS/TP & Modbus network communication in one unit. Standard features include a programmable fan relay, LED indicators, integrated display and audible alarm.

APPLICATIONS

- Monitor and alert occupants of dangerous air
- Ensure adequate air flow in occupied spaces
- Alert occupants of elevated gas levels
- Directly control exhaust fans
- Parking lot CO/NO2 combo
- Leak detection for VRV refrigerant systems
- Monitor spaces heated by gas RTUs

IP54 enclosure (protected from dust and splashing water)

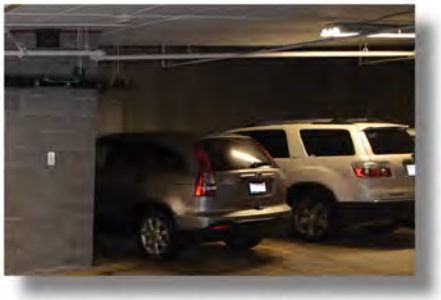
Magnetic calibraton adaptor available

Made in the USA

FEATURES

- NEW! Configure and update firmware with the **SenvaSync** app
- Single or dual sensors on each unit. (refrigerant sensors may only be single element units)
- Choose from up to two gases, supporting CO, CO2, NO2, CH4, C3H8, H2, O2. H2S, NH3, refrigerants and most A2L & A3 gasses
- Field-replaceable, digital factory-calibrated elements automatically adjust set-point and alarm thresholds for easy installation
- Dual analog outputs support daisy chain wiring to cost-effectively sense and control large areas
- Standard setpoint relay for direct fan control or daisy chain for central alarm activation eliminates need for costly controllers
- Rugged enclosure is unobtrusive, and tamper resistant for both surface or recessed j-box
- 7-year limited warranty on electronics; 2-years on sensor elements
- Calibration certificate included with every sensing element to facilitate fast commissioning
- UL listing for element only, UL2034 recognized electrochemical CO sensing element

Applications



Detect exhaust in parking garages with CO/NO2

- Low profile design fits standard j-box

Monitor VRV/VRF systems by sensing any standard refrigerant

- Built-in buzzer alerts occupants of leaks; hidden capactive reset

Combine CO/CO2 for classrooms with gas RTUs

- Meet requirements for CO sensing in classrooms while also measuring CO2 for occupancy and ventilation control

Protect commercial kitchens with CO/Methane sensing

- Meet NFPA 720 with an IP54 rated device for the most challenging envornments

Safeguard battery storage rooms with H2 detection

- Meet NFPA 111 requirements for H2 detection in battery rooms. UPS' can be dangerous if not properly monitored

Sense excess O2 levels in compressed gas storage rooms

- Sense for too much or too little O2; both can signal a problem

ORDERING

TGR - ☐ ☐ ☐

Output Type
A = Analog
B = BACnet/Modbus

Gas Type 1
C = Carbon Monoxide (CO)
D = Carbon Dioxide (CO_2)
E = Dual Channel CO2
N = Nitrogen Dioxide (NO_2)
M = Methane (CH_4)
P = Propane (C_3H_8)
H = Hydrogen (H_2)
O = Oxygen (O_2)
S = Hydrogen Sulfide (H_2S)
A = Ammonia
2 = R22*
4 = R410A* (Multi-Gas)
5 = R404A*
6 = R407C*
7 = R449A
8 = R513A
9 = 1233ZDE

Gas Type 2
X = No second gas
D = Carbon Dioxide (CO_2)
E = Dual Channel (CO_2)
N = Nitrogen Dioxide (NO_2)
M = Methane (CH_4)
P = Propane (C_3H_8)
H = Hydrogen (H_2)
O = Oxygen (O_2)
S = Hydrogen Sulfide (H_2S)
A = Ammonia

*Refrigerant gas sensors can ONLY be ordered as a stand-alone single element.

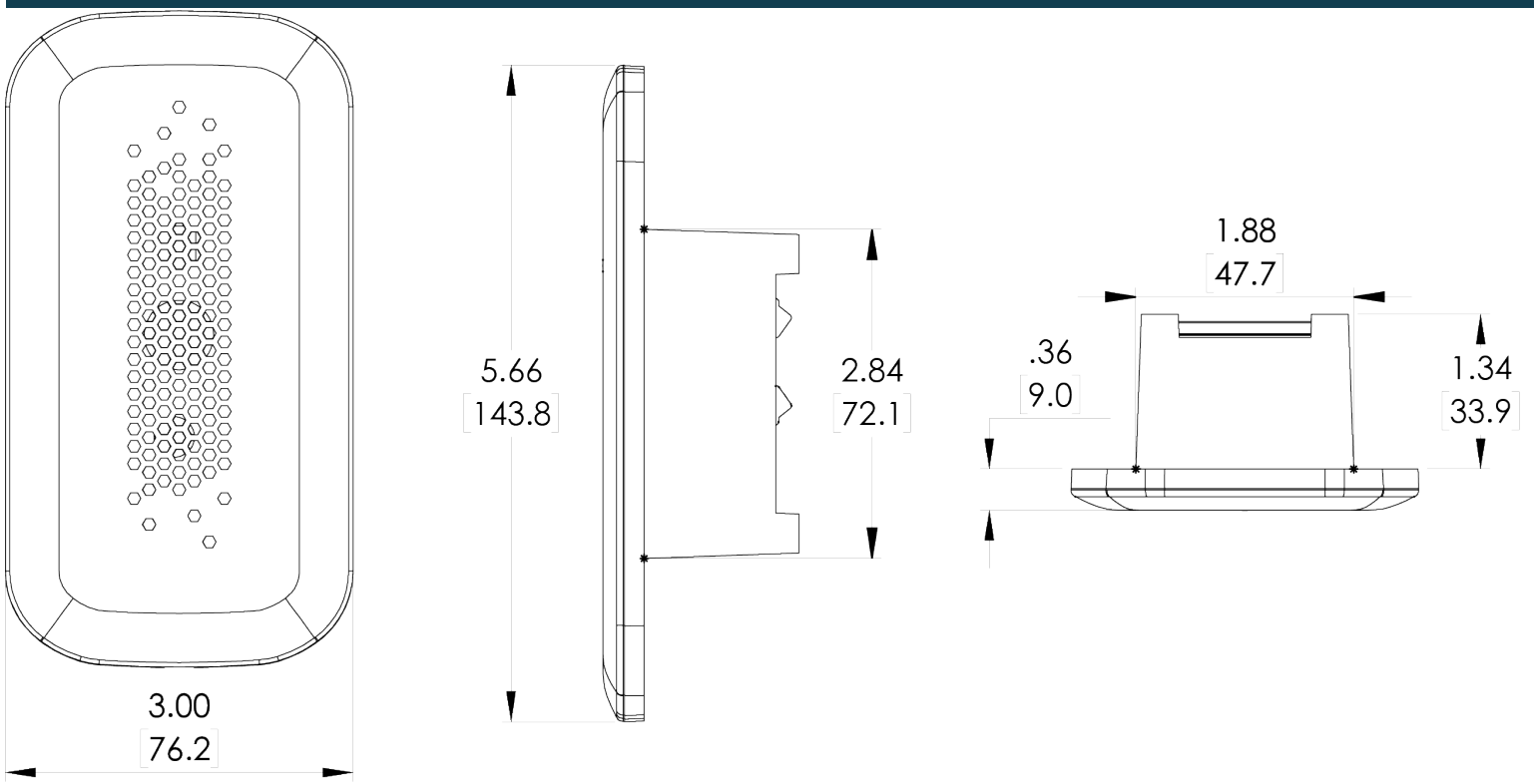
Scan here for TG UL Sensor Placement and Coverage Area

Scan here for Refrigerant Cross-Sensitivities

Scan here for Understanding Cross-Sensitivities

Warning: *Applications of sensor combinations appropriateness should be considered when specifying a sensor and it's placement. Always comply with all national and local codes.*

DIMENSIONS



Warning: The datasheet is designed for reference only. Refer to installation instructions that accompany the product and heed all safety instructions. Product improvement is a continuing process at Senva. Changes may occur to products without prior notice.

SPECIFICATIONS

Power Supply	Comms	16-30VDC/24VAC(1), 5W max, 200mA max.
	Analog	12-30VDC/24VAC(1), 5W max, 200mA max.
Wiring	Conductor	14-24 AWG, Minimum 600V, 75°C
	Terminal Torque	0.5 N•m
Outputs (Analog)	2 programmable outputs	0-10V, 0-5V, and 4-20mA(2) (selectable)
	CO Output Scaling	0-200ppm (default), 0-500ppm (menu selectable)
	NO2 Output Scaling	0-10ppm (default), 0-10ppm (menu selectable)
	CO2 Output Scaling	0-10,00ppm (default), 0-10,00ppm (menu selectable)
	Propane/Methane/Hydrogen Output Scaling	0-50% LEL (default), 0-50% LEL (Menu Selectable)
	Oxygen Output Scaling	0-25% Vol (default), 0-25% Vol (menu selectable)
	Refrigerant Output Scaling	0-1000ppm (default), 0-1000ppm (menu selectable)
	H2S Output Scaling	0-100ppm (default), 0-100ppm (menu selectable)
	Ammonia NH3 Output Scaling	0-100ppm (default), 0-100ppm (menu selectable)
	Temp Output Scaling (optional)	20 to 85°C
BACnet /Modbus	Protocol RS-48	BACnet MS/TP, Modbus RTU
	Baud Rates	9600, 19200, 38400, 57600, 76800, 115200
	RS-485	1/4 unit
Trouble Relay	Trouble Relay characteristics	N.C. 1A@24VAC/30VDC (50/60Hz) (no mains connection)
Alarm Relay	Alarm relay characteristics	N.O. 1A@24VAC/30VDC (50/60Hz) (no mains connection)
LED	Green, Yellow, Red	Green = Normal, Yellow = Warning, Red = Alarm
Audible Alarm Exposure	85dB Piezo transducer	30 minutes above alarm setpoint per UL2075; tamper-proof silence/reset button (menu selectable)

CO Sensor Performance	Type	Electrochemical
	Accuracy	±5% of default range(3) ±5%of reading above 200ppm
	Resolution	1ppm
	Certifications	UL2075 Listed Component
	Life expectancy	>7 years
	Recommended Calibration	Annual
	Recommended Height	3 to 6 feet; coverage 5000-7500 sq ft.
NO2 Sensor Performance	Type	Electrochemical
	Accuracy	±5% of default range(4) ±5%of reading above 20ppm
	Resolution	0.1ppm
	Life expectancy	>7 years
	Recommended Calibration	Annual
	Recommended Height	3 to 6 feet; coverage 5000-7500 sq ft.
Carbon Dioxide (CO2)	Type	Non-Dispersive Infrared (NDIR)
	Accuracy (5)	±(30ppm +3% of reading) (400-2000ppm), @-10-50°C
		±(50ppm +5% of reading) Standard (2000-5000ppm), @-10-50°C
		±(50ppm+3% of reading) Dual Channel (2000-5000ppm), @-10-50°C
		±(100ppm+10% of reading) (5000-10000ppm), @0-50°C
	Drift with ABC disabled (6)	35ppm/month (6) (Standard) 5ppm/month (6) (Dual Channel)
	Range	0-2000/5000ppm; Programmable up to 10,000ppm
	Response time	30 s
	Sample rate	1 s
	Recommended Height	3 to 6 feet; coverage 5000-7500 sq ft.
	Resolution	1 ppm
	Life expectancy	15 years
Methane/Propane/Hydrogen Sensors Performance	Type	Catalytic
	Detection Range	0-50% LEL (Lower Explosive Limit)
	Accuracy	5% of range
	Resolution	1%LEL
	Life expectancy	>5 years
	Recommended Calibration	Bump test annually, calibrate or replace if necessary (12)
	Recommended Height	Hydrogen/Methane: 0.5 to 1 foot from ceiling; coverage 5000-7500 sq ft
		Propane: 1-3 ft. above finished floor, coverage area 5000 sq. ft.
Oxygen Sensor Performance	Type	Electrochemical
	Detection Range	0-25% Volume
	Accuracy	±5% of range
	Resolution	0.1%
	Life expectancy	5 years
	Recommended Calibration	Annual
	Recommended Height	3 to 6 feet; coverage 5000-7500 sq ft
H2S Sensor Performance	Type	Electrochemical
	Detection Range	0-100 ppm
	Accuracy	±5% of range
	Resolution	1 ppm
	Life expectancy	5 years
	Recommended Calibration	6 months
	Recommended Height	3 to 6 feet; coverage 5000-7500 sq ft

Ammonia Sensor Performance	Type	Electrochemical
	Accuracy	±5% of range
	Resolution	0.1 ppm
	Life expectancy	5 years
	Recommended Calibration	6 months
	Recommended Height	0.5 to 1 foot from ceiling; coverage 5000-7500 sq ft
Refrigerant Sensor Performance	Type	Electrochemical
	Detection Range	0-25% Volume
	Resolution	1 ppm
	R134A Sensitivity (6)	@300ppm test gas: 450 ppm R410A, 425 ppm R407C, 400 ppm R404A, 370 ppm R22, 300 ppm R134A
	Other detectable gases (8)	R407A, R407F, R427A, R452B, R507, R448A, R449A, R422A, R422D, R452A, R513A, R514A, R32
	Life expectancy	>10 years (typical life expectancy for MOS sensors)
	Recommended Calibration	6 months
	Recommended Height	6 inches above floor; no more than 18 inches above lowest level of equipment location for leak detection; coverage 5000-7500 sq ft.
	Max Elevation (9)	2629 m (8625 ft)
Operating Environment	Temperature, continuous	-20 to 50°C
	Humidity	15-90% continuous, 0-99% intermittent
	Max Elevation	2000m
Enclosure	Material	ABS/Polycarbonate
	Dimensions	5.7”h x 3.0” x 1.8”d
	Rating	IP20
Agency	Compliance	RoHS

(1) One side of transformer secondary is connected to signal common. Dedicated transformer is recommended. No mains circuit connection allowed. In addition, it is required to use an isolated power supply that is certified by a national or international standard (i.e. UL). Use of a Class 2 LPS power supply or greater is required.
(2)Extreme temperatures may affect accuracy when using 4-20mA outputs.
(3) Carbon Monoxide full scale is 1000ppm.
(4) Nitrogen Dioxide full scale is 30ppm.
(5) Accuracy of CO2 reading may be reduced at temperatures below 14ºF (-10ºC).
(6) Refrigerant sensor may only be ordered as a single element sensor. It cannot be combined with other sensors.
(7)R134A sensor is factory calibrated to R134A gas but may be used as a general purpose refrigerant sensor. Sensitivity to some other gases can be found in the installation manual. Actual response may vary depending on installation. For more accurate response to a specific gas, a unit may be field calibrated.
(8) These gases my be detected by the sensor but sensitivity curves are not available at this time.
(9) Refrigerant sensors have been tested to perform at this altitude. To maintain accuracy spec, a field calibration is recommended.

(10) It is not recommended to de-activate ABC (auto-calibration) except for continuously occupied spaces or greenhouses. Drift ratings may vary based on environment.

(11) Combination CO/Methane, CO/Propane, or CO/Refrigerant sensors should be mounted according to Propane/Methane/Refrigerant recommendations. Consult factory for other combinations. Mounting height recommendations may be adjusted according to installation. Ensure sensor is accessible for maintenance and target gas has unobstructed access to sensor. Mount in accordance with ANSI/NFPA 70 and NEC or CEC.

(12) A bump test involves exposing the sensor to a reference gas and detecting the sensor’s response. If sensor response is out of accuracy range, recalibration or replacement of the sensor element may be necessary.

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Siren/Strobe Alert System

High intensity LEDs with clearly visible red strobe
Adjustable sound and light options
105dB Siren

DESCRIPTION

A combination of siren and strobe that can be connected to any number of existing toxic gas (TG) or CO2 sensors to create one centralized alarm system. The singular, highly visible and audible alert simplifies systems and effectively notifies occupants of elevated gas levels.

APPLICATIONS

- Provides users with effective visual and/or audible notification when TG or CO2 sensors detect high concentrations of gas.
- Centralized alarm can be used for entirebuilding systems for rapid notification.

Safety Technology International

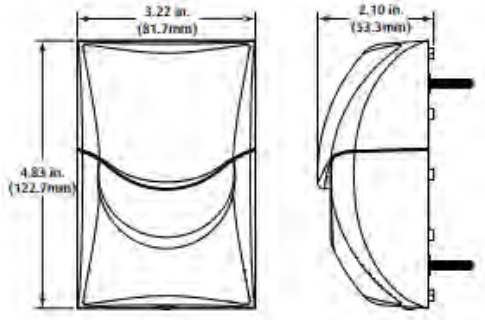
FEATURES

- Options to program for strobe and sound only or both
- Tamper-proof for optimal security
- 32 unique alarm tones
- Two volume settings
- Eight different flash patterns, including continuous and optional left to right flashing
- High-impact resistant polycarbonate withstands abuse

ORDERING

SS-A	Siren/Strobe-Amber Beacon
SS-B	Siren/Strobe-Blue Beacon
SS-R	Siren/Strobe-Red Beacon

DIMENSIONS



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SPECIFICATIONS	
SPECIFICATIONS	
Operating Voltage	12-24VDC
Operating Current	0.42A@12VDC / 0.22A@24VDC
Relay Output	N.C. 12VDC, 50mA Dry Contact
Operating Temperature	-4°F to 140°F (-20°C to 60°C)
Volume @1 foot (29.4cm)	High 105dB / Low 85dB
Number of Flash Patterns	8
Number of Sound Tones	32
Strobe/Sound Only Control	Yes
Alarm Trigger	Trigger on Power
Projected IP Rating	IP54

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ZipSeal Series

ZipSeal Conduit Sealant

Duct sealing system to protect sensors from water intrusion and conduit reverse venting
Recommended for all conduit systems subject to condensation

DESCRIPTION

Prevents water intrusion in CO/NO2 sensors that may occur from warm moisture condensing in conduit and draining into top of sensor body, potentially damaging the sensor. Also prevent airflow intrusion from conduit which can cause faulty readings. Recommended for seaing both top and bottom conduit entries. The unique two-part foam installs quickly and effectively. The innovative design of the Zip-Disc™ insert allows for horizontal and vertical installation with minimal drip. Cured foam blocks can be removed and re-entered relatively quickly if necessary. ZipSeal™ Duct Sealant holds up to 10 feet (3.0 m) water-head pressure. ZipSeal™ Duct Sealant holds up to 10 feet (3.0 m) water-head pressure to keep gases and rodents out of conduits.

APPLICATIONS

- Protects CO/NO2 sensors from condensation and water damage
- Prevents back venting into sensor which can impair readings

Prevents sensor damage from conduit condensation

FEATURES

- Meets NEC Code Requirements – 2011 NEC Articles 225.27, 230.8, 300.5 (G), 300.7 (A), on Raceway Seals, 501.15 (B)(2).
- Meets Industry Standards – Complies with TIA-758-B Standard 5.1.1.2.8, 5.4.2.3, and 7.4.2.8.1 Sealing Ducts.
- Installs in just 45 seconds--save on labor
- Re-enterable – easily removed.
- Multiple Seals – One kit seals up to five 2-inch/50 mm conduits.

ORDERING

TOOL-50-11

Dispensing tool

Includes 1 TOOL-50-11. The TOOL-50-11 is a dispensing tool for 50mL cartridges of BT, EPCT, & SDP Sealant.

MXR-20T-10

Mixing Nozzle Set

One set includes 10 mixing nozzles for the TOOL-50-11 dispensing tool.

ZIP-KIT1G

Kit Includes

Includes 1 cartridge (50 mL), 2 mixing nozzles, 2 pairs of gloves, 5 zip discs (2in/5cm), 1 instruction sheet, 1 dispensing tool TOOL-50-11.

ZIP-50KIT ☐

Kit Options

1= Standard kit (without TOOL-50-11).
Includes 1 cartridge (50 mL), 2 mixing nozzles, 2 pairs of gloves, 5 zip discs (2in/5cm), 1 instruction sheet.

B6= Bulk kit of 6 (without TOOL-50-11).
Includes 6 cartridges (50 mL), 12 mixing nozzles, 12 pairs of gloves, 30 zip discs (2in/5cm), 6 instruction sheets.

DIMENSIONS

Dimensions	10 × 5 × 4 in

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CALGAS Series

Gas Calibration Kit

Calibration Gas Kit CALKITHW-UL

- Includes case to hold two cylinders
- Regulator, Stainless Steel, 0.5 LPM, Inlet CGA: C-10/SS, Inlet Gauge: 0-1200, 3/16" Hose Barb
- Tygon Tubing (2X3')
- Gas Shroud (CALSHROUD-UL: calibration of NO2,H2S,NH3,O2, and MOS)*
- Order gas cylinders separately

Calibration Gas Kit CALKITHW-CO

- Includes case to hold two cylinders
- Regulator, Stainless Steel, 0.5 LPM, Inlet CGA: C-10/SS, Inlet Gauge: 0-1200, 3/16" Hose Barb
- Tygon Tubing (2X3')
- Gas Shroud (CALSHROUD-TG0R for TG0R series sensors)
- Gas Shroud (CALSHROUD-AQ2 for AQ2 series sensors)
- Gas Shroud (CALSHROUD-TGR for TGR series sensors)
- Gas Shroud (CALSHROUD-CO for CO in TGx series)
- Order gas cylinders separately

Calibration Gas Kit CALKITHW-CAT

- Includes case to hold two cylinders
- Regulator, Stainless Steel, 0.5 LPM, Inlet CGA: C-10/SS, Inlet Gauge: 0-1200, 3/16" Hose Barb
- Tygon Tubing (2X3')
- Gas Shroud (CALSHROUD-TGCAT: calibration of catalytics: CH4, C3H8, H2)
- Order gas cylinders separately

DESCRIPTION

All gas monitors must be calibrated on a regular basis. Readily verify sensor calibration and adjust as appropriate. Rugged case for ease of transport and deployment.

APPLICATIONS

▪ Quick and accurate calibration or commissioning verification

CALGAS-XXXX Test Gas Cylinders

FEATURES

- Available for all available TG sensors
- Factory calibrated
- CO and NO2 sensors include calibration certificate
- Save time and money on annual calibration

ORDERING

Universal Gas Kits

CALKITHW- ☐

Kit Includes

UL = For TGW/M/D Series. Includes a case to hold two cylinders, a stainless steel regulator (0.5 LPM, Inlet CGA: C-10/SS, Inlet Gauge: 0-1200, 3/16" Hose Barb), 1 length of Tygon Tubing (2X3'), CALSHROUD-TGUL. Gas cylinders not included.*

CO= For TGW/M/D/R/0R Series & AQ2 Series. Includes 4 gas schrouds: CALSHROUD-CO, CALSHROUD-AQ2, CALSHROUD-TGR, and CALSHROUD-TG0R

CAT= For TGW/M/D Series Series. Includes a case to hold two cylinders, a stainless steel regulator (0.5LPM, Inlet CGA: C-10 SS, Inlet Gauge: 0-1200, 3/16" Hose Barb), 1 length of Tygon Tubing (2X3'), CALSHROUD-TGCAT. Gas cylinders not included.*

*Order gas cylinders separately using part numbers from table below.

Gas Cylinders for Universal Gas Kits

CALGAS- ☐

Gas Options

FNO2=	A29L 10ppm NO2, Valve CGA: C-10, 500PSI, Balance Nitrogen
ZNO2=	A58L 10ppm NO2, Valve CGA: C-10, 500PSI, Balance Nitrogen
UNO2=	A116L 10ppm NO2, Valve CGA: C-10, 1000PSI, Balance Nitrogen
JCO=	103L 100ppm CO, Valve CGA: C-10, 1000PSI, Balance Air
JCO2=	103L 100ppm CO2, Valve CGA: C-10, 1000PSI, Balance Nitrogen
JC3H8=	103L 1.05% (50% LEL) PROPANE C-10Valve, 1000PSI, Balance Air
JCH4=	103L 2.50% (50% LEL) METHANE C-10Valve, 1000PSI, Balance Air
JH2=	103L 2.00% (50% LEL) HYDROGEN C-10Valve, 1000PSI, Balance Air
JO2=	103L 20.90% OXYGEN C-10Valve, 1000PSI, Balance Air
JR134A=	103L 1000 PPM R-134A C-10Valve, 1000PSI, Balance Air
J404A=	103L 1000 PPM R-404A C-10Valve, 1000PSI, Balance Air
J410A=	103L 1000 PPM R-410A C-10Valve, 1000PSI, Balance Air
JR22=	103L 1000 PPM R-22 C-10Valve, 1000PSI, Balance Air
JR407C=	103L 1000 PPM R-407C C-10Valve, 1000PSI, Balance Air
JCO2=	103L 100ppm CO2, Valve CGA: C-10, 1000PSI, Balance Nitrogen

DIMENSIONS

Overall Dimensions: 11" x 9" x 4" -- 9 LBS

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SPECIFICATIONS

Shelf life of gas canisters	CO	3 years
	NO2	1 year
	CO2	3 years
	Combustibles:	3 years
	C3H8	
	CH2	
	H2	
	O2	
	Refrigerants	3 years

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TotalSense Series

IAQ/Occupancy Sensor

Industry's first IAQ sensor with PIR motion detection
Ten environmental sensors: PIR, PMx, VOC, CO2, CO, O3, RH, T, ambient light, barometric pressure
BACnet/Modbus or analog outputs with set-point relay
Pair with an IOTBuddy for BACnet IP or IOT Connection

DESCRIPTION

The TotalSense Series provides more data for more advanced ventilation control while drastically reducing installation cost and time on a project. It includes a comprehensive selection of IAQ sensing with carbon dioxide (CO2), relative humidity (RH), and temperature plus options for occupancy detection (PIR), total volatile organic compounds (TVOC), particulate matter (PM), Carbon Monoxide (CO), and ambient light. More than an IAQ sensor, it's the first fully configurable Indoor Environmental Quality (IEQ) sensor matrix. Motion detection (PIR) can initiate ventilation upon occupancy, providing air exchanges the instant people are present, allowing for cleaner and safer indoor spaces while still saving energy.

APPLICATIONS

- Verify effectiveness of IAQ strategies in post covid environment
- Energy management/building control
- Facilitates compliance with ASHRAE 62.1 standard for air quality
- Contributes toward satisfying Feature A08 and T06 under the WELL Building Standard®

Display, AQ ring, and standard designs

PIR Motion Detection (optional) - Detect occupancy for quicker and safer ventilation

Configure up to ten sensors

Tamper proof push-in lock tabs - great for schools!

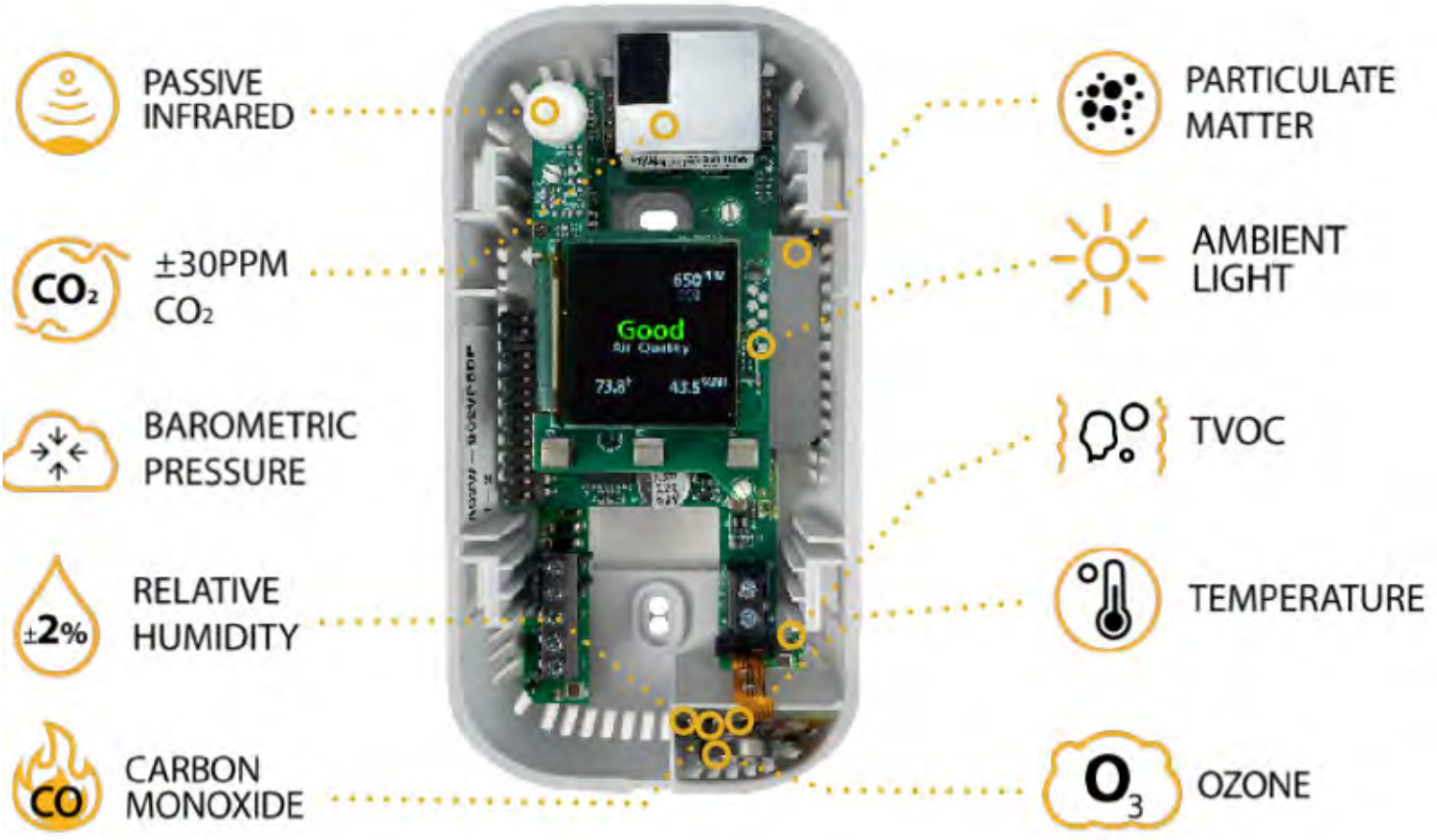
NEW! PID control - program any analog output for local control of dampers or valves

RESET monitors are tested and certified for your RESET Air Projects.

FEATURES

- NEW! Save even more using an analog output for local PID control
- NEW! Dual BACnet/Modbus PLUS analog output version for BAS connection plus local analog control
- NEW! Configure quickly with the SenvaSync app
- Specify the exact product for your application with made in USA quality
- NEW! Use PIR occupancy sensor to enable auto-wakeup of display
- Initiate ventilation immediately upon occupancy detection for healthier buildings and energy savings
- Sense unhealthy or offensive air with TVOC
- Detect a variety of PM sizes to indicate airborne respiratory droplets, allergens, and other dangers
- Industry-leading temperature and barometric pressure compensated CO2 sensing with non-dispersive infrared sensing element (NDIR), 15+ year life expectancy on CO2 sensing element; ±30ppm, ±3% of reading
- Capacitive touch buttons make setup and use simple
- Slim and sleek surface-mount enclosure is tamper-proof and easy to install
- Field-replaceable PM, RH, Temp, and CO2 sensors ease maintenance
- Set-point sliders and pushbuttons are also available to meet the requirements for any job
- 7-year limited warranty / 3 years on CO2 sensor - 2 years on all others

TEN SENSING TECHNOLOGIES



ORDERING

AQ2 [W] - [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

Mounting Type
W = Wall Mount

Output Type *(1)(3)(4)(5)(7)*
A = Analog
B = BACnet/Modbus
D = Dual Analog + BACnet/Modbus

CO2 *(2)*
A = None
C = CO_2
D = Dual Channel CO_2

Humidity Sensor (RH) *(3)*
A = None
2 = 2% RH Sensor

Total Volatile Organic Compounds (TVOC)
A = None
V = TVOC

Advanced Sensors *(4)(6)(7)*
A = None
C = CO
O = O_3
P = (PM) Particulate Matter 1.0, 2.5, 4.0,10.0
Q = PM + O_3
R = PM + CO

Temperature *(3)(5)*
A = None
B = Transmitter
C = 100PtRTD
D = 1000PtRTD
E = 10K Type 2
F = 10K Type 3
G = 10K W/ 11K
H = 3K
I = 2K2
J = 1K8
K = 20K

Display *(1)(5)(6)(7)*
X = None
D = OLED Display
S = OLED w Solid Cover
R = Air Quality Ring

Optional Accessories
Blank = None
(See below for options)

Setpoint Slider *(7)*
Blank = None
C = 1K Ω
F = 10K Ω
G = 20K Ω
T = 200-900 Ω

Slider Offset Resistor
Blank = None
E = 910 Ω
K= 6K Ω

Pushbutton *(7)*
Blank= None
S = Slider Override Pushbutton *(8)*
O = Thermistor Override Pushbutton *(9)*
U = Stand Alone PB Terminals
B = Comms Only PB (No Terminals)

PIR Sensor
Blank = None
P = PIR Sensing

(1) Ambient light detection standard on all models selected with BACnet/Modbus and D= OLED Display Option.
(2) Barometric pressure sensing included standard on all models with CO2!
(3) Models with RH have a separate temp sensor that reads to the display and BACnet/Modbus, if chosen with any temperature selection.
(4) All PM options only available with BACnet/Modbus models.
(5) Only Transmitter and RH option is shown on display and readable via BACnet/Modbus. Thermistor versions not available to display on OLED or to read over BACnet/Modbus. See note (3).
(6) CO sensor only available with display and Temp/RH for calibration purposes.
(7) Slider and pushbutton options not available with PM sensor. Call for additional slider and override options. Slider value will show on the OLED Display and via BACnet/Modbus, if the appropriate options are selected.
(8) Slider required, shorts slider terminals to read pushbutton.
(9) Thermistor Required, shorts thermistor terminals to read pushbutton.

