



## MICROSONIC® Thru-beam Sensors



### **Extremely reliable thru-beam sensing in a smaller package and ranges up to 1016 mm (40")**

They are miniature in size, powerful in sensing capability, and the product of the same reliable, world-leading ultrasonic technology built into the original MICROSONIC® SM100 series. The SM800 series of thru-beam sensors is available in 18 mm FDA rated ULTEM® plastic and stainless steel barrel housings and in ULTEM® plastic “flat-profile” housings designed for small-object applications where installation space is limited. “Across-the-line” sensing versatility includes standard sensing ranges of 102 mm (4”) and 305 mm (12”) and extended sensing ranges of 610 mm (24”) and 1016 mm (40”).

The SM800 thru-beam sensors are ideal for detecting small objects of any color or material that are transparent or opaque, regular or irregular shaped, as well as those with either poor reflective or fully sound-absorbing surfaces. Response times of either 4 ms or 0.4 ms allow the detection of objects moving at speeds of over 2000 units per minute. “Smart” sensor enhancements include clean switching delay and

output polarity variations.

With protection ratings of NEMA 4X (indoor use only) and IP67, the sensors are resistant to dust, 100% humidity, most acids and bases, and high-pressure washdowns that often leave water buildup on the sensing face. Unlike photoelectrics, these miniature thru-beam sensors are virtually unaffected by splashing food, caustic cleaning solutions, and changing light conditions or colors. Shielding and filtering makes the fully encapsulated sensors highly immune to radiated or conducted energy. They are also tolerant of high noise levels, vibration, and a storage temperature range of -10° to 100° C.

Equipped with sinking type (NPN) and sourcing type (PNP) outputs, the 12 to 24 VDC circuitry and output signal make these sensors directly compatible with many programmable logic controllers, computers, and other logic control systems. Available in either cable or “micro” connector style, the receiver units of the CE certified sensors have an amber LED that illuminates when sonic energy is received, regardless of output state. The micro connector style receivers are also equipped with a green LED to

- **Ideal for small object detection**
- **Sensing ranges up to 1016 mm (40")**
- **Available in barrel or flat-profile types**
- **Ideal for limited space installations**
- **CE certified**

indicate that power is being supplied to the sensor.

Rugged, robust, and easy to set up, these sensors need no maintenance and require no sensitivity adjustments to compensate for inconsistent product materials.

Applications include the detection of such objects as clear 2-liter P.E.T. bottles, metal parts as small as 6.4 mm (0.25”) diameter, powdery products, shaped cans, photographic films, fabrics, and corrugated boxes up to 991 mm (39”) wide. They are the solution for lead-edge detection and for a wide variety of applications that require repeatable and reliable, cost-effective sensing performance day in and day out.

## Operation

The SM800 series sensors are continuous-wave devices that consist of a high-frequency transmitter and a receiver positioned opposite each other, illustrated at right, at a distance of up to 1016 mm (40"). During operation, the transmitter sends a continuous ultrasonic beam which is picked up by the receiver. When an object of any material or shape passes between the transmitter and receiver and breaks the beam, object presence is detected and the output of the receiver switches. Or, when a hole allows the beam to pass through to the receiver, the output of the receiver switches.

With all circuitry compactly sealed in the plastic and stainless steel transmitter and receiver probes, the MICROSONIC® sensors boast a narrow, constant, ultra-high frequency sonic beam for high sensing resolution. The sensors are available in two different operating frequencies: 500 kHz for a standard sensing range of up to 305 mm (12") and 200 kHz for an extended sensing range of up to 1016 mm (40").

The thru-beam sensing mode is set up by mounting the sensors on the same axis opposite each other as shown in Figure 1.

Positioning of the transmitter and receiver for operation is extremely important for the reliable detection of objects, particularly small ones. As the figure also shows, the width of the transmitted sound beam initially expands at a rate of 10 degrees (5 degrees each side of the common axis) for the 500 kHz models (and 20 degrees for the 200 kHz models) as the distance between the transmitter and receiver increases. This means that if the distance between the transmitter and receiver is too great and the object is too small, it is possible for the beam to "wrap around" the object enough to not cause the receiver output to switch, as shown in Figure 2.

Therefore, reliable detection of 13 mm (0.5") inch wide or smaller objects is achieved when the objects are allowed to pass near the face of either the transmitter or receiver. An alternative approach is to position the transmitter and receiver on parallel axes, as shown in Figure 3, so as to reduce the amount of beam reaching the receiver.

Where sensing distances are adversely affected as the environment becomes more contaminated, the MICROSONIC® sensors remain constant under adverse conditions where other sensor types fail.

