



The SUPERPROX® Model SM506A (cable style) and Model SM556A (connector style) ultrasonic, noncontact sensors with a sensing range of 51 mm (2") to 2 meters (79") are readily available. These rugged sensors monitor the distance to an object while generating a proportional analog output relative to two span limits which can be easily set with the push of a button. For applications such as maintaining a constant fill level in a filler machine, the analog

output modulates the product flow into the filler as the filler speed changes. The analog output may modulate the speed of other machinery or regulate the movement of control valve actuators. Two discrete outputs, with setup and operation independent of the analog output span limits, provide alarm capability through the single sensor.

The analog output may also connect directly to programmable controller analog input modules for performing complex loop control or simple status (e.g., distance measuring) monitoring functions.

Easy to install and operate, these reliable SUPERPROX® DC-powered sensors carry the CE Mark. The sensor housing meets NEMA 4X (indoor use only), IP67 industry standards and a Dairy 3A compliant housing is available as an option.

Introduction

Hyde Park's SUPERPROX® sensors with analog output employ the latest in piezoelectric, ultrasonic, and microprocessor technology to provide reliable, noncontact, level, distance, or size measurement sensing for a wide variety of process-control applications.

SUPERPROX® Ultrasonic Analog Output Sensors

- *Easy push-button setup for setting sensing span limits*
- *Switch for selecting either direct or inverse proportional output*
- *4 to 20 mA or 0 to 10 VDC selectable outputs*
- *Adjustable analog output response potentiometer*
- *SUPERPROX® housing meets IP67 and NEMA 4X (indoor use only) industry standards*
- *CE certified*

As shown in Figures 1 and 3, these sensors have a sensing range of either 51 mm to 1 m (2 to 39") or 120 mm to 2 m (4.7 to 79"), at or within which the analog span limits and alarm set points (if selected) can be set.

Sensor is Quickly and Easily Configured

This is done through four dip switches, two push-buttons, and a one-turn potentiometer located inside a watertight control compartment at the back side of the sensor (Fig. 2 and Fig.4). Access to the compartment is gained by loosening two flathead screws, inserting a small screwdriver in either the top or bottom slot, and removing the square cover. A short plastic tether prevents separation of the cover from the sensor.

Loss of Echo

Loss of echo occurs when the sensor does not receive echos from an object within its sensing range for more than one second. When this occurs, the

analog signal will go to the minimum or maximum value depending on the position of configuration Switch 2. When the sensor again receives echos from within its sensing range, the analog signal is updated to a value indicating the object's present position relative to the span limits.

"LE" Option - Function "00" & "81" or Hold Output on Loss of Echo - Function "98" & "99"

Depending on model functionality, when loss of echo occurs for more than one second, the analog signal will hold at the value of the last echo received. When the sensor again receives echos within its sensing range, the analog signal is updated to a value indicating the object's present position relative to the span limits.

Sensor Configuration Switches

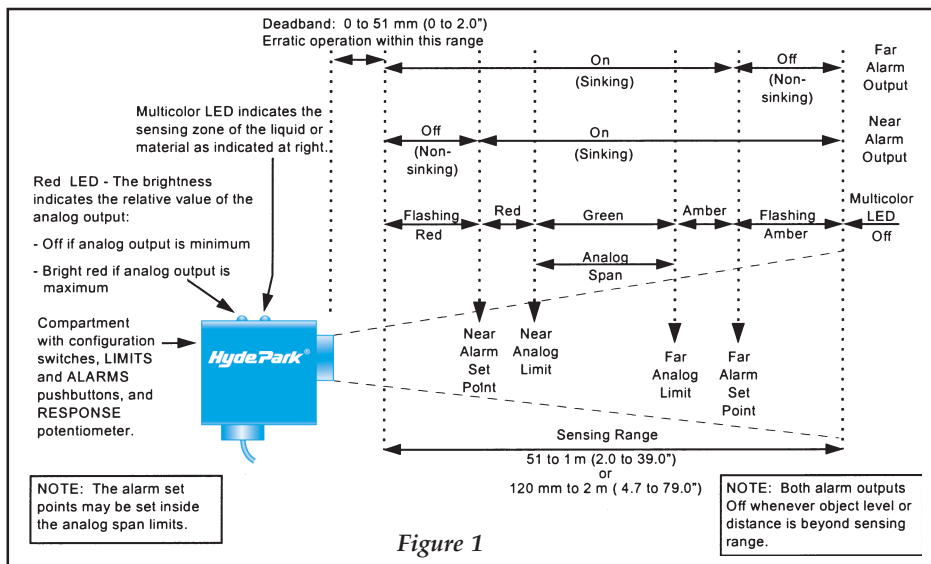
Switch 1 (all models) selects either a directly (DIR) or inversely (INV) proportional (level or distance of an object relative to the span limits) analog output. When the switch is in the DIR position, the maximum analog output occurs at the limit closest to the sensor. When the switch is in the INV position, the maximum analog output occurs at the limit farthest from the sensor.

Switch 2 selects the desired analog output on loss of echo for all models as shown in the chart below. For models with alarms, Switch 2 works with Switch 3 in selecting the state of the output. Switch 2 also determines the state of the output on power-up.

Switch 3 (models with alarms only) selects whether the analog output goes to default, minimum or maximum output, or holds on loss of echo.