Example:

	Mount	Output	CO_2	RH	TVOC	PM	Temp	Display	Slider	Push-Button	PIR
AQ2	**W**	**-** **B**	**C**	**2**	**V**	**P**	**F**	**D**	**F**	**S**	**P**

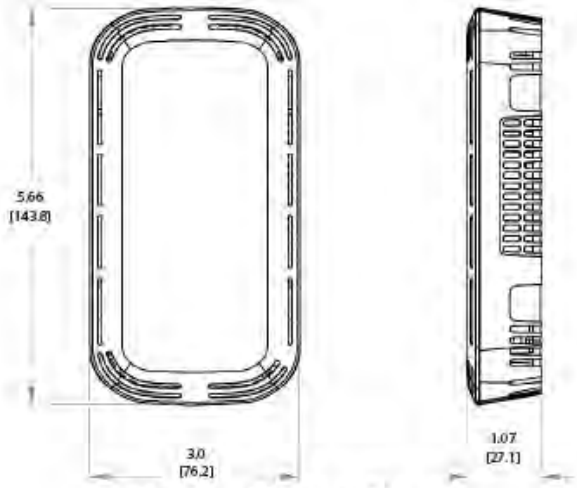
(TotalSense Wall mount with BACnet/Modbus RS-485, Temp, CO2, 2% RH, VOC, PM, 10K T3

Replacement Sensors:

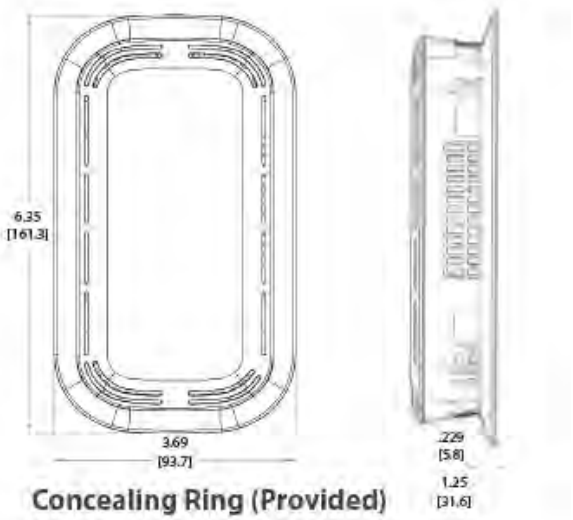
AQS - CO2 Replacement CO2 Sensor

AQS - D CO2 Replacement Dual CO2 Sensor

DIMENSIONS



Standard Surface Mount



Concealing Ring (Provided)

- Conceal oversized drywall cutouts or European junction boxes

Warning: The datasheet is designed for reference only. Refer to installation instructions that accompany the product and heed all safety instructions. Product improvement is a continuing process at Senva. Changes may occur to products without prior notice.

SPECIFICATIONS

Power Supply	Non-Display	16-30VDC/24VAC(1), 3.5W nominal, 4W max.
	Display or LED Ring	16-30VDC/24VAC(1), 4.3W nominal, 5W max.
Interface	OLED (optional)	1.5" Organic LED Display, 128x128, color
	Air Quality Ring	Color changing (red/yellow/green) LED Air Quality Ring
Analog Outputs (Analog or Dual version only)	Quantity	Up to 3 outputs
	Source	CO2, RH%, Temp, Temp slider, TVOC (selectable)
	Scale	0-5V, 0-10V, 4-20mA (switch selectable, programmable per output)
Protocol Output (Comms or Dual version only)	Protocol	BACnet MS/TP or Modbus RTU
	Connection	3-wire RS-485, with isolated ground
	Data Rate	9600, 19200, 38400, 57600, 76800, 115200 (switch selectable)
	Address Range	0-127
Relay (Standard except for PM models)	Type	Solid-state output, 1A @ 30VAC/DC, N.O.
	Polarity	NO/NC (selectable)
	Source	CO2 setpoint, RH setpoint, Temp setpoint, TVOC setpoint, PIR motion detection, Air Quality, off (selectable)
CO2 (Optional)	Type	Non-dispersive Infrared (NDIR)
	Accuracy	±(30ppm + 3% of reading) (400-2,000ppm), -10-50ºC, 0-85%RH
		±(50ppm+ 5% of reading) (2,000-5,000ppm), -10-50ºC, 0-85%RH
		>5,000ppm consult factory
	Resolution	1 ppm
	Range	0-2,000 PPM (Default) (Programmable up to 10,000ppm)
	Response time	90 seconds to 90% reading
	Sample rate	1s
	Temp and Pressure Compensation	Yes, barometric pressure readable over comms
Relative Humidity (Optional)	Type	Digital CMOS
	Accuracy(2)	2% models, +/-2% over 0 to 80%RH range

	Resolution	0.05%RH
	Response time (3)	30s
	Sample rate	3s
	Operating range	0 to 100%RH (non-condensing)
	Operating conditions (4)	-4 to 140oF (-20 to 60° C) @ RH>90%; -4 to 176oF @ RH=50%
Temperature Transmitter	Type	Silicon Band-gap
(Optional)	Nominal Accuracy	±0.3° C (operating range)
	Maximum Accuracy (2)	±0.5° C (at 25° C), ±1.0° C
	Resolution	0.1° C
	Response time	30s
	Sample rate	3s
TVOC (Optional)	Type	MOS
	Gas	Total VOC
	Formaldehyde CH2O Sensitivity	Responsive to Formaldehyde concentrations 50-1000 ppb
	Range	0-10,000 µg/m3 (Display may be programmed to show PPB)
	Response Time	<10s
	Accuracy (5)	±20 µg/m3 + 15% at 1 to 500 µg/m3 (typical)
	Output	0-2,000 µg/m3 (default) programmable up to 10,000 µg/m3
PMx (Optional)	Type	Optical
CLASS 1 LASER PRODUCT	Size Range	PM1.0, PM2.5, PM4.0, PM10.0
	Scale	0-1,000 µg/m3
	Lower detection limit	0.3 µm
	Precision	±10 µg/m3 (0-100µg/m3); ±10% (100-1,000 µg/m3)
	Long-Term Drift	±1.25 µg/m3 / year
Carbon Monoxide	Type	Electrochemical
	Detection Range	0-200 ppm
	Accuracy	±5% FullScale @20°C
	Resolution	1 ppm
	Response Time	60 seconds
	Sensor Life	5 years
	Certifications	UL2034 Recognized Component
Ozone	Type	PMOS
	Ozone Detection Range	20-500 ppb
	Accuracy	±15% of FS @ 20° C
PIR (Optional)	Type	Passive Infrared
	Axis X field of view	140o, 15 ft (4.5m)
	Axis Y field of view	76o, 15 ft (4.5m)
Ambient Light	Type	Phototransistor
	Scale	0-100 fc (lm/ft2), readable over comms
Operating Environment	Temperature	32 to 122oF (0 to 50oC)
	Humidity	0-95% non-condensing
Enclosure	Material	ABS Plastic
	Dimensions	5.67”h x 3.00”w x 1.07”d (With concealing ring: 6.35”h x 3.69”w x 1.25”d)
Compliance	Agency	CE, RoHS
	Accreditations	RESET Air Accredited Monitor
	Standards	Facilitates compliance with ASHRAE 62.1 standard for air quality

Contributes toward satisfying Feature A08 and T06 under WELL Building Standard®

(1) One side of transformer, secondary is connected to signal common. Dedicated transformer is recommended.
(2) Models with PM sensor included achieve ±5% accuracy over 0 to 80%RH range and an additional temperature shift of up +0.5° C.
(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).
(5) Wiring with silicone or other high VOC insulation will affect TVOC readings.

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

TotalSense Series

IAQ/Occupancy Sensor

Industry's first IAQ sensor with PIR motion detection
Ten environmental sensors: PIR, PMx, VOC, CO2, CO, O3, RH, T, ambient light, barometric pressure
Optional OLED to display environmental readings and setpoint
BACnet/Modbus or analog outputs with set-point relay
Pair with an IOTBuddy for BACnet IP or IOT Connection

SENV SYNC COMPATIBLE

DESCRIPTION

The TotalSense Series provides more data for more advanced ventilation control while drastically reducing installation costs and time on a project. It includes a comprehensive selection of IAQ sensing with carbon dioxide (CO2), relative humidity (RH), and temperature plus options for occupancy detection (PIR), total volatile organic compounds (TVOC), particulate matter (PM), Carbon Monoxide (CO), and ambient light. More than an IAQ sensor, it's the first fully configurable Indoor Environmental Quality (IEQ) sensor matrix. Motion detection (PIR) can initiate ventilation upon occupancy, providing air exchanges the instant people are present, allowing for cleaner and safer indoor spaces while still saving energy.

APPLICATIONS

- Verify the effectiveness of IAQ strategies in post covid environment
- Energy management/building control
- Facilitates compliance with ASHRAE 62.1 standard for air quality
- Contributes toward satisfying Feature A08 and T06 under the WELL Building Standard®

Display, AQ ring, and standard designs

PIR Motion Detection (optional) - Detect occupancy for quicker and safer ventilation

Configure up to ten sensors

Tamper proof push-in lock tabs - great for schools!

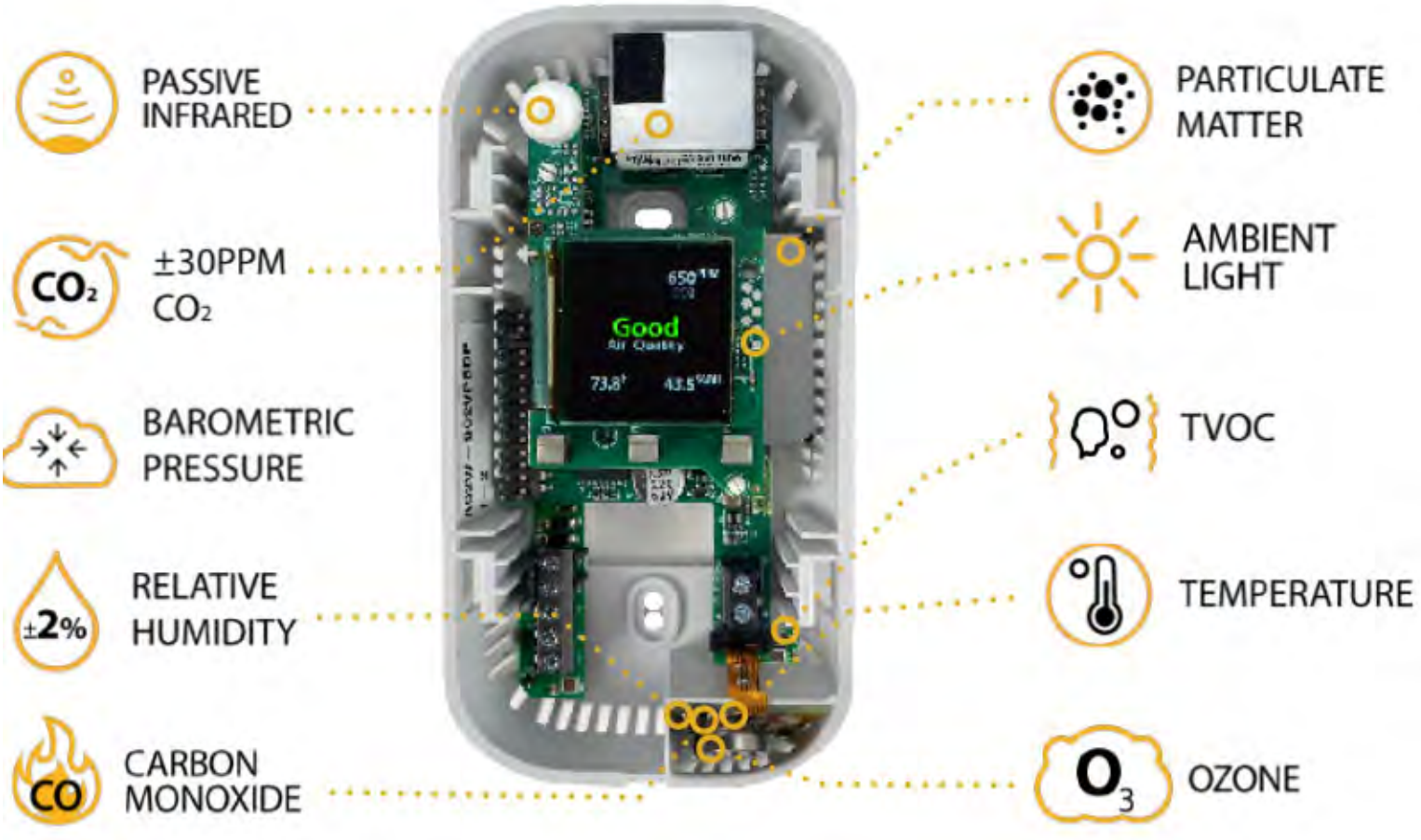
NEW! PID control - program any analog output for local control of dampers or valves

RESET monitors are tested and certified for your RESET Air Projects.

FEATURES

- NEW! Save even more using an analog output for local PID control
- NEW! Dual BACnet/Modbus PLUS analog output version for BAS connection plus local analog control
- NEW! Configure and update firmware with the SenvaSync app
- Specify the exact product for your application with made in USA quality
- NEW! Use PIR occupancy sensor to enable auto-wakeup of display
- Color display and Air Quality Ring for tenant assurance (programmable)
- NEW! Use PIR occupancy sensor to enable auto-wakeup of display
- Initiate ventilation immediately upon occupancy detection for healthier buildings and energy savings
- Industry-leading temperature and barometric pressure compensated CO2 sensing with non-dispersive infrared sensing element (NDIR), 15+ year life expectancy on CO2 sensing element; ±30ppm, ±3% of reading
- Capacitive touch buttons make setup and use simple
- Slim and sleek surface-mount enclosure is tamper-proof and easy to install
- Field-replaceable sensors ease maintenance
- Set-point sliders and pushbuttons are also available to meet the requirements for any job
- 7-year limited warranty / 3 years on CO2 sensor - 2 years on all others

TEN SENSING TECHNOLOGIES



ORDERING

AQ2 [W] - [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

Mounting Type
W = Wall Mount

Output Type *(1)(3)(4)(5)(7)*
A = Analog
B = BACnet/Modbus
D = Dual Analog + BACnet/Modbus

CO2 *(2)*
A = None
C = CO_2
D = Dual Channel CO_2

Humidity Sensor (RH) *(3)*
A = None
2 = 2% RH Sensor

Total Volatile Organic Compounds (TVOC)
A = None
V = TVOC

Advanced Sensors *(4)(6)(7)*
A = None
C = CO
O = O_3
P = (PM) Particulate Matter 1.0, 2.5, 4.0,10.0
Q = PM + O_3
R = PM + CO

Temperature *(3)(5)*
A = None
B = Transmitter
C = 100PtRTD
D = 1000PtRTD
E = 10K Type 2
F = 10K Type 3
G = 10K W/ 11K
H = 3K
I = 2K2
J = 1K8
K = 20K

Display *(1)(5)(6)(7)*
X = None
D = OLED Display
S = OLED w Solid Cover
R = Air Quality Ring

Optional Accessories
Blank = None
(See below for options)

Setpoint Slider *(7)*
Blank = None
C = 1K Ω
F = 10K Ω
G = 20K Ω
T = 200-900 Ω

Slider Offset Resistor
Blank = None
E = 910 Ω
K= 6K Ω

Pushbutton *(7)*
Blank= None
S = Slider Override Pushbutton *(8)*
O = Thermistor Override Pushbutton *(9)*
U = Stand Alone PB Terminals
B = Comms Only PB (No Terminals)

PIR Sensor
Blank = None
P = PIR Sensing

(1) Ambient light detection standard on all models selected with BACnet/Modbus and D= OLED Display Option.
(2) Barometric pressure sensing included standard on all models with CO2!
(3) Models with RH have a separate temp sensor that reads to the display and BACnet/Modbus, if chosen with any temperature selection.
(4) All PM options only available with BACnet/Modbus models.
(5) Only Transmitter and RH option is shown on display and readable via BACnet/Modbus. Thermistor versions not available to display on OLED or to read over BACnet/Modbus. See note (3).
(6) CO sensor only available with display and Temp/RH for calibration purposes.
(7) Slider and pushbutton options not available with PM sensor. Call for additional slider and override options. Slider value will show on the OLED Display and via BACnet/Modbus, if the appropriate options are selected.
(8) Slider required, shorts slider terminals to read pushbutton.
(9) Thermistor Required, shorts thermistor terminals to read pushbutton.

Example:

	Mount	Output	CO_2	RH	TVOC	PM	Temp	Display	Slider	Push-Button	PIR
AQ2	**W**	**-** **B**	**C**	**2**	**V**	**P**	**F**	**D**	**F**	**S**	**P**

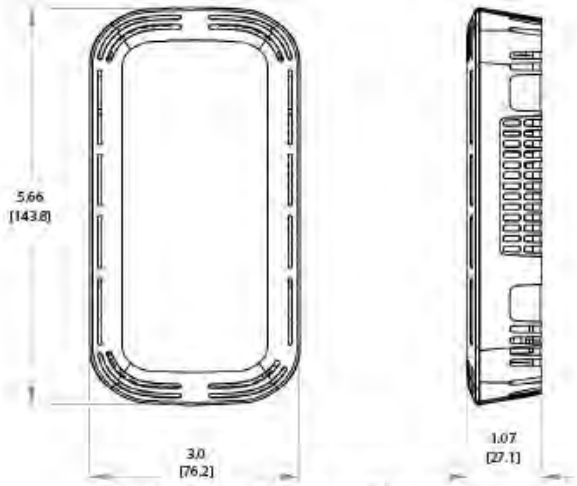
(TotalSense Wall mount with BACnet/Modbus RS-485, Temp, CO2, 2% RH, VOC, PM, 10K T3

Replacement Sensors:

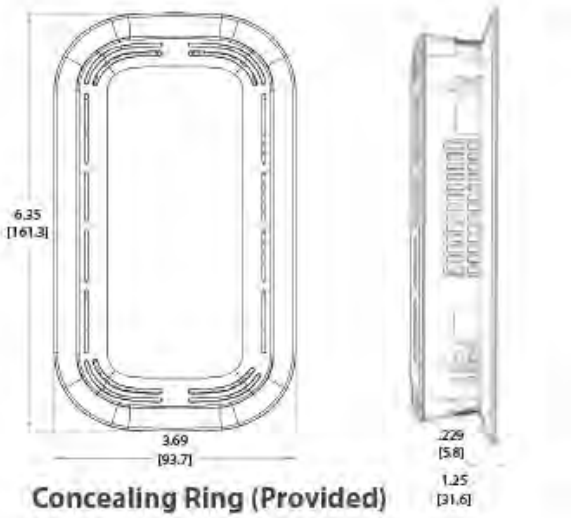
AQS - [CO2] Replacement CO2 Sensor

AQS - [D] [CO2] Replacement Dual CO2 Sensor

DIMENSIONS



Standard Surface Mount



Concealing Ring (Provided)

- Conceal oversized drywall cutouts or European junction boxes

Warning: The datasheet is designed for reference only. Refer to installation instructions that accompany the product and heed all safety instructions. Product improvement is a continuing process at Senva. Changes may occur to products without prior notice.

SPECIFICATIONS

Power Supply	Non-Display	16-30VDC/24VAC(1), 3.5W nominal, 4W max.
	Display or LED Ring	16-30VDC/24VAC(1), 4.3W nominal, 5W max.
Interface	OLED (optional)	1.5" Organic LED Display, 128x128, color
	Air Quality Ring	Color changing (red/yellow/green) LED Air Quality Ring
Analog Outputs (Analog or Dual version only)	Quantity	Up to 3 outputs
	Source	CO2, RH%, Temp, Temp slider, TVOC (selectable)
	Scale	0-5V, 0-10V, 4-20mA (switch selectable, programmable per output)
Protocol Output (Comms or Dual version only)	Protocol	BACnet MS/TP or Modbus RTU
	Connection	3-wire RS-485, with isolated ground
	Data Rate	9600, 19200, 38400, 57600, 76800, 115200 (switch selectable)
	Address Range	0-127
Relay (Standard except for PM models)	Type	Solid-state output, 1A @ 30VAC/DC, N.O.
	Polarity	NO/NC (selectable)
	Source	CO2 setpoint, RH setpoint, Temp setpoint, TVOC setpoint, PIR motion detection, Air Quality, off (selectable)
CO2 (Optional)	Type	Non-dispersive Infrared (NDIR)
	Accuracy	±(30ppm + 3% of reading) (400-2,000ppm), -10-50ºC, 0-85%RH
		±(50ppm+ 5% of reading) (2,000-5,000ppm), -10-50ºC, 0-85%RH
		>5,000ppm consult factory
	Resolution	1 ppm
	Range	0-2,000 PPM (Default) (Programmable up to 10,000ppm)
	Response time	90 seconds to 90% reading
	Sample rate	1s
	Temp and Pressure Compensation	Yes, barometric pressure readable over comms
Relative Humidity (Optional)	Type	Digital CMOS
	Accuracy(2)	2% models, +/-2% over 0 to 80%RH range

	Resolution	0.05%RH	
	Response time (3)	30s	
	Sample rate	3s	
	Operating range	0 to 100%RH (non-condensing)	
	Operating conditions (4)	-4 to 140oF (-20 to 60° C) @ RH>90%; -4 to 176oF @ RH=50%	
Temperature Transmitter		With RH option	Without RH option
(Optional)	Type	Silicon Band-gap	NTC Thermistor
	Nominal Accuracy	±0.3° C (operating range)	±0.5° C (operating range)
	Maximum Accuracy (2)	±0.5° C (at 25° C), ±1.0° C	±1.0° C (at 25° C), ±2.0° C
	Resolution	0.1° C	0.05° C
	Response time	30s	30s
	Sample rate	3s	100 milliseconds
TVOC (Optional)	Type	MOS	
	Gas	Total VOC	
	Formaldehyde CH2O Sensitivity	Responsive to Formaldehyde concentrations 50-1000 ppb	
	Range	0-32,000 µg/m3 (Display may be programmed to show PPB)	
	Response Time	<10s	
	Output	0-2,000 µg/m3 (default) programmable up to 32,000 µg/m3	
PMx (Optional)	Type	Optical	
CLASS 1 LASER PRODUCT	Size Range	PM1.0, PM2.5, PM4.0, PM10.0	
	Scale	0-1,000 µg/m3	
	Lower detection limit	0.3 µm	
	Precision	±10 µg/m3 (0-100µg/m3); ±10% (100-1,000 µg/m3)	
	Long-Term Drift	±1.25 µg/m3 / year	
Carbon Monoxide	Type	Electrochemical	
	Detection Range	0-200 ppm	
	Accuracy	±5% FullScale @20° C	
	Resolution	1 ppm	
	Response Time	60 seconds	
	Sensor Life	5 years	
	Certifications	UL2034 Recognized Component	
Ozone	Type	PMOS	
	Accuracy	±15% of fs @20° C	
	Ozone Detection Range	20-500 ppb	
PIR (Optional)	Type	Passive Infrared	
	Axis X field of view	140o, 15 ft (4.5m)	
	Axis Y field of view	76o, 15 ft (4.5m)	
Ambient Light	Type	Phototransistor	
	Scale	0-100 fc (lm/ft2), readable over comms	
Operating Environment	Temperature	32 to 122oF (0 to 50oC)	
	Humidity	0-95% non-condensing	
Enclosure	Material	ABS Plastic	
	Dimensions	5.67”h x 3.00”w x 1.07”d (With concealing ring: 6.35”h x 3.69”w x 1.25”d)	
Compliance	Agency	CE, RoHS	
	Accreditations	RESET Air Accredited Monitor	
	Standards	Facilitates compliance with ASHRAE 62.1 standard for air quality	

Contributes toward satisfying Feature A08 and T06 under WELL Building Standard®

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

(2) Models with PM sensor included achieve ±5% accuracy over 0 to 80%RH range and an additional temperature shift of up +0.5° C

(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.)

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

TotalSense Series

Duct Air Quality Sensor

Build a complete air quality system for indoor, duct, and outdoor
Six environmental sensors: PMx, VOC, CO2, RH, T, barometric pressure
BACnet/Modbus or analog outputs with set-point relay
Pair with an IOTBuddy for BACnet IP or IOT Connection

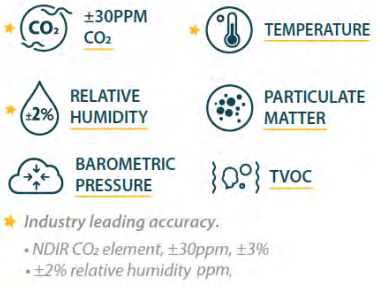
DESCRIPTION

The TotalSense Series Duct AQ sensor provides more data for more advanced ventilation control while drastically reducing installation cost and time on a project. It includes a comprehensive selection of AQ sensing with carbon dioxide (CO2), relative humidity (RH), and temperature plus options for total volatile organic compounds (TVOC), barometric pressure and particulate matter (PM).

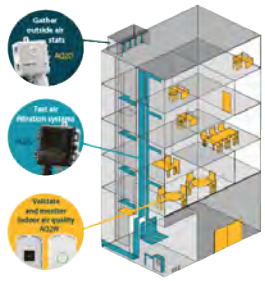
APPLICATIONS

- Measure duct air quality to validate filtration systems and deliver fresh air
- Verify effectiveness of IAQ strategies in post covid environment
- Energy management/building control
- Facilitates compliance with ASHRAE 62.1 standard for air quality
- Contributes toward satisfying Feature A08 and T06 under the WELL Building Standard®

Fully configurable display



Choose up to 6 air quality indicators



Build a full validation system

Replaceable CO2, RH, and temp sensors

RESET monitors are tested and certified for your RESET Air Projects

FEATURES

- NEW! Configure and update firmware with the SenvaSync app
- Reduce installation costs with multiple sensors in a rugged, easy-mount duct enclosure
- Specify the exact product for your application and made in USA
- Sense unhealthy particulates or TVOC's in your duct system
- Industry-leading temperature and barometric pressure compensated CO2 sensing with non-dispersive infrared sensing element (NDIR), 15+ year life expectancy on CO2 sensing element; ±30ppm, ±3% of reading
- Tamper-proof
- Field-replaceable RH, Temp, and CO2 sensors ease maintenance
- 7-year limited warranty / 3 years on CO2 sensor - 2 years on all others

ORDERING

AQ2 [D] - [ ] [ ] [ ] [ ] [ ] [ ] [ ]

Mounting Type
D = Duct Mount

Output Type
A = Analog
B = BACnet/ Modbus

CO2 Sensor
A = None
C = CO_2 Sensor
D = Dual Channel CO_2

Humidity Sensor (RH)
A = None
2 = 2% RH Sensor

Total Volatile Organic Compounds (TVOC)
A = None
V = TVOC

Particulate Matter (PM)
A = None
C = CO*
P = PM 1.0, 2.5, 4.0, 10.0
O = O3**
Q = PM + O3**
R = PM + CO*

Temperature***
A = None
B = Transmitter
C = 100PtRTD
D = 1000PtRTD
E = 10K Type 2
F = 10K Type 3
G = 10K W/ 11K
H = 3K
I = 2K2
J = 1K8
K = 20K

Display
X = None
D = OLED Display

* CO sensor only available with RH, Temp, and Display for calibration purposes.
** Ozone (O3) only available with Temp/RH for calibration purposes
*** Choose Transmitter option for OLED temperature display and temperature readings over BACnet/Modbus. Thermistor versions not available to display on OLED or to read over BACnet/Modbus.

Example

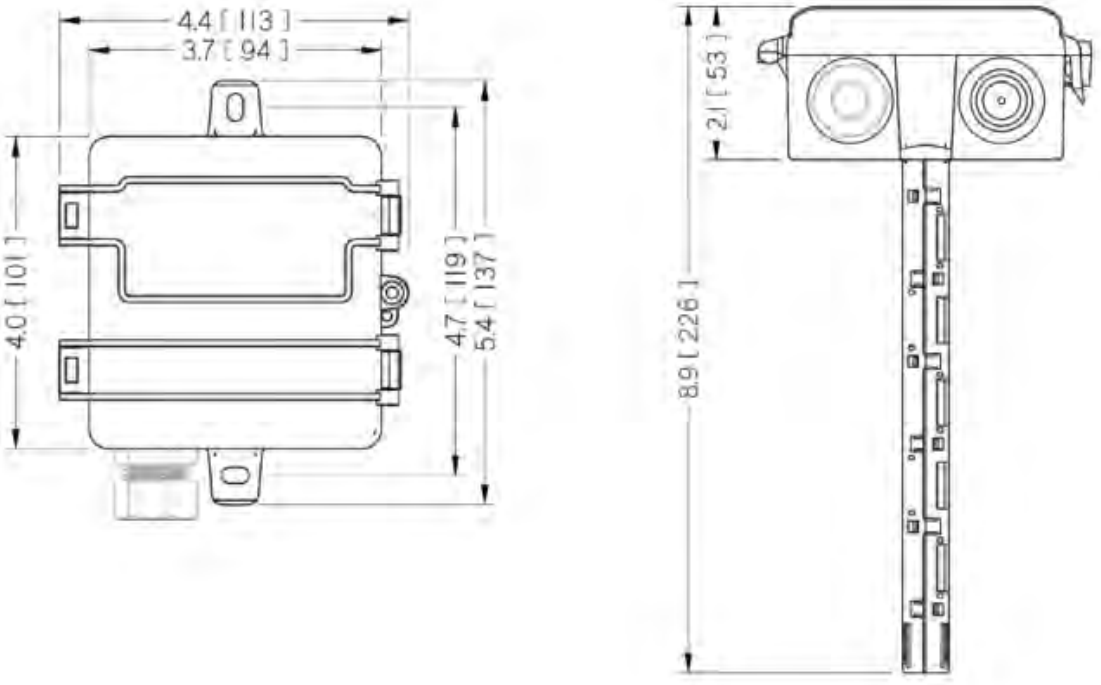
	Mount	Output	CO_2	RH	TVOC	PM	Temp	Display
AQ2	D	B	C	2	V	P	F	D

(TotalSense Duct mount sensor with BACnet/Modbus RS-485, Temp, CO2, 2% RH, VOC, PM, 10K Type 3 Temperature, OLED Display)

Replacement Sensors:

AQS - [CO2] Replacement CO2 Sensor
AQS - [D] [CO2] Replacement Dual CO2 Sensor

DIMENSIONS



Warning: The datasheet is designed for reference only. Refer to installation instructions that accompany the product and heed all safety instructions. Product improvement is a continuing process at Senva. Changes may occur to products without prior notice.

SPECIFICATIONS

Power Supply	Non-Display	16-30VDC/24VAC(1), 3.5W nominal, 4W max.
Interface	OLED (optional)	1.5" Organic LED Display, 128x128, color
	Air Quality Ring	Color changing (red/yellow/green) LED Air Quality Ring
Analog Outputs (Analog or Dual version only)	Quantity	Up to 3 outputs
	Source	CO2, RH%, Temp, TVOC, PM, CO, Ozone (selectable)
	Scale	0-5V, 0-10V, 4-20mA (switch selectable, programmable per output)
Protocol Output (Comms or Dual version only)	Protocol	BACnet MS/TP or Modbus RTU
	Connection	3-wire RS-485, with isolated ground
	Data Rate	9600, 19200, 38400, 57600, 76800, 115200 (switch selectable)
	Address Range	0-127
Relay	Type	Solid-state output, 1A @ 30VAC/DC, N.O.
	Polarity	NO/NC (selectable)
	Source	CO2 setpoint, RH setpoint, Temp setpoint, TVOC setpoint, PIR motion detection, Air Quality, off (selectal
CO2 (Optional)	Type	Non-dispersive Infrared (NDIR)
	Accuracy (Standard)	±(30ppm + 3% of reading) (400-2,000ppm), -10-50ºC, 0-85%RH
		±(50ppm+ 5% of reading) (2,000-5,000ppm), -10-50ºC, 0-85%RH
		>5,000ppm consult factory
	Accuracy(Dual)	±(30ppm + 3% of reading) (0-2,000ppm), @ 0-50ºC
		±(50ppm+ 3% of reading) (2,000-5,000ppm), @ -10-50ºC
		±(100ppm+ 10% of reading) (5,000-10,000ppm), @ 0-50ºC
	Drift with ABC disabled (Standard)	35ppm/month
	Drift with ABC disabled (Dual Channel)	5ppm/month

	Resolution	1 ppm
	Range	0-2,000 PPM (Default) (Programmable up to 10,000ppm)
	Response time	90 seconds to 90% reading
	Sample rate	1s
	Temp and Pressure Compensation	Yes, barometric pressure readable over comms
Relative Humidity (Optional)	Type	Digital CMOS
	Accuracy(2)	2% models, +/-2% over 0 to 80%RH range
	Resolution	0.05%RH
	Response time (3)	30s
	Sample rate	3s
	Operating range	0 to 100%RH (non-condensing)
	Operating conditions (4)	-4 to 140oF (-20 to 60° C) @ RH>90%; -4 to 176oF @ RH=50%
Temperature Transmitter	Type	Silicon Band-gap
(Optional)	Nominal Accuracy	±0.3° C (operating range)
	Maximum Accuracy (2)	±0.5° C (at 25° C), ±1.0° C
	Resolution	0.1° C
	Response time	30s
	Sample rate	3s
TVOC (Optional)	Type	MOS
	Gas	Total VOC
	Formaldehyde CH2O Sensitivity	Responsive to Formaldehyde concentrations 50-1000 ppb
	Range	0-10,000 µg/m3
	Response Time	<10s
	Accuracy (5)	±20 µg/m3 + 15% at 1 to 500 µg/m3 (typical)
	Output	0-2,000 µg/m3 (default) programmable up to 10,000 µg/m3
PMx (Optional)	Type	Optical
CLASS 1 LASER PRODUCT	Size Range	PM1.0, PM2.5, PM4.0, PM10.0
	Scale	0-1,000 µg/m3
	Lower detection limit	0.3 µm
	Precision	±10 µg/m3 (0-100µg/m3); ±10% (100-1,000 µg/m3)
	Long-Term Drift	±1.25 µg/m3 / year
Carbon Monoxide	Type	Electrochemical
	Detection Range	0-200 ppm
	Accuracy	5% of reading
	Resolution	1 ppm
	Response Time	60 seconds
	Sensor Life	5 years
	Certifications	UL2034 Recognized Component
Ozone	Type	PMOS
	Ozone Detection Range	20-500 ppb
	Accuracy	±15% of FS @ 20° C
Operating Environment	Temperature	-4 to 122° F (-20 to 50° C). Devices including PM or CO sensors rated (-10 to 50° C) CO sensors can inte operate down to –20°C.”
	Humidity	0-95% non-condensing
Enclosure	Material	ABS/Polycarbonate
	Dimensions	4.0”h x 4.4”w x 2.1”d (+6.8” probe)
	Conduit Opening	Tapped 1/2” NPT

	Rating	IP43 or NEMA 3R
Compliance	Agency	CE, RoHS

(1) One side of transformer, secondary is connected to signal common. Dedicated transformer is recommended.
(2) Models with PM sensor included achieve ±5% accuracy over 0 to 80%RH range and an additional temperature shift of up +0.5° C.
(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).
(5) Wiring with silicone or other high VOC insulation will affect TVOC readings.

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

TotalSense Series

Outdoor Air Quality Sensor

Build a complete air quality system for indoor, duct, and outdoor
Seven environmental sensors: PMx, VOC, CO2, RH, T, ambient light, barometric pressure
BACnet/Modbus or analog outputs with set-point relay
Pair with an IOTBuddy for BACnet IP or IOT Connection

SENV SYNC COMPATIBLE

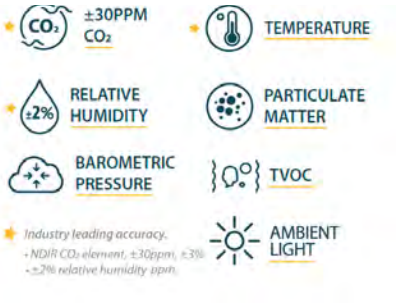
DESCRIPTION

The TotalSense Series Outdoor AQ sensor provides more data for more advanced ventilation control while drastically reducing installation cost and time on a project. It includes a comprehensive selection of AQ sensing with carbon dioxide (CO2), relative humidity (RH), and temperature plus options for total volatile organic compounds (TVOC), barometric pressure and particulate matter (PM). This sensor is enclosed in an outdoor rated enclosure to protect electronics from rain, overhead watering systems and harmful UV rays.