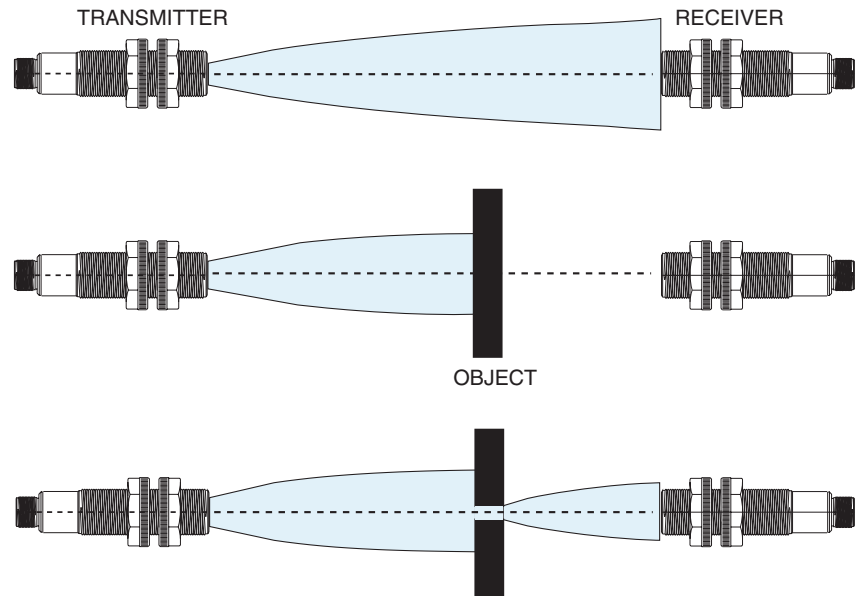
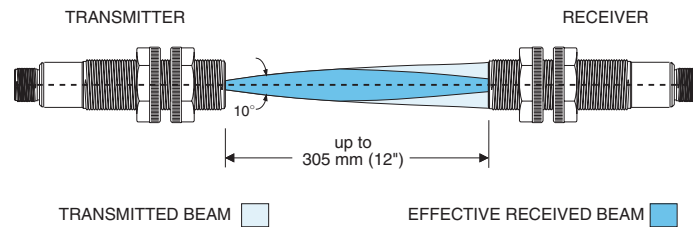


Figure 1

### 500 kHz Standard Sensing Range Models



### 200 kHz Extended Sensing Range Models

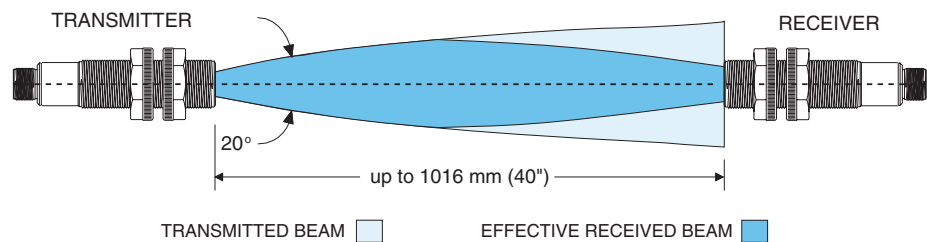


Figure 1, Thru-beam Patterns and Ranges

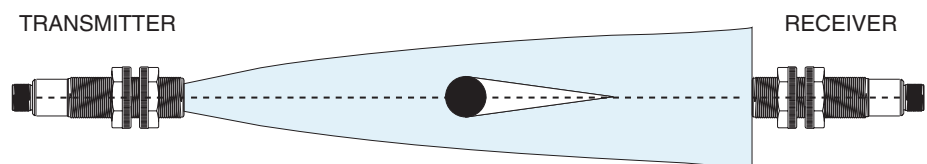


Figure 2

## Mounting

The Model SM800 series sensors should be mounted in brackets that allow them to be adjusted for proper alignment on the same axis. Hyde Park offers the Model AC226 stainless and polyamide conveyor-rail clamp/bracket set, Model AC227 large, right-angle, stainless mounting bracket, Model AC228 small, right-angle, stainless, mounting bracket, Model AC231 straight, stainless, mounting bracket and Model AC232 s-shaped, stainless, mounting bracket which are illustrated with dimensions, on Pages 5-37 and 5-38.