Switch 4 (models with alarms only) selects either a current or voltage output. Place the switch in the VOLT position for 0-10 VDC or in the mA position for 4-20 mA.

Models with Alarms



Models without Alarms

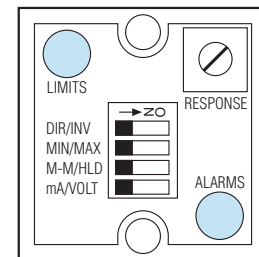
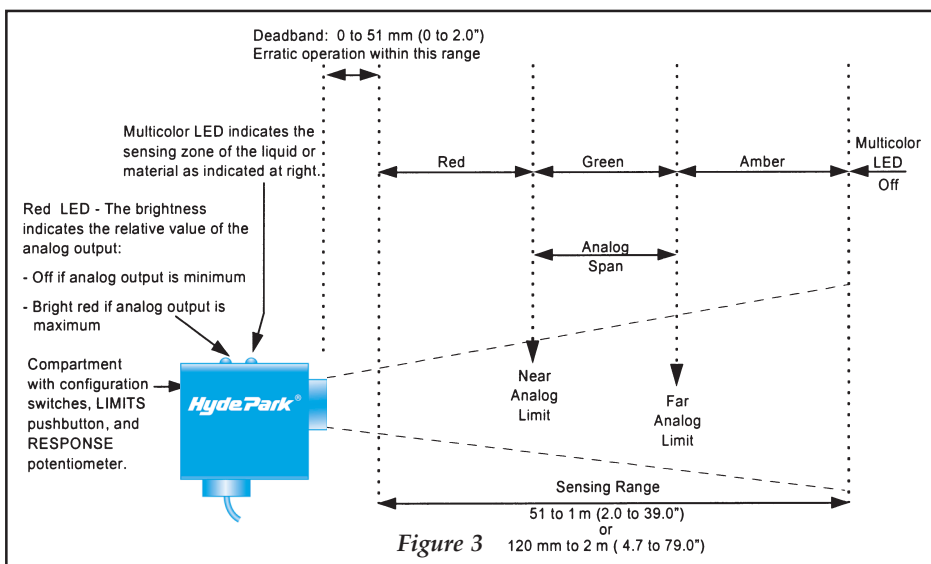


Figure 2 (with alarms)

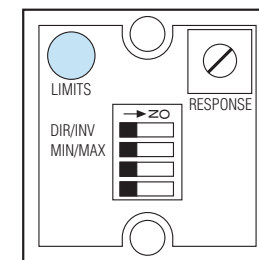


Figure 4 (without alarms)

Analog Response Time Potentiometer

As the position of a sensed object changes relative to the span limits, the analog output changes accordingly. In some applications where there is rapid and erratic object movement or irregular object profiles and surfaces, it may be desirable to reduce the rate of output

change. A one-turn RESPONSE potentiometer, located in the control compartment, allows adjustment or damping of the analog output response to either abrupt or rapid changes in the object's position. The response is adjustable from 70 ms to 2.5 seconds, allowing smooth control regulation or speed modulation of process equipment. Figure 5 illustrates the relationship between the potentiometer setting and the output response time over the entire one-turn range.

| Analog Models: | When | | State of the Analog Output on Loss of Echo ¹ |
|---|------------------|------------------|---|
| | Switch 2 set at: | Switch 3 set at: | |
| With alarms (See note 2 for models with suffix 198.) | MIN | M-M | 4 mA or 0 V (Alarms non-sinking and on) |
| | MAX | M-M | 20 mA or 10 V (Alarms non-sinking and on) |
| | MIN | HLD | No change ³ (and no change in alarms) |
| | MAX | HLD | |
| Without alarms and no LE suffix (See note 2 for models with suffix 118 & 188.) | MIN | Not used | 4 mA or 0 V |
| | MAX | | 20 mA or 10 V |
| Without alarms and with LE suffix | MIN | Not used | No change ³ |
| | MAX | | |

1 Loss of echo occurs when sensor does not receive any echoes within its sensing range for more than one second.

2 These sensor models ignore all echoes outside the programmed span.

3 Means the output will hold at value of last echo received. When sensor again receives echoes within its sensing range, the outputs are updated to a value indicating the object's present position.

NOTE: On power-up, the analog output

The output response is the time period required for the output signal to match 95% of a monitored abrupt change in object position. For example, assume Switch 1 is set to DIR and the potentiometer is set for a response time of 2.5 seconds (fully CW). At the far span limit the output is 4 mA. The object being detected has been stable at the far limit but then moves to the near span limit very rapidly. Two and one-half seconds after the object reaches the

near limit, the analog output reaches 19.2 mA... or, (20 mA - 4 mA) .95 + 4 mA. Figure 6 illustrates the output response characteristics for 1.25 and 2.5 seconds.