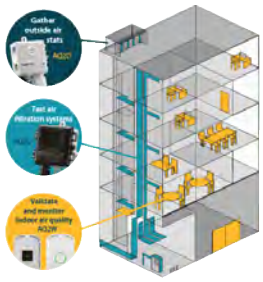
APPLICATIONS

- Measure outdoor air quality for indoor/outdoor comparison to meet ASHRAE 62.1 standard for air quality
- Energy management/building control
- Contributes toward satisfying Feature A08 and T06 under the WELL Building Standard®
- Dual Channel CO2 version is perfect for greenhouses

Fully configurable display



Choose from to 7 environmental sensors



Build a full validation system

BACnet/Modbus protocols or up to 3 analog outputs

Replaceable CO2, RH, and temp sensors

Made in USA; 7 year warranty on electronics

FEATURES

- NEW! Configure and update firmware with the SenvaSync app
- Reduce installation costs with multiple sensors in a rugged, easy-mount outdoor enclosure
- Specify the exact product for your application with made in USA
- Sense unhealthy particulates or TVOC's
- Industry-leading temperature and barometric pressure compensated CO2 sensing with non-dispersive infrared sensing element (NDIR), 15+ year life expectancy on CO2 sensing element; ±30ppm, ±3% of reading
- Tamper-proof
- Field-replaceable RH, Temp, and CO2 sensors ease maintenance
- 7-year limited warranty / 3 years on CO2 sensor - 2 years on all others

ORDERING

AQ2 [O] - [ ] [ ] [ ] [ ] [ ] [ ] [ ]

Mounting Type
O = Outdoor

Output Type
A = Analog
B = BACnet/ Modbus

CO2 Sensor
A = None
D= Dual Channel CO_2

Humidity Sensor (RH)
A = None
2 = 2% RH Sensor

Total Volatile Organic Compounds (TVOC)
A = None
V = TVOC

Particulate Matter (PM)
A = None
C = CO*
P = PM 1.0, 2.5, 4.0, 10.0
O = O3**
Q = PM + O3**
R = PM + CO*
L = Ambient Light+

Temperature***
A = None
B = Transmitter
C = 100PtRTD
D = 1000PtRTD
E = 10K Type 2
F = 10K Type 3
G = 10K W/ 11K
H = 3K
I = 2K2
J = 1K8
K = 20K

Display
X = None
D = OLED Display

* CO sensor only available with RH, Temp, and Display for calibration purposes.
** Ozone (O3) only available with Temp/RH for calibration purposes
*** Choose Transmitter option for OLED temperature display and temperature readings over BACnet/Modbus. Thermistor versions not available to display on OLED or to read over BACnet/Modbus.
+ Ambient light is only available on select models with temp and RH, consult factory.

Example

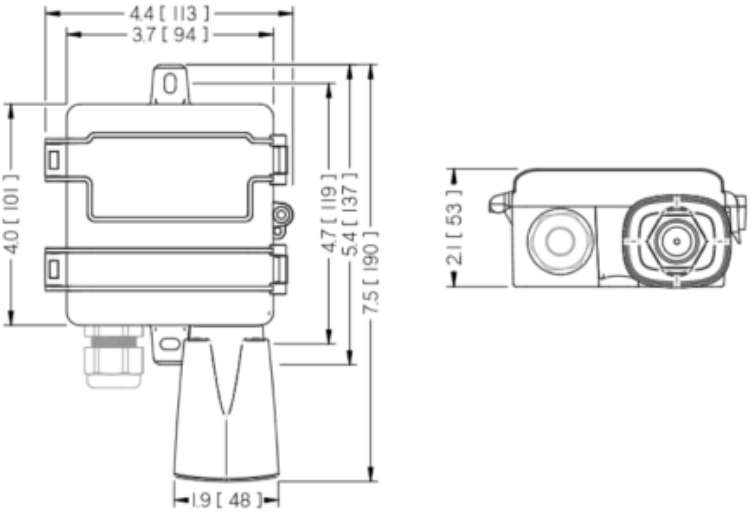
	Mount	Output	CO_2	RH	TVOC	PM	Temp	Display
AQ2	O	- B	D	2	V	P	F	D

(TotalSense outdoor sensor with BACnet/Modbus RS-485, Temp, Dual Channel CO2, 2% RH, VOC, PM, 10K Type 3 Temp, OLED Display)

Replacement Sensors:

AQS - [D] [CO2] Replacement Dual CO2 Sensor

DIMENSIONS



Warning: The datasheet is designed for reference only. Refer to installation instructions that accompany the product and heed all safety instructions. Product improvement is a continuing process at Senva. Changes may occur to products without prior notice.

SPECIFICATIONS

Power Supply		16-30VDC/24VAC(1), 3.5W nominal, 4W max.
Analog Outputs	Quantity	3 outputs
	Source	CO2,%RH,Temp,PM,TVOC,Ambient Light,CO,Ozone
	Scale	0-5V, 0-10V, 4-20mA (switch selectable, programmable per output)
Protocol Outputs (Communications version only)	Protocol	BACnet MS/TP or Modbus RTU
	Connection	3-wire RS-485, with isolated ground
	Data Rate	9600, 19200, 38400, 57600, 76800, 115200 (switch selectable)
	Address Range	0-127 (switch selectable)
Relay Set-point	Type	Solid-state output, 1A @ 30VAC/DC, N.O.
	Source	CO2 setpoint, RH setpoint, Temp setpoint, TVOC setpoint, air quality, off (selectable)
	Polarity	NO/NC (selectable)
CO2 (optional)	Type	Non-dispersive Infrared (NDIR)
	Accuracy	±(30ppm +3% of reading) (400-2000ppm), @-10-50°C ±(50ppm +5% of reading) Standard (2000-5000ppm), ±(50ppm+3% of reading) Dual Channel (2000-5000ppm), ±(100ppm+10% of reading) (5000-10000ppm)
	Drift with ABC disabled (Standard)	35ppm/month
	Drift with ABC disabled (Dual Channel)	5ppm/month
	Resolution	1 PPM
	Range	0-2000 PPM (Default) (Programmable up to 10,000 PPM)
	Response Time	90 seconds to 90% reading
	Sample Rate	1s
	Temp and Pressure	Compensated. Barometric pressure also readable over communications
Relative Humidity (optional)	Type	Digital CMOS
	Accuracy(2)	±2% over 0 to 80%RH range

	Resolution	0.05%RH
	Response time (3)	30s
	Sample rate	3s
	Operating range	0 to 100%RH (non-condensing)
	Operating conditions (4)	41 to 140oF (5 to 60° C) @ 20% to 80%RH
Temperature Transmitter (optional)	Type	Silicon Band-gap
	Nominal Accuracy	±0.3° C (operating range)
	Maximum Accuracy (2)	±0.5° C (at 25° C), ±1.0° C
	Resolution	0.01° C
	Response time	30s
	Sample rate	3s
TVOC (optional)	Type	MOS
	Gas	Total VOC
	Range	0-10,000 µg/m3
	Response Time	<10s
	Accuracy (5)	±20 µg/m3 + 15% at 1 to 500 µg/m3 (typical)
	Output	0-2000 µg/m3 (default) Programmable up to 10,000 µg/m3
PMx (optional)	Type	Optical
CLASS 1 LASER PRODUCT	Size Range	PM1.0, PM2.5, PM4.0, PM10.0
	Scale	0-1000 µg/m3
	Lower detection limit	0.3 µm
	Precision	±10 µg/m3 (0-100µg/m3); ±10% (100-1000 µg/m3)
Carbon Monoxide	Type	Electrochemical
	Detection Range	0-200 ppm
	Accuracy	5% of reading
	Resolution	1 ppm
	Response Time	60 seconds
	Sensor Life	5 years
	Certifications	UL2034 Recognized Component
Ozone	Type	PMOS
	Ozone Detection Range	20-500 ppb
	Accuracy	±15% of FS @ 20° C
Ambient Light	Type	Phototransistor
	Scale	0-300 fc (lm/ft2)
	Precision	±15%, across Full Range
Operating Environment	Temperature	-4 to 122° F (-20 to 50° C). Devices including PM or CO sensors rated (-10 to 50° C) CO sensors can intermittently operate down to –20°C.
	Humidity	0-95% non-condensing
Agency	Compliance	CE, RoHS
Enclosure	Material	ABS/Polycarbonate
	Dimensions	7.5”h x 4.4”w x 2.1”d
	Conduit Opening	Tapped 1/2” NPT
	Rating	IP43 or NEMA 3R

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

(2) Models with PM sensor included achieve ±3% accuracy over 0 to 80%RH range and an additional temperature shift of up +0.5° C

(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.)

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CT1 Series

CT1R & CT1W CO2 Temp Recessed & Wall

Optional LCD with field calibration menu
High-accuracy NDIR CO2 element
Sense up to 10,000 ppm CO2 or choose Dual Channel element
Integrated setpoint relay on LCD versions
Optional "wall" enclosure for surface-mount applications

DESCRIPTION

The Senva CT1 Series comes in our newly engineered enclosure, making it the most attractive and quickest-installed CO2 sensor on the market. Designed with a selectable analog output and a variety of thermistor options allows flexibility on-site and ease of ordering. It mounts easily in any junction box, or it can be unobtrusively mounted directly to drywall using Senva's built-in drywall clamps. Save installation time and energy costs with this versatile product.

APPLICATIONS

- Controlling ventilation in response to occupancy
- Facilitating compliance with ASHRAE 62.1 standard for air quality
- Offices, conference rooms, and public assembly areas
- Greenhouses, hospitals, convenience stores, etc (dual channel version)

CT1R drywall clamps make installation simple without a junction box

CT1W Tamper proof push-in lock tabs - great for schools!

Made in America - Best in industry 7-year warranty!

FEATURES

- Mounts easily in standard wall plates
- Innovative drywall clamps allow unobtrusive and secure mounting without a junction box
- Ideal for schools and institutional environments
- Analog output provides 0-5,V, 0-10V, or 3-wire 4-20mA
- Thermistor outputs for temperature optional
- Optional LCD display
- Optional Dual Channel element
- Non-dispersive infrared sensing element (NDIR)
- 15+ year life expectancy on CO2 sensing element
- High Accuracy: ± 30 ppm, ± 3% of reading
- Auto-calibration mode returns sensor to baseline values

ORDERING

CT1 [ ] - [ ] [3] [ ] - [ ]

Enclosure
R = Recessed Wall
W = Wall

Temperature
A= None
B= Transmitter*
C= 100PtRTD
D= 1000PtRTD
E= 10K Type 2
F= 10K Type 3
G= 10K W/ 11K
H= 3K
I = 2K2
J = 1K8
K = 20K
L= 100K

Output
3= 4-20mA, 0-5V, 0-10V 3-Wire Connection

Display (LCD)
X= None
D=Display+ Setpoint Relay

Dual Channel
BLANK= None
D=Dual Channel CO_2 Element

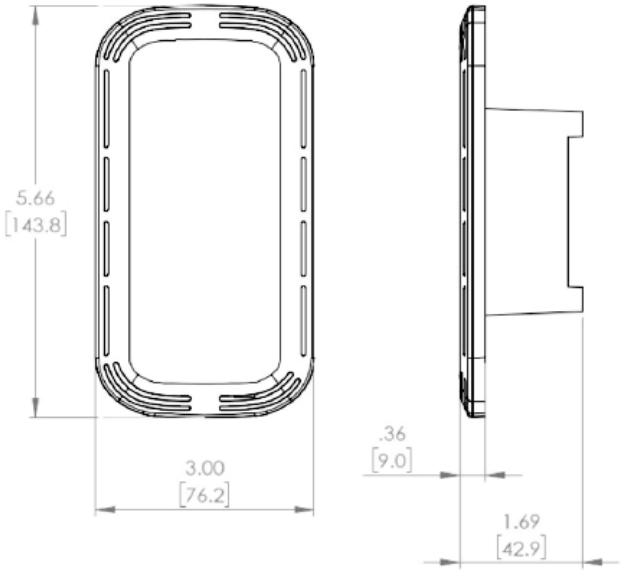
* Order B=transmitter to display temperature reading; thermistor and RTD options will not display temperature on LCD

Replacement Sensors:

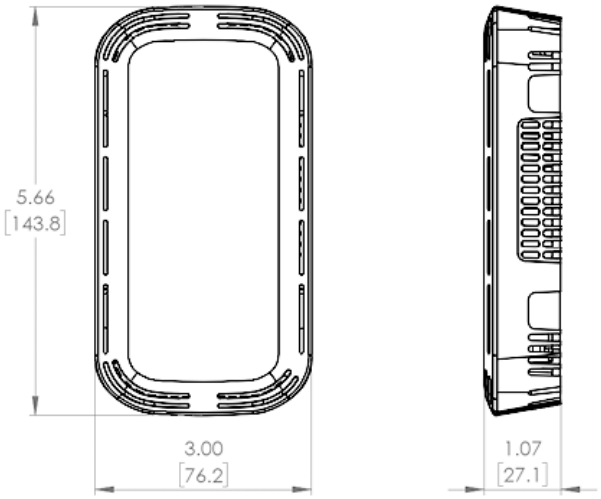
AQS - [CO2]	Replacement CO2 Sensor
AQS - [D] [CO2]	Replacement Dual CO2 Sensor

DIMENSIONS

CT1R



CT1W



Warning: The datasheet is designed for reference only. Refer to installation instructions that accompany the product and heed all safety instructions. Product improvement is a continuing process at Senva. Changes may occur to products without prior notice.

SPECIFICATIONS

Power Supply		24VAC(1), 100mA max / 12-30VDC, 50mA max
Analog Outputs	Analog	3-wire 4-20mA and 0-5V/0-10V(2) (dip switch selectable)
	Output scaling	0 - 2000 (default) or 0 - 5000 ppm (selectable)
Digital Setpoint Output	Programmable	Solid-state, 1A @ 30VAC/DC, N.O. on LCD version only.
CO_2 Sensor Performance	Type	Non-dispersive Infrared (NDIR)
	Accuracy (Standard)	±(30ppm +3% of reading) (400-2000ppm), @-10-50°C
		±(50ppm +5% of reading) (2000-5000ppm), @-10-50°C
		±(100ppm+10% of reading) (5000-10000ppm), @ 0-50C
	Accuracy (Dual Channel)	±(30ppm+3% of reading) (0-2000ppm), @ 0-50C
		±(50ppm+3% of reading) (2000-5000ppm), @ -10-50C
		±(100ppm+10% of reading) (5000-10000ppm), @ 0-50C
	Drift with ABC disabled (Standard)	35ppm/month (3)
	Drift with ABC disabled (Dual Channel)	5ppm/month (3)
	Range	0-2000/5000ppm; Programmable up to 10,000ppm
	Response time	60s to 90% reading
	Output update rate	1s
	Element Operating Environment	14 to 144°F (-10 to 50°C), 0 to 95% RH
LCD Menu Setup Parameters	SPH, Setpoint, Hi (On point)	500ppm to full-scale (800ppm default)
	SPL, Setpoint, Lo (Off point)	400ppm to full-scale (700ppm default)
	SCL, Scaling	0-2000ppm, 0-5000ppm, 0-10000ppm (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	14 to 122oF (-10 to 50oC)
	Humidity	0-95% non-condensing
Temperature Tansmitter	Accuracy	<±0.2°C
	Resolution	0.01°C
	Repeatability	0.04°C
	Response time	2s
	Output update rate	0.5s
	Element Operating range	-40 to 140°F (-40 to 60°C)
Environmental	Enclosure Rating	IP20/NEMA 1
	Dimensions	5.66'"h x 3.00"w x 0.36"d (1.69"d including recessed portion)
	Max Operating Temp	14 to 122°F (-10 to 50°C)
Enclosure	Material	ABS Plastic
	Dimensions (fits low-voltage bracket)	5.66”h x 3.0”w x 1.69”d (1.07d” for surface mount)

(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) Relay only available with display.

(4) It is not recommended to de-activate ABC (auto-calibration) except for continuously occupied spaces or greenhouses. Drift ratings may vary based on environment.

(5) Operation outside of element operating environment may result in reduced accuracy

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

CT1O Series

CT1O CO2 Temp Outdoor

Adjustable for ranges of 2000, 5000, or 10,000 ppm CO2
Field replaceable dual-channel NDIR element
Dual 3-wire 4-20mA and 0-5/0-10V (selectable)
Rugged gasketed enclosure

DESCRIPTION

Featuring a gold plated dual-channel NDIR sensor for the best accuracy and the highest reliability for your outdoor or greenhouse sensing needs. An optional built-in LCD display makes set up a snap, and a standard solid-state setpoint relay makes demand ventilation simple. Dual 4-20mA and 0-10/5 vdc outputs.

APPLICATIONS

- Controlling ventilation in response to occupancy
- Facilitates compliance with ASHRAE 62.1 standard for air quality
- Outdoor or greenhouse applications

Rugged enclusure

Field replaceable CO2 element for lower total lifetime cost

Made in the USA - Industry best 7-year warranty!

FEATURES

- Integrated display and push-button 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
- Non-dispersive infrared sensing element (NDIR)
- Field replaceable dual-channel CO2 sensor
- 15+ year life expectancy on CO2 sensing element
- Industry leading 7-year limited warranty on electronics; NDIR module 3 years
- ±30ppm, ±3% of reading

ORDERING

CT1	O	-		3	
	Enclosure		**Temperature**	**Output**	**Display**
	O= Outdoor		A= None B= Transmitter* C= 100PtRTD D= 1000PtRTD E= 10K Type 2 F= 10K Type 3 G= 10K W/ 11K H= 3K I = 2K2 J = 1K8 K = 20K L= 100K	3= 4-20mA, 0-5V, 0-10V 3-Wire Connection	X= None D=Display

* Order B=transmitter to display temperature reading; thermistor and RTD options will not display temperature on LCD

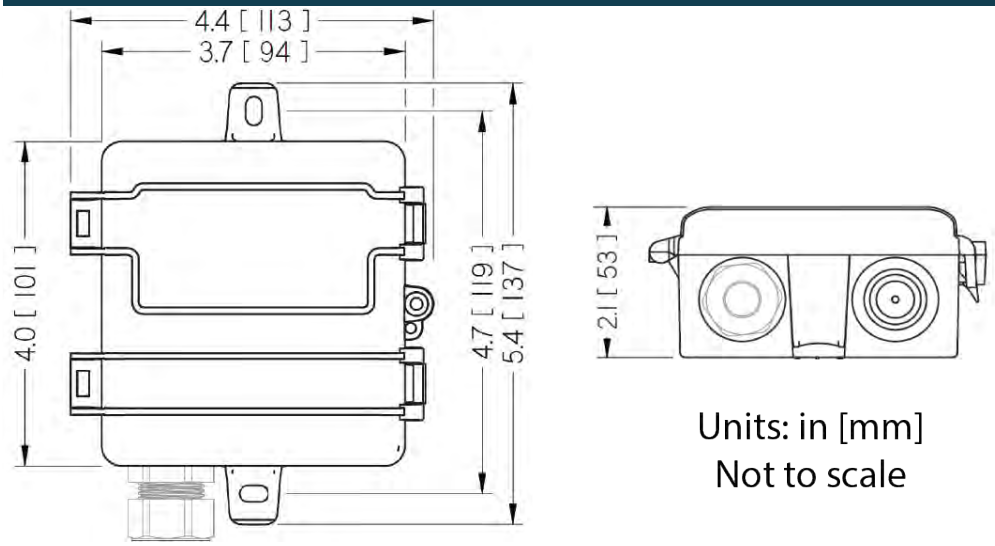
To order replacement sensor elements, please consult factory.

* All outdoor CT1O models use dual channel elements for high reliability!

Replacement Sensors:

AQS - D CO2 Replacement Dual CO2 Sensor

DIMENSIONS



Units: in [mm]
Not to scale

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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)
Set-point Relay	Programmable	Solid-state, 1A @ 30VAC/DC, N.O.
Sensor Performance	Type	Non-dispersive Infrared (NDIR)
	Accuracy (Standard)	±30ppm, ±3% of reading (400-2000ppm), @-10-50°C, 0-85%RH
		±50ppm, ±5% of reading (2000-5000ppm), @-10-50°C, 0-85%RH
		±100ppm, ±10% of reading (5000-10000ppm), @ 0-50°C, 0-85%RH
	Accuracy (Dual Channel)	±30ppm, ±3% of reading (400-2000ppm), @ 0-50°C, 0-85%RH
		±50ppm, ±3% of reading (2000-5000ppm), @-10-50°C, 0-85%RH
		±100ppm, ±10% of reading (5000-10000ppm), @ 0-50°C, 0-85%RH
	Drift with ABC disabled (Standard)	35 ppm/month
	Drift with ABC disabled (Dual Channel)	5 ppm/month
	Pressure Dependency	+1% reading per kPa (0.143PSI) deviation from nominal (101kPa, 14.7PSI)
	Response time	60 seconds to 90% reading
	Output update rate	1 second
	Element Operating Environment	4 to 122°F (-20 to 50°C), 0 to 95% RH
LCD Menu Setup Parameters	SPH, Setpoint, Hi (On point)	500ppm to full-scale (800ppm default)
	SPL, Setpoint, Lo (Off point)	400ppm to full-scale-50 (700ppm 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	-4 to 122F (-20 to 50C)
	Humidity	0-95% non-condensing
Enclosure	Material	Polycarbonate; aluminum tube
	Dimensions	4.0”h x 4.4”w x 2.1”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. Operating outside of element operating environment may result in reduced accuracy.
4. Time for reaching 63% of reading at 25oC and 1 m/s airflow.
5. It is not recommended to de-activate ABC (auto-calibration) except for continously occupied spaces or greenhouses. Drift ratings may vary based on environment.

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

CT1D Series

CT1D CO2 Temp Duct Sensor

- Optional LCD display with field calibration menu
- Adjustable for ranges of 2000, 5000, or 10,000 ppm CO2
- Integrated set-point relay
- Field replaceable NDIR element

DESCRIPTION

Self-calibrating NDIR sensor for high accuracy. An optional built-in LCD display makes set up a snap, and a standard solid-state setpoint relay makes demand ventilation easy. Probe is non-directional for accurate readings and ease of installation. Dual 4-20mA and 0-10/5 vdc outputs.

APPLICATIONS

- Controlling ventilation in response to occupancy
- Facilitates compliance with ASHRAE 62.1 standard for air quality
- Offices, conference rooms, and public assembly areas

Field replaceable CO2 element for lower total lifetime cost

LCD with menu to confirm readings

Made in the USA - 7-year Warranty

FEATURES

- Integrated display and push-button 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
- Non-dispersive infrared sensing element (NDIR)
- Field replaceable CO2 sensor
- 15+ year life expectancy on CO2 sensing element
- Industry leading 7-year limited warranty on electronics; NDIR module 3 years
- Selectable auto-calibration mode returns sensor to baseline values
- ±30ppm, ±3% of reading

ORDERING

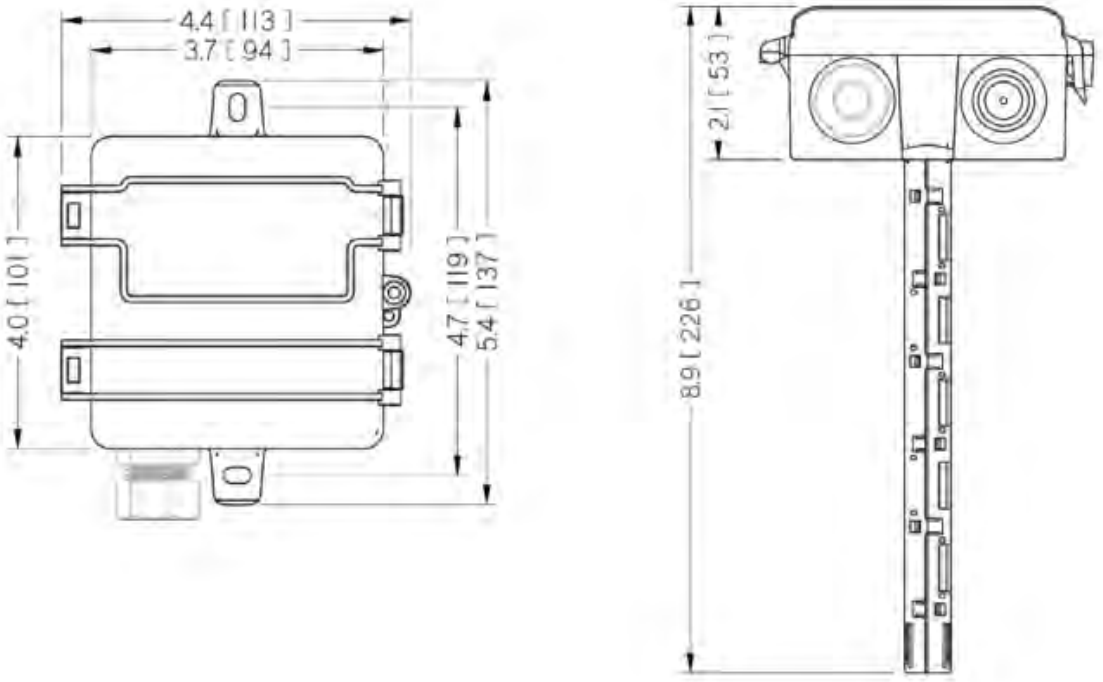
CT1	D	-		3		-	
	Enclosure		**Temperature**	**Output**	**Display**		**Dual Channel**
	D= Duct H = Hose Barb		A= None B= Transmitter* C= 100PtRTD D= 1000PtRTD E= 10K Type 2 F= 10K Type 3 G= 10K W/ 11K H= 3K I = 2K2 J = 1K8 K = 20K L= 100K	3= 4-20mA, 0-5V, 0-10V 3-Wire Connection	X= None D=Display		Blank = NDIR D = Dual Channel

* Order B=transmitter to display temperature reading; thermistor and RTD options will not display temperature on LCD

Replacement Sensors:

AQS - CO2	Replacement CO2 Sensor
AQS - D CO2	Replacement Dual CO2 Sensor

DIMENSIONS



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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)
Set-point Relay	Programmable	Solid-state, 1A @ 30VAC/DC, N.O.
Sensor Performance	Type	Non-dispersive Infrared (NDIR)
	Accuracy (Standard)	±30ppm, ±3% of reading (400-2000ppm), @-10-50°C, 0-85%RH
		±50ppm, ±5% of reading (2000-5000ppm), @-10-50°C, 0-85%RH
		±100ppm, ±10% of reading (5000-10000ppm), @ 0-50°C, 0-85%RH
	Accuracy (Dual Channel)	±30ppm, ±3% of reading (400-2000ppm), @ 0-50°C, 0-85%RH
		±50ppm, ±3% of reading (2000-5000ppm), @-10-50°C, 0-85%RH
		±100ppm, ±10% of reading (5000-10000ppm), @ 0-50°C, 0-85%RH
	Drift with ABC disabled (standard)	35 ppm/month
	Drift with ABC disabled (Dual Channel)	5 ppm/month
	Pressure Dependency	+1% reading per kPa (0.143PSI) deviation from nominal (101kPa,14.7PSI)
	Response time	60 seconds to 90% reading
	Sample rate	1 second
	Output update rate	1 second
	Element Operating Environment	4 to 122°F (-20 to 50°C), 0 to 95% RH
LCD Menu Setup Parameters	SPH, Setpoint, Hi (On point)	500ppm to full-scale (800ppm default)
	SPL, Setpoint, Lo (Off point)	400ppm to full-scale-50 (700ppm default)
	SCL, Scaling	0-2000ppm, 0-5000ppm, 0-10000ppm (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	14 to 122F (-10 to 50C)
	Humidity	0-95% non-condensing
Enclosure	Material	ABS/Polycarbonate
	Dimensions	4.0’ h x 4.4”w x 2.1”d (+6.8” probe)

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. Operating outside of element operating environment may result in reduced accuracy.
4. Time for reaching 63% of reading at 25oC and 1 m/s airflow.
5. It is not recommended to de-activate ABC (auto-calibration) except for continously occupied spaces or greenhouses. Drift ratings may vary based on environment

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

Value Series - VT0R or HT0R

Customization Form

NEW!

Sell *your* brand of sensor, generate service calls!

- Private label with low up-front cost
- Minimum order of only 10 units
- Market *your* brand, *your* service

Professional look and feel

- Color printed with UV ink
- No bulky, cheap-looking stickers
- High quality, long lasting marketing

Generate service calls for the life of the product!

1. Choose a part number

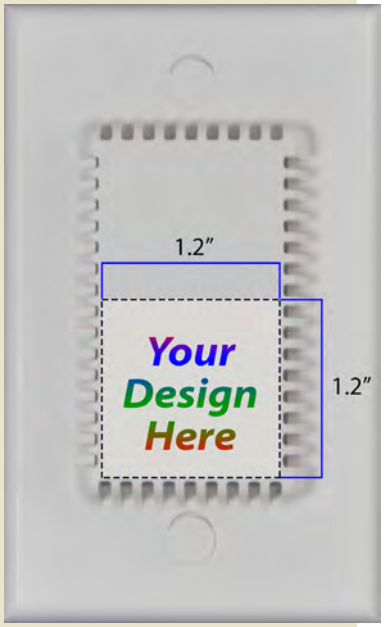
Choose a part number up to 12 digits. We suggest using the name of your company, such as HT0R-YOURCOMPANY.

Include this part number with each order (of any value product) you'd like customized. For example, if you order:

- (25) HT0R-2AA,
- (5) VT0R-AD,
- (30) HT0R-YOURCOMPANY

you will receive all 30 units with your company's customization.

(VT0R) HT0R - _ _ _ _ _ _ _ _ _ _ _ _



2. Provide an image

Provide an image for the customization.

- Format: .AI, .JPEG, .PDF, or .PNG
- Dimensions: 1.2" x 1.2" to be placed as shown on the right
- Resolution: At least 300 ppi
- Font: We suggest no less than 6 pt for legibility

3. Send this form, and your 1.2"x1.2" image to support@senvainc.com

We'll send you a sample print for approval and then you are ready to order for any job!

A one-time setup fee (HT0R-SETUP) will be added to your first order.

PROUDLY MADE IN USA

7 year limited warranty

VT0R Series

VT0R VOC Temp Sensor

- Cost-effective measurement of room VOC levels
- 0-5V, 0-10V, 2-wire and 3-wire 4-20mA options
- Thermistor outputs for temperature optional
- Rugged attractive design

DESCRIPTION

The VT0R is capable of sensing thousands of VOC's coming from sources such as paints, glues, cleaners, alcohol, building products, smoke, and myriad other harmful or offensive gases. It's ability to sense these contaminants in addition to breath and other bodily functions makes it the preferred alternative or compliment to CO2 occupancy sensing. The VT0R Value Series ensures that odor and ventilation issues are never a topic of conversation. An array of analog outputs and thermistor options accommodate any installation and keep occupants breathing easy.

APPLICATIONS

- Verify operation of ionazation and UV systems
- Controlling ventilation in response to occupancy
- Ventillation control
- Economizer control
- Cafeterias, conference rooms, restrooms and public assembly areas

Your brand, your product. Affordable high-quality branding. Generate service calls for life.

Gasket seals element from wall drafts. 45 degree terminals for ease of wireing.

Made in the USA - 7-year Warranty

FEATURES

- On-board temperature compensation for VOC
- Gasket seals sensor against wall drafts and false readings
- Senses thousands of contaminants
- Perfect alternative or compliment to CO2 sensing for ventillation
- New enclosure design is rugged and slim; unobtrusive tamper resistant design
- Fits easily in standard single gang boxes
- 0-5V, 0-10V, 2-wire and 3-wire 4-20mA options
- Thermistor outputs for temperature optional

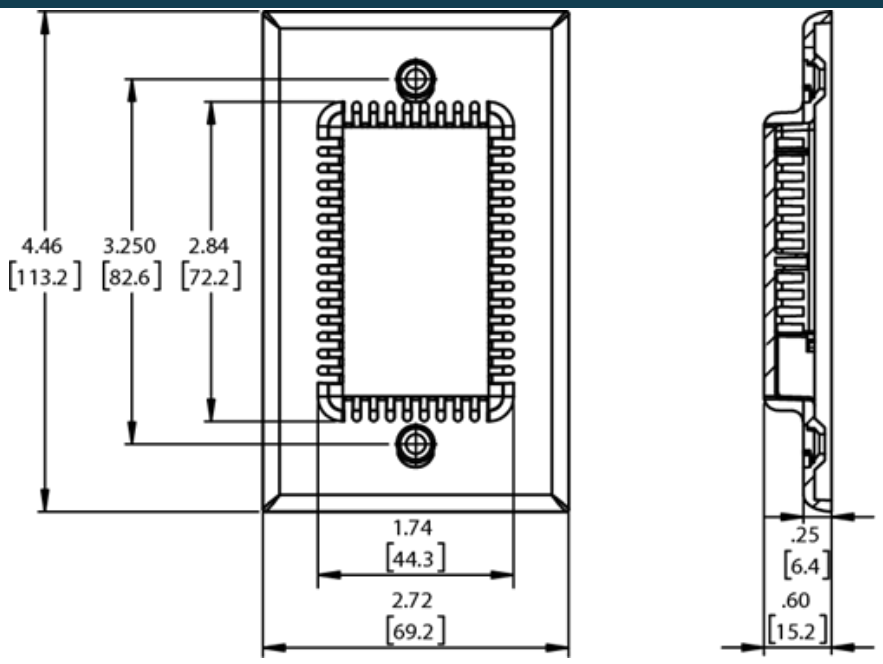
ORDERING

VT0R- ☐ ☐

Output Type
A= 0-5VDC, 3-Wire
B= 0-10VDC, 3-Wire
C= 4-20mA, 2-Wire
D= 4-20mA, 3-Wire

Temperature
A= None
C= 100PtRTD
D= 1000PtRTD
E= 10K Type 2
F= 10K Type 3
G= 10K W/ 11K
H= 3K
I = 2K2
J = 1K8
K = 20K
L= 100K

DIMENSIONS



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SPECIFICATIONS		
Power Supply		12-30VDC/24VAC(1), 24mA max
Output	Analog outputs	0-10V, 0-5V, 2-wire or 3-wire 4-20mA
Output scaling	VOC intensity	0-500 (relative intensity)
Thermistor Options		Yes, see ordering table on left
VOC Sensor Performance	Type	MOS
	Gas	Ethanol
	Range	0-1000ppm of ethanol equivalent
	Response Time	<10s
	Humidity Compensation	Yes
Enclosure	Dimensions	4.46”h x 2.72”w x 0.6”d (depth measured from wall)
	RH	0 to 90% RH (operating)
		0- to 80% (storage)
	Temp Rating	14 to 122oF (-10 to 50oC) (operating)
		5 to 30ºC (storage)
Compliance		CE, RoHS

(1) One side of transformer, secondary is connected to signal common. Dedicated transformer is recommended. 15-30VDC/24VAC power supply voltage required for 10 volt output.