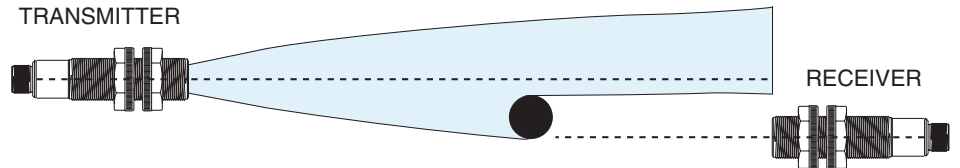


Figure 3

## Model Reference Guide - SM800 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:** SM801-A-40-01S

<b>MICROSONIC® Product Series</b>	_____	SM801
<b>Power/Connection Type</b>	_____	-A-
0...12 to 24 VDC / cable style		
5...12 to 24 VDC / "micro" connector style		
<b>Sensing Type</b>	_____	40
0...Transmitter		
1...Receiver		
<b>Design Level</b>	_____	-01-
A...Applies to all models		
<b>Sensing Range</b>	_____	S
04...Low-power: 102 mm (4")*		
12...Standard: 305 mm (12")		
24...Extended-range: 610 mm (24")		
40...Extended-range: 1016 mm (40")		
<b>Sensing Variations - Transmitter</b>	_____	
00...Standard		
02...Variable power		
<b>Sensing Variations - Receiver***</b>	_____	
00...N.O. Output, 4 ms on & off		
01...N.O. Fast Response, 0.4 ms on & off		
10...N.C. Output, 4 ms on & off		
11...N.C. Output, Fast Response, 0.4 ms on & off		
<b>Housing Types</b>	_____	

...No letter indicates standard ULTEM® - 18 mm dia. housing

FP...ULTEM® flat-profile housing

S...SS303 stainless steel - 18 mm dia. housing

\* Used to detect narrow objects

\*\* ULTEM® is a registered trademark of the General Electric Co.

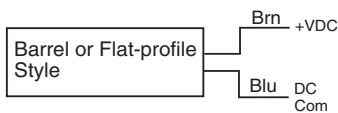
\*\*\* N.O. - "Normally Open," outputs off when beam broken

N.C. - "Normally Closed," outputs on when beam broken

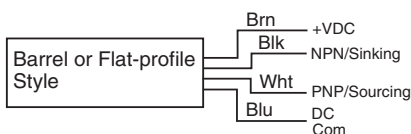
## Electrical Wiring

The sensor wires must be run in conduit free of any AC power or control wires.

### Transmitters

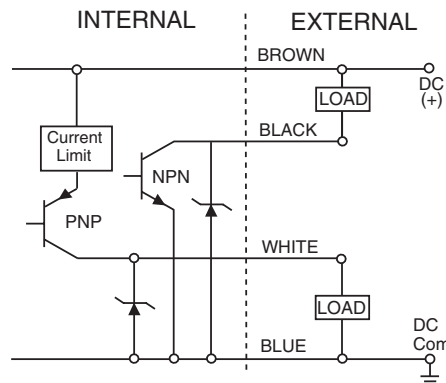


### Receivers

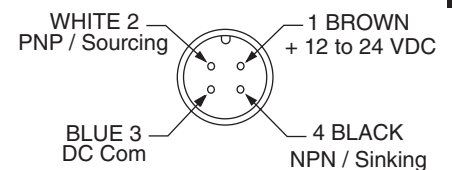


## Receiver (SM801, SM851) Outputs

### NPN Sinking and PNP Sourcing



### Receiver Connector Pins



## Dimensions

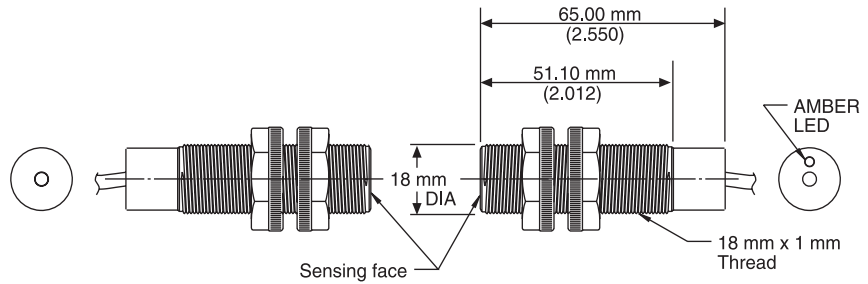
### Barrel Cable Style

(ULTEM® plastic and stainless steel)

#### Transmitter Models:

SM800A-04-XX, 800A-12-XX,  
800A-24-XX, 800A-40XX

SM800A-04-XXS, 800A-12-XXS,  
800A-24-XXS, 800A-40XXS



#### Receiver Models:

SM801A-04-XX, 801A-12-XX, 801A-24-XX, 801A-40-XX SM  
801A-04-XXS, 801A-12-XXS, 801A-24-XXS, 801A-40-XXS

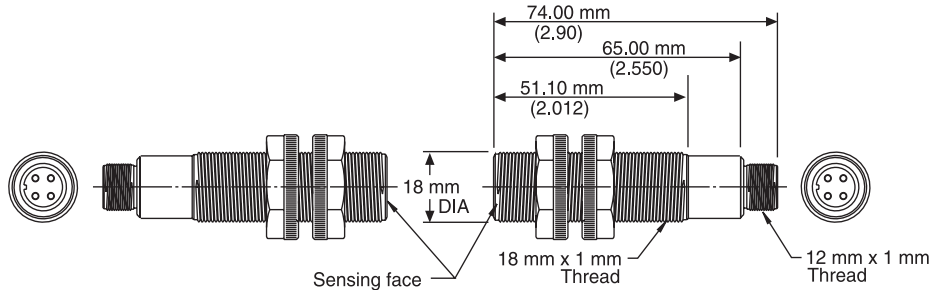
### Barrel Connector Style

(ULTEM® plastic and stainless steel)