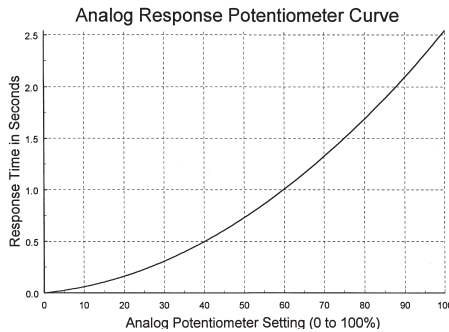


Figure 5

The LIMITS & ALARMS Push-buttons

The LIMITS push-button is used to set both near and far limits of the analog span within which object detection and control takes place. After the limits have been set, the sensor continuously emits either a 0 to 10 VDC or 4 to 20 mA output that is in proportion to the object's position relative to the span limits. For example, if the output selected is 4-20 mA and the object is detected halfway between the analog span limits, the output is 12 mA. The output range adjusts to the size of the analog span and remains proportional regardless of where the limits are set for the analog span.

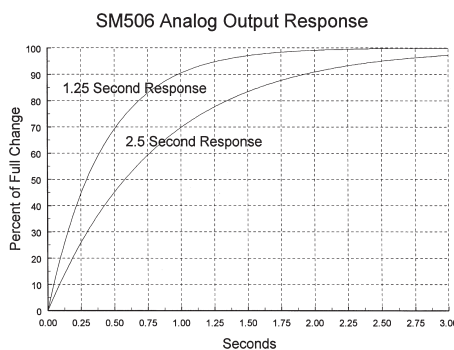


Figure 6

Setting the limits begins by using a flat-surface target, approximately 150 mm x 150 mm (6" x 6") in size, and positioning it in front of and parallel to the face of the sensor. The operator moves the target the desired distance from the sensor that represents either the near or far selected span limit. One press of the LIMITS push-button lights

the multicolored LED on top of the sensor amber and sets the limit at that distance. When the push-button is released, the LED flashes amber, indicating the other limit needs to be set. Moving a target to the second selected span limit position, which can be as close as 6.5 mm (1/4") from the other limit, and pressing the push-button again sets that limit. Again, while the push-button is depressed, the multicolored LED lights amber. Upon release of the push-button, the LED turns green to indicate acceptance of both span limits. At the same time, the sensor output switches from the inactive to active state, placing the sensor in operation, ready to use. If, in setting either span limit the echo from the object is too weak or distorted, the multicolored LED flashes red for 10 seconds or until the push-button is pressed again. This indicates the limit setting was not accepted by the sensor. If power is interrupted or is turned off during operation, the span limits are retained in a nonvolatile memory.

During operation, as long as an object is within the analog span limits, the multicolored LED remains green. The other LED (always red) indicates the relative value of the analog output and varies in intensity according to the output. The higher the current or voltage output, the brighter the red LED. See Page 4-64 for further explanation.

The ALARMS push-button (on alarm models) is used to set two discrete alarm set points anywhere within the sensing range where alarm outputs are required to protect equipment from potential damage. An example would be the prevention of an overflow condition. Setting the alarm set points follows the same procedure as for the span limits with one exception: Upon release of the ALARMS push-button for the second alarm set point, the multicolored LED flashes amber for the farther (from the sensor) set point and flashes red for the nearer set point to indicate acceptance of both alarm set points.

Multicolored LED status

When setting analog span limits: While LIMITS push-button is held in the first time at first limit:

- Amber - sensing solid, stable object
- Red - sensing unstable object or no object

After release of LIMITS push-button first time, at first limit:

- Flashing Amber - first limit accepted, waiting for second limit
- Flashing Red - first limit invalid; retry

While LIMITS push-button is held in the first time at second limit:

- Amber - sensing solid, stable object
 - Red - sensing unstable object or no object
- After release of LIMITS push-button first time, at second limit:

- Green or Red - second limit (near) accepted
- Green or Amber - second limit (far) accepted
- Flashing Red - second limit not accepted; begin again with first limit setup

When setting alarm setpoints:

Press and release the ALARMS push-button with the object at the desired far-alarm set point.

- Flashing Amber - Far-alarm set point is set.

Press and release the ALARMS push-button with the object at the desired near-alarm set point.

- Flashing Red - Near-alarm set point is set.

NOTE: When either one of the alarm set points is reset at a different point, the other alarm set point must also be reset.

During operation:

- Flashing Red - object sensed at or closer than the near-alarm set point.
- Red - object sensed between the near- alarm set point and the near limit.
- Green - object sensed at or between the near and far limits.
- Amber - object sensed between the far limit and the far-alarm set point.
- Flashing Amber - object sensed at or farther than the far-alarm set point.
- Off - no object sensed within the full sensing range.

Red LED status during setup and operation:

During setup of sensor, the red LED has no significance. During operation, the brightness of the red LED indicates the relative value of the analog output. The red LED is off when the output is minimum and brightest red when the output is maximum.

Electrical Wiring

These analog sensors are available as either three-wire or five-wire devices, depending on the configuration selected. The model with remote limits setup is either a four- or six-wire device, available only as a cable style model. NOTE: In order to avoid unwanted electrical interference, the sensor wires must be run in conduit separate from any AC power or control wires.

Model Reference Guide - SM506 Series

Use the guide below to ensure the correct model number is specified for the application. Please note that not all sensor model combinations are available.