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

VT0D Series

VT0D VOC/Temp Duct

- Cost-effective measurement of room VOC levels
- 0-5V, 0-10V, 2-wire and 3-wire 4-20mA options
- Thermistor outputs for temperature optional
- Rugged attractive design

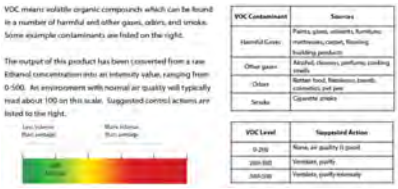
DESCRIPTION

The VT0D is capable of sensing thousands of VOC's coming from sources such as paints, glues, cleaners, alcohol, building products, smoke, and myriad other harmful or offensive gases. It's ability to sense these contaminants in addition to breath and other bodily functions makes it the preferred alternative or compliment to CO2 occupancy sensing. The VT0D Value Series ensures that odor and ventilation issues are never a topic of conversation. An array of analog outputs and thermistor options accommodate any installation and keep occupants breathing easy.

APPLICATIONS

- Verify operation of ionazation and UV systems
- Controlling ventilation in response to occupancy
- Ventillation control
- Economizer control
- Cafeterias, conference rooms, restrooms and public assembly areas

Rugged Enclosure



VOC Explained

Made in the USA - 7-year Warranty

FEATURES

- On-board temperature compensation for VOC
- Gasket seals sensor against wall drafts and false readings
- Senses thousands of contaminants
- Perfect alternative or compliment to CO2 sensing for ventillation
- New enclosure design is rugged and slim; unobtrusive tamper resistant design
- Fits easily in standard single gang boxes
- 0-5V, 0-10V, 2-wire and 3-wire 4-20mA options
- Thermistor outputs for temperature optional

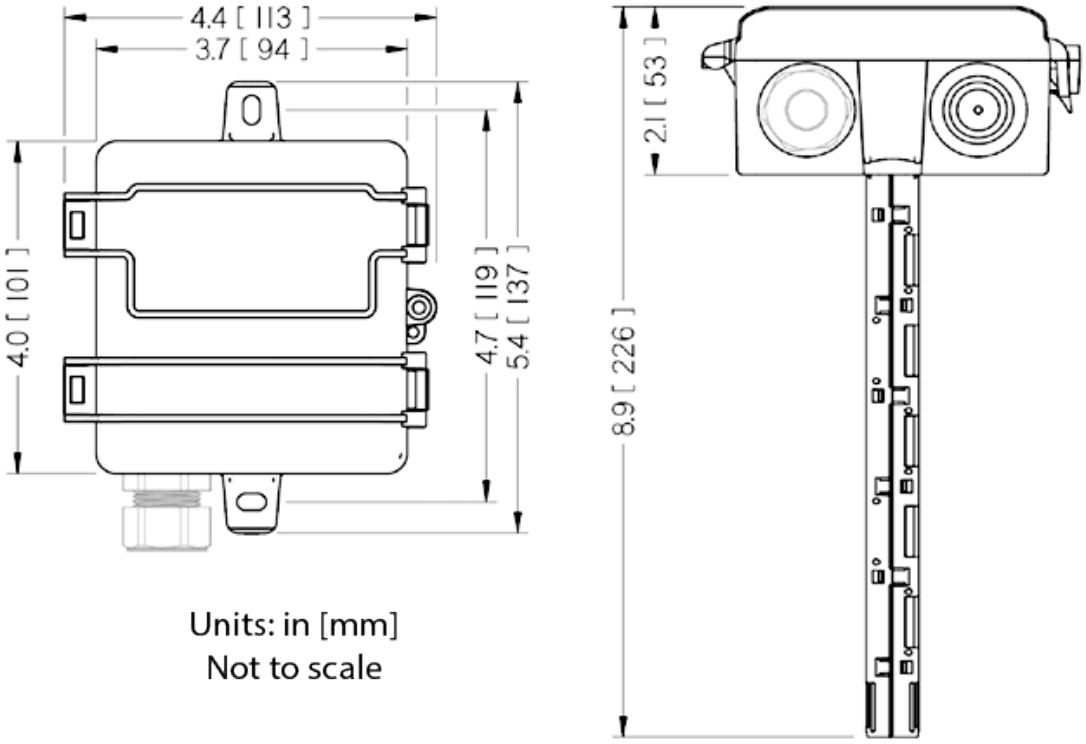
ORDERING

VT0D- ☐ ☐

Output Type
A= 0-5VDC, 3-Wire
B= 0-10VDC, 3-Wire
C= 4-20mA, 2-Wire
D= 4-20mA, 3-Wire

Temperature
A= None
C= 100PtRTD
D= 1000PtRTD
E= 10K Type 2
F= 10K Type 3
G= 10K W/ 11K
H= 3K
I = 2K2
J = 1K8
K = 20K
L= 100K

DIMENSIONS



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SPECIFICATIONS		
Power Supply		12-30VDC/24VAC (1), 24mA max.
Outputs	RH% (options)	0-10V, 0-5V, 2-wire or 3-wire 4-20mA
Output scaling	RH%	0-500 (relative intensity)
Thermistor Options		Yes, see ordering table
Sensor Performance	Type	MOS
	Gas	Ethanol
	Range	0-1000ppm of ethanol equivalent
	Response time	<10s
	Humidity Compensation	Yes
	Long term drift	<0.25%RH per year
Enclosure	Dimensions	4.0"h x 4.4"w x 2.1"d (+6.8" probe)
	RH Rating	0-90% operating, 0-80% storage
	Temp Rating	-10 to 50C operating, 5 to 30C storage
Compliance		CE, RoHS

1. One side of transformer, secondary is connected to signal common. Dedicated transformer is recommended. 15-30VDC/24VAC power supply voltage required for 10 volt output.

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TotalSense Series

IAQ/Occupancy Sensor

Industry's first IAQ sensor with PIR motion detection
Ten environmental sensors: PIR, PMx, VOC, CO2, CO, O3, RH, T, ambient light, barometric pressure
BACnet/Modbus or analog outputs with set-point relay

DESCRIPTION

The TotalSense Humidity version is designed for quick-installation and complete flexibility. With options for analog or BACnet/Modbus connectivity, four display options, various thermistors, sliders, and pushbuttons, it can be configured for any job. Motion detection (PIR) can initiate ventilation upon occupancy, providing air exchanges the instant people are present (in addition to monitored elevated CO2 levels.) This technology provides a much faster trigger for ventilation allowing for cleaner and safer indoor spaces while still saving energy. PIR and ambient light sensors can also be utilized for light harvesting for additional energy savings and code compliance. The TotalSense Series also includes a comprehensive selection of IAQ sensors. For options including CO2, TVOC, or PM, see the "indoor air quality" section.

APPLICATIONS

Energy management/building control
Facilitates compliance with ASHRAE 62.1 standard for air quality

Display, AQ ring, and standard designs

PIR Motion Detection (optional) - Detect for safer ventilation

Configure up to ten sensors

Tamper proof push-in lock tabs - great for schools!

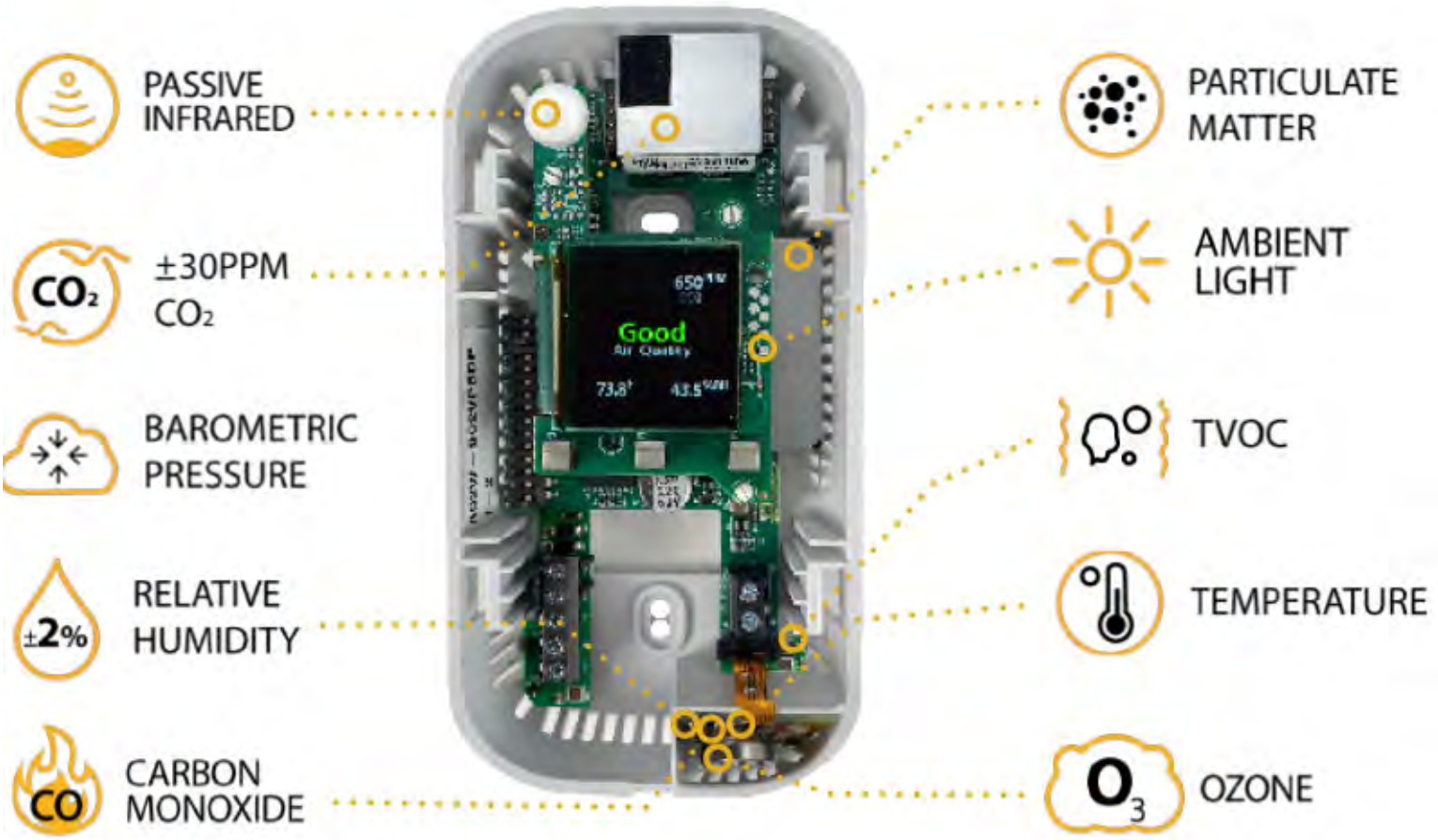
NEW! PID control output for local control of dampers or valves.

RESET monitors are tested and certified.

FEATURES

- NEW! Configure and update firmware with the SenvaSync app
- Color display and Air Quality Ring for tenant assurance (programmable)
- Initiate ventilation immediately upon occupancy detection for healthier buildings and energy savings
- Capacitive touch buttons make setup and use simple
- Slim and sleek surface-mount enclosure is tamper-proof and easy to install
- Field-replaceable sensors ease maintenance
- Set-point sliders and pushbuttons are also available to meet the requirements for any job
- 7-year limited warranty / 3 years on CO2 sensor - 2 years on all others

RESET monitors are tested and certified.



ORDERING

AQ2 [W] - [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

Mounting Type
W = Wall Mount

Output Type *(1)(3)(4)(5)(7)*
A = Analog
B = BACnet/Modbus
D = Dual Analog + BACnet/Modbus

CO_2 *(2)*
A = None
C = CO_2
D = Dual Channel CO_2

Humidity Sensor (RH) *(3)*
A = None
2 = 2% RH Sensor

Volatile Organic Compounds (VOC)
A = None
V = VOC

Advanced Sensors *(4)(6)(7)*
A = None
C = CO
O = O_3
P = (PM) Particulate Matter 1.0, 2.5, 4.0, 10.0
Q = PM + O_3
R = PM + CO

Temperature *(3)(5)*
A = None
B = Transmitter
C = 100PtRTD
D = 1000PtRTD
E = 10K Type 2
F = 10K Type 3
G = 10K W/ 11K
H = 3K
I = 2K2
J = 1K8

Display *(5)(6)(7)*
X = None
D = OLED Display
S = OLED w Solid Cover
R = Air Quality Ring

Optional Accessories
Blank = None
(See below for options)

Setpoint Slider *(7)*
Blank = None
C = 1K Ω
F = 10K Ω
G = 20K Ω
T = 200-900 Ω

Slider Offset Resistor
Blank = None
E = 910 Ω
K = 6K Ω

Pushbutton *(7)*
Blank = None
S = Slider Override Pushbutton *(8)*
O = Thermistor Override Pushbutton *(9)*
U = Stand Alone PB Terminals
B = Comms Only PB (No Terminals)

PIR Sensor
Blank = None
P = PIR Sensing

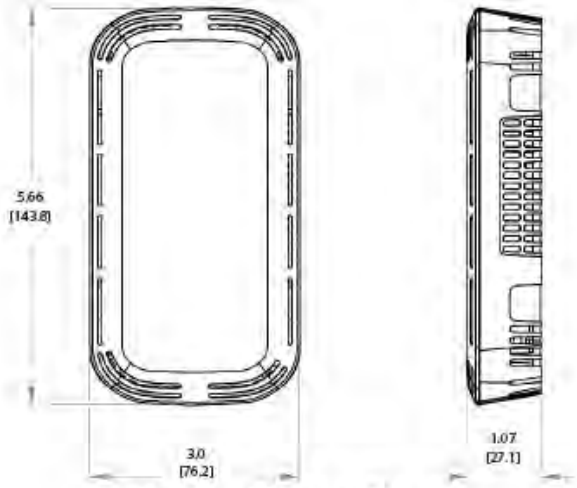
(1) Ambient light detection standard on all models selected with BACnet/Modbus and D= OLED Display Option.
(2) Barometric pressure sensing included standard on all models with CO2!
(3) Models with RH have a separate temp sensor that reads to the display and BACnet/Modbus, if chosen with any temperature selection.
(4) All PM options only available with BACnet/Modbus models.
(5) Only Transmitter and RH option is shown on display and readable via BACnet/Modbus. Thermistor versions not available to display on OLED or to read over BACnet/Modbus. See note (3).
(6) CO sensor only available with display and Temp/RH for calibration purposes.
(7) Slider and pushbutton options not available with PM sensor. Call for additional slider and override options. Slider value will show on the OLED Display and via BACnet/Modbus, if the appropriate options are selected.
(8) Slider required, shorts slider terminals to read pushbutton.
(9) Thermistor Required, shorts thermistor terminals to read pushbutton.

Example:

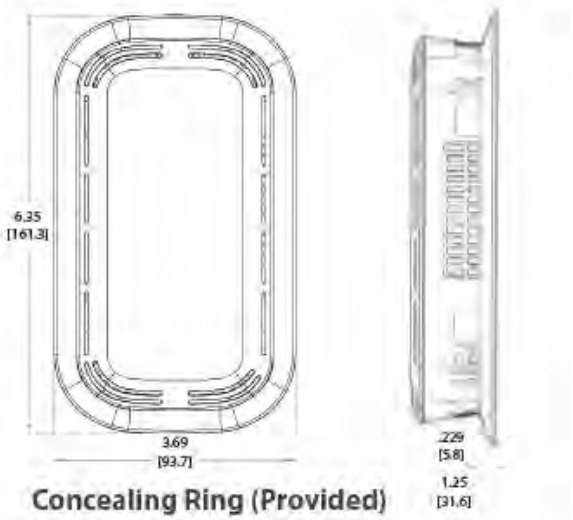
	Mount	Output	CO_2	RH	VOC	PM	Temp	Display	Slider	Push-Button	PIR
AQ2	W	- B	C	2	V	P	F	D	F	S	P

(TotalSense Wall mount with BACnet/Modbus RS-485, Temp, CO2, 2% RH, VOC, PM, 10KT3 Temp, OLED, 10K Slider, Slider Override PB, No Offset Ω, PIR Sensor)

DIMENSIONS



Standard Surface Mount



Concealing Ring (Provided)

- Conceal oversized drywall cutouts or European junction boxes

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SPECIFICATIONS

Power Supply	Non-Display	16-30VDC/24VAC(1), 3.5W nominal, 4W max.
	Display or LED Ring	24-30VDC/24VAC(1), 4.3W nominal, 5W max.
Interface	OLED (optional)	1.5" Organic LED Display, 128x128, color
	Air Quality Ring	Color changing (red/yellow/green) LED Air Quality Ring
Analog Outputs (Analog or Dual version only)	Quantity	Up to 3 outputs
	Source	CO2, RH%, Temp, Temp slider, TVOC (selectable)
	Scale	0-5V, 0-10V, 4-20mA (switch selectable, programmable per output)
Protocol Output (Comms or Dual version only)	Protocol	BACnet MS/TP or Modbus RTU
	Connection	3-wire RS-485, with isolated ground
	Data Rate	9600, 19200, 38400, 57600, 76800, 115200 (switch selectable)
	Address Range	0-127
Relay (Standard except for PM models)	Type	Solid-state output, 1A @ 30VAC/DC, N.O.
	Polarity	NO/NC (selectable)
	Source	CO2 setpoint, RH setpoint, Temp setpoint, TVOC setpoint, PIR motion detection, Air Quality, off (selectable)
CO2 (Optional)	Type	Non-dispersive Infrared (NDIR)
	Accuracy	±(30ppm + 3% of reading) (400-2,000ppm), -10-50ºC, 0-85%RH
		±(50ppm+ 5% of reading) (2,000-5,000ppm), -10-50ºC, 0-85%RH
		>5,000ppm consult factory
	Resolution	1 ppm
	Range	0-2,000 PPM (Default) (Programmable up to 10,000ppm)
	Response time	90 seconds to 90% reading
	Sample rate	1s
	Temp and Pressure Compensation	Yes, barometric pressure readable over comms
Relative Humidity (Optional)	Type	Digital CMOS
	Accuracy(2)	2% models, +/-2% over 0 to 80%RH range
	Resolution	0.05%RH

	Response time (3)	30s	
	Sample rate	3s	
	Operating range	0 to 100%RH (non-condensing)	
	Operating conditions (4)	-4 to 140oF (-20 to 60° C) @ RH>90%; -4 to 176oF @ RH=50%	
Temperature Transmitter		With RH option	Without RH option
(Optional)	Type	Silicon Band-gap	NTC Thermistor
	Nominal Accuracy	±0.3° C (operating range)	±0.5° C (operating range)
	Maximum Accuracy (2)	±0.5° C (at 25° C), ±1.0° C	±1.0° C (at 25° C), ±2.0° C
	Resolution	0.1° C	0.05° C
	Response time	30s	30s
	Sample rate	3s	100 milliseconds
TVOC (Optional)	Type	MOS	
	Gas	Total VOC	
	Formaldehyde CH2O Sensitivity	Responsive to Formaldehyde concentrations 50-1000 ppb	
	Range	0-32,000 µg/m3 (Display may be programmed to show PPB)	
	Response Time	<10s	
	Output	0-2,000 µg/m3 (default) programmable up to 32,000 µg/m3	
PMx (Optional)	Type	Optical	
CLASS 1 LASER PRODUCT	Size Range	PM1.0, PM2.5, PM4.0, PM10.0	
	Scale	0-1,000 µg/m3	
	Lower detection limit	0.3 µm	
	Precision	±10 µg/m3 (0-100µg/m3); ±10% (100-1,000 µg/m3)	
	Long-Term Drift	±1.25 µg/m3 / year	
Carbon Monoxide	Type	Electrochemical	
	Detection Range	0-200 ppm	
	Accuracy	5% of reading	
	Resolution	1 ppm	
	Response Time	60 seconds	
Ozone	Type	PMOS	
	Gas	Ozone, cross sensitivity to NO2	
	Ozone Detection Range	20-500 ppb	
PIR (Optional)	Type	Passive Infrared	
	Axis X field of view	140o, 15 ft (4.5m)	
	Axis Y field of view	76o, 15 ft (4.5m)	
Ambient Light	Type	Phototransistor	
	Scale	0-100 fc (lm/ft2), readable over comms	
Operating Environment	Temperature	32 to 122oF (0 to 50oC)	
	Humidity	0-95% non-condensing	
Enclosure	Material	ABS Plastic	
	Dimensions	5.67”h x 3.00”w x 1.07”d (With concealing ring: 6.35”h x 3.69”w x 1.25”d)	
Compliance	Agency	CE, RoHS	

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HT1 Series

Humidity/Temp Recessed/Wall

2% and 3% RH accuracy options
Universal analog output provides 0-5,V, 0-10V, 2-wire or 3-wire 4-20mA
Thermistor outputs for temperature optional
Optional LCD display

DESCRIPTION

The new Senva HT1 Series comes in our newly engineered enclosure making it the most attractive and quickest-installation humidity sensor on the market. Designed with a universal analog output and a variety of thermistor options allows flexibility on-site. It mounts easily in any junction box or it can be unobtrusively mounted directly to drywall using Senva's built-in drywall clamps. Save installation time and energy costs with this versatile product.

APPLICATIONS

- Facilitating compliance with ASHRAE 62.1 standard for air quality
- Indoor air comfort and control in HVAC systems
- Maintain healthy air quality, minimize mold and other contaminants
- Museums, hopsitals and other critical environments
- Offices, conference rooms, and public assembly areas
- Industrial process control environments

Attachable dry wall clamps for easy retrofit installation

Optional "Wall" version for surface-mount applications

Tamper proof push-in lock tabs - great for schools!

Meets Buy American Act Certification

FEATURES

- Fast and attractive installation: mounts easily in standard wall recepticals or order the surface-mount version
- Low profile installation is ideal for schools and other harsh environments
- Innovative drywall clamps allow unobtrusive and secure mounting without a junction box
- Ideal for schools and institutional environments
- Field calibration with LED or LCD allows easy adjustment of calibrated RH value as needed to maintain certification
- On-board temperature compensation for RH. Eliminates temperature coefficient errors and achieves an excellent measurement accuracy as well as high repeatability and offset stability.

ORDERING

HT1 [ ] - [ ] [ ] [U] [ ]

Enclosure
R = Recessed Wall
W = Surface Wall

Accuracy
2= 2%
3= 3%
N= 2%/ with NIST Cert.

Temperature
A= None
B= Transmitter*
C= 100PtRTD
D= 1000PtRTD
E= 10K Type 2
F= 10K Type 3
G= 10K W/ 11K
H= 3K
I = 2K2
J = 1K8
K = 20K
L= 100K

Output
U= Universal (4-20mA, 0-5V,0-10V) 2 or 3-Wire Connection

Display (LCD)
X= None
D=Display

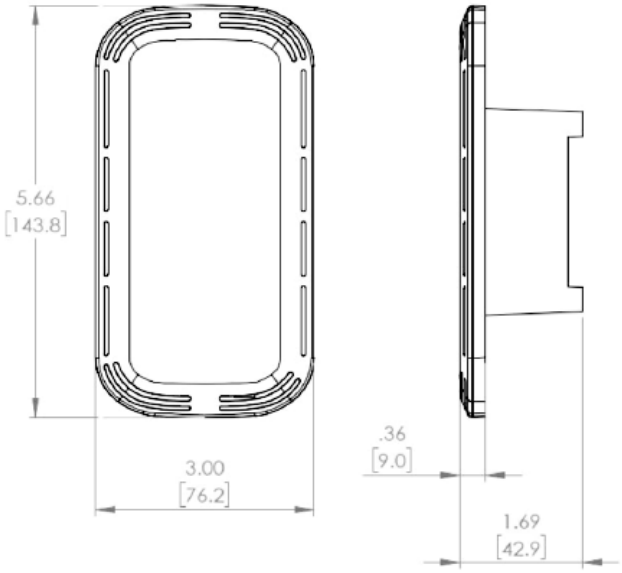
* Order B=transmitter to display temperature reading; thermistor and RTD options will not display temperature on LCD

Replacement Sensors:

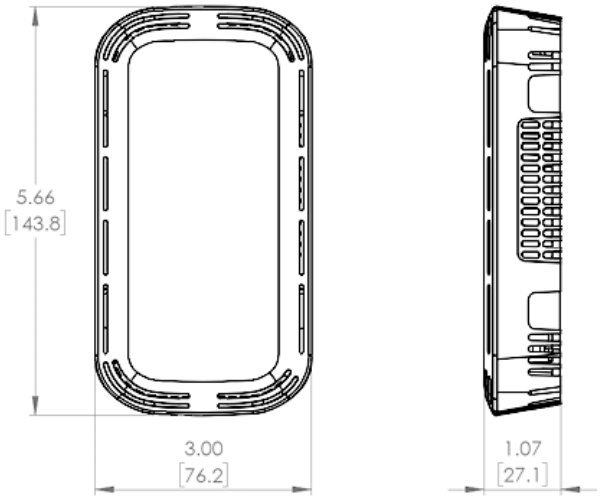
HTW - 2A	2%, Xmtr or No Temp, HT1W/R & AQ2W	HTW - 3A	3%, No Temp or Transmitter, HT1W/R & AQ2W
HTW - 2C	2%, 100Pt RTD, HT1W/R & AQ2W	HTW - 3C	3%, 100Pt RTD, HT1W/R & AQ2W
HTW - 2D	2%, 1000Pt RTD, HT1W/R & AQ2W	HTW - 3D	3%, 1000Pt RTD, HT1W/R & AQ2W
HTW - 2E	2%, 10K Type 2, HT1W/R & AQ2W	HTW - 3E	3%, 10K Type 2, HT1W/R & AQ2W
HTW - 2F	2%, 10K Type 3, HT1W/R & AQ2W	HTW - 3F	3%, 10K Type 3, HT1W/R & AQ2W
HTW - 2K	2%, 20K, HT1W/R & AQ2W	HTW - 3K	3%, 20K, HT1W/R & AQ2W
HTW - NA	2% NIST, Xmtr or No Temp, HT1W/R & AQ2W		
HTW - ND	2% NIST, 1000Pt RTD, HT1W/R & AQ2W		

DIMENSIONS

CT1R



CT1W



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SPECIFICATIONS		
Power Supply		12-30VDC/24VAC (1), 100mA max.
Outputs	RH% and Temperature	3-wire 0-5, 10V (4), or 4-20mA, 2-wire 4-20mA(selectable)
Output scaling	RH%	0-100% RH
	Temperature	50-95° F (10-35° C) or 32-122°F (0-50°C)
Thermistor Options		Yes, see ordering table
Media filter		PTFE membrane, IP54 protection
Relative Humidity	Accuracy	2% models: ±2% max 0 to 100% RH 3% models: ±3% max 0 to 100% RH
	Resolution	0.01%RH
	Hysteresis	±0.8%RH
	Non-Linearity	factory linearized <1%RH
	Temperature coefficient	fully compensated by on-board temp sensor
	Response time (2)	8s
	Output update rate	0.5s
	Operating range	0 to 100%RH (non-condensing)
	Long term drift	<0.25%RH per year
	Normal Operating conditions (3)	41 to 140°F (5 to 60°C) @ 20 to 80%RH
Temperature	Accuracy	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	0.04° C
	Response time (2)	2s
	Temperature Scaling	50-95°F (10-35° C)
	Output update rate	0.5s
	Operating range	-40° C to 140°F (-40 to 60°C)
Environmental	Enclosure Rating	IP20/NEMA 1
	Unit Temp Rating	-40° C to 158°F (-40 to 70°C)
Compliance	Agency	CE, RoHS

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).
4. 15-30VDC/24VAC power supply voltage required for 10 volt output. Power consumption 100mA max AC, 50mA Max DC

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

HT1D Series

Humidity Temp Duct

2% or 3% accuracy (NIST certification options)
0-5V/10V and 4-20mA RH/Temp (thermistors optional)
LCD display with field calibration menu
Field replaceable element

DESCRIPTION

The HT1D Series is designed with both the engineer and field technician in mind. The HT1D Series combines excellent stability with reliable operation in 2% or 3% RH accuracy options. Optional temperature transmitters, RTDs and thermistors add further flexibility when ordering. The standard LCD and field replaceable elements make the initial installation and future service a breeze.

APPLICATIONS

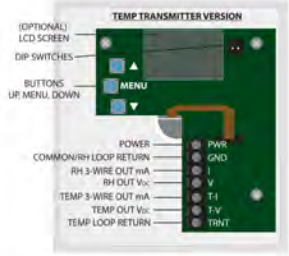
- HVAC room humidity and temperature measurement and control
- Replaceable element is ideal for difficult environments such as swimming pools
- Facilitating compliance with ASHRAE 62.1 standard for air quality
- Indoor air comfort and control in HVAC systems
- Maintain healthy air quality, minimize mold and other contaminants
- Museums, hospitals & other critical environments
- Offices, conference rooms, & indoor public areas
- Industrial process control environments

HT ribbon element for harsh enviornments

LCD with adjustable offsets menu

State of the art measurement and calibration

Probe provides active airflow readings



Options with temp transmitter version

Buy American Act Certified

FEATURES

- 2% or 3% RH versions with field replaceable sensor
- Switch selectable 5V/10V and 4-20mA RH/T transmitter outputs
- Thermistor outputs for temperature optional
- Field calibration. LCD and push-button menu allows easy adjustment of calibrated RH value as needed to maintain certification.
- Field replaceable sensor—without disturbing conduit
- On-board temperature compensation for RH. Eliminates temperature coefficient errors and achieves excellent measurement accuracy, high repeatability, and offset stability.
- State-of-the-art testing facilities. Certification options: 8-point (NIST traceability—consult factory)
- Industry-leading 7-year warranty/ 2-year replaceable element warranty

ORDERING

HT1D- [ ] [ ] [U] [ ]

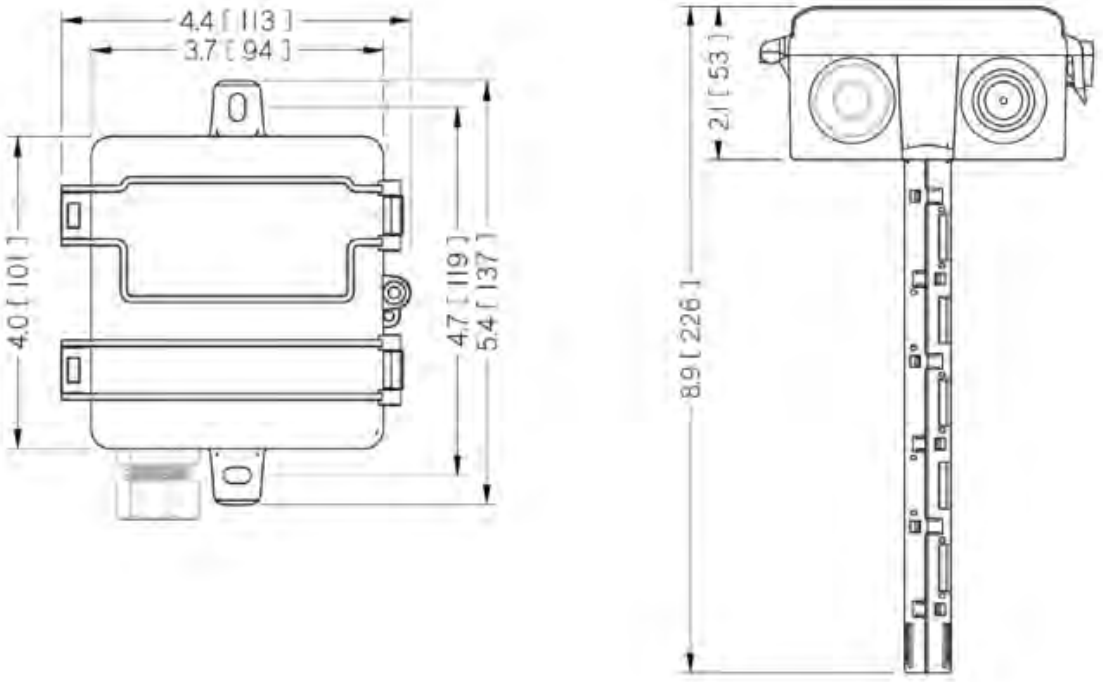
Accuracy	**Temperature**	**Output**	**Display (LCD)**
2= 2%	A= None	U= Universal (4-20mA, 0-5V,0-10V) 2 or 3-Wire Connection	X= None
3= 3%	B= Transmitter*		D=Display
N= 2%/ with NIST Cert.	C= 100PtRTD		
	D= 1000PtRTD		
	E= 10K Type 2		
	F= 10K Type 3		
	G= 10K W/ 11K		
	H= 3K		
	I = 2K2		
	J = 1K8		
	K = 20K		
	L= 100K		

* Order B=transmitter to display temperature reading; thermistor and RTD options will not display temperature on LCD

Replacement Sensors:

HTD	-	**2A**	2%, Xmtr or No Temp, HT1D & AQ2D	**HTD**	-	**3A**	3%, No Temp or Transmitter, HT1D & AQ2D
HTD	-	**2C**	2%, 100Pt RTD, HT1D & AQ2D	**HTD**	-	**3C**	3%, 100Pt RTD, HT1D & AQ2D
HTD	-	**2D**	2%, 1000Pt RTD, HT1D & AQ2D	**HTD**	-	**3D**	3%, 1000Pt RTD, HT1D & AQ2D
HTD	-	**2E**	2%, 10K Type 2, HT1D & AQ2D	**HTD**	-	**3E**	3%, 10K Type 2, HT1D & AQ2D
HTD	-	**2F**	2%, 10K Type 3, HT1D & AQ2D	**HTD**	-	**3F**	3%, 10K Type 3, HT1D & AQ2D
HTD	-	**2K**	2%, 20K, HT1D& AQ2D	**HTD**	-	**3K**	3%, 20K, HT1D & AQ2D

DIMENSIONS



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SPECIFICATIONS		
Power Supply	AC Supply/DC Supply	24VAC, 100mA max. /12-30VDC, 50mA max.
Outputs	RH% and Temperature	3-wire 0-5/10V[4] (jumper) or 2-wire 4-20mA, selectable
Output scaling	RH%	0-100% RH
	Temperature	32-122°F (0-50°C) or -40-140°F (-40 to 60°C) (jumper)
Thermistor/RTD	Optional	See ordering table
Media filter		PBT with water-vapor permeable membrane
Relative Humidity	Accuracy	2% models, ±2% max 0 to 100%RH; ±1.5% typ 0 to 80% RH @25°C
		3% models, ±3% max 0 to 100%RH; ±2% typ 0 to 100% RH @25°C
	Resolution	0.01%RH
	Hysteresis	±0.8%RH
	Repeatability	0.08% RH
	Non-Linearity	factory linearized <1%RH
	Temperature coefficient	fully compensated by on-board temp sensor
	Response time [2]	8s
	Output update rate	0.5s
	Operating range	0 to 100%RH (non-condensing)
	Long term drift	<0.25%RH per year
	Operating conditions [3]	41 to 140°F (5 to 60°C) @20 to 80% RH
Temperature	Accuracy	2% models, <±0.25°C; 0.1°C typ @ 25° C
		3% models, <±0.3°C; 0.25° C typ @ 25° C
	Resolution	0.01° C
	Repeatability	0.4° C
	Response time [2]	2s
	Output update rate	0.5s
	Operating range	-40 to 140°F (-40 to 60°C)
Enclosure	Materials	ABS/Polycarbonate
	Dimensions	4.0"h x 4.4"w x 2.1"d (+6.8" probe)
	Enclosure Rating	IP20/NEMA 1
	Unit Temp Rating	-40°F to 158°F (-40 to 70°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.)
4. 15-30VDC/24VAC power supply voltage required for 10 volt output.