#### Transmitter Models:

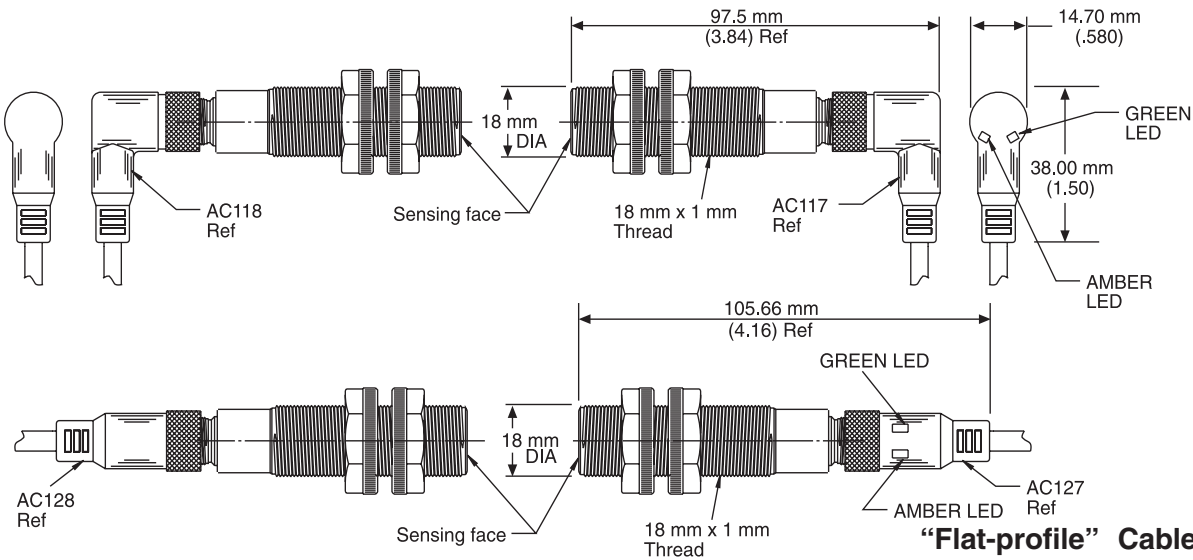
SM850A-04-XX, 850A-12-XX,  
850A-24-XX, 850A-40-XX

SM850A-04-XXS, 850A-12-XXS,  
850A-24-XXS, 850A-40-XXS



#### Receiver Models:

SM851A-04-XX, 851A-12-XX, 851A-24-XX, 851A-40-XX SM851A-04-  
XXS, 851A-12-XXS, 851A-24-XXS, 851A-40-XXS



### "Flat-profile" Cable Style

(ULTEM® plastic)

#### Transmitter Models:

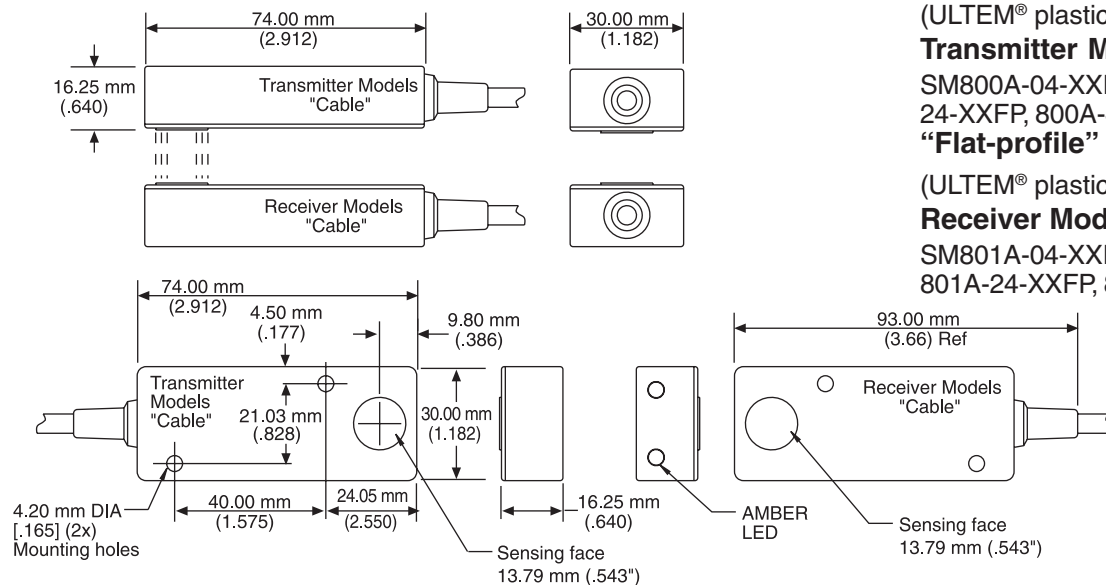
SM800A-04-XXFP, 800A-12-XXFP, 800A-  
24-XXFP, 800A-40XXFP