EXAMPLE MODEL:

SUPERPROX® Product Series

Power/Connection Type

- 0...15 to 24 VDC / cable style
- 5...15 to 24 VDC / connector style

Sensing Function

- 6...Proximity - analog

Design Level

- A...Applies to all models

Sensing Range

- 1...51 to 1 m (2 to 39")
- 4...120 mm to 2 m (4.7 to 79")

Functionality

- 00...4 to 20 mA
- 18...4 to 20 mA, ignore objects outside of span limits
- 81...0 to 10 VDC
- 88...0 to 10 VDC, ignore objects outside of span limits, Hold output on Loss-of-echo
- 98...Disable/enable loss of echo with high/low alarms, ignore objects outside of span limits
- 99...Disable/enable loss of echo with high/low alarms

Special Features

- ...No letter indicates standard sensor with no special features
- LE...No change in output on loss of echo
- FS...Fluorosilicone transducer face
- AA...Remote limit setup (Available on cable models only.)
- AB...RS232, 4-digit/2-decimal place output (Available on cable models only.)
- AD...Limits push-button disabled
- AE...RS232, 5-digit/3-decimal place output (Available on cable models only.)
- AF...No LEDs

Housing Types

- ...No letter indicates standard ULTEM® plastic housing
- N...NORYL® Dairy 3A gray plastic housing

Remote Type

- ...No letter indicates standard housing
- R...Right-angle sensing head with armor cable
- S...Straight sensing head with armor cable

Remote Cable Length

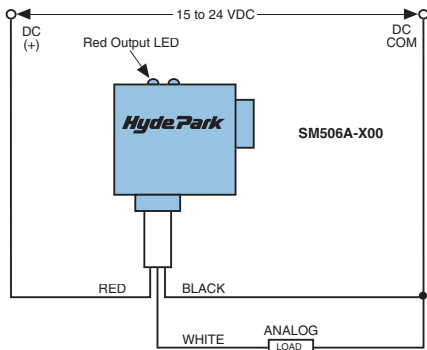
- ...No number indicates standard housing
 - 1 ...254 mm (10")
 - 2 ...508 mm (20")
 - 3 ...762 mm (30")
 - 4 ...1016 mm (40")
 - 5P...1270 mm (50")
 - 6P...1524 mm (60")
- Armored (standard) or PVC cable (specify P after number)
- Available in PVC cable only

SM5 06 A - 4 81 - FS N S 4

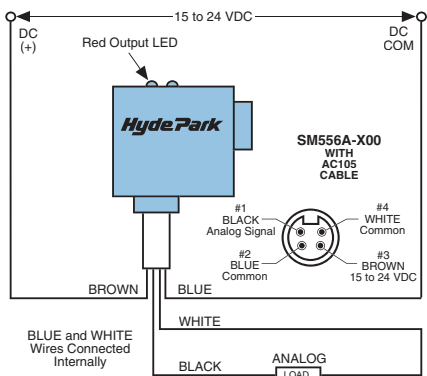
*ULTEM® and NORYL® are registered trademarks of The General Electric Company.

| 3-Wire Sensor Wire Colors | Cable Style | Connector Style (4-Pin) |
|---|-------------|-------------------------|
| Power (+) | | |
| 15 to 24 VDC | RED | BROWN |
| Analog Output (4 to 20 mA or 0 to 10 VDC) | WHITE | BLACK |
| Power Common | BLACK | BLUE |
| Signal Common | | WHITE |
| Remote Push-button (Option) | BLUE | Not Available |

3-Wire Connections

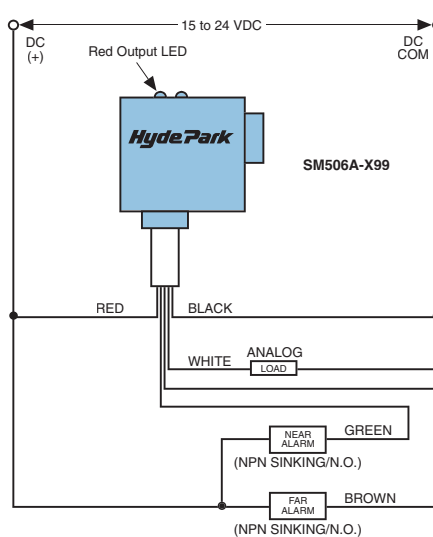


4-Wire Connections

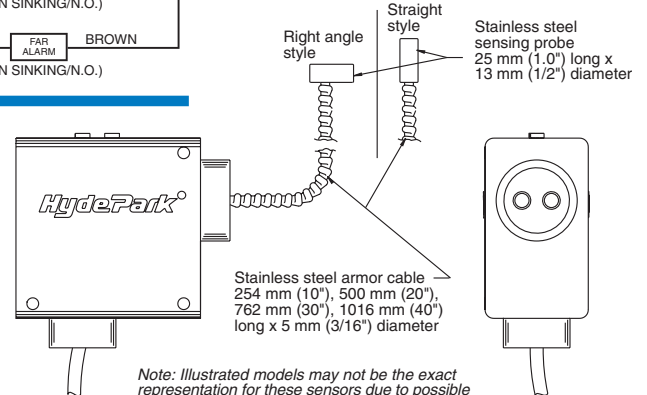


| 5-Wire Sensor Wire Colors | Cable Style | Connector Style (5-Pin) |
|---|-------------|-------------------------|
| Power (+) | | |
| 15 to 24 VDC | RED | BROWN |
| Analog Output (4 to 20 mA or 0 to 10 VDC) | WHITE | BLACK |
| Common | BLACK | BLUE |
| Near-Alarm Limit | GREEN | WHITE |
| Far-Alarm Limit | BROWN | ORANGE |
| Remote Push-button (Option) | BLUE | Not Available |