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

HT1O Series

Humidity/Temp Outside Air

2% or 3% accuracy (NIST certification options)
0-5V/10V and 4-20mA RH/Temp (thermistors optional)
LCD display with field calibration menu
Field replaceable element

DESCRIPTION

The HT1O Series is designed to be mounted on the building exterior to provide outside air RH measurement. The HT1O Series combines excellent stability with reliable operation in 2% or 3% RH accuracy options. Optional temperature transmitters, RTDs and thermistors add further flexibility when ordering. The standard LCD, gasketed lid and field replaceable elements make the initial installation and future service a breeze.

APPLICATIONS

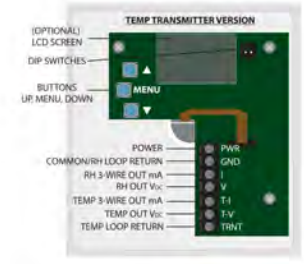
- Replaceable element is ideal for difficult environments such coastal areas or process control such as poultry farms
- Facilitating compliance with ASHRAE 62.1 standard for air quality
- Indoor air comfort and control in HVAC systems
- Maintain healthy air quality, minimize mold and other contaminants
- Design is ideal for greenhouse applications

Rugged Enclosure

LCD with adjustable offsets menu

State of the art measurement and calibration

HT ribbon element for harsh enviornments



Options with temp transmitter version

Buy American Act Certified

FEATURES

- 2% or 3% RH versions with field replaceable sensor
- Switch selectable 5V/10V and 4-20mA RH/T transmitter outputs
- Thermistor outputs for temperature optional
- Field calibration. LCD and push-button menu allows easy adjustment of calibrated RH value as needed to maintain certification.
- Replace a sensor without disturbing conduit
- On-board temperature compensation for RH. Eliminates temperature coefficient errors and achieves an excellent measurement accuracy as well as high repeatability and offset stability.
- State of the art testing facilities. Multi-point calibration certifcation options. Consult factory.
- Industry leading 7-year warranty/ 2-year replaceable element warranty

ORDERING

HT1O- [ ] [ ] [U] [ ]

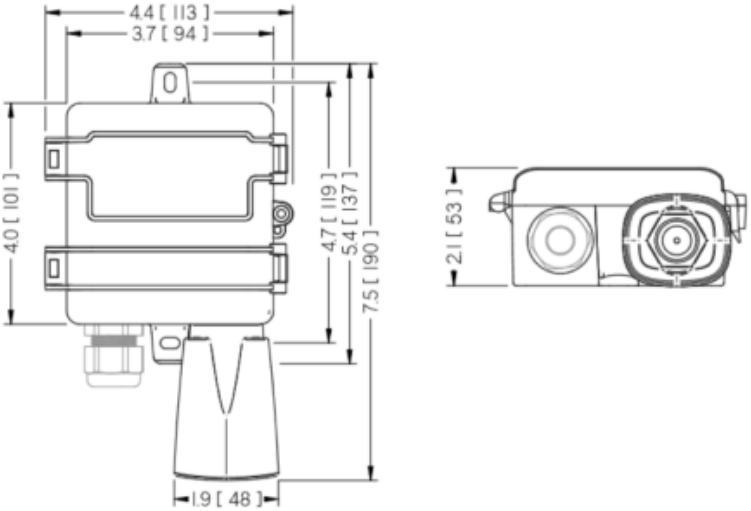
Accuracy	**Temperature**	**Output**	**Display (LCD)**
2= 2%	A= None	U= Universal (4-20mA, 0-5V,0-10V) 2 or 3-Wire Connection	X= None
3= 3%	B= Transmitter*		D=Display
N= 2%/ with NIST Cert.	C= 100PtRTD		
	D= 1000PtRTD		
	E= 10K Type 2		
	F= 10K Type 3		
	G= 10K W/ 11K		
	H= 3K		
	I = 2K2		
	J = 1K8		
	K = 20K		

* Order B=transmitter to display temperature reading; thermistor and RTD options will not display temperature on LCD

Replacement Sensors:

HTO - 2A	2%, Xmtr or No Temp, HT1O & AQ2O	**HTO - 3A**	3%, No Temp or Transmitter, HT1O & AQ2O
HTO - 2C	2%, 100Pt RTD, HT1O & AQ2O	**HTO - 3C**	3%, 100Pt RTD, HT1O & AQ2O
HTO - 2D	2%, 1000Pt RTD, HT1O & AQ2O	**HTO - 3D**	3%, 1000Pt RTD, HT1O & AQ2O
HTO - 2E	2%, 10K Type 2, HT1O & AQ2O	**HTO - 3E**	3%, 10K Type 2, HT1O & AQ2O
HTO - 2F	2%, 10K Type 3, HT1O & AQ2O	**HTO - 3F**	3%, 10K Type 3, HT1O & AQ2O
HTO - 2K	2%, 20K, HT1O & AQ2O	**HTO - 3K**	3%, 20K, HT1O & AQ2O
HTO - NF	2% NIST, 10K Type 3, HT1O & AQ2O		

DIMENSIONS



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SPECIFICATIONS		
Power Supply	AC Supply/DC Supply	24VAC, 100mA max./ 12-30VDC, 50mA max
Outputs	RH and Temperature)	3-wire 0-5/10V(4) or 2-wire 4-20mA
Output scaling	RH	0-100% RH
	Temperature	32-122°F (0-50oC) or -40-140°F (-40-60oC)
Thermistor/RTD	Optional	See ordering table
Media filter		Sintered stainless steel
Relative Humidity	Accuracy	2% models, ±2% over 0 to 100% RH Range; ±1.5% typ
		3% models, ±3% over 0 to 100% RH Range; ±2% typ
	Resolution	0.01%RH
	Hysteresis	±0.8%RH
	Non-Linearity	Factory linearized <1%RH
	Temperature coefficient	Fully compensated by on-board sensor
	Response time(2)	8s
	Output update rate	0.5s
	Operating range	0 to 100%RH (non-condensing)
	Long term drift	<0.25%RH per year
	Normal Operating	41 to 140ºF (5°C to 60°C) @ 20% to 80% RH
	conditions (3)	
Temperature	Accuracy	2% models, <±0.25° C; 0.1° C typ @ 25° C
		3% models, <±0.3° C; 0.25° C typ @ 25° C
	Resolution	0.01° C
	Repeatability	0.08° C
	Response time(2)	2s
	Output update rate	0.5s
	Operating range	-40 to 140oF (-40° to 60° C)
Enclosure	Materials	ABS/Polycarbonate
	Unit Temp Rating	-40 to 158oF (-40 to 70oF)
	Enclosure Rating	Nema 1; Add drain holes to enclosure bottom to achieve Nema 3R rating
	Dimensions	4.0”h x 4.4”w x 2.1”d (+2.8” solar shield)
Agency	Compliance	CE, RoHS

(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.)

(4) 15-30VDC/24VAC power supply voltage required for 10 volt ouput.

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

HT0R Series

Humidity Recessed Value

2% and 3% RH accuracies
0-5V, 0-10V, 2-wire and 3-wire 4-20mA options
Thermistor outputs for temperature optional
High quality private label--promote YOUR brand!

DESCRIPTION

Attractive design is attractive, durable, and cost-effective--ideal for schools and other harsh environments. Mount to J-box or surface mount with a small cut-out. Features accurate 2% and 3% RH, and choice of 0-5V, 0-10V, 2-wire and 3-wire 4-20mA outputs as well as thermistor options. Professionally printed private labeling is available to promote your company and future service business.

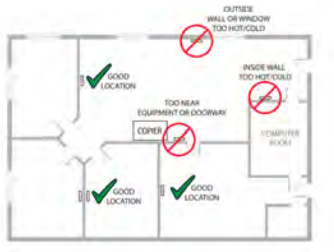
APPLICATIONS

- Attractive and durable--ideal for commercial, institutional, and school environments
- HVAC humidity/temp measurement & control
- Facilitating compliance with ASHRAE 62.1 AQ
- Maintain healthy air quality, minimize mold and other contaminants
- Museums, hospitals, & other critical areas
- Offices, conference rooms, & indoor public areas
- Industrial process control environments

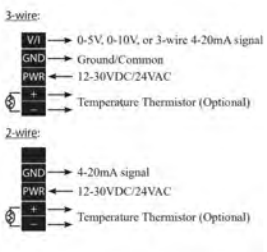
Cost-effective...ask about quantity pricing

Your brand, your product. Affordable high-quality branding. Generate service calls for life

Gasket seals element from wall drafts. 45 degree terminals for ease of wireing



Locate sensor in an area away from ventilation, and heat generating equipment/appliances



Wire sensor as shown above

Buy American Act Certified

FEATURES

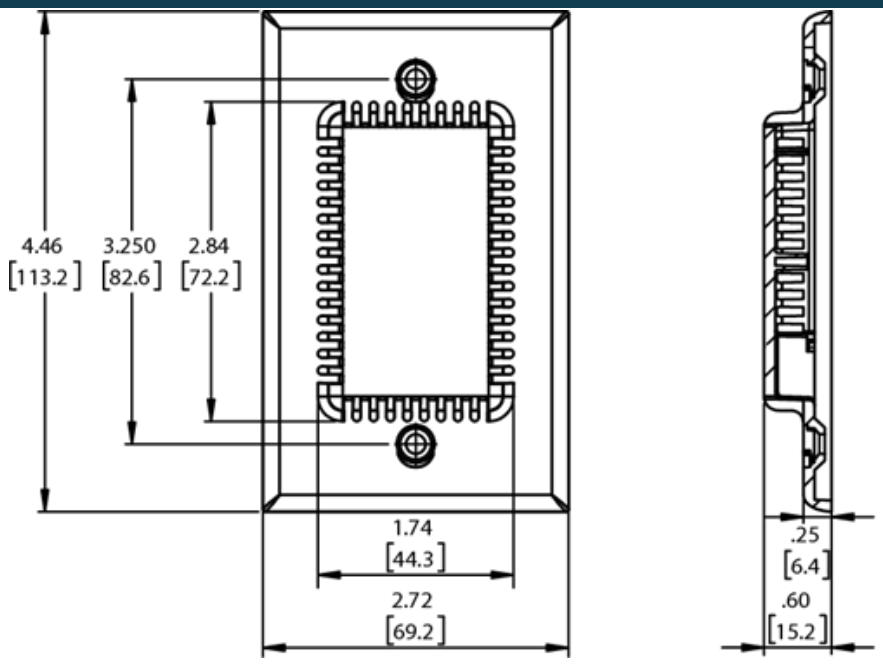
- New enclosure design is rugged and slim
- No exposed screws; unobtrusive tamper-resistant design
- Ideal for schools and institutional environments
- Fits easily in standard single-gang boxes
- Saves installation time and reduces callbacks
- On-board temperature compensation for RH.
- Gasket seals sensor against wall drafts and false readings

ORDERING

HT0R- ☐ ☐ ☐

Accuracy	**Output Type**	**Temperature**
2= 2%	A= 0-5V, 3-wire	A= None
3= 3%	B= 0-10V, 3-wire	C= 100PtRTD
	C= 4-20mA, 2-wire	D= 1000PtRTD
	D= 4-20mA, 3-wire	E= 10K Type 2
		F= 10K Type 3
		G= 10K W/ 11K
		H= 3K
		I = 2K2
		J = 1K8
		K = 20K
		L = 100K

DIMENSIONS



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SPECIFICATIONS		
Power Supply		12-30VDC/24VAC (1), 24mA max.
Outputs	RH% (options)	3-wire 0-5/10VDC, 4-20mA 2-wire 4-20mA
Output scaling	RH%	0-100% RH
Thermistor Options		See ordering table
Media filter		PTFE membrane, IP54 protection
Relative Humidity	Accuracy	2% models: ±2% max 0 to 100% RH, ±1.5% typ 0 to 80% RH@25°C 3% models: ±3% max 0 to 100% RH, ±2% typ 0 to 100% RH@25°C
	Resolution	0.01%RH
	Hysteresis	±0.8%RH
	Non-Linearity	factory linearized <1%RH
	Temperature coefficient	fully compensated by on-board temp sensor
	Response time (2)	8s
	Output update rate	0.5s
	Operating range	0 to 100%RH (non-condensing)
	Long term drift	<0.25%RH per year
	Normal Operating conditions (3)	41 to 140°F (5 to 60°C) @ 20 to 80%RH
Environmental	Enclosure Rating	IP20/NEMA 1
	Unit Temp Rating	-40°F to 158°F (-40 to 70°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).
4. 15-30VDC/24VAC power supply voltage required for 10 volt output. Power consumption 100mA max AC, 50mA max DC

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

HT0D Series

Humidity/Temp Duct Value

- 2% and 3% RH accuracy options
- 0-5V, 0-10V, 2-wire and 3-wire 4-20mA options
- Thermistor outputs for temperature optional

DESCRIPTION

Designed for use with energy management systems in buildings, the HT0D series combines excellent stability and reliable operation. Analog output options and thermistor options accommodate any installation.

APPLICATIONS

- HVAC room humidity and temperature measurement and control
- Energy management/building control

Cost-effective...ask about quantity pricing

Probe provides active airflow readings

Buy American Act Certified

FEATURES

- On-board temperature compensation for RH.
- Gasket seals sensor against wall drafts and false readings
- Vortex probe circulates flow for accuracy
- Cost-effective solution for duct applications

ORDERING

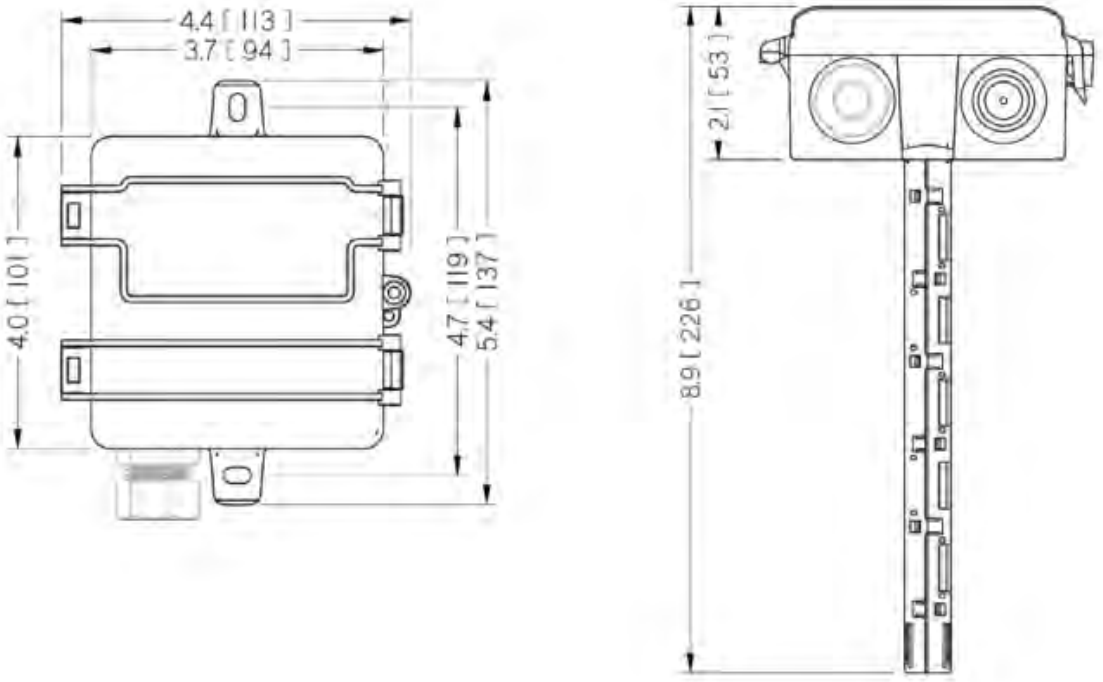
HT0D- ☐ ☐ ☐

Accuracy
2= 2%
3= 3%

Output Type
A= 0-5V, 3-wire
B= 0-10V, 3-wire
C= 4-20mA, 2-wire
D= 4-20mA, 3-wire

Temperature
A= None
C= 100PtRTD
D= 1000PtRTD
E= 10K Type 2
F= 10K Type 3
G= 10K W/ 11K
H= 3K
I = 2K2
J = 1K8
K = 20K
L= 100K

DIMENSIONS



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SPECIFICATIONS		
Power Supply		12-30VDC/24VAC (1), 24mA max.
Outputs	RH% (options)	3-wire 0-5/10VDC, 4-20mA 2-wire 4-20mA
Output scaling	RH%	0-100% RH
Thermistor Options		Yes, see ordering table
Media filter		PTFE membrane, IP54 protection
Relative Humidity	Accuracy	2% models: ±2% max 0 to 100% RH 3% models: ±3% max 0 to 100% RH
	Resolution	0.01%RH
	Hysteresis	±0.8%RH
	Non-Linearity	factory linearized <1%RH
	Temperature coefficient	fully compensated by on-board temp sensor
	Response time (2)	8s
	Output update rate	0.5s
	Operating range	0 to 100%RH (non-condensing)
	Long term drift	<0.25%RH per year
	Normal Operating conditions (3)	41 to 140°F (5 to 60°C) @ 20 to 80%RH
Environmental	Enclosure Rating	IP20/NEMA 1
	Unit Temp Rating	-40°F to 158°F (-40 to 70°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).
4. 15-30VDC/24VAC power supply voltage required for 10 volt output. Power Consumption 100mA max AC, 50mA max DC"

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

T0R Series

Temp Recessed Value

Wide range of thermistor options
Set-point & override options
Rugged, low-profile design deters vandalism

DESCRIPTION

The T0R series is designed for use in energy management systems in buildings. The flush mount sensor housing accommodates a wide range of thermistor options for sensing room temperature. Optional set-point slider and override button can be added for additional control.

APPLICATIONS

- Room temperature measurement for building automation control
- Low profile tamper resistant design is ideal for schools and public areas

Optional Set-Point slider and Override Button

Gasket seals element from wall drafts. 45 degree terminals for ease of wireing

Buy American Act Certified

FEATURES

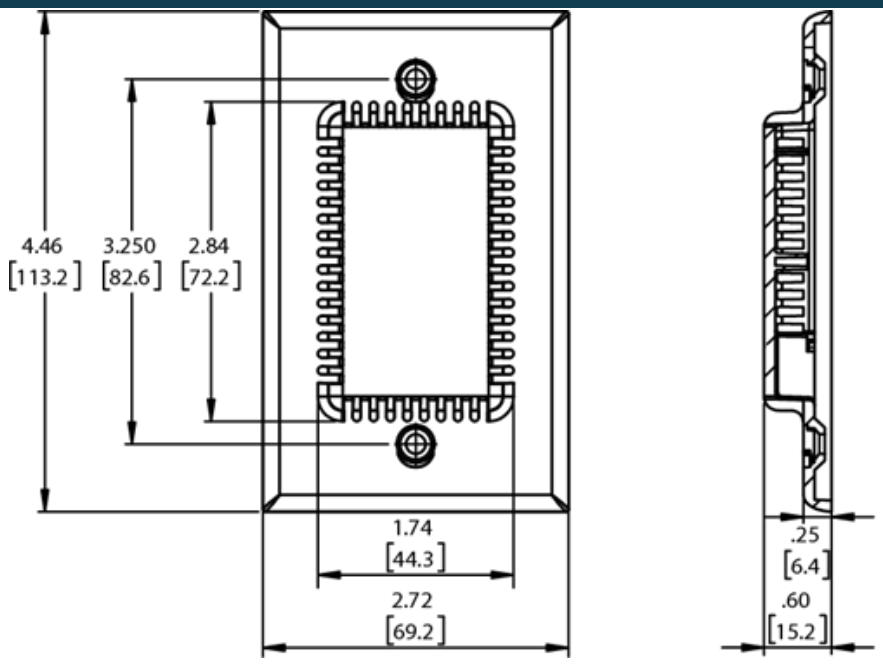
- Fits in any standard j-box or low voltage bracket.
- No exposed screws; unobtrusive tamper resistant design

ORDERING

T0R- ☐ ☐ ☐

Temperature	Override	Setpoint
C= 100PtRTD	A= None	A= None
D= 1000PtRTD	B= Normally Open Contacts (N.O.)	B= 1K Ω setpoint slider
E= 10K Type 2		C= 10K Ω setpoint slider
F= 10K Type 3		D= 5K Ω setpoint slider
G= 10K W/ 11K		E= 20K Ω setpoint slider
H= 3K		T= 200-900 Ω setpoint slider
I = 2K2		
J = 1K8		
K = 20K		
L= 100K		

DIMENSIONS



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SPECIFICATIONS

4.45”h x 2.7”w x 0.5”d (depth measured from wall)
ABS Plastic
See thermistor ratings for more info

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

PreSet Series

Scaled Adjustable Current Switches

Scaled calibration for proof of flow set-point
Split and solid core models to 150A
N.O. 30VAC/DC or 120VAC output
Optional command relay with LED

DESCRIPTION

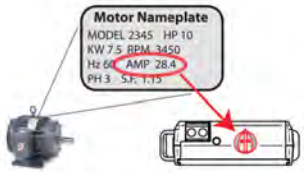
PreSet™ allows for matching sensor set-point to the motor nameplate, eliminating the need to calibrate in energized enclosures and reducing installation time. The sensor will detect motor undercurrent conditions such as belt loss, coupling shear, and mechanical failure on fans and pumps.

APPLICATIONS

- Detecting belt loss, coupling shear, and mechanical failure on fans and pumps
- Monitoring status of industrial processes
- Monitoring status of critical motors
- Great for data center current switch sensing

Just set to motor full load amps for proof of flow. Simple and safe.

Optional CR command relay for stop/start/status in a single labor saving device.



Adjust knob on sensor to motor full load amperage (FLA) indicated on nameplate

Never calibrate in live enclosures again. Reducing risk of an arc flash exposure.

No hazardous guesswork. Multi-turn pots are a think of the past.

Proven 1/2 hour savings per install over manually calibrated devices.

FEATURES

- Preset scaled calibration enables set-point adjustment for proof of flow by simply matching dial to motor full load amps (FLA) nameplate
- Safer--eliminates calibration in energized enclosures, reduces arc flash hazard
- Proven to save up to 1/2 hour per install...no need to return to calibrate live
- Prevents call-backs, no multi-turn potentiometers, and guesswork to find set-point
- A super low turn-on for compatibility with smaller motors
- Solid-state-more reliable than mechanical pressure switches for proof of flow
- Quality backed by a 7-year limited warranty
- PATENTED

ORDERING

SPLIT CORE	Range (Amps)	Max Amps	Sensor AP	N.O. Output	Trip LED	Power LED
C-2320-L	0.45A	50A	0.75"	1.0A@30VAC/DC	•	•
C-2320	0.50A	100A	0.75"	1.0A@30VAC/DC	•	•
C-2320-H *	0.50A	150A	0.75"	1.0A@30VAC/DC	•	•
C-2320HV	0.50A	100A	0.75"	0.2A@120VAC	•	•
C-2320HV-L	0.45A	50A	0.75"	0.2A@120VAC	•	•
SPLIT CORE - MINI						
C-2220	1.00A	50A	0.375"	1.0A@30VAC/DC	•	
SOLID CORE						
C-1320	0.75A	50A	0.5"	1.0A@30VAC/DC	•	
SOLID CORE - MINI						
C-1220-L	0.75A	5A	0.3"	1.0A@30VAC/DC	•	
C-1220	0.75A	50A	0.3"	1.0A@30VAC/DC	•	
C-1220HV-L	0.75A	5A	0.3"	0.2A@120VAC	•	
C-1220HV	0.75A	50A	0.3"	0.2A@120VAC	•	

COMMAND RELAY - DIRECT MOUNT (MOUNTS ON ALL 2300 SERIES CURRENT DEVICES)	Contact rating	Coil
CR3-24	N.O. 10A @ 125VAC	24VAC/DC 15mA nominal
CR4-24	N.C. 10A @ 125VAC	24VAC/DC 15mA nominal
CR3-12	N.O. 10A @ 125VAC	9-12VDC 30mA nominal
CR4-12	N.C. 10A @ 125VAC	9-12VDC 30mA nominal

Other coil voltages available—consult factory

Ordering tip: *For best resolution, choose the sensor lowest maximum amperage which accommodates your motor (e.g. 0-50A us -L, 50-100A use standard, 100 to 150A use -H)*

** Now with a new, lower turn on setting!*

DIMENSIONS

SPLIT CORE C-2320

L: 2.5" H: 0.57" W: 2.23"
A: 0.75"x 0.75"

- Mount sensor without removing conductor for installation savings
- Clamp on conductor with iris, or use detachable base to screw or DIN mount
- Larger 0.75" aperture accomodates oversize conductors

OPTIONAL RELAY for additional labor savings

L: .84" H: .72" W: 2.06"

- Add to 2320 series to get start/stop/status in a single device
- Reduces the number of installed components... saves time and space
- Removable relay facilitates service

SPLIT CORE - MINI C-2220

L: 2.00" H: .75" W: 1.75"
A: .040" x 0.32"

- Mount sensor without removing conductor for installation savings
- Fits in small enclosures
- Clamp on conductor with iris, or screw mount detachable base

SOLID CORE C-1320

L: 2.40" H: 1.04" W: 1.6"
A: 0.52" diameter

- Compact design
- Aperture accomodates spade terminals

SOLID CORE - MINI C-1220

L: 1.91" H: .88" W: 1.31"
A: 0.30" diameter

- Super small—fits anywhere
- Low cost

Warning: The datasheet is designed for reference only. Refer to installation instructions that accompany the product and heed all safety instructions. Product improvement is a continuing process at Senva. Changes may occur to products without prior notice.

SPECIFICATIONS	
Standard Output Rating	1.0A@30VAC/DC
Line Voltage Output Rating	0.2A@120VAC (-HV ONLY)
Output Type	NO, solid-state FET
Environmental Rating	5-140 °F (-15-60 ° C) 10-90% RH Non-condensing
Insulation Class	600V RMS. For use on insulated conductors only! Use minimum 75 ° C insulated conductor
Sensor Power	Induced
Frequency Range	50/60Hz

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

AutoSet Series

Self-calibrating Current Switch

Self-calibrating for proof of flow
Works flawlessly on VFDs and constant volume applcations
0.5-135A range
N.O. 30VAC/DC output
Optional command relay with LED

DESCRIPTION

The AutoSet™ VFD self-calibrates to detect proof of flow on both variable frequency driven and constant volume motors on fans or pumps. The C-2350VFD automatically sets the proper threshold, eliminating false alarms associated with varying frequencies. Detects motor undercurrent conditions such as belt loss, coupling shear, and mechanical failure on fans and pumps while reducing installation time. New super-low 0.5A turn-on--totally self-powered!

APPLICATIONS

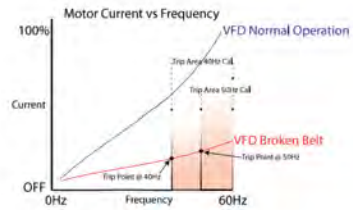
- Detecting belt loss, coupling shear, and mechanical failure on variable frequency drives and constant volume fans and pumps.
- Great for data center current switch sensing

Optional CR-XX command relay for stop/start/status in one labor saving device.

Low turn-on of 0.5A for proof of flow status on VFDs. No calibration typically required.

Never clibrate in live enclosures again. Redicing risk of an arc flash.

Proven 1/2 hour savings per install over manually calibrated devices.



Utilizes a algorithm to detect belt loss on motors operated by variable frequency drives

Buy American Act Certified

FEATURES

- Self-calibration for proof of flow on both VFD and constant volume (CV) fans and pump applications
- Works without costly 'training' of sensor - our sensors are just plain smarter!
- No need to open energized enclosures - save on labor as well as improves safety
- Only sensor line capable of functioning on VFDs to 0.5A
- Sensor is always properly adjusted—no callbacks
- Push-button and LED for fast learn and go/no modes
- Optional command relay for stop/start/status in unitary device—saves component and installation space/cost
- Solid-state-more reliable than mechanical pressure switches for proof of flow
- Quality backed by 7 year limited warranty!

ORDERING

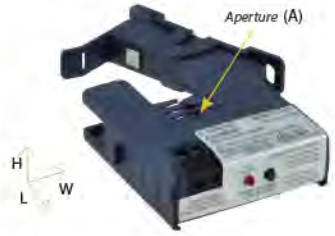
SPLIT CORE	Min (on)	Max Amps	Output	Run/Alarm LED	Sensor Power
C-2350VFD	0.5A @ 60Hz 1.5A @ 20Hz 2.5A @ 10Hz	135A	1.0A@30VAC/DC	•	Induced

COMMAND RELAY - DIRECT MOUNT (MOUNTS ON ALL 2300 SERIES CURRENT DEVICES)	Contact rating	Coil
CR3-24	N.O. 10A @ 125VAC	24VAC/DC 15mA nominal
CR4-24	N.C. 10A @ 125VAC	24VAC/DC 15mA nominal
CR3-12	N.O. 10A @ 125VAC	9-12VDC 30mA nominal
CR4-12	N.C. 10A @ 125VAC	9-12VDC 30mA nominal

Other coil voltages available—consult factory

DIMENSIONS

SPLIT CORE
C-2350VFD



L: 2.5" H: 0.57" W: 2.23"
A: 0.75"x 0.75"

- Mount sensor without removing conductor for installation savings
- Clamp on conductor with iris, or use detachable base to screw or DIN mount
- Larger 0.75" aperture accomodates oversize conductors

OPTIONAL RELAY

L: 0.84" H: 0.72" W: 2.06"

- Add to 2350VFD series to get start, stop, status in a single device
- Reduces the number of installed components… saves time and space
- Removable relay facilitates service

Warning: The datasheet is designed for reference only. Refer to installation instructions that accompany the product and heed all safety instructions. Product improvement is a continuing process at Senva. Changes may occur to products without prior notice.

SPECIFICATIONS

Split Core	Min (on)	Max A	Output*	Sensor P
C-2350VFD	0.5A	135A	1.0A@30VAC/DC	Induced

Command Relay	Contact rating	Coil
CR3-24	N.O. 10A@125VAC	24VAC/DC, 15mA nom.
CR4-24	N.C. 10A@125VAC	24VAC/DC, 15mA nom.
CR3-12	N.O. 10A@125VAC	9-12VDC, 30mA nom.
CR4-12	N.C. 10A@125VAC	9-12VDC, 30mA nom.

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

ECMSet Pro

ECM Current Switch with ECTune™ Technology (patent pending)

Lowest turn on in the industry (as low as 30 mA), no more wire wraps

Resolution down to 5 mA for on/off state difference, eliminate costly call-backs

Tool-free adjustment with LED indication, save time with fast installation

Better than using Analog sensors, no more panel programming required

DESCRIPTION

The ECMSet Pro, with the industry's lowest turn-on threshold, minimizes the need for wire wraps eliminating the frustration at installations where space or wire is insufficient for a proper wrap. With the patent pending ECTune™ technology, the CT is tuned to the electronic signature of an EC motor. In addition to achieving the industry's lowest turn-on, it also allows the sensor to detect on/off states with even the slightest change in current. This reduces call-backs for false 'on' or 'off' status and reduces time spent troubleshooting and commissioning. The no-tools-required adjustment knob is linearly calibrated, providing the user the ability to fine-tune without the hassle of multi-turn dials. It is also strategically marked, with a lettered dial (A-K) so the sensor can be pre-adjusted and installed without any live calibration. Finally, the red/green LED gives status indication for local testing and troubleshooting. Reduce installation time and eliminate call-backs with the ECMSet Pro.

APPLICATIONS

- Go/no run detection for EC motors.
- High setpoint resolution prevents false trips due to EC motor stand-by current.
- Fans, pumps, and other loads driven by EC motors
- Small load go/no detection, even non-ECMs

Tool-free adjustment with LED indication makes installation fast and easy

Low turn-on current eliminates the need for bulky wire wraps

Works flawlessly - accurate motor state detection with a sensitivity of 5 mA

Eliminate costly call-backs with the ECMSet Pro

Lettered dial (A-K) can be pre-adjusted and calibrated for repeat installations

Made in the USA with a 7-Year Warranty

FEATURES

- **No more wire wraps** : The industry's lowest turn-on (down to 30 mA), thanks to ECTune technology (read more!)
- **No troubleshooting or callbacks:** Resolution down to 5 mA eliminates false "ON" or "OFF" indications
- **Fast and safe installation** : No-tools-required adjustment knob is linearly calibrated, providing the user ability to fine-tune without the hassle of multi-turn dials.
- **Immediate feedback** : Local LED indicators provide immediate feedback on motor status
- **No need to calibrate the same motor twice:** It is strategically marked with a lettered dial so the sensor can be pre-adjusted and installed without any live calibration. (read more!)
- **Reduced maintenance costs:** The precise detection of motor status and reduced false alarms, saving time and reducing operational costs.

ORDERING

SPLIT CORE	Min (on)	Max Amps	N.O. Output*	LED Indicator
C-2220-L-ECM	0.03A	50A	1.0A@30VAC/DC	•

DIMENSIONS

SPLIT CORE - MINI
C-2220-L-ECM

L: 2.02" **H:** 0.76" **W:** 1.62"
A: 0.42" x 0.35"

- Mount Sensor Without removing conductor for installation savings
- Fits in small enclosures
- Clamp on conductor with iris, or screw mount detachable base

Warning: The datasheet is designed for reference only. Refer to installation instructions that accompany the product and heed all safety instructions. Product improvement is a continuing process at Senva. Changes may occur to products without prior notice.