### "Flat-profile" Cable Style

(ULTEM® plastic)

#### Receiver Models:

SM801A-04-XXFP, 801A-12-XXFP,  
801A-24-XXFP, 801A-40-XXFP

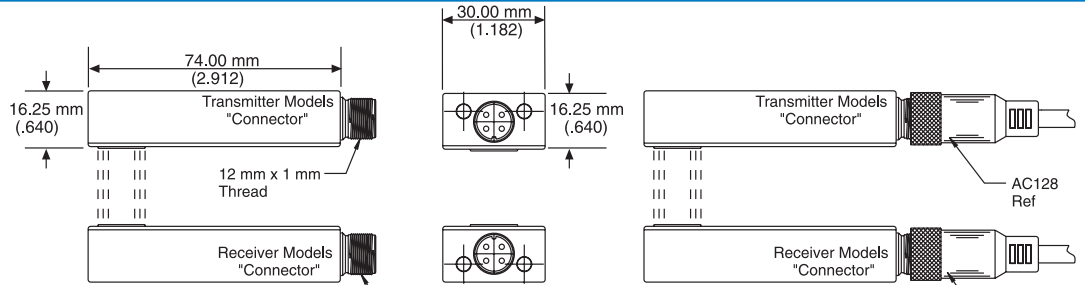


## "Flat-profile"

### Connector Style

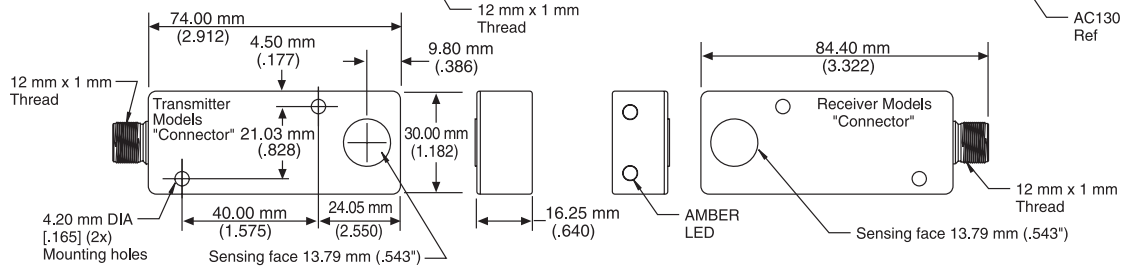
(ULTEM® plastic)

SM850A-04-XXFP,  
SM850A-12-XXFP,  
SM850A-24-XXFP,  
SM850A-40-XXFP



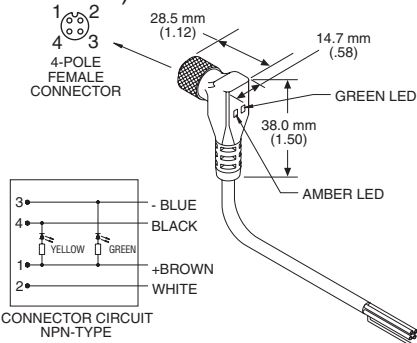
(ULTEM® plastic)

SM851A-04-XXFP,  
SM851A-12-XXFP,  
SM851A-24-XXFP,  
SM851A-40-XXFP

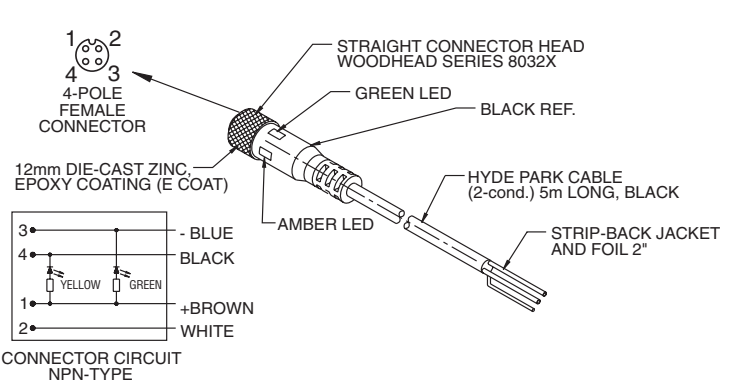


## Mounting Accessories

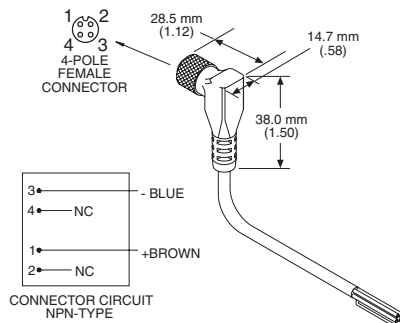
**AC117** Right-angle, M12 micro, 4-conductor, connector/cable assembly with built-in LEDs (for SM851 series Receivers)