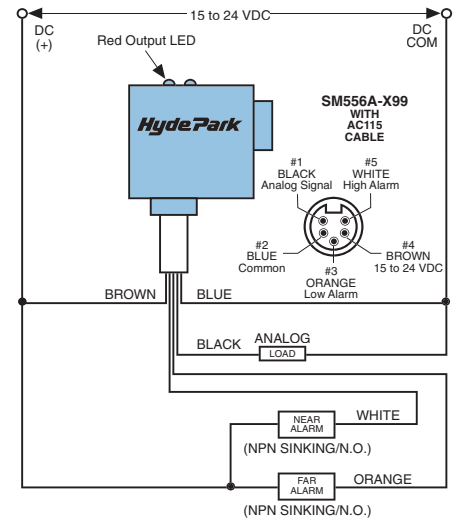
5-Wire Connections



Remote Sensing Models



Note: Illustrated models may not be the exact representation for these sensors due to possible design modifications.

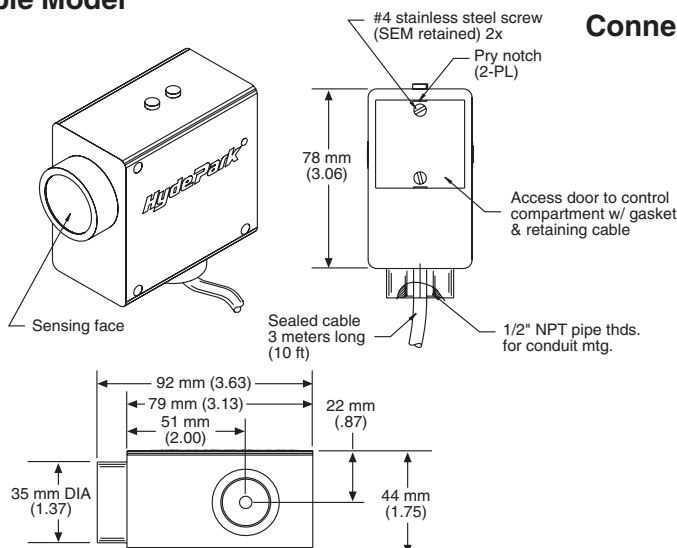


*WARNING:

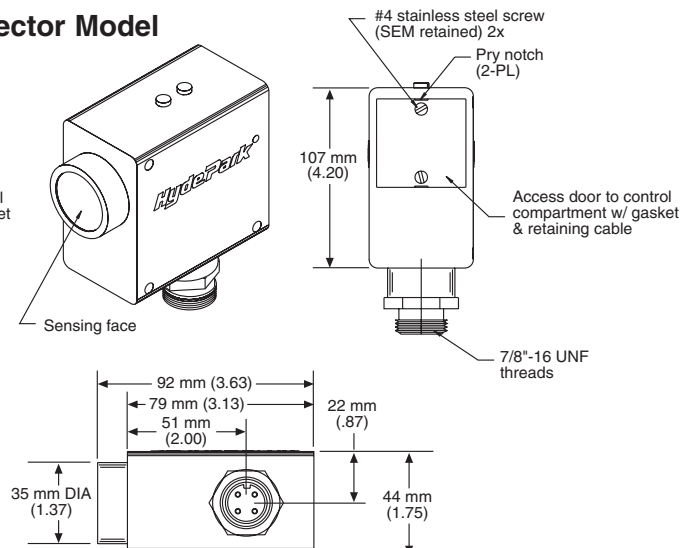
The analog output "COMMON" is internally connected to earth ground. An isolated signal transmitter is required when using the controller with ungrounded analog input process control devices.