SPECIFICATIONS	
Type	Split-Core Current Switch
Amperage Range	0 A to 50 A
Trip Adjustment	0.03 A~0.50 A (varies by motor type)
Dial Adjustment	240 degrees, no tools required
Output Type	NO, solid-state FET
Contact "On" Resistance	< 10 ω
Contact "Off" Resistance	>1M ω
Response Time	<3s
Hysteresis	2-6%
Standard Output Rating	1.0A@30VAC/DC
Power/Status LED	Power (red), Contact closed (green)
Environmental Rating	5-140 °F (-15-60 °C) 10-90% RH Non-condensing
Insulation Class	600V RMS. For use on insulated conductors only! Use minimum 75°C insulated conductor
Power Sensor	Induced
Frequency Range	50/60Hz
Dimensions (LxWxH)	1.9" x 1.35" x 0.6" (2.0" x 1.6" x 0.6" with bracket)
Sensor Aperture	0.375"
Compliance	cUL, UL, CE, RoHS

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ECMset

ECM (Brushless motor) Current Switch

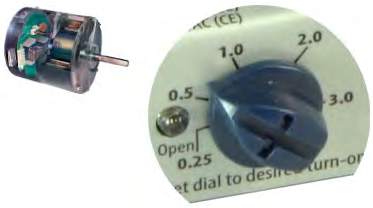
Adjustable minimum turn-on
Prevents false trip due to ECM stand-by current
Split-core operation to 200A
N.O. 30VAC/DC output
Optional command relay with LED

DESCRIPTION

ECMSet™ is designed for no/go run detection on electronically commutated motors (ECMs) . ECMs draw a small amount of AC standby current to power their inverter, up to 1A, even when the motor isn't running. The ECMSet features a high resolution adjustable turn-on setpoint to ignore standby current, preventing false ON status indications.

APPLICATIONS

- No/go run detection for EC motors
- On set-point prevents false trips due to EC inverter stand-by current
- Great for data center current switch sensing



Turn-on setpoint minimizes false trips due to standby ECM inverter draw.

Optional CR command relay for stop/start/status in a single labor saving device.

FEATURES

- Reliable operation on ECM motors
- Set trip point with easily scaled dial to that sensor only turns on when motor is actually running
- Super low turn-on adjustment scale Maintenance-free—no call backs
- No hazardous guesswork. Multi-turn adjustments are a thing of the past
- Reduce the risk of arc flash; sensor can be set without calibration in live enclosure
- Industry leading 7 year warranty
- Looking for something smaller? Or a lower turn-on current? Check out the Pro version: ECMSet Pro

ORDERING

SPLIT CORE	Min (on)	Max Amps	N.O. Output*	Trip LED	Power LED
C-2320-L-ECM	0.25A	200A	1.0A@30VAC/DC	•	•

COMMAND RELAY - DIRECT MOUNT (MOUNTS ON ALL 2300 SERIES CURRENT DEVICES)	Contact rating	Coil
CR3-24	N.O. 10A @ 125VAC	24VAC/DC 15mA nominal
CR4-24	N.C. 10A @ 125VAC	24VAC/DC 15mA nominal
CR3-12	N.O. 10A @ 125VAC	9-12VDC 30mA nominal
CR4-12	N.C. 10A @ 125VAC	9-12VDC 30mA nominal

Other coil voltages available—consult factory

DIMENSIONS

L: 2.5″ **H:** 0.57″ **W:** 2.23″
A: 0.75″x0.75″

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SPECIFICATIONS	
Standard Output Rating	1.0A@30VAC/DC
Output Type	NO, solid-state FET
Environmental Rating	5-140 °F (-15-60 °C) 10-90% RH Non-condensing
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)	2.94"x 2.23" x 0.82" (1.4"H with optional relay module)
Sensor Aperture	0.75"
Compliance	cUL, UL, CE, RoHS

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

Fixed Series

Fixed (Go No) Switches

Go / No status
0.25 - 200A range
Split and solid core models
N.O. 30VAC/DC or 120VAC output
Optional command relay with LED

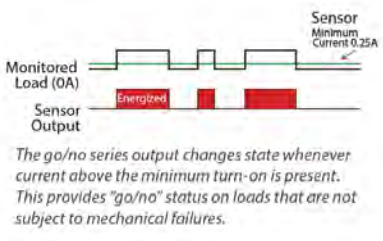
DESCRIPTION

Looking for cost-effective status? Our mini-solid core fits in the smallest enclosures. Our split-core is great for retroft, plus you can snap on a serviceable command relay for controlling the load in a single device. Great for go/no status on resistive loads, unit-vent heaers, and more. NOTE: CR1 series command relay has been updated to CR3 and CR4 series.

APPLICATIONS

- Monitoring on/off status of electrical loads
- Monitoring direct-drive units, exhaust fans, and other fixed loads
- Verifying lighting run times
- Great for data center current switch sensing

Relay option available with C-2300



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

Run status based on current

Buy American Act Certified

FEATURES

- Solid state - no moving parts to fail
- Less expensive than 277V relays for lighting status
- More reliable for status than relays across auciliary contacts
- Industry leading 7 year limited warranty

ORDERING

SPLIT CORE	Range (Amps)	Max Amps	Sensor AP.	N.O. Output
C-2300	0.35A	200A	0.75"	1.0A@30VAC/DC
C-2300HV	0.35A	100A	0.75"	0.2A@120VAC
SPLIT CORE - MINI				
C-2200	1.0A	50A	0.375"	1.0A@30VAC/DC
SOLID CORE				
C-1300	0.25A	50A	0.52"	1.0A@30VAC/DC
SOLID CORE - MINI				
C-1200	0.25A	50A	0.30"	1.0A@30VAC/DC
C-1200HV	0.75A	50A	0.30"	0.2A@120VAC
C-1200HV-240V	0.35A	50A	0.30"	1.0A@240VAC

COMMAND RELAY - DIRECT MOUNT (MOUNTS ON ALL 2300 SERIES CURRENT DEVICES)	Contact rating	Coil
CR3-24	N.O. 10A @ 125VAC	24VAC/DC 15mA nominal
CR4-24	N.C. 10A @ 125VAC	24VAC/DC 15mA nominal
CR3-12	N.O. 10A @ 125VAC	9-12VDC 30mA nominal
CR4-12	N.C. 10A @ 125VAC	9-12VDC 30mA nominal

Other coil voltages available—consult factory

DIMENSIONS

SPLIT CORE
C-2300

L: 2.5" H: 0.57" W: 2.23"
A: 0.75"x. 0.75"

- Mount sensor without removing conductor for installation savings
- Clamp on conductor with iris, or use detachable base to screw or DIN mount
- Larger 0.75" aperture accomodates oversize conductors

OPTIONAL RELAY

L: 0.84" H: .72" W: 2.06"

- Add to 2300 series to get start/stop/status in a single device
- Reduces the number of installed components... saves time and space
- Removable relay facilitates service

SPLIT CORE - MINI
C-2200

L: 2.00" H: .75" W: 1.75"
A: .0.40"x 0.32"

- Mount sensor without removing conductor for installation savings
- Fits in small enclosures
- Clamp on conductor with iris, or screw mount detachable base

SOLID CORE
C-1300

L: 2.27" H: 1.04" W: 1.6"
A: 0.52" diameter

- Compact design
- Aperture accomodates spade terminals

SOLID CORE - MINI
C-1200

L: 1.78" H: .88" W: 1.31"
A: 0.30" diameter

- Super small—fits anywhere
- Low cost

Warning: The datasheet is designed for reference only. Refer to installation instructions that accompany the product and heed all safety instructions. Product improvement is a continuing process at Senva. Changes may occur to products without prior notice.

SPECIFICATIONS	
Standard Output Rating	1.0A@30VAC/DC
Line Voltage Output Rating	0.2A@120VAC (-HV models only)
Output Type	N.O., soli-state FET
Environmental Rating	5-140°F (15-60°C) 10-90% RH non-condensing
Insulation Class	600V RMS. For use on insulated conductors only! Use minimum 75°C insulated conductor
Sensor Power	Induced
Frequency Range	50/60 Hz

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C-Series

Current Transducers

0-5VDC, 0-10VDC, 4-20mA outputs
Multiple selectable range split-cores
Optional command relay with LED
Fixed range on solid-cores

DESCRIPTION

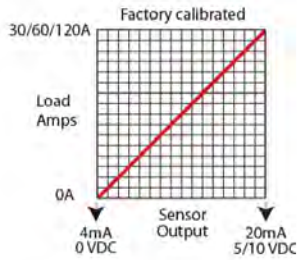
Senva analog transducers measure AC current and provide a proportional output for load trending and control. Choose from easy to install split-core or compact solid core. Selectable ranges and optional command relay make for a versatile transducer.

APPLICATIONS

- Load trending
- Motor control
- Process control
- Fan/Pump status
- Motor load jamming
- Lighting load levels
- Great for data center current transducer sensing

Selectable ranges reduce inventory and minimize callbacks. Made in USA

Optional CR command relay for stop/start/status in a single labor saving device.



Factory calibrated

FEATURES

- Selectable ranges (30, 60, 120A or 5, 10, 20A) C-234X makes scaling easy, reduces call-backs and inventory
- 0-5VDC, 0-10VDC, 4-20mA loop powered versions for control compatibility
- Superior split-core design for easy installation, mount sensor without removing conductor for installation savings
- Clamp on conductor with iris or use detachable base to screw or DIN mount
- Larger 0.75" aperture accomodates oversize conductors
- Snap-on command relay for unitary start/stop/status... saves time and space
- Industry leading 7 year limited warranty

ORDERING

SPLIT CORE	Range Type	Max Amp Range	Output	Power Needed	Sensor Power Type
C-2343	Selectable	30A, 60A, 120A	0-5 VDC	None	Induced
C-2344	Selectable	30A, 60A, 120A	0-10 VDC	None	Induced
C-2345	Selectable	30A, 60A, 120A	4-20 mA	12-30 VDC	Loop
C-2343-L	Selectable	5A, 10A, 20A	0-5 VDC	None	Induced
C-2345-L	Selectable	5A, 10A, 20A	4-20 mA	12-30 VDC	Loop
C-2343-200	Fixed	200A	0-5 VDC	None	Induced
C-2344-200	Fixed	200A	0-10 VDC	None	Induced
SOLID CORE - MINI					
C-1203	Fixed	15A	0-5 VDC	None	Induced
C-1205	Fixed	15A	4-20 mA	12-30 VDC	Loop
C-1203-L	Fixed	5A	0-5 VDC	None	Induced
C-1303-L	Fixed	5A	0-5 VDC	None	Induced

COMMAND RELAY - DIRECT MOUNT (MOUNTS ON ALL 2300 SERIES CURRENT DEVICES)	Contact rating	Coil
CR3-24	N.O. 10A @ 125VAC	24VAC/DC 15mA nominal
CR4-24	N.C. 10A @ 125VAC	24VAC/DC 15mA nominal
CR3-12	N.O. 10A @ 125VAC	9-12VDC 30mA nominal
CR4-12	N.C. 10A @ 125VAC	9-12VDC 30mA nominal

Other coil voltages available—consult factory

DIMENSIONS

SPLIT CORE
C-2300

L: 2.5" H: 0.57" W: 2.23"
A: 0.75"x. 0.75"

- Mount sensor without removing conductor for installation savings
- Clamp on conductor with iris, or use detachable base to screw or DIN mount
- Larger 0.75" aperture accomodates oversize conductors

OPTIONAL RELAY

L: 0.84" H: .72" W: 2.06"

- Add to 2300 series to get start/stop/status in a single device
- Reduces the number of installed components... saves time and space
- Removable relay facilitates service

SPLIT CORE - MINI
C-2200

L: 2.00" H: .75" W: 1.75"
A: .0.40"x 0.32"

- Mount sensor without removing conductor for installation savings
- Fits in small enclosures
- Clamp on conductor with iris, or screw mount detachable base

SOLID CORE
C-1300

L: 2.27" H: 1.04" W: 1.6"
A: 0.52" diameter

- Compact design
- Aperture accomodates spade terminals

SOLID CORE - MINI
C-1200

L: 1.78" H: .88" W: 1.31"
A: 0.30" diameter

- Super small—fits anywhere
- Low cost

Warning: The datasheet is designed for reference only. Refer to installation instructions that accompany the product and heed all safety instructions. Product improvement is a continuing process at Senva. Changes may occur to products without prior notice.

SPECIFICATIONS

ORDERING INFORMATION

Split Core	Amperage Range	Output	Sensor Power	Sensor Aperature
C-2343	30A, 60A, 120A Selectable	0 - 5 VDC	Induced	0.75"
C-2344	30A, 60A, 120A Selectable	0 - 10 VDC	Induced	0.75"
C-2345	30A, 60A, 120A Selectable	4 - 20mA	Loop- powered, 12-30 VDC	0.75"
C-2343-200	Fixed 200A Full-Scale Range	0 - 5 VDC	Induced	0.75"
C-2344-200	Fixed 200A Full-Scale Range	0 - 10 VDC	Induced	0.75"
C-2343L	5A, 10A, 20A Selectable	0 - 5 VDC	Induced	0.75"
C-2345L	5A, 10A, 20A Selectable	4-20mA	Loop- powered, 12-30 VDC	0.75"
Solid Core - Mini	Range A	Output	Sensor Power	
C-1203	15 A	0 - 5 VDC	Induced	0.30"
C-1203-L	5 A	0 - 5 VDC	Induced	0.30"
C-1205	15 A	4 - 20mA	Loop- powered, 12-30 VDC	0.30"

Command Relay	Contact rating	Coil	Dimensions (LxWxH)
CR3-24	N.O. 10A@125VAC	24VAC/DC, 15mA nom.	2.94" x 2.23" x 0.82" (1.4" H with relay module)
CR4-24	N.C. 10A@125VAC	24VAC/DC, 15mA nom.	2.94" x 2.23" x 0.82" (1.4" H with relay module)
CR3-12	N.O. 10A@125VAC	9-12VDC, 30mA nom.	2.94" x 2.23" x 0.82" (1.4" H with relay module)
CR4-12	N.C. 10A@125VAC	9-12VDC, 30mA nom.	2.94" x 2.23" x 0.82" (1.4" H with relay module)

Specifications

Environmental Rating	5-140 °F (-15-60 ° C) 10-90% RH Non-condensing
Insulation Class	600V RMS. For use on insulated conductors only! Use minimum 75 ° C insulated conductor
Accuracy	+/-2% F.S. over 10 to 100% range
Frequency Range	50/60Hz

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

C-Series

High Current Transducers

Universal output 0-5/10VDC, 4-20mA (loop and 3-wire)
Space saving, easy to install rogowski coil
Five models up to 6000A, four selectable sub-ranges
Four sizes from 9" to 36" circumference

DESCRIPTION

Rogowski analog transducers measure high amperage AC current and provide a proportional output for load trending and control. Rowgoski coil overs wide amperages without saturation effects common to iron core sensors. Selectable ranges ensure excellent resolution.

APPLICATIONS

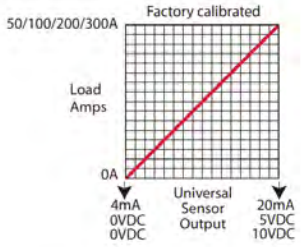
- Load trending
- Building mains
- Motor control
- Process control
- Chiller monitoring
- Great for data center current transducer sensing

Flexible split-core rogowski CTs are easy to install and don't saturate like iron core

4 ranges with universal outputs

Measure up to 6000A with ease

RoFlex universal output current transducer



The RoFlexTM provides a universal output signal proportional to monitored current

Buy American Act Certified

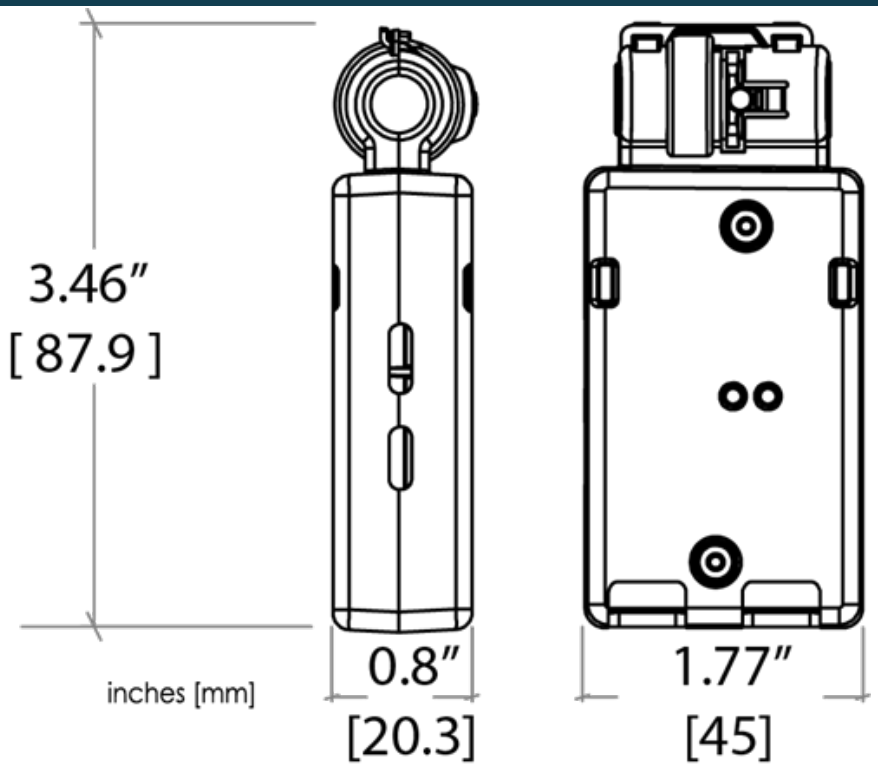
FEATURES

- Split-core rogowski coil is lightweight and space saving
- Universal output reduces inventory
- No call backs due to mis-sizing
- Compatible with any control application
- Industry leading 7 year limited warranty

ORDERING

C-3106 = Small 9"; 50/100/200/300A (Selectable)
C-3216 = Medium 15"; 200/400/600A/800A
C-3326 = Large 24"; 600/800/1000/1200A
C-3436 = Extra Large 36"; 800/1200/1800/2400A
C-3446 = Extra Large 36"; 1800/2400/4000/6000A

DIMENSIONS



Warning: The datasheet is designed for reference only. Refer to installation instructions that accompany the product and heed all safety instructions. Product improvement is a continuing process at Senva. Changes may occur to products without prior notice.

SPECIFICATIONS	
Amperage Range	Varies by model 50 to 6000A
Output type	Universal (2-wire 4-20mA, 3-wire 0-5V/0-10V/4-20mA)
Accuracy	+/-2% F.S. over 10 to 100% range
Temperature rating	Maximum surrounding air ambient, 60 ° C
Insulation class	600V RMS. For use on insulated conductors only Use minimum 75 ° C insulated conductors Must be installed at least 1/2" away from any uninsulated conductor This product provides basic insulation only
Sensor Power	12 to 30VDC/24VAC
Frequency Range	50/60Hz
Dimensions (LxWxH)	3.5" x 1.6" x 0.8"
Terminal Tightening Torque	0.5N*m
Wire	21-24 AWG Copper
Compliance	cUL, UL, CE, RoHS

For use in Pollution Degree 2 Environment.

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

EMX Advanced

True RMS Energy Meter

BACnet & Modbus, Pulse
Revenue grade metering (ANSI C12.20 Class 0.2 Standards)
Monitor loads from 0.25-6000A & 90-600V
Accurately measure harmonic loads

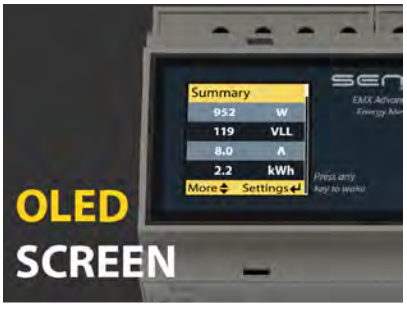
SENVA SYNC COMPATIBLE

DESCRIPTION

The EMX Advanced is the most user-friendly and quick installation True RMS energy meter on the market. Its line is powered with a color OLED screen and data-rich user interface, making setup as easy as L1, L2, L3. Equipped with both pulse and RS485 outputs, the EMX Advanced can connect to almost any metering or control device. Ideal for retrofits, the EMX accepts any 0.333V CT or standard metering Rogowski coil with no need for time-consuming and bulky integrators. Mixed or match loads or CT sizes!

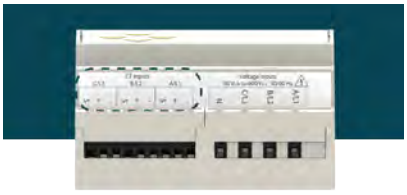
APPLICATIONS

- Energy Management and performance contracting
- Monitoring for commercial tenants
- Activity-based costing in commercial and industrial facilities
- Real-time power monitoring
- Load shedding
- Audits/temporary monitoring
- Distributed generation
- Great for data center energy meter sensing



OLED screen for easy configuration

the most user-friendly and quick installation True RMS energy meter on the market



1-3 PHASE VOLTAGE 90-600V

Self-powered with 1 to 3 phase voltage, 90-600V

Supports DIN rail mounting

Optional Nema 4X Enclosure with padlock

Works with any 0.333V CT or di-dt Rogowski coil

FEATURES

- NEW! Configuration App with **SenvaSync**, plus download logged data!
- NEW! Real-time logging data
- OLED screen with user interface that streamlines the setup process
- Self-powered with 1 to 3 phase voltage, 90-600V
- Functions as three indepent voltage/current power meters in one--mix and match CT sizes for multiple loads
- 2 pulse inputs for summing multiple meters or for general (configurable) pulse counting from any pulse meter - water, gas, steam, etc
- 2 pulse outputs for separately tracking positive and negative energy usage, additional power metrics or power quality alarms
- Provides accurate RMS (Root Mean Square) metering of harmonic loads
- One universal meter supports all metering CT options in the product family
- Supports mounting on PR30 (TS 35/F6) DIN rail

ORDERING

EMX Enclosure

Enclosure Options

EMX-ENC = Enclosure WITH Padlock

Rogowski Current Transducers

See Metering Series Rogowski CT's page to order

PART #: CT-F(XX)

Split Core Current Transducers

See Metering Series Split-Core CT's page to order

PART #: XH-SCT-(XXXX)

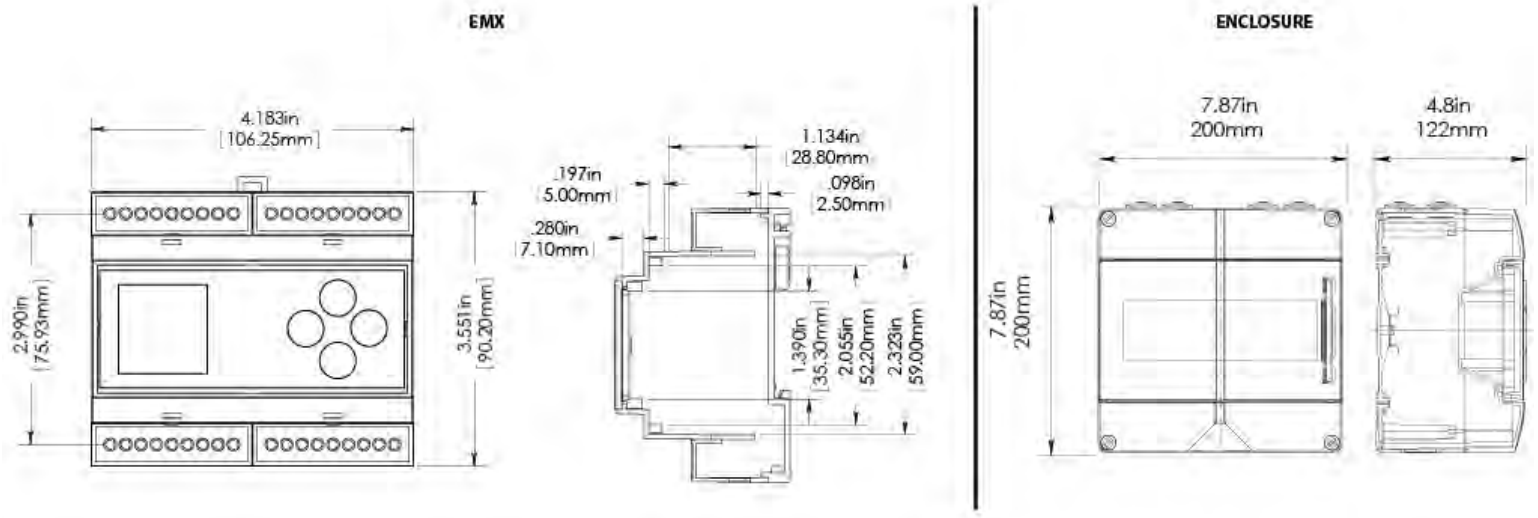
Fuse Kit

Fuse Kit, 600V, 1/2A, 3 Phase

PART #: CVT-FUSE-3PH

Rogowski CT:https://www.senvainc.com/en/products/energy-measurement/metering-series-rogowski-ct's
Split-Core Current Transducers: https://www.senvainc.com/en/products/energy-measurement/metering-series-split-core-ct's

DIMENSIONS



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SPECIFICATIONS

Power supply Input	Line/High voltage	90VLN-600VLL (+20%), 50/60Hz, 1-3 phase
	Power Consumption	4W Typ.
	Frequency Range	50/60 Hz
Outputs	RS-485	2-wire, BACnet MS/TP, Modbus RTU, Modbus ASCII
	Baud Rates	9600, 19200, 38400, 57600, 76800, 115200
	RS-485 Loading	1/4 unit
Pulse Output	Dual Outputs	Import & Export Energy Outputs
	Type	Solid state dry contact
	Specifications	N.O and N.C. 300mA max, 40Vac/dc
	Pulse scaling	0.01, 0.1, 1, 10, 100, 1k Wh/Pulse
	Duration	10,25,50,100,250,500 (ms)
EMX Wiring Requirements	Conductor gauge	24-14 AWG; Power terminals: 24-12 AWG
	Terminal torque rating	0.37 ft-lb (0.50 N•m)
Pulse Inputs	Input Rating	3.5 ± 0.5 VDC, short circuit current is 10mA max
	Pulse Rate	50 Hz (default), configurable up to 500 Hz
	Pulse Active	<100 Ohms
	Pulse Undefined	100-1000 Ohms
	Pulse Idle	>1000 Ohms
Service Types	Configurations	1Ph, 2Ph, 3Ph Wye (4-Wire), 3Ph Delta (3-Wire)
	Voltages	90VL-N through 600VL-L
	Frequency	45-65 Hz
	Measurement	CAT lll
EMX Performance	Meter Accuracy	0.2% (ANSI C12.20 Class 0.2 standards)
	System Accuracy	1% for V, A, kW, kVAR, kVA
Operating Environment	Operating Temperature	-22 to 158ºF (-30 to 70ºC)
	Storage Temperature	-40 to 158ºF (-40 to 70ºC)
	Humidity	0-95% non-condensing
	Environmental Rating	IP20; Front display IP40
EMX Meter Enclosure	Material	Polycarbonate/ABS
	Dimensions	3.55”h x 4.18”w x 2.26”d
	DIN Rail Compatibility	PR30 (TS 35/F6)
Industrial Enclosure (Optional)	Environmental Rating	NEMA 4X/ IP65
	Optional enclosure dimensions	7.78”h x 7.78”w x 4.8”d
	Material	Polycarbonate
Compliance	Agency	UL Listed, cUL Listed, File E489498
	Standards	CE, RoHS

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

Branch Series

Multi-Circuit (Branch) Meter

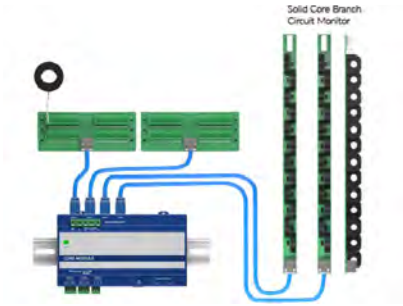
Monitors up to 96 circuits
On board webserver and data logging
Customizable alarming features

DESCRIPTION

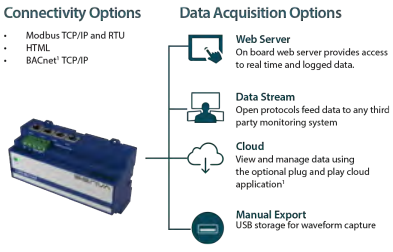
Senva is redefining Branch Circuit Monitoring with a next generation technology that simplifies installation and connectivity while providing instant access to data in a user friendly format. The versatile Core Module TM system is a single monitoring solution with peripherals optimized for Branch Circuit and Multi-Circuit Monitoring applications designed to reduce the cost and complexity associated with legacy multi-circuit monitors.

APPLICATIONS

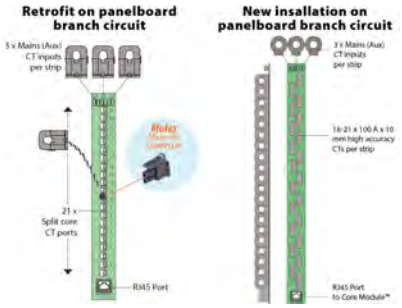
- Ideal for baseline consumption in premises (e.g., store-to-store comparisons for chains)
- Activity-based costing in commercial and industrial facilities
- More informative than an amperage measurement only
- Great for solid core, split core CTs, and analog for data center



Options for solid core, split core CTs, & discrete inputs

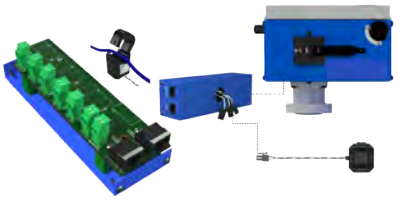


On board webserver for easy setup and data access

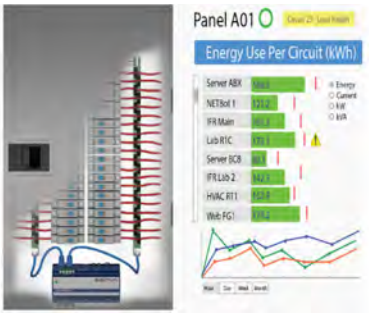


Split Core Strip for Retrofit or Solid Core Strip for New Insallations

Add metering to tap-off boxes or end-feeds in any busway system



Retrofit Monitoring Installation (CTS40x-F)



Presence of Voltage detection accurately indicates breaker status - even under no load

FEATURES

- Optimized for new and retrofit installations with no disruption to critical loads
- Monitors up to 96 circuits
- Options for solid core, split core CTs, and analog, discrete inputs.
- On-board web server provides immediate access to real-time and logged data
- Integrated data logging supports up to 64 GB storage; remotely accessible or manually exportable
- Customizable alarming features
- Select from multiple connectivity options, including Modbus TCP/IP, RTU
- Open protocols allow connection with any third-party monitoring system
- Presence of Voltage detection accurately indicates breaker status even under no load conditions
- True-Circuit Display mapping function presents data according to actual circuit configurations
- Detailed power and energy monitoring per circuit, including Waveform capture and THD

ORDERING

Core Module Monitoring Systems

CM02SV	Enhanced Core Module, 90-300 VAC L-N, 50/60 Hz (combined sensing and power supply input); supports 277V L-N / 480V 4W with neutral sources and 240 VAC / 415V 4W sources; use alternate models for 3W sources that do not have a neutral
CM02SV-480	Enhanced Core Module, 160-480 VAC L-L / 0.1A, 50 Hz (combined sensing and power supply input); used for 3W applications where neutral is not available
CM02SV-DC	Enhanced Core Module with 12-24VDC control power required; supports 3W and 4W sources; 90-300 VAC L-N / 160-480VAC L-L, 50/60 Hz sensing voltage
CTS-ENCL1	NEMA 1 Core Module Enclosure

Busway Strips

CTS403-F	3 channel tap-off monitor for remote CTs (end feed and retrofit)
CTS203E	3 channel tap-off monitor with PC mounted 100 A solid core CTs and presence of voltage sensing
CTS406-F	6 channel tap-off monitor for remote CTs (end feed and retrofit)
CTS206E	6 channel tap-off monitor with PC mounted 100 A solid core CTs and presence of voltage sensing

Solid Core CT Strip monitoring system for installations on new panelboards

All systems include 10mm x 100 A solid core CTs and + 3 auxiliary CT terminals per strip for main input CTs

0.75" c-c CT strips

CTS021A	Standard 0.75" CT center 1 x 21 100A solid core CT strip
CTS021B	Enhanced 0.75" CT center 1 x 21 100A solid core CT strip with presence of voltage detection

1.0" c-c CT strips

CTS121A	Standard 1.0" CT center 1 x 21 100A solid core CT strip

CTS121B	Enhanced 1.0" CT center 1 x 21 100A solid core CT strip with presence of voltage detection

18mm c-c CT strips

CTS218A	Standard 18mm CT center 1 x 18 100A solid core CT strip
CTS218B	Enhanced 18mm CT center 1 x 18 100A solid core CT strip with presence of voltage detection
CTS221A	Standard 18mm CT center 1 x 21 100A solid core CT strip
CTS221B	Enhanced 18mm CT center 1 x 21 100A solid core CT strip with presence of voltage detection
CTS223A	Enhanced 18mm CT center 1 x 23 100A solid core CT strip
CTS223B	Enhanced 18mm CT center 1 x 23 100A solid core CT strip with presence of voltage detection

Retrofit Panelboard CT Interface Module (Floating Strip CT interface module) and Core Module monitor

Floating Strip CT interface boards reside in raceway and interface with 10mm x 75 A or 100 A split core CTs using plug-in quick connects; each

CTS321A	24-channel Floating Strip split core CT interface board; utilizes branch CTs with connectors
CTSC01050	50 A x 10mm window split core current transformer, 250mm 300V AWG24 lead with Molex connector
CTSC01075	75 A x 10mm window split core current transformer, 250mm 300V AWG24 lead with Molex connector
CTSC010100	100 A x 16mm window split core current transformer, 250mm 300V AWG24 lead with Molex connector

Multi-Circuit Monitoring Systems and Core Module monitor

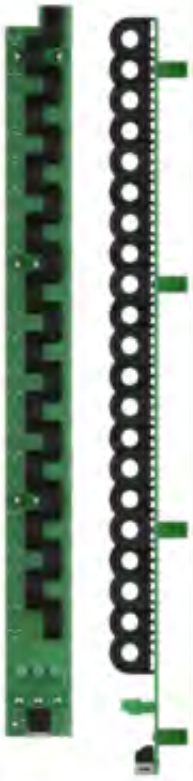
The Multi-Circuit Monitoring system supports up to 4 x 24 CT Interface Cards (96 circuits) and accommodates any 0.33 Vout current transformers or native Rogowski coils.