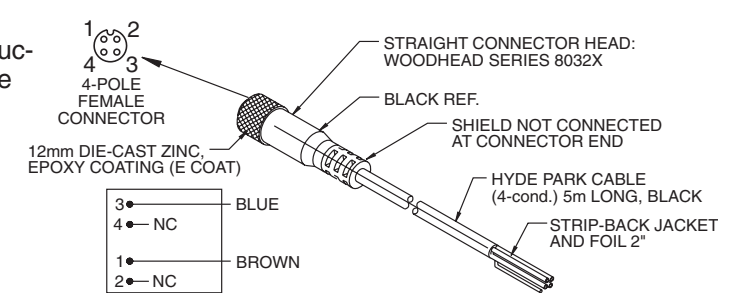
Straight, M12 micro, 4-conductor, connector/cable assembly, 5 m (16'), with built-in LEDs (for SM851 series connector-style Receivers)



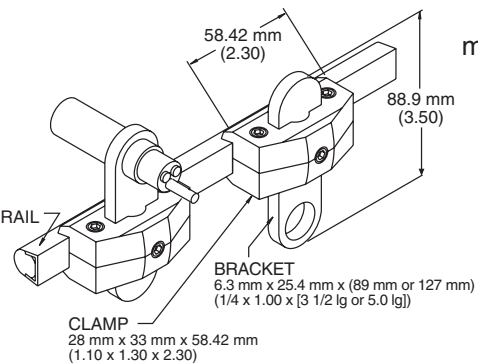
Right-angle, M12 micro, 2-conductor, connector/cable assembly (for SM850 series Transmitters)



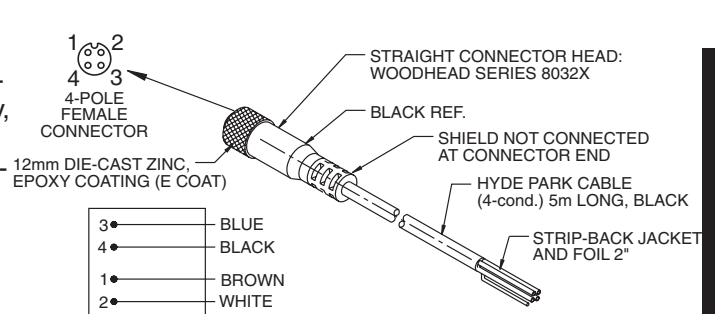
Straight, M12 micro, 2-conductor, connector/cable assembly, 5 m (16') (for SM850 Series, flat-profile, connector-style Transmitters)



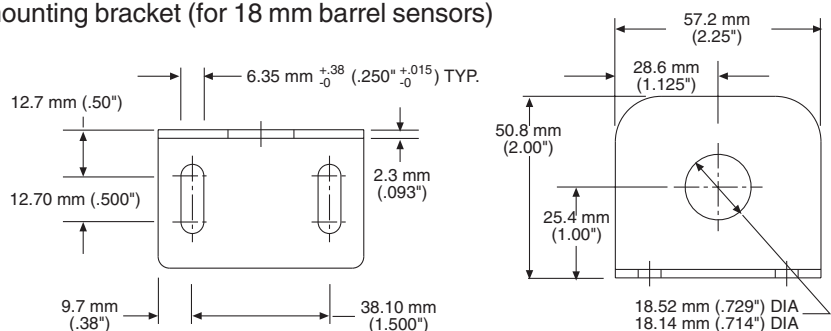
**AC226** Stainless and polyamide conveyor-rail clamp/bracket set (for 18 mm barrel sensors)



Straight, M12 micro, 4-conductor, connector/cable assembly, 5 m (16') (for SM851 Series, flat-profile, connector-style Receivers)

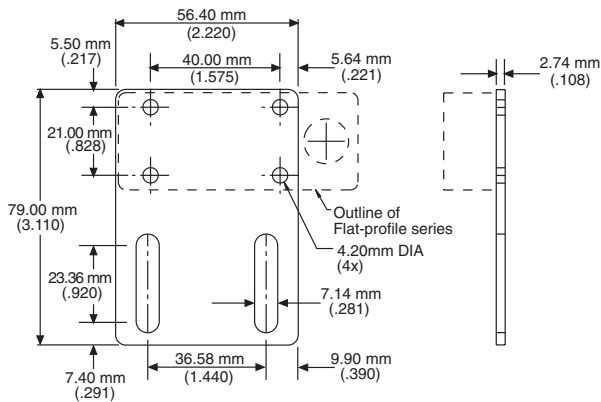


Large, right-angle, stainless, mounting bracket (for 18 mm barrel sensors)