Dimensions

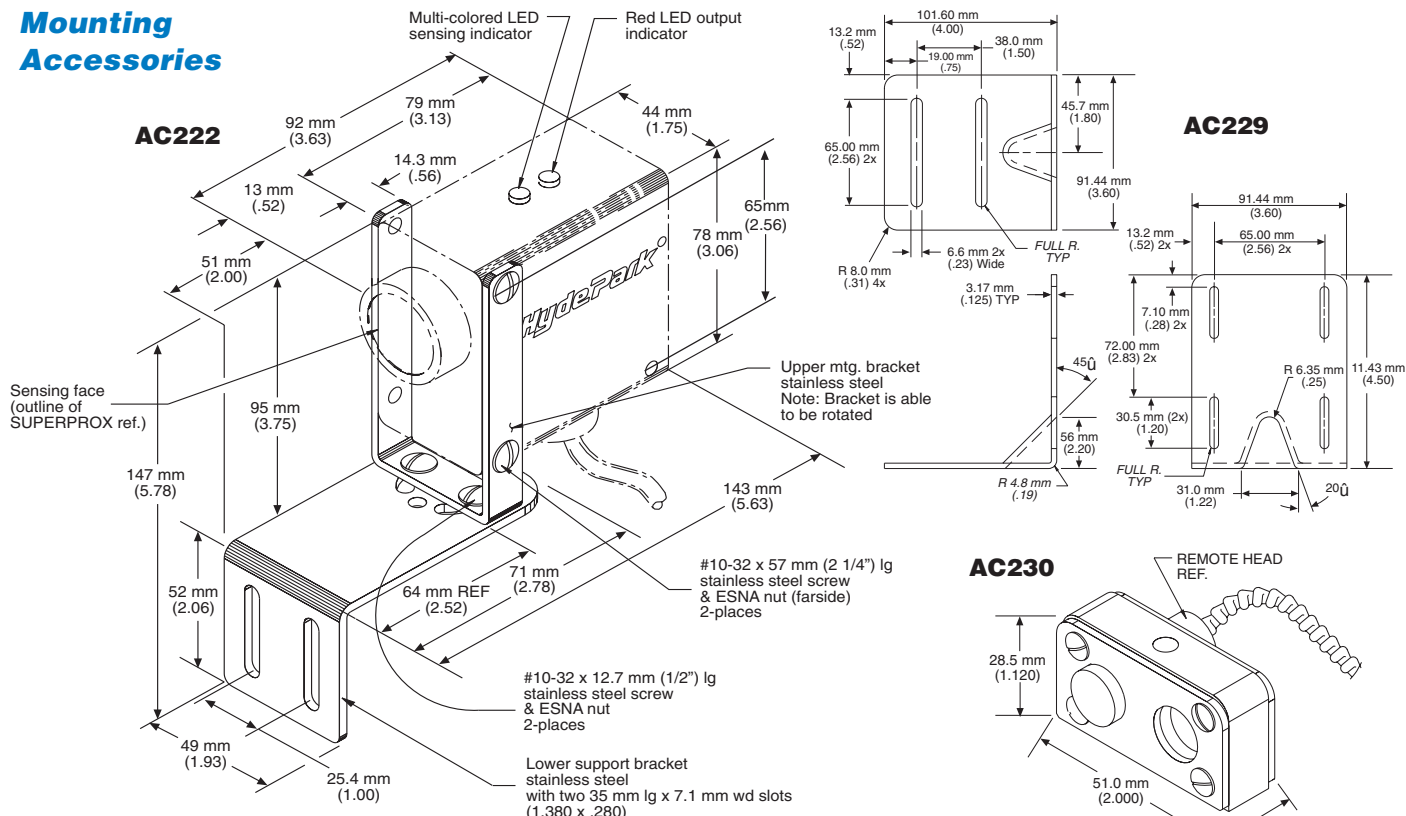
Cable Model



Connector Model



Mounting Accessories



General Specifications

Sensing

Ranges: 51 to 1000 mm (2" to 39")
 120 mm to 2 m (4.7" to 79") - DC model only
 Sonic Frequency: 200 kHz
 Maximum Plane-reflector Angle:
 ± 10° on 305 mm x 305 mm (12" x 12") flat
 target at a distance of 305 mm (12")
 Sonic Cone Angle: 26° @ 762 mm (30")

Analog Output Electrical Specifications

(Test conditions: 24 VDC, T_A = 20°C, large flat
 target, still air)

| | current output ¹ | voltage output ² | units |
|---------------------------|--------------------------------|--------------------------------|--------------|
| Output Range | 4-20 mA | 0-10 V | |
| Load Resistance | 10 to 1K | 200 to ∞ | Ohms |
| Resolution ³ | 0.004 mA | 2.5 mVDC | |
| Accuracy ⁴ | ± 0.50 | ± 0.40 | % of span |
| Linearity | ± 0.10 | ± 0.10 | % of span |
| Temperature dependence | ± 0.006 | ± 0.004 | % of span/°C |

¹ tested with 250 Ohm load

² tested with 470 Ohm load; a low value is recom-
 mended to minimize noise pickup

³ resolution = span/4000; maximum: 0.08 mm
 (0.003")

⁴ best accuracy may be limited to + 1/32 +0.794
 mm (0.03125") due to wave-skip phenomena

Power Requirements

15 to 24 VDC ± 10% @ 80 mA excluding
 output load

Outputs

Switch selectable for either 4 to 20 mA or 0 to 10
 VDC in alarm models only. Other models
 dedicated to either 4 to 20 mA or 0 to 10 VDC.

Non-isolated

Sinking Outputs:

Maximum on-state voltage drop @ 60mA: 0.25 v
 Maximum load current: 100 mA
 Maximum applied voltage: 35 VDC

Response Time

0.07 to 2.5 seconds
 (See analog output response curves.)

Indicators

Multicolored (Amber, Red, Green) LED:
 Indicates Limits-setup and operational modes
 Red LED: Visual indicator for analog output;
 intensity varies as output magnitude changes.

Connections

Cable Style Models:

DC: 24 AWG, PVC jacket, 3-, 4-, or 5-conductor,
 3 meters (10') long, standard

Connector Style Models:

DC: 24 AWG, 4- or 5-pin "mini" style

Protection

Power Supply: Current-limited over-voltage, ESD,
 reverse polarity

Outputs: Current-limited over-voltage, ESD, over-
 current

Environmental

Operating Temperature Range:

0° to 50°C (32° to 122°F)

Storage Temperature Range:

-40° to 100°C (-40° to 212°F)

Operating Humidity: 100%

Protection Ratings:

NEMA 4X (indoor use only), IP67

Chemical Resistance:

Resists most acids and bases, including most
 food products. Fluorosilicone transducer face is
 available to provide resistance to aromatic and
 petroleum-based hydrocarbons.