IOC24A1	24-Channel Digital Input Card
CTC24A1	24-Channel Multi-Circuit Monitoring CT interface board

Current Transformers

see Current Transformer selection guide for details

CTS218
CTS221
CTS121



CTS203E
CTS206E

CTS403-F
CTS406-F

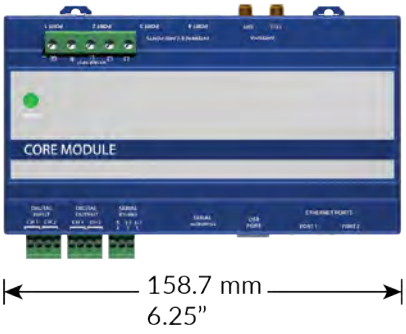
CTC24A1

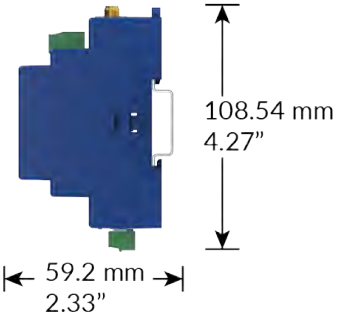
CTS321A1

IOC24A1

CTS-ENCL1

DIMENSIONS





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SPECIFICATIONS

INPUTS	
Input power (standard)	90-277 VAC (480 VAC 4W+G) 50/ 60 Hz
Input power (enhanced)	480-600 VAC (3W or 4W+G) 50/ 60 Hz
DC Control	12-24 VDC nominal (only avaiable on models with DC input power supply)
Overload protection	Internally fused
Power consumption	<5W
Channels / circuit capacity	24 x 4 channels (96 circuits total)
PERFORMANCE	
Power/Energy	IEC 62053-21 Class 1, ANSI C12.1-2008 System Accuracy (including branch CTs) (1% system accuracy includes both the Core Module and branch current sensors
Accuracy	0.50% for voltage and current
Sampling rate	> 3 kHz
COMMUNICATIO	
Physical interface	Cat5 or greater Ethernet cable. 10/100Mbit speeds supported
Data protocols	Modbus TCP/IP (Ethernet), Modbus RTU (RS-485 2 wire), HTML (web server)
Baud Rate	9600, 19200, 38400, 57600, 76800, 115200
Ethernet ports	2 x RJ-45 10/100 Mbit
USB port	USB 2.0 Type A
Web server	HTML via standard browser
Protocols supported	BACnet/IP
DIGITAL I/O	
Digital Input	Dry Contact (N.O) with 5V @ 10mA source
Digital Output	30VDC / 0.1A maximum
ENVIRONMENTAI	
Operating temperature	0 to 60 °C (32 to 140 °F) (<95% RH non-condensing)
Storage temperature	-40 to 70 °C (-40 to 158 °F)
Enclosure versions	NEMA 1/IP20 (indoor use);
APPROVALS	
Agency approvals	UL61010 IEC/EN61010-1, CE, CAT II

MONITORED PARAMETERS		
Monitored Parameter	Circuit Level	Input Level1
phase per Current	•	•
Max. current per phase	•	•
Current demand (avg. current) per phase	•	•
Current phase angle	•	•
Voltage phase angle	•	•
Real power (kW) per phase	•	•
Real power (kW) demand per phase	•	•
Real power (kW) demand max	•	•
Energy (kWh) per phase	•	•
Power factor	•	•
Power factor vector	•	•
Apparent power (kVA)	•	•
Reactive power (kVA)	•	•
THDI	•	•
THDV	•	•
Voltage, L-L and average		•
Voltage, L-N and average		•
Voltage, L-N and per phase		•
Waveform capture	•	•
Presence of Voltage3	•	•
Ground current2	•	•

1 - Input level data can be calculated by summing up branch CT measurements or directly measured using CTs.
2 - Required optional ground current CT connected to auxiliary CT input

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Metering Series

Split-Core Current Transducers

1% total system accuracy (meter & CT)
For use with Senva's EMX and Branch Multi-Circuit Meter
Flexible Split-core Sensors for easy installation or retrofits
Monitor loads from 15-2000A

DESCRIPTION

The Senva Metering Series CT's provide a high accuracy linear 0V to 0.333VAC signal output proportional to the measured current. These can be safely and simply installed to be used with most power meters, data loggers, and other instruments. Our Split-core Metering CT's come in a range of inner diameter sizes and amperages to accommodate a wide variety of installations and retro-fits.

APPLICATIONS

- Energy management and performance contracting
- Monitoring for commercial tenants
- Activity-based costing in commercial and industrial facilities
- Real-time power monitoring
- Load shedding
- Audits/temporary monitoring
- Distributed generation
- Great for data center energy power sensing

Each outputs 333mV or 0.333V at rated current

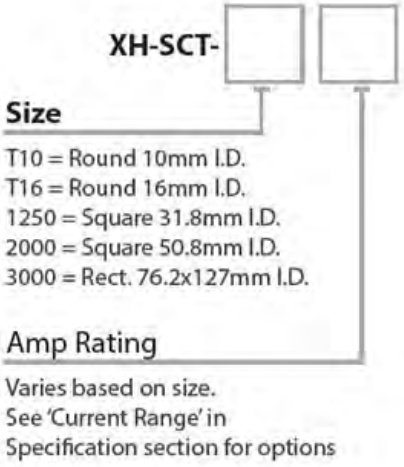
Sense loads 15-2000A

CT's come in a range of inner diameter sizes and amperages

FEATURES

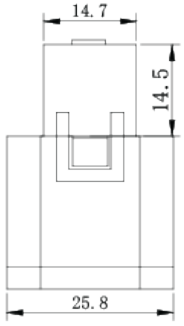
- Choose from 5 aperture sizes
- Linear output 333mV or 0.333V at rated current
- Sense loads 15-2000A
- Use with any standard meter or data-logger
- High accuracy
- UL Listed Energy Monitoring Equipment, UL recognized Instrument Transformer, CE and RoHS compliant

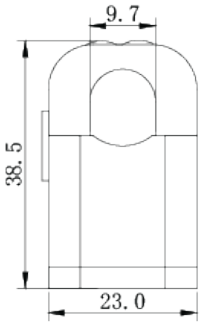
ORDERING



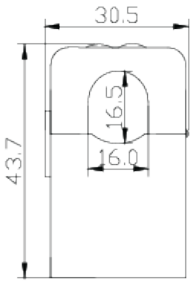
T10	15A, 30A, 50A
T16	100A
1250	100A, 150A, 200A, 300A
2000	400A, 600A, 800A
3000	1000A, 1200A, 1500A, 2000A

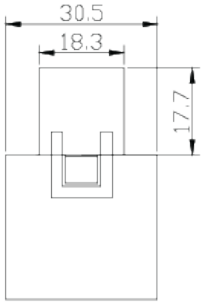
DIMENSIONS



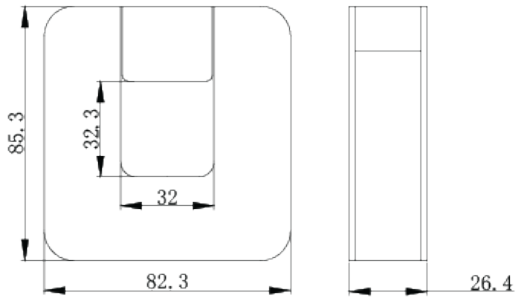


XH-SCT-T10

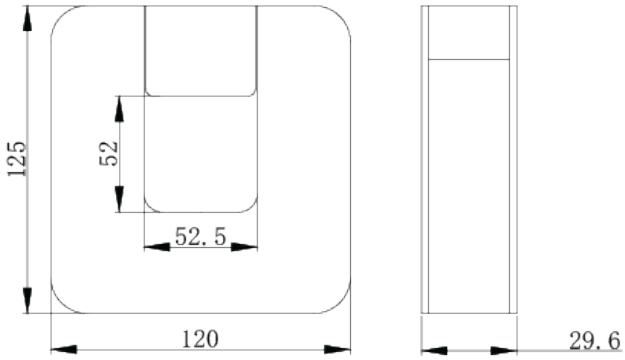




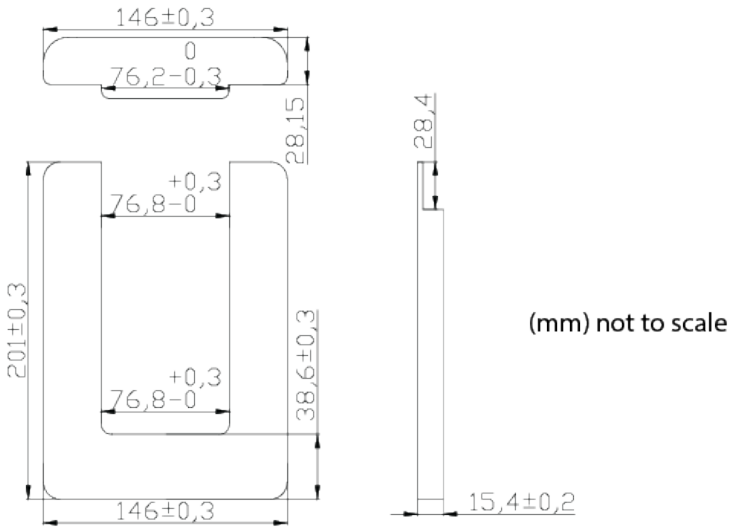
XH-SCT-T16



XH-SCT-1250



XH-SCT-2000



XH-SCT-3000

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SPECIFICATIONS

Performance	Accuracy	±1% From 5-120% rated current
Rated Output	Scale	0.333VAC
Current Range	T10	15A, 30A, 50A
	T16	100A
	1250	100A, 150A, 200A, 300A
	2000	400A, 600A, 800A
	3000	1000A, 1200A, 1500A, 2000A
Inner Diameter	T10	10mm, 0.39in, round
	T16	16mm, 0.63in, round
	1250	19.1mm, 0.75in, square
	2000	31.8mm, 1.25in, square
	3000	76.2mmx127mm, 3x5in, rectangular
Phase Angle	Rated	Less than 2 degrees at 50% rated current
Voltage	Insulation Voltage	600VAC
	Primary Voltage	5000VAC (insulated conductor)
Environmental	Operating Temp	-15 to 60oC
Frequency	Freq Range	50-400Hz
Leads	Length	105cm, 4 ft.
	Wire	UL 1015 twisted pair, 22AWG
Agency	Compliance	UL/cUL Recognized, CE Compliant, RoHS Compliant

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

Metering Series

Rogowski CT

Standard mV/kA output
Space saving, easy-to-install Rogowski coil
Rated for 6000A
Four sizes from 9" to 36" circumference

DESCRIPTION

Rogowski analog transducers measure high amperage AC current and provide a proportional output for metering devices. Rogowoski coil covers wide amperage ranges without saturation effects common to iron core sensors. Selectable lengths ensure ease of installation.

APPLICATIONS

- Energy management and performance contracting
- Monitoring for commercial tenants
- Activity-based costing in commercial and industrial facilities
- Real-time power monitoring
- Load shedding
- Audits/temporary monitoring
- Distributed generation
- Great for data center energy meter sensing

Fast locking coil connection

High amperage rating

Mount sensor without removing conductor

FEATURES

- High amperage rating
- Mount sensor without removing conductor for installation savings
- Fast-locking coil connection
- Rogowski coil is lightweight and space-saving
- UL recognized, CE, and RoHS compliant

ORDERING

CT- □ □

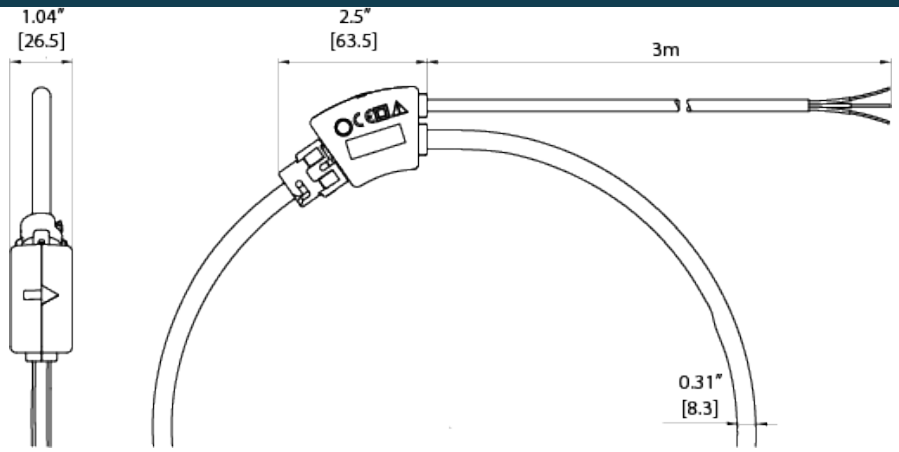
Type

F = Flexible Rogowski

Circumference

09 = 9" Rogo, 6000A
15 = 15" Rogo, 6000A
24 = 24" Rogo, 6000A
36 = 36" Rogo, 6000A

DIMENSIONS



Warning: The datasheet is designed for reference only. Refer to installation instructions that accompany the product and heed all safety instructions. Product improvement is a continuing process at Senva. Changes may occur to products without prior notice.

SPECIFICATIONS		
Performance	Accuracy	<±1% of reading, from 5-6000 A
Rated Output	Scale	120 mV/kA @60Hz
	Detection Range	0 to 6000A
Voltage	Insulation Voltage	600VAC CAT IV
	Primary Voltage	1000VAC CAT III
Environmental	Operating Temp	-30 to 80oC
	Protection Degree	IP67
Frequency	Freq Range	40-20kHz
	Length	3m, 9ft
	Wire	shielded, double insulated, 22AWG
Agency	Compliance	UL/cUL Recognized, CE Compliant, RoHS Compliant EN61010-1, EN61010-2-032

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

EM-RS485 Series

Multi-channel Energy Meters

ANSI C12.20 0.2% Meter Accuracy
BACnet & Modbus
Reduced pointmap version for simple integration (field changeable to full version)
Auto enrolls on network
Flexible Split-core Rogowski CVT™ Sensors
Monitor loads from 30-6000A & 90-600V

DESCRIPTION

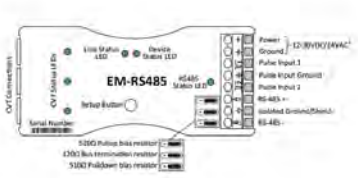
The EM Series is the safest and fastest meter to install on the market. The unique design makes the meter entirely low-voltage. Ideal for retrofits as the high-voltage components are embedded in the Current/Voltage Transducer (CVT). Experience high-accuracy data-rich power metering in a compact, easy-to-use package. Meter recognizes CVTs automatically, eliminating time-consuming scaling. Each CVT uses digital communication with the meter for superior noise immunity The CVT are individually calibrated and can be mixed or matched as independent meter channels--1% total accuracy! Features both Modbus and self-configuring plug-and-play BACnet MS/TP for seamless integration.

APPLICATIONS

- Energy Management & performance contracting
- Monitoring for commercial tenants
- Activity-based costing in commercial & industrial facilities
- Real-time power monitoring & load shedding
- Audits/temporary monitoring
- Distributed generation
- Great for data center automation power meter

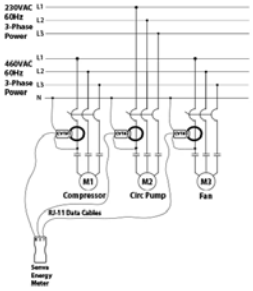
Flexible split-core CVT sensors are easy to install with plug and play high accuracy

Super compact, low voltage meter base fits in or outside panel. Screw, DIN, and magnetic mounting.



Typical connections - accepts additional pulse inputs!

Fusing is typically NOT required!



Monitor different voltages and currents with a single meter! Ideal for HVAC equipment.

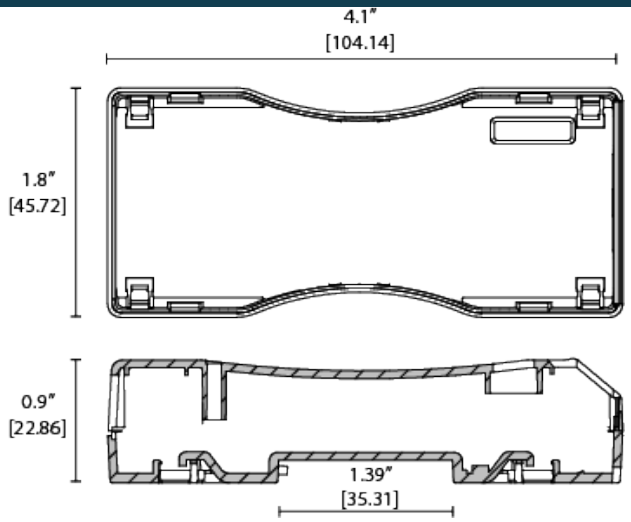
The safest/fastest meter install on the market

FEATURES

- Split-core Rogowski CVT™ senses both voltage and current, communicating with the meter through a low voltage data cable
- Easy to install Rogowski CVT™ is lightweight and compact
- True 3 channel meter--mix and match different voltages and currents per phase on HVAC equipment
- EM-RS485 self-configures baud rate, serial formal, protocol type and address - eliminating additional configuration steps
- No scaling required--easy set up
- Meter base is entirely low voltage--locate external to panel if desired
- 2 pulse inputs can connect to a variety of pulse output meters (water, gas, steam, etc.)
- Versatile DIN, screw, and magnetic mount

ORDERING

DIMENSIONS



Warning: The datasheet is designed for reference only. Refer to installation instructions that accompany the product and heed all safety instructions. Product improvement is a continuing process at Senva. Changes may occur to products without prior notice.

SPECIFICATIONS		
Power Supply Input		12-30VDC/24VAC(1), 1.5W max, 100mA max.
Output	RS-485	2-wire, BACnet MS/TP, Modbus RTU, Modbus ASCII
	Baud Rates	9600, 19200, 38400, 57600, 76800, 115200
	RS-485 Loading	1/4 unit
Wiring Requirements	Conductor gauge	14-26 AWG
	Terminal torque rating	0.5 min, 0.6 max
Pulse Inputs	Dual Inputs	3.5 +/- 0.5 VDC, short circuit current is 10mA max
	Pulse Rate	50 Hz (default), configurable up to 500 Hz
	Pulse active	<100 ohms
	Pulse Undefined	100-1000 ohms
	Pulse Idle	>1000 ohms
Service Types	Configurations	1Ph, 2Ph, 3Ph Wye (4-Wire), 3Ph Delta (3-Wire)
	Voltages	90VL-N through 600VL-L
	Frequency	45-65 Hz
Performance	Meter Accuracy	0.2% (ANSI C12.20 Class 0.2 standards)
	System Accuracy	1% for V, A, kW, kVAR, kVA
Operating Environment	Temperature	-4 to 140F (-20 to 60C)
	Humidity	0-95% non-condensing
Dimensions	Meter	4.1”h x 1.8”w x 0.9”d
	CVT	3.5”h x 1.6”w x 0.8”d
	Material	Polycarbonate/ABS
Compliance	Agency	UL Listed, File E501430, CE, RoHS
	USA	Meets ANSI C12.20 Class 0.2 Standards (Revenue Grade)
	State	Meets WA State Clean Building bill

Fusing is typically NOT required! Under UL 240.21, Senva CVTs may tap conductors without overcurrent protection under certain guidelines. Senva's unique architecture keeps the high voltage connections contained within the CVT enclosure and in consideration to the tap rule, Senva does not ship EM Series meters with more than 10 feet of voltage reference wire on any CVT. If your voltage reference must be longer than 20 feet, proper use of over current protection is required (i.e. appropriate fusing or circuit breakers)

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

EM Pulse Series

Pulse Output Energy Meter

ANSI C12.20 0.2% Meter Accuracy
Pulse Version: kWh, KVAR, kVA
Accepts additional pulse inputs for meters or flow meters
Flexible Split-core Rogowski CVTTM Sensors
Monitor loads from 30-6000A & 90-600VAC

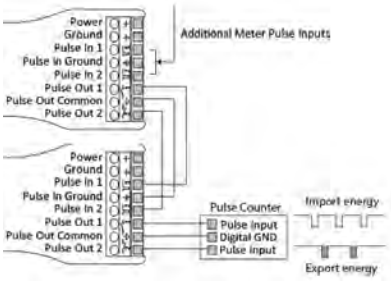
DESCRIPTION

The EM-pulse installs quickly and safely. Unique design makes the meter entirely low-voltage, as the high voltage components are embedded in the Current/Voltage Transducer (CVT). Each CVT uses digital communication with the meter for superior noise immunity. The CVTs are individually calibrated and can be mixed or matched with independent meter channels for a sum total. Accepts additional pulse inputs for additional meter inputs.

APPLICATIONS

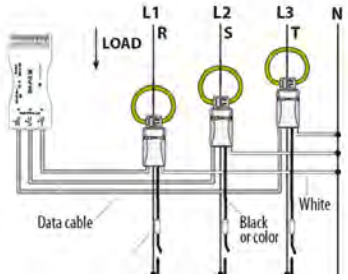
- Energy Management & performance contracting
- Monitoring for commercial tenants
- Activity-based costing in commercial & industrial facilities
- Real-time power monitoring & load shedding
- Audits/temporary monitoring
- Distributed generation
- Great for data center & voltage and current sensing

Flexible split-core CVT sensors are easy to install with plug and play high accuracy



Multi-meter pulse summing. The EMPULSE meter is capable of accepting pulse inputs from one or more meters. The meter will aggregate the pulses and report them as a total sum. The meters must all be set with the same pulse scale.

Super compact, low voltage meter base fits in or outside panel. Screw, DIN, and magnetic mounting



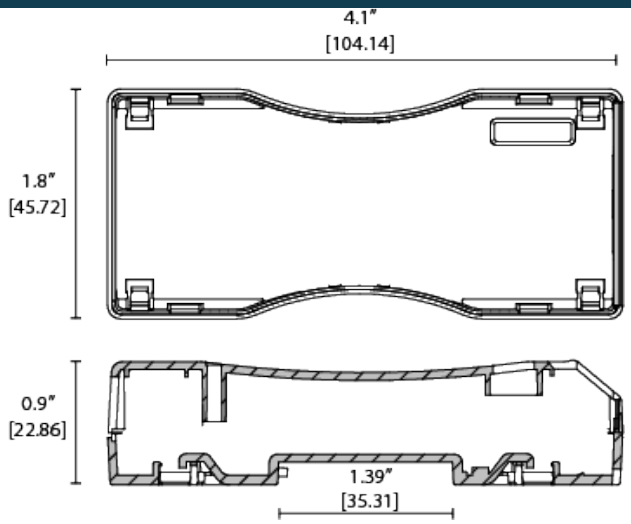
Fusing is typically NOT required! *Meter base is low voltage and safe* *Fast installation options*

FEATURES

- Split-core Rogowski CVT™ senses both voltage and current, communicating with the meter through a low voltage data cable
- Easy to install Rogowski CVT™ is lightweight and compact
- True 3 channel meter--mix and match different voltages and currents per phase on HVAC equipment
- No scaling required--easy set up
- Meter base is entirely low voltage--locate external to panel if desired
- 2 pulse inputs can connect to a variety of pulse output meters (water, gas, steam, etc.)
- Versatile DIN, screw, and magnetic mount

ORDERING

DIMENSIONS



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SPECIFICATIONS		
Power Supply Input		12-30VDC/24VAC (1), 1.5W max,100mA max.
Pulse Outputs	Dual Outputs	Import & Export Energy
	Type	Solid state dry contact
	Specifications	N.O., 300mA max, 40V max
	Pulse Scaling	0.01, 0.1, 1, 10, 100, 1k Wh/Pulse
Wiring Requirements	Conductor gauge	14-26 AWG
	Terminal torque rating	0.4 ft-lb (0.55 N-m)
Pulse Inputs	Input Rating	3.5 +/- 0.5 VDC, short circuit current is 10mA max
	Pulse Rate	50 Hz max
	Pulse Active	<100 ohms
	Pulse Undefined	100-1000 ohms
	Pulse Idle	>1000 ohms
Service Types	Configurations	1Ph, 2Ph, 3Ph Wye (4-Wire), 3Ph Delta (3-Wire)
	Voltages	90VL-N through 600VL-L
	Frequency	45-65 Hz
Performance	Meter Accuracy	0.2% (ANSI C12.20 Class 0.2 standards)
	System Accuracy	1% for V, A, kW, kVAR, kVA
Operating Environment	Temperature	-4 to 140F (-20 to 60C)
	Humidity	0-95% non-condensing
Dimensions	Meter	4.1”h x 1.8”w x 0.9”d
	CVT	3.5”h x 1.6”w x 0.8”d
	Material	Polycarbonate/ABS
Compliance	Agency	UL Listed, File E501430, CE, RoHS
	USA	Meets ANSI C12.20 Class 0.2 Standards (Revenue Grade)
	State	Meets WA State Clean Building bill

Fusing is typically NOT required! Under UL 240.21 Senva CVTs may tap conductors without overcurrent protection under certain guidelines. Senva's unique architecture keeps the high voltage connections contained within the CVT enclosure and in consideration to the tap rule, Senva does not ship EM Series meters with more than 10 feet of voltage reference wire on any CVT. If your voltage reference must be longer than 20 feet, proper use of over current protection is required (i.e. appropriate fusing or circuit breakers)

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

CVT Series

Current/Voltage Transducers

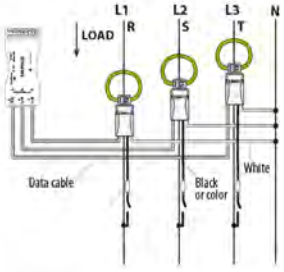
1% total system accuracy (meter & CVT)
For use with Pulse and Protocol Versions of the EM Series Meter
Flexible Split-core Rogowski CVT™ Sensors
Monitor loads from 30-6000A & 90-600V

DESCRIPTION

The Current/Voltage Transducer (CVT) measures both voltage and current, communicating the data digitally to the meter via plug-in low voltage connections. This allows the meter to remain a low-voltage device. Each CVT uses digital communication with the meter for superior noise immunity. The CVTs are individually calibrated and measurement accuracy is independent of the transducer. To complement the CVT, our metering platform offers two meter options (EM-PULSE & EM-RS485) which are small enough to fit in the palm of your hand, yet powerful enough to self-configure during installation, removing all manual configuration. Virtually a plug and play BACnet meter!

APPLICATIONS

- Energy Management and performance contracting
- Monitoring for commercial tenants
- Activity-based costing in commercial and industrial facilities
- Real-time power monitoring
- Load shedding
- Audits/temporary monitoring
- Distributed generation
- Great for data center CVT



FEATURES

- Digitally calibrated CVTs™ are extremely accurate
- The accuracy is as high as a calibrated system, yet different CVTs ™ can be changed from meter to meter while maintaining accuracy. A big advantage for auditing, since meter is not size specific.
- Plug and play installation— individual CVTs™ are digitally recognized by the meter and outputs are automatically scaled—no user set up is required.
- Digital communication offers superior noise immunity compared to traditional induced low-signal Rogowskis
- All the high voltage connections are at the CVT™
- Rogowski CVTs™ are available in 4 sizes from 9" to 36" in circumference and include several rating options from 300A to 6000A and are universally rated for 90-600V
- No fusing required for CVT wire runs under 10'

ORDERING

CVT- [F]

Type
F= Flexible Rogowski

Coil (Amps/Size)
03S= 300A/Small
08S= 800A/Small
08M= 800A/Medium
15S= 1500A/Small
15M= 1500A/Medium
24M= 2400A/ Medium
24L= 2400A/Large
60G= 6000A/Grande

Lead Length
Blank= 3' (Default)
L06= 6'
L10=10'

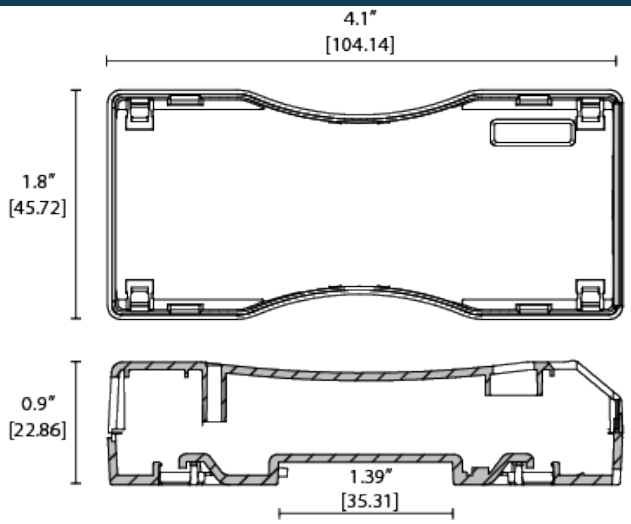
Lead Color
Blank= Black (Default)
C2= Red
C6=Blue
3PH= 4-20mA, 3-Wir

Color

CVT-FUSE- [ ]

Color
Blank = black (default)
C2 = Red
C6 = Blue
3PH = Three Fuse Kit (1 Black, 1 Red, 1 Blue)

DIMENSIONS



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SPECIFICATIONS		
Performance	Accuracy	1% System Accuracy (Includes Meter & CVTs) for V, A, KW, kVAR, KVA
Current/Voltage TransducerTM	Small Rope Circumference	9"
	Medium Rope Circumference	15"
	Large Rope Circumference	24"
	Grande Rope Circumference	36"
	300A Operating Range(1)	±1% of reading from 7.5-300A (2.5-100% of rated current)
	800A Operating Range	±1% of reading from 30-800A (3.75-100% of rated current)
	1500A Operating Range	±1% of reading from 30-1500A (2-100% of rated current)
	2400A Operating Range	±1% of reading from 50-2400A (2-100% of rated current)
	6000A Operating Range	±1% of reading from 120-6000A (2-100% of rated current)
Operating Environment	Temperature	-4 to 140oF (-20 to 60oC)
	Humidity	0-95% non-condensing
Meter Enclosure	Material	Polycarbonate/ABS
	Dimensions	4.1"h x 1.8"w x 0.9"d
CVT^{TM} Enclosure	Material	Polycarbonate/ABS
	Enclosure Dimensions	3.5"h x 1.6"w x 0.8"d
Fuse specifications (not required per UL on CVT runs under 10')	Fuse type	1/2 Amp, 600VAC slow blow, 200kA AC Interrupting rating
	Dimensions	4.1"h x 1.8"w x 0.9"d

(1) CVT must be installed with the current-carrying wire centered, as described in installation manual, to achieve stated accuracy at low ranges.

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PRU1 Series

Pilot Relays 10A

10A resistive rating
Multi-voltage coil operation
Hand Off Auto option with tamper resistant cover
Current run-status confirmation option

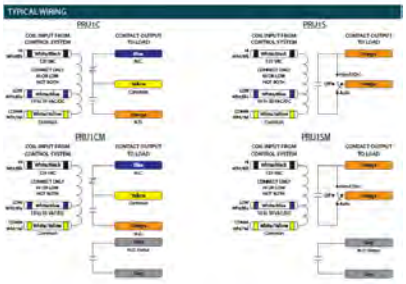
DESCRIPTION

The PR Series pilot relays are ideal multi-voltage input pilot duty relays that mount to existing panels to control loads. External enclosures are not required making them ideal for interfacing loads with building automation control systems. Featuring the highest output in the smallest package, integrated current sensing, and a secure tamper resistant HOA.

APPLICATIONS

- Command contactors
- Control motors
- Isolation
- Device interlocking
- Relay logic
- Lighting load levels
- Great for data center Hand Off Auto-Pilot Relays

Hinged HOA cover with tamper resistant screw



Typical wiring

Ideal for multi-voltage input pilot duty relays that mount to existing panels

FEATURES

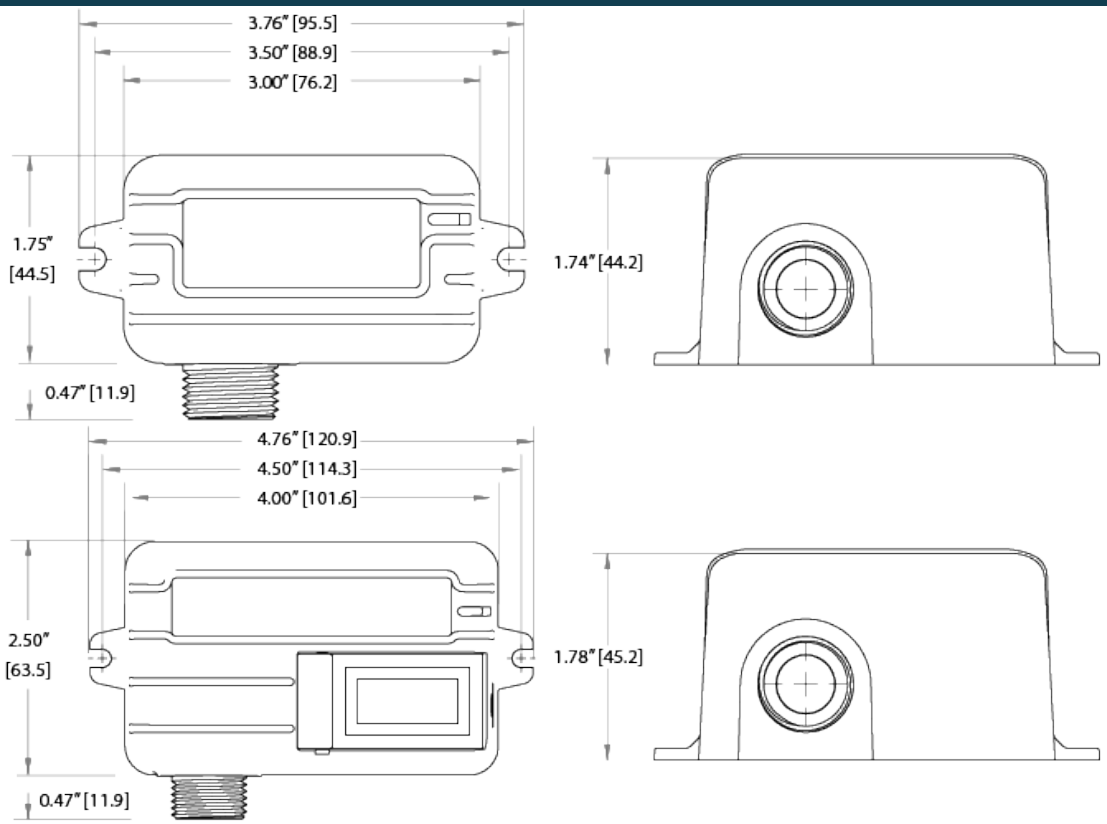
- Nipple mount to any electrical enclosure
- Flexible tinned stranded wire... easily fits tight spaces and provides secure connections to wire nuts.
- Versions with Hand Off Auto (HOA) switch feature with secure screw cover door to prevent tampering.
- Eliminates costly system override-related service calls

ORDERING

PILOT SMALL ENCLOSURE RELAY SINGLE SPDT CONTACT (1 N.C. & 1 N.O.) 10 AMPS	Coil Input w/LED	Hand/Off/Auto Switch	Status (Fixed 0.3 A Trip)	Current Switch
PRU1C	10-30VAC/DC, 120VAC		None	
PRU1CM	10-30VAC/DC, 120VAC		N.O. 1.0A@30VAC/DC	•

PILOT MEDIUM ENCLOSURE RELAY SINGLE SPST CONTACT (1 N.O.) 10 AMPS	Coil Input w/LED	Hand/Off/Auto Switch	Status (Fixed 0.3 A Trip)	Current Switch
PRU1S	10-30VAC/DC, 120VAC	•	None	
PRU1SM	10-30VAC/DC, 120VAC	•	N.O. 1.0A@30VAC/DC	•

DIMENSIONS



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SPECIFICATIONS

General		Environmental Operating	-30 to 60oC (-22 to 140oF), 10-95% RH non-condensing
		Expected Relay Life	100,000 cycles electrical; 10,000,000 mechanical
		LED	ON when energized
	Device Wiring	16" minimum lead length; coil: 18AWG; contacts: 12AWG;	
		HOA monitor wires: 12 AWG; status: 18AWG	
	Field Wiring	Coil: 16AWG to 18AWG, Contacts: 12AWG to 14AWG	
		Certifications	UL1015
Dimensions		Small Enclosure	1.75"x3.0"x1.75" with 0.5" NPT nipple
		Medium Enclosure	2.5"x4.0"x1.78" with 0.5" NPT nipple

CONTACT RATINGS(PRU1c)
10 Amp Resistive @ 277 VAC
10 Amp Resistive @ 28 VDC
480 VA Pilot Duty @ 240-277 VAC
480 VA Ballast @ 277 VAC
Not rated for electronic ballast
600 Watt Tungsten @ 120 VAC (N.O.)
240 Watt Tungsten @ 120 VAC (N.C.)
1/3 HP @ 120 VAC (N.O.)