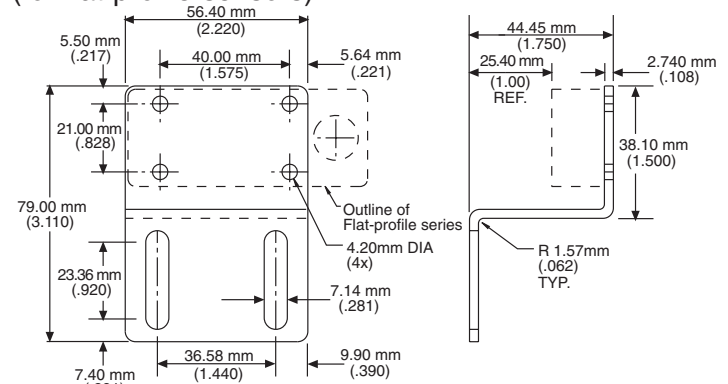


## Mounting Accessories (cont.)

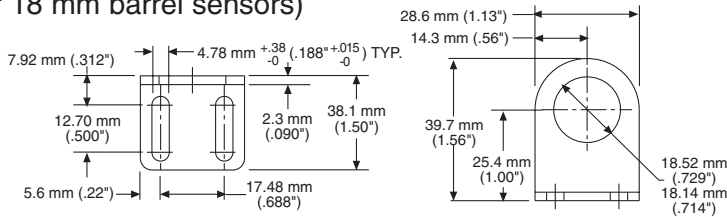
### Straight, stainless mounting bracket (for flat-profile sensors)



### S-shaped, stainless mounting bracket (for flat-profile sensors)



### Small, right-angle, stainless, mounting bracket (for 18 mm barrel sensors)



## General Specifications

### Sensing

#### Ranges:

102 mm (4"), 305 mm (12"),  
610 mm (24"), 1016 mm (40")

#### Sonic Frequency:

500 kHz: 102 mm (4") & 305 mm (12") ranges  
200 kHz: 610 mm (24") & 1016 mm (40") ranges

#### Minimum-size Detection:

12.7 mm (0.50") at 102 mm (4") range  
25 mm (1.0") at 305 mm (12") range  
38 mm (1.5") at 610 mm (24") range  
114 mm (4.5") at 1016 mm (40") range

Repeatability: 0.79 mm (0.031") typical

Supply Voltage: 12 to 24 VDC  $\pm$  10%,  
regulated supply

Current Consumption: 90 mA per set

Power Consumption: 2.2 W max. @ 24 VDC per set

NPN Sinking: 0 to 30 V

Maximum on state voltage 0.2 V @ 100 mA

PNP Sourcing: 100 mA @ 24 VDC, max.

Receiver amber LED "ON" when beam is received

"On" 0.4 ms or 4 ms

(Model dependent - see selection chart)

"Off" 0.4 ms or 4 ms

(Model dependent - see selection chart)

Transmitter: None

Receiver:

Amber LED: Illuminated when sonic energy is  
received, regardless of output state.

Green LED: Indicates that power is being  
supplied ("micro" connector style only).

Transmitter cable style model SM800 series:

3 m (10'), 24 AWG, foil shield, lead-free,  
PVC jacket 2-conductor

Transmitter connector style model SM850 series:

Model AC118 M12 micro, watertight quick-  
disconnect, right-angle, 5 m (16'), 12 mm,  
24 AWG, 2-conductor, foil shield

Receiver cable style model SM801 series:

3 m (10'), 24 AWG, foil shield, lead-free,  
PVC jacket 4-conductor

Receiver connector style model SM851 series:

Model AC117 M12 micro, watertight quick-  
disconnect, right-angle, 5 m (16'), 12 mm,  
24 AWG, 4-conductor, foil shield

(Note: Connector-style sensor does not have  
LEDs. The cable assembly provides this  
feature.)

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

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

Operating Temperature Range:

0° to 60°C

Storage Temperature Range: -40° to 100°C

(-40° to 212°F)

Operating Humidity: 100%

Protection Ratings:

Cable Style: NEMA 4X (indoor use only), IP67

Watertight "micro" quick-disconnect:

NEMA 4X (indoor use only), IP67

Chemical Resistance: Resists most acids and  
bases, including most food products.

Mark: conformity is declared to:

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

and amend. No.2:1995, EN50082-1, EN55011

Group 1 Class B.