Agency Approvals

CE Mark: CE conformity is declared to:

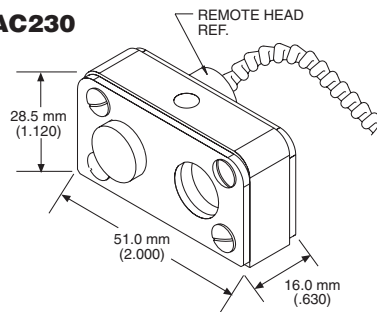
EN61010-1: 1990 including amend. No.1:1992

EN55011 Group 1 Class A, EN50082-1.

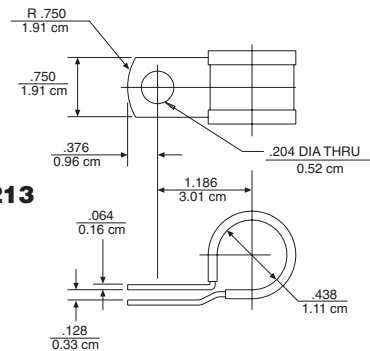
Declaration of conformity available upon request.

AC Models SM520/570 carry the ETL safety label.

AC230



AC213



Construction

Dimensions (overall)

92 mm (3.625") L x 44 mm (1.75") W x
 91 mm (3.50") H cable style

Housing:

Shock and vibration resistant

Case: ULTEM® (FDA approved)

Optional: NORYL® (USDA-Dairy 3A
 Sanitary Standards compliant)

Transducer Face: Silicone rubber (FDA approved)

Optional: Fluorosilicone rubber

Sensor Cable: PVC jacket

LED: Polycarbonate

* ULTEM® and NORYL® are registered trademarks of The
 General Electric Co.

Accessories

Model AC105, Straight, 7/8-16 mini, 4-conductor, mating connector cable, 4 m (12'), for connector-style sensors

Model AC105-50, Straight, 7/8-16 mini, 4-conductor, mating connector cable, 15 m (50'), for connector-style sensors

Model AC115, Straight, 7/8-16 mini, 5-conductor, mating connector cable, 4 m (12'), for Model SM556A-X9X series analog, connector-style prox sensors with alarms

Model AC115-50, Straight, 7/8-16 mini, 5-conductor, mating connector cable, 15 m (50'), for Model SM556A-X9X series analog, connector-style prox sensors with alarms

Model AC213, Stainless and Teflon, remote sensing probe mounting bracket

Model AC222, Standard, stainless mounting bracket assembly, slotted for vertical adjustment

Model AC229, Stainless, plate-style, right-angle, mounting bracket, with base slotted for forward/reverse adjustment and side slotted for sensor adjustment

Model AC230, Three-piece, stainless, mounting bracket assembly with O-ring mount for sensor models with remote heads.

See page 7-1 for accessory photos.