1/6 HP @ 120 VAC (N.C.)
1/4 HP @ 277 VAC (N.O.)
1/8 HP @ 277 VAC (N.C.)

CONTACT RATINGS(PRU1s)
10 Amp Resistive @ 277 VAC
10 Amp Resistive @ 14 VDC
480 VA Pilot Duty @ 240-277 VAC
480 VA Ballast @ 277 VAC
Not rated for electronic ballast
600 Watt Tungsten @ 120 VAC (N.O.)
1/3 HP @ 120/240 VAC (N.O.)
1/4 HP @ 277 VAC (N.O.)

COIL CURRENT/Performance

Voltage	AC	DC
10 V	30mA	16mA
15 V	34mA	20mA
20 V	38mA	21mA
25 V	42mA	22mA
30 V	45mA	23mA
120 V	23mA	
	Pull-In Voltage	
	AC	DC
10 to 30V	8V	9V
120V	85V	
	Dropout Voltage	
10 to 30V	3V	3V

** Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.*

PR24 Series
Power Relays

20A range resistive rating
Hand Off Auto switch option
Current run-status confirmation option

DESCRIPTION

The PR Series pilot relays are ideal multi-voltage input pilot duty relays that mount to existing panels to control loads. External enclosures are not required making them ideal for interfacing loads with building automation control systems.

APPLICATIONS

- Command contactors
- Control motors
- Isolation
- Device interlocking
- Relay logic
- Lighting load levels

NEW!

FEATURES

Convenient and cost-effective control

- Current sensor run status option
- LED indicator
- Multi-voltage coil input
- Hand-Off-Auto switch option

Compact enclosure mounts externally for easy installation

- Nipple mount to any electrical enclosure
- Flexible tinned stranded wire… fits easily in tight spaces and provides secure connections to wire nuts

Concealed HOA switch with screw secured cover prevents tampering

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

Run status confirmation

- True current sensing provides proof of load feedback that pilot device relay coil is powered

Rugged enclosure

- Rated for Nema 4X when installed with O-ring and 1/2" locknut on existing Nema 4X control panel.

Hinged HOA cover with screw retention minimizes tampering

MODEL	CONTACT	COIL INPUT	CONTACT	HOA	CURRENT RUN STATUS	ENCLOSURE	LED
PR2401B	SPDT	24-30VDC, 24VAC, 120VAC	20A			Small	●
PR24BM	SPDT	24-30VDC, 24VAC	20A		N.O. 1A @ 30VAC/DC, 0.3A TRIP	Small	●
PR2401SB	SPST N.O.	24-30VDC, 24VAC, 120VAC	20A	●		Medium	●
PR2401SBM	SPST N.O.	24-30VDC, 24VAC, 120VAC	20A	●	N.O. 1A @ 30VAC/DC, 0.3A TRIP	Medium	●

SPECIFICATIONS

General	Environmental Operating	-30 to 60°C (-22 to 140°F), 10-95% RH non-condensing
	Expected Relay Life	100,000 cycles electrical; 10,000,000 mechanical
	LED	ON when energized
	Device Wiring	16" minimum lead length; coil: 18AWG; contacts: 12AWG; HOA monitor wires: 12 AWG; status: 18AWG
	Field Wiring	Coil: 16AWG to 18AWG, Contacts: 12AWG to 14AWG
	Certifications	UL1015, Plenum Rated (UL2043), California State Fire Marshal, CE, RoHS
Dimensions	Small Enclosure	1.75"x3.0"x1.75" with 0.5" NPT nipple
	Medium Enclosure	2.5"x4.0"x1.78" with 0.5" NPT nipple

CONTACT RATINGS(PR2401B/PR24BM)
20 Amp Resistive @ 277 VAC/30VDC NO/NC
1HP @ 120VAC NO/NC
2HP @ 277VAC NO/NC
20A @ 120/277VAC STANDARD BALLAST NO
1100VA Pilot Duty @ 277VAC
Not rated for electronic ballast
10A @ 120VAC TUNGSTEN NO

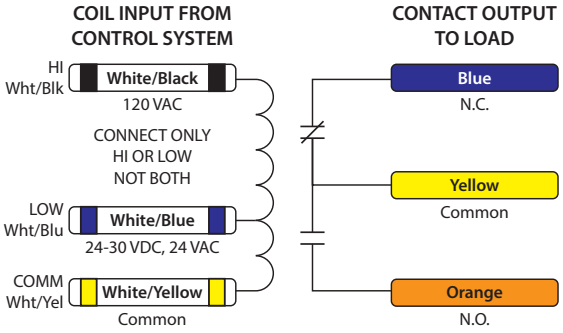
CONTACT RATINGS(PR2401SB/PR2401SBM)
20 Amp Resistive @ 277 VAC NO
1HP @ 120VAC NO
2HP @ 277VAC NO
20A @ 120/277VAC STANDARD BALLAST NO
1100VA Pilot Duty @ 277VAC
Not rated for electronic ballast
10A @ 120VAC TUNGSTEN NO

COIL CURRENT/PERFORMANCE		
Voltage	**AC**	**DC**
24 V	59mA	32mA
26 V		35mA
28 V		37mA
30 V		40mA
120 V	43mA	
Pull-In Voltage		
	AC	DC
10 to 30V	8V	9V
120V	85V	
Dropout Voltage		
10 to 30V	3V	3V

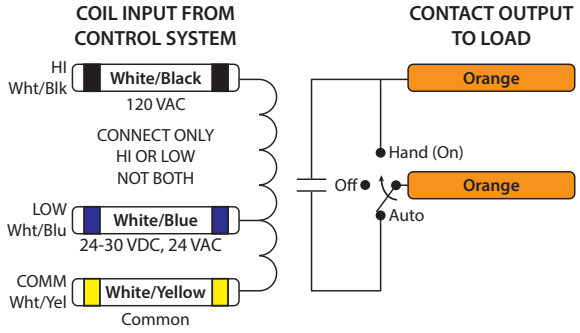
Warning: *Refer to installation instructions that accompany product and heed all safety instructions. Do not rely on current status LED to indicate presence of power.*

TYPICAL WIRING

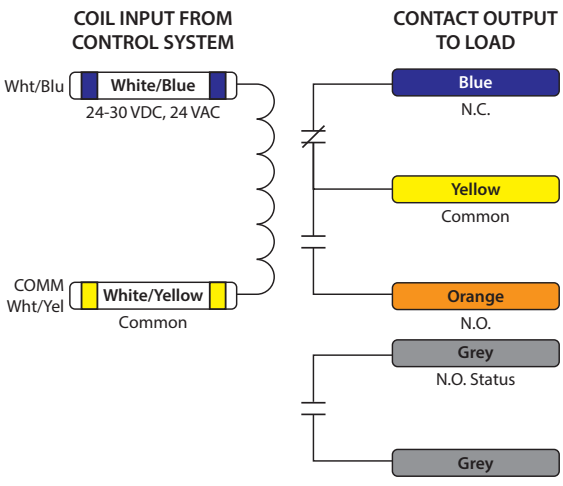
PR2401B



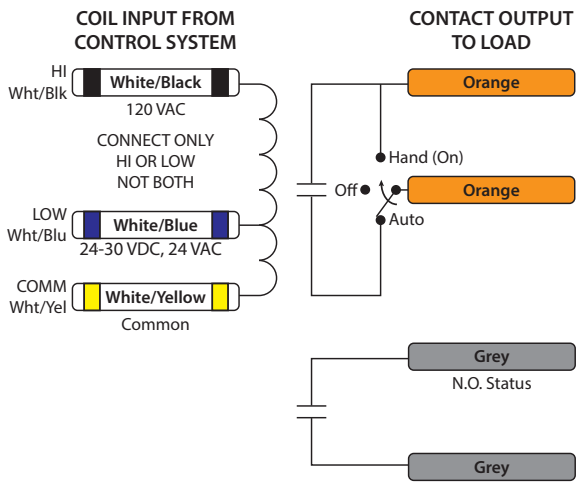
PR2401SB



PR24BM



PR2401SBM



PR24 Series

Power Relays 20A

20A range resistive rating
Smallest 20A package on the market
Hand Off Auto switch option
Current run-status confirmation option

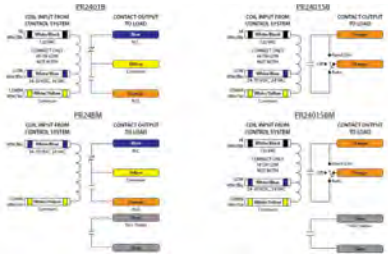
DESCRIPTION

The PR Series power relays are ideal multi-voltage input pilot duty relays that mount to existing panels to control loads. External enclosures are not required making them ideal for interfacing loads with building automation control systems. Featuring the highest output in the smallest package, integrated current sensing, and a secure tamper resistant HOA. Highest 20A capacity in the industries smallest package.

APPLICATIONS

- Command contactors
- Control motors
- Isolation
- Device interlocking
- Relay logic
- Lighting load levels
- Great for data centers using Hand Off Auto (HOA) switch

Hinged HOA cover with tamper resistant screw



Typical wiring

Ideal multi-voltage input pilot duty relays that mount to existing panels

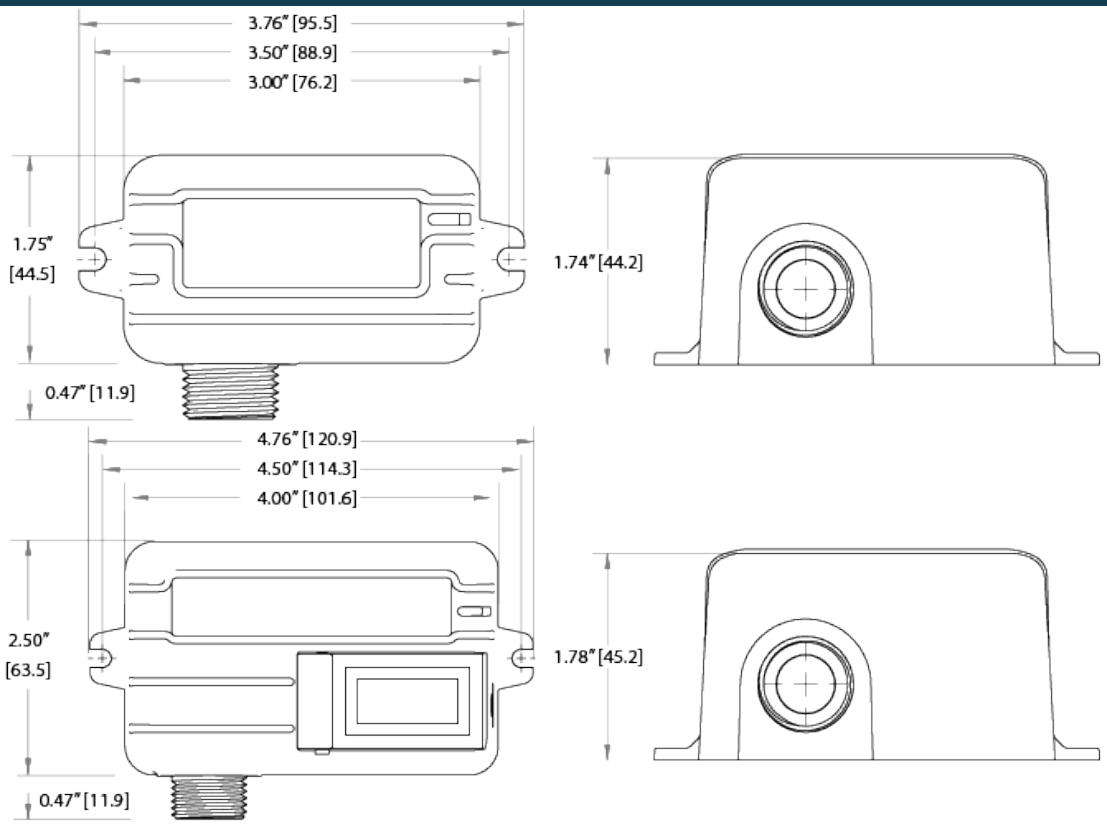
FEATURES

- Current sensor run status option
- LED indicator
- Multi-voltage coil input
- Hand-Off-Auto switch option
- Nipple mount to any electrical enclosure
- Flexible tinned stranded wire... fits easily in tight spaces and provides secure connections to wire nuts
- Versions with Hand Off Auto (HOA) switch feature with secure screw cover door to prevent tampering
- Eliminates costly system override-related service calls

ORDERING

POWER SMALL ENCLOSURE RELAY SINGLE SPDT CONTACT (1 N.C. & 1 N.O.) 20 AMPS	Coil Input w/LED	Hand/Off/Auto Switch	Status (Fixed 0.3 A Trip)	Current Switch
PR2401B	24-30VDC, 24VAC, 120VAC		None	
PR24BM	24-30VDC, 24VAC		N.O. 1.0A@30VAC/DC	•
POWER MEDIUM ENCLOSURE RELAY SINGLE SPST CONTACT (1 N.O.) 20 AMPS	**Coil Input w/LED**	**Hand/Off/Auto Switch**	**Status (Fixed 0.3 A Trip)**	**Current Switch**
PR2401SB	24-30VDC, 24VAC, 120VAC	•	None	
PR2401SBM	24-30VDC, 24VAC, 120VAC	•	N.O. 1.0A@30VAC/DC	•

DIMENSIONS



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SPECIFICATIONS

General	Environmental Operating	-30 to 60oC (-22 to 140oF), 10-95% RH non-condensing
	Expected Relay Life	100,000 cycles electrical; 10,000,000 mechanical
	LED	ON when energized
	Device Wiring	16" minimum lead length; coil: 18AWG; contacts: 12AWG; HOA monitor wires: 12 AWG; status: 18AWG
	Field Wiring	Coil: 16AWG to 18AWG, Contacts: 12AWG to 14AWG
	Certifications	UL1015
Dimensions	Small Enclosure	1.75"x3.0"x1.75" with 0.5" NPT nipple
	Medium Enclosure	2.5"x4.0"x1.78" with 0.5" NPT nipple

Power_relays_series

CONTACT RATINGS(PR2401B/PR24BM)
20 Amp Resistive @ 277 VAC/30VDC NO/NC
1HP @ 120VAC NO/NC
2HP @ 277VAC NO/NC
20A @ 120/277VAC STANDARD BALLAST NO
10A @ 120/277VAC STANDARD BALLAST NC
Not rated for electronic ballast
10A @ 120VAC TUNGSTEN NO
2A @ 120VAC TUNGSTEN NC

Power_relays_series

CONTACT RATINGS(PR2401SB/PR2401SBM)
20 Amp Resistive @ 277 VAC NO
14 Amp Resistive @ 14 VDC NO
1HP @ 120VAC NO
2HP @ 277VAC NO
20A @ 120/277VAC STANDARD BALLAST NO
Not rated for electronic ballast
10A @ 120VAC TUNGSTEN NO

Power_relays_series

COIL CURRENT/Performance		
Voltage	AC	DC
24 V	59mA	32mA
26 V		35mA
28 V		37mA
30 V		40mA
120 V	43mA	
Pull-In Voltage		
	AC	DC
24 to 30V	20V	20V
120V	85V	
Dropout Voltage		
10 to 30V	6V	6V
Enclosure	Environmental	Nema 1

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the product for installation and wiring.

RD Series

Remote LED Displays

3 1/2 digit LED
Choose Red, green, or blue
Adjustable zero and span

DESCRIPTION

This a really attractive, super bright LED display for your control applications. Available in single or dual versions, it's low profile and rugged. You also get pre-cut vinyl labeling for humidity, temperature, and pressure. Adjustable zero/splan.

APPLICATIONS

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

Single Verson Available

Dual and Triple Versions Available

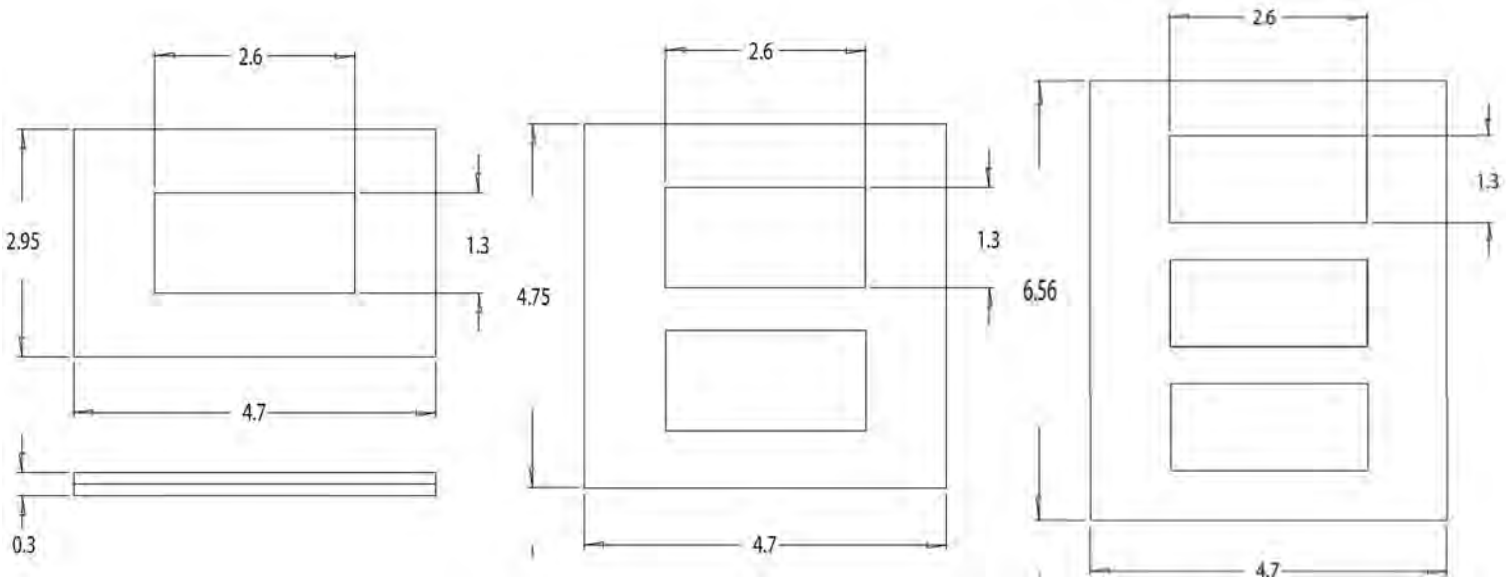
Buy American Act Compliant

FEATURES

- 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 adjustable zero and span

ORDERING

DIMENSIONS



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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 Temperature	32-122oF (0-50oC)

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

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WD Series

Water Detector

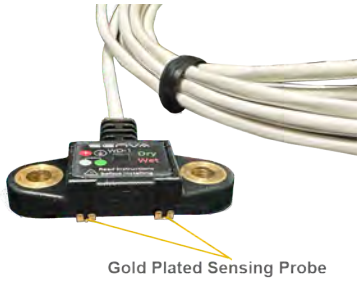
Mount to floor, drip pan, or condensate pan
Solid state relay--no moving parts to fail
Gold-plated sensing electrodes for long-life
Completely submersible

DESCRIPTION

The newly improved WD-1 detector is the smallest water detector on the market, designed to detect water in even the tightest spaces. The WD Series is a fully encapsulated low-pressure molding that is water resistant and can safely be submerged for extended periods of time. Its gold-plated sensing probes are strategically positioned for optimal sensitivity to leaks, making it ideal for spot leak detection in various environments, including data centers, critical equipment areas, restrooms, and commercial kitchens. More features. Better value.

APPLICATIONS

- Ideal for spot leak detection
- Computer rooms, data centers, critical equipment, restrooms, or commercial kitchens
- Monitor condensate pans and drains—turn off equipment when pans reach limit
- Great for data centers



Sensing Probes Are Close To Surface For Fast Moisture Sensing

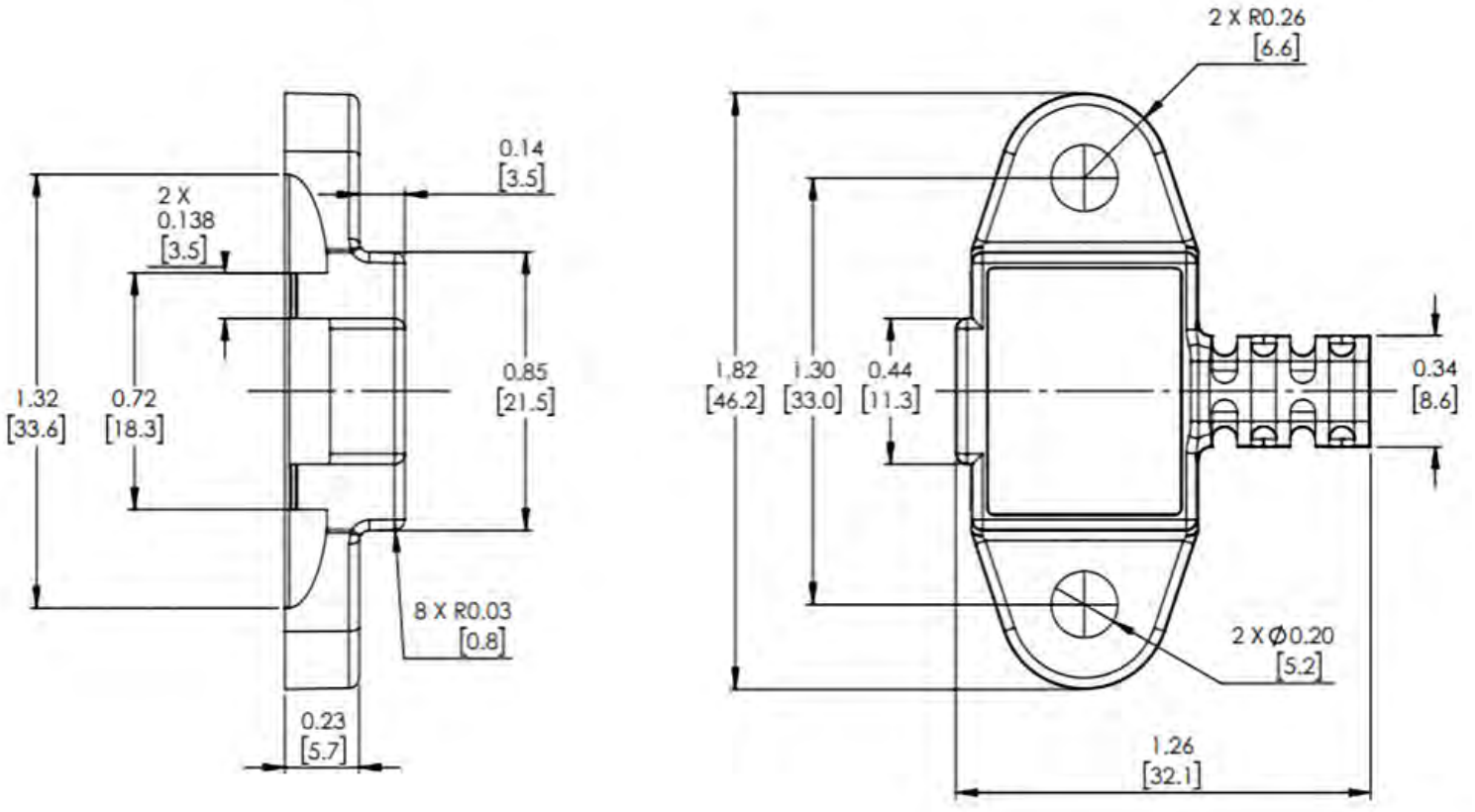
WD-1 is Buy American Act Compliant

FEATURES

- Reliable water 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 encapsulated for water resistance... maximum durability

ORDERING

DIMENSIONS



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SPECIFICATIONS	
Power Supply	12-24VDC/24VAC +/-15%, 5W Max. Isolated
Output	N.C. (Form B) Solid State Relay, Isolated
Output Rating	30VAC/DC, 0.1A (100mA) Max.
Sensing	Gold plated electrodes
Operating Environment	-20 to 70°C

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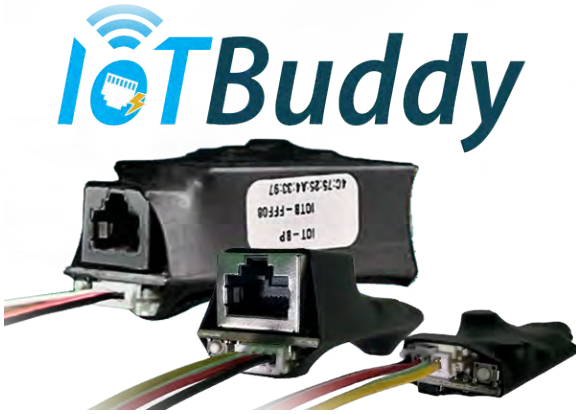
IoT Series

IOT Buddy Device Connectivity Solution

Connects analog or Modbus RTU devices to cloud services, while still allowing BACnet/IP or Modbus/TCP connections for the same points. Facilitates power over Ethernet (POE), Ethernet, or Wireless 2.4 GHz. Small design to allow for installation in sensor housing or junction box. Easy configuration via NFC or the IoTBuddy Hosted Web page.



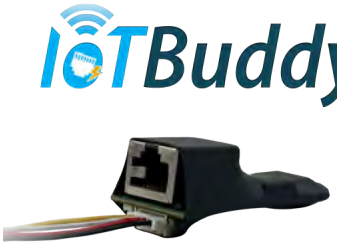
DESCRIPTION

This a compact communicating device for your API, cloud storage, and communication applications. Convert any Modbus RTU or analog signal to Ethernet, Power Over Ethernet (POE), or 2.4 GHz wireless (Wifi) and connect to IOT cloud services (AWS, Azure, MQTT). This connection also allows for local BACnet/IP or Modbus/TCP point hosting via the local IP network. Its small profile and low power requirements allow for field mounting in device enclosures or junction boxes. Use pre-configured sensor data for Senva sensors for fast configuration.

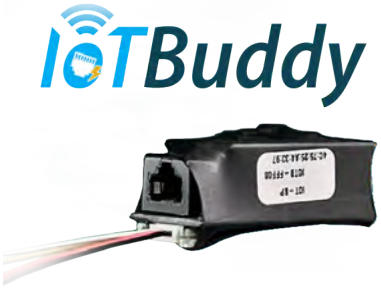
APPLICATIONS

- Allows cloud access to sensor data in remote, network-connected spaces or buildings
- Monitoring of sensors in network-connected retrofits or additions
- Display data on energy management, tenant, or client-facing dashboards
- Perfect for air quality, occupancy, and energy usage reporting
- Add sensor monitoring to critical infrastructure

Wireless version connections to (2.4 GHz) networks



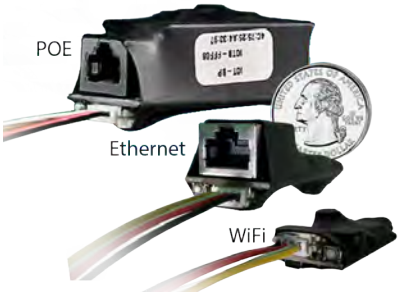
Ethernet version connects to ethernet



Option for POE (Power over Ethernet)

Choose pre-configured or configure your own

Fits in slim enclosures and junction boxes

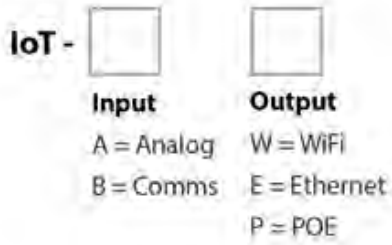


Three options to choose from!

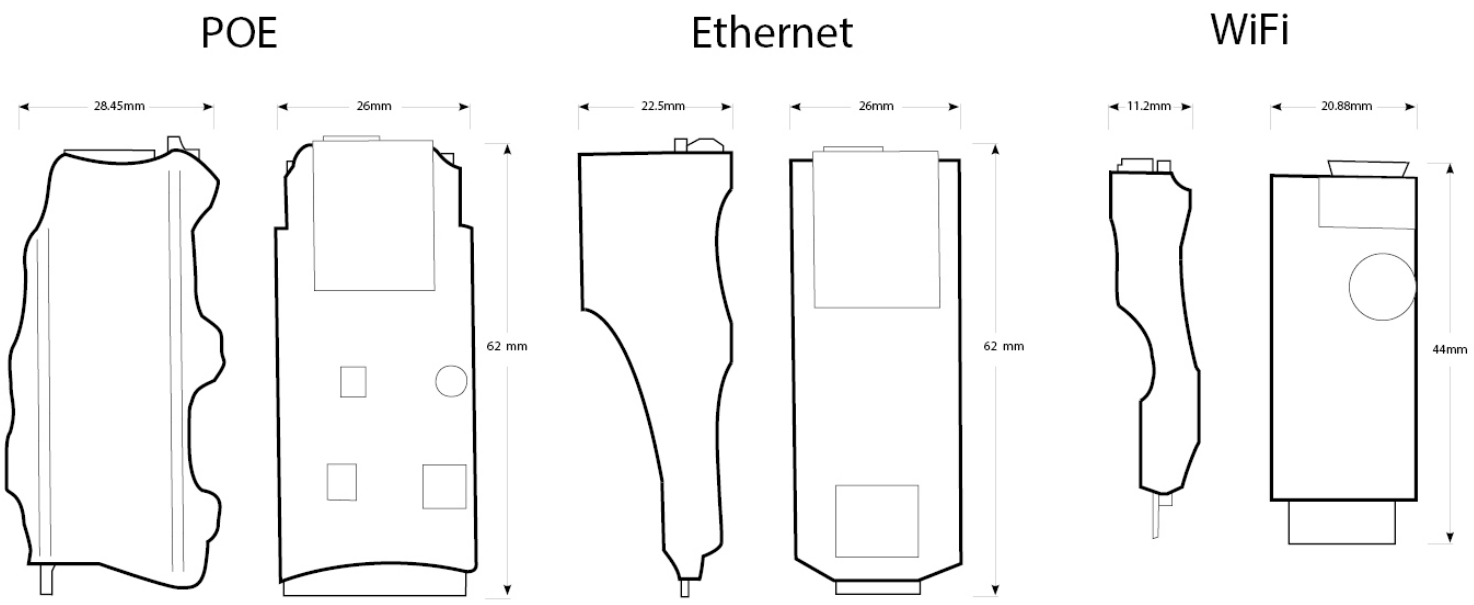
FEATURES

- Allows cloud IOT (MQTT, Azure, AWS) connections for sensors and field devices, with simultaneous BACnet/IP or Modbus/TCP connections across the local IP network.
- Expand your IIOT system!
- Greatly reduces licensing, technician, and panel costs associated with cloud integration of sensors by allowing installation and network connectivity directly at the device location.
- Accepts device connection of either two configurable analog input signals or a single Modbus RTU device.
- Pre-configured setup for Senva sensors and devices can be saved, loaded, and set up via web interface or NFC app.
- Connect via Ethernet or Wireless 2.4 GHz
- Power over Ethernet (POE) version includes power pass-through for powering sensors and allows the connected sensors to be powered from existing POE equipment, utilizing power backups to allow for critical reporting with no added power cost.
- Easily integrate any sensor to existing IT data/BAS/Cloud Service monitoring.
- Monitored sensor data can easily be added to display on energy management, tenant, or client-facing dashboards. This is perfect for air quality, occupancy, and energy usage reporting.
- Wireless version hosts a local access point for easy connection and setup!
- Inputs, network, and cloud connection are configured via web page hosted from the IoTBuddy or via NFC app.
- Connectivity Options: Modbus RS485 to Ethernet RJ45 (Cloud and BACnet/IP or Modbus/TCP), Modbus RS485 to Wifi (Cloud and BACnet/IP or Modbus/TCP), Analog to Ethernet or POE (Cloud and BACnet/IP or Modbus/TCP), Analog to Wifi (Cloud and BACnet/IP or Modbus/TCP).

ORDERING



DIMENSIONS



NOT TO SCALE

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SPECIFICATIONS

Note: Features and Specifications are for initial release and may change with subequent releases.

Power Supply	4 Wire Flying Leads	Wifi and Ethernet versions: 12-30VDC/24VAC, 1W max, 100mA max. POE versions: powered by ethernet. Accepts 24VDC. Power to Sensor: 24vdc 5W max.
Analog Inputs	2 programmable Inputs	0-10V and 4-20mA (selectable)
LED	Red	**Normal Mode:** Off=Not Configured Steady= No Connection Slow Blink = Connected to device Fast Blink= Connected to cloud service **Setup Mode:** Off=Button Held (Hold for 3 seconds) Slow Blink = Commissioning Mode Fast Blink= Hold to Initiate Factory Reset
Ethernet	RJ45	10/100 BASE-TX IPV4 Static or DHCP IPV6 Static or Dynamic via DHCPv6 or SLAAC BACnet/IP, Modbus/TCP (~ 100 Points Maximum) Cloud Service Connection (~20 Points Maximum)
WI-Fi	2.4 GHz	**AP Mode:** Supports Open, WPA2, WPA-WPA2 Mixed, WPA3, WPA2-WPA3 Mixed networks IPV4 DHCP or Static IP One client Wi-Fi Connection with configurable password Uses Fixed IP for access point during initial setup WPA2-PSK (AES) 30M Range, in unimpeded areas. **Station Mode:** Supports Open, WPA2, WPA-WPA2 Mixed, WPA3, WPA2-WPA3 Mixed networks IPV4 Static or DHCP IPV6 Static or Dynamic via DHCPv6 or SLAAC Configurable SSID lookup Auto-reconnect after network or power loss BACnet/IP, Modbus/TCP (~ 100 Points Maximum) Cloud Service Connection (~20 Points Maximum) 30M Range, in unimpeded areas.
Operating Environment	Operating Temperature	-40 to 158ºF (-40 to 70ºC)
	Storage Temperature	-40 to 185ºF (-40 to 85ºC)
	Humidity	0 to 95% RH (non-condensing)
	Altitude	2,000 Meters
Enclosure	Wi-Fi Model	~ 1”h x 1”w x 0.5”d
	RJ45 Model	~2.4”h x 1”w x 1”d
	RJ45 POE Model	~2.4”h x 1”w x 1.1”d

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