| Model No. | Power/Vision | | Connection Style | Sensing Range | | | Transducer Style | | Analog Output | Transducer Materials | | | | Loss of Echo ^P | High/Low Alarms | Ignore object outside of span limits | Notes | Special Features |
|-----------------|--------------|-------|------------------|---------------|-----------|----------|------------------|-----------------|---------------|----------------------|---------|------------|-----------|---------------------------|-----------------|--------------------------------------|-------|---|
| | 15/24 VDC | Cable | | 2m (79") | 1 m (39") | Standard | Rt. Angle | Remote Straight | | 0-10 VDC | 4-20 mA | Selectable | Silicone* | | | | | |
| SM506A-100• | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | | | | | |
| SM506A-100 AB | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | | | | | RS232 output |
| SM506A-100 FS | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | | | | | |
| SM506A-100 LE• | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | ■ | | | | |
| SM506A-100 LER4 | ■ | ■ | | ■ | ■ | | ■(40") | | ■ | | | ■ | | ■ | | | | |
| SM506A-100 N | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | ■ | | | | |
| SM506A-100 R2 | ■ | ■ | | ■ | ■ | | ■(20") | | ■ | | | ■ | | | | | | |
| SM506A-100 S4 | ■ | ■ | | ■ | ■ | | ■(40") | | ■ | | | ■ | | | | | | |
| SM506A-118 | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | ■ | | ■ | | |
| SM506A-181 | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | | | | | |
| SM506A-181 AA | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | | | | | Remote limit setup |
| SM506A-181 LE | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | ■ | | | | |
| SM506A-181 LER2 | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | ■ | | | | |
| SM506A-181 S1 | ■ | ■ | | ■ | ■ | | ■(10") | | ■ | | | ■ | | | | | | |
| SM506A-181 S4 | ■ | ■ | | ■ | ■ | | ■(40") | | ■ | | | ■ | | | | | | |
| SM506A-188 | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | ■ | | ■ | | |
| SM506A-188 AA | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | ■ | | ■ | | Remote limit setup |
| SM506A-198• | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | ■ | | ■ | | Disable/enable loss of echo |
| SM506A-198 AA | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | ■ | | ■ | | Disable/enable loss of echo, Remote limit setup |
| SM506A-198 R2 | ■ | ■ | | ■ | ■ | | ■(20") | | ■ | | | ■ | | ■ | | ■ | | Disable/enable loss of echo |
| SM506A-198 R3 | ■ | ■ | | ■ | ■ | | ■(30") | | ■ | | | ■ | | ■ | | ■ | | Disable/enable loss of echo |
| SM506A-199• | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | ■ | | ■ | | Disable/enable loss of echo |
| SM506A-199 AA | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | ■ | | ■ | | Disable/enable loss of echo, Remote limit setup |
| SM506A-199 FS | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | ■ | | | | Disable/enable loss of echo |
| SM506A-199 R2 | ■ | ■ | | ■ | ■ | | ■(20") | | ■ | | | ■ | | ■ | | | | Disable/enable loss of echo |
| SM506A-199 R3 | ■ | ■ | | ■ | ■ | | ■(30") | | ■ | | | ■ | | ■ | | | | Disable/enable loss of echo |
| SM506A-400 | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | | | | | |
| SM506A-400 LE | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | ■ | | | | |
| SM506A-418 | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | ■ | | ■ | | |
| SM506A-481 | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | ■ | | | | |
| SM506A-481 LE | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | ■ | | | | |
| SM506A-488 | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | ■ | | ■ | | |
| SM506A-498• | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | ■ | | ■ | | Disable/enable loss of echo |
| SM506A-498 AA | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | ■ | | ■ | | Disable/enable loss of echo, Remote limit setup |
| SM506A-499• | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | ■ | | | | Disable/enable loss of echo |
| SM556A-100• | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | | | | | |
| SM556A-100 FS | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | | | | | |
| SM556A-100 LE• | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | ■ | | | | |
| SM556A-100 LEN | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | ■ | | | | |
| SM556A-100 LER4 | ■ | ■ | | ■ | ■ | | ■(40") | | ■ | | | ■ | | ■ | | | | |
| SM556A-100 R4 | ■ | ■ | | ■ | ■ | | ■(40") | | ■ | | | ■ | | | | | | |
| SM556A-100 S4 | ■ | ■ | | ■ | ■ | | ■(40") | | ■ | | | ■ | | | | | | |
| SM556A-118 | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | ■ | | ■ | | |
| SM556A-181 | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | | | | | |
| SM556A-181 FS | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | | | | | |
| SM556A-181 LE | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | ■ | | | | |
| SM556A-181 R2 | ■ | ■ | | ■ | ■ | | ■(20") | | ■ | | | ■ | | | | | | |
| SM556A-188 | ■ | ■ | | ■ | ■ | | | | ■ | | | ■ | | ■ | | ■ | | |

Selection Chart

SM506 Series Analog Output

| Model No. | Power/Version | | Connection | | Sensing Range | | Transducer Style | | Analog Output | | Transducer Materials | | | Housing | | | Special Features | | | |
|---------------|---------------|-------|------------|-------|---------------|-----------|------------------|-----------|---------------|----------|----------------------|------------|-----------|-----------------|---------|---------|------------------|---------------------------|-----------------|--------------------------------------|
| | 15/24 VDC | Cable | Connector | Style | 2m (79") | 1 m (39") | Standard | Rt. Angle | Remote | 0-10 VDC | 4-20 mA | Selectable | Silicone* | Fluorosilicone* | ULTEM®* | NORYL®* | | Loss of Echo ^P | High/Low Alarms | Ignore object outside of span limits |
| SM556A-188 AD | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | ■ | | ■ | ■ | ■ | | | ■ | ■ | | Limits push-button disabled |
| SM556A-198• | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | ■ | ■ | ■ | ■ | | | | ■ | ■ | Disable/enable loss of echo |
| SM556A-199• | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | ■ | ■ | ■ | ■ | | | | ■ | ■ | Disable/enable loss of echo |
| SM556A-199 FS | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | ■ | ■ | ■ | ■ | | | | ■ | ■ | Disable/enable loss of echo |
| SM556A-199 N | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | ■ | ■ | ■ | ■ | | ■ | | ■ | ■ | Disable/enable loss of echo |
| SM556A-199 R2 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■(20") | | | ■ | ■ | ■ | ■ | | | | ■ | ■ | Disable/enable loss of echo |
| SM556A-199 R4 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■(40") | | | ■ | ■ | ■ | ■ | | | | ■ | ■ | Disable/enable loss of echo |
| SM556A-400• | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | ■ | | ■ | ■ | ■ | | | | | | |
| SM556A-400 LE | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | ■ | | ■ | ■ | ■ | | | ■ | | | |
| SM556A-400 N | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | ■ | | ■ | ■ | ■ | | ■ | | | | |
| SM556A-418 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | ■ | | ■ | ■ | ■ | | | ■ | ■ | | |
| SM556A-481 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | ■ | | ■ | ■ | ■ | | | | | | |
| SM556A-481 LE | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | ■ | | ■ | ■ | ■ | | | ■ | | | |
| SM556A-488 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | ■ | | ■ | ■ | ■ | | | ■ | ■ | | |
| SM556A-498• | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | ■ | ■ | ■ | ■ | | | | ■ | ■ | Disable/enable loss of echo |
| SM556A-499• | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | ■ | ■ | ■ | ■ | | | | ■ | ■ | Disable/enable loss of echo |
| SM556A-499 N | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | ■ | ■ | ■ | ■ | | ■ | | | | Disable/enable loss of echo |