Declaration of Conformity available upon request

Housing: Shock and vibration resistant

Case (barrel and flat-profile types): ULTEM®\*

blue plastic (FDA Approved)

(SS303 stainless steel available for barrel types)

Transducer Face: Silicone rubber - gray

Sensor Cables: Lead-free PVC jacket,

black (Model AC117)

LED: Polycarbonate

\* ULTEM® is a registered trademark of The General Electric  
Co.

## Accessories

, Right-angle, M12 micro, 4-conductor,  
connector/cable assembly, 5 m (16'), with built-in  
LEDs, for SM851 series receivers

, Right-angle, M12 micro, 2-conductor,  
connector/cable assembly, 5 m (16'), for SM850  
series transmitters

, Straight, M12 micro, 4-conductor,  
connector/cable assembly, 5 m (16'), with built-in  
LEDs for SM851 series connector-style receivers

Stainless and polyamide conveyor-rail  
clamp/bracket set

, Large, right-angle, stainless, mounting  
bracket

, Small, right-angle, stainless, mounting  
bracket

, Straight, M12 micro, 4-pin, 2  
conductor, connector/cable assembly, 5 m (16'),  
for SM850 series, flat-profile, connector-style  
Transmitters

, Straight, M12 micro, 4-conductor,  
connector/cable assembly, 5 m (16'), for flat-  
profile, for SM851 series, flat-profile, connector-  
style receivers

, Straight, stainless, mounting bracket  
S-shaped, stainless, mounting bracket

See page 7-1 for accessory photos.

# Selection Chart

## SM800 Series MICROSONIC® Thru-Beam

Transmitter	Receiver	Model No.	Power Version	Connection Style	Sensing Range	Transducer		Housing		Transmitter		Sensing Variations		Receiver	N.C. Output	N.C. Output Fast Response
						Silicone*	18mm ULTELY®	18mm Stainless	Flat-profile	Standard	Variable Power	Standard	Fast Response .4ms on & off			
SM800A-04-00•	SM801A-04-00•		12-24VDC	10' cable	4"	■	■		■	■						
SM800A-04-00FP•	SM801A-04-00FP•		12-24VDC	10' cable	4"	■			■	■						
SM800A-04-00S•	SM801A-04-00S•		12-24VDC	10' cable	4"	■		■								
SM800A-04-00	SM801A-04-01		12-24VDC	10' cable	4"	■	■									
SM800A-04-00FP	SM801A-04-01FP		12-24VDC	10' cable	4"	■			■	■						
SM800A-04-00S	SM801A-04-01S		12-24VDC	10' cable	4"	■		■								
SM800A-04-00	SM801A-04-10		12-24VDC	10' cable	4"	■	■							■		
SM800A-04-00FP	SM801A-04-10FP		12-24VDC	10' cable	4"	■			■	■				■		
SM800A-04-00S	SM801A-04-10S		12-24VDC	10' cable	4"	■		■						■		
SM800A-04-00	SM801A-04-11		12-24VDC	10' cable	4"	■	■									■
SM800A-04-00FP	SM801A-04-11FP		12-24VDC	10' cable	4"	■			■	■						■
SM800A-04-00S	SM801A-04-11S		12-24VDC	10' cable	4"	■		■								■
SM800A-04-02	SM801A-04-00		12-24VDC	10' cable	4"	■	■			■	■					
SM800A-04-02FP	SM801A-04-00FP		12-24VDC	10' cable	4"	■			■	■						
SM800A-04-02S	SM801A-04-00S		12-24VDC	10' cable	4"	■		■			■					
SM800A-04-02	SM801A-04-01		12-24VDC	10' cable	4"	■	■						■			
SM800A-04-02FP	SM801A-04-01FP		12-24VDC	10' cable	4"	■			■	■			■			
SM800A-04-02S	SM801A-04-01S		12-24VDC	10' cable	4"	■		■					■			
SM800A-04-02	SM801A-04-10		12-24VDC	10' cable	4"	■	■							■		
SM800A-04-02FP	SM801A-04-10FP		12-24VDC	10' cable	4"	■			■	■				■		
SM800A-04-02S	SM801A-04-10S		12-24VDC	10' cable	4"	■		■						■		
SM800A-04-02	SM801A-04-11		12-24VDC	10' cable	4"	■	■									■
SM800A-04-02FP	SM801A-04-11FP		12-24VDC	10' cable	4"	■			■	■						■
SM800A-04-02S	SM801A-04-11S		12-24VDC	10' cable	4"	■		■								■
SM800A-12-00	SM801A-12-00		12-24VDC	10' cable	12"	■	■			■	■					
SM800A-12-00FP	SM801A-12-00FP		12-24VDC	10' cable	12"	■			■	■						
SM800A-12-00S	SM801A-12-00S		12-24VDC	10' cable	12"	■		■			■					
SM800A-12-00•	SM801A-12-01•		12-24VDC	10' cable	12"	■	■						■			
SM800A-12-00FP•	SM801A-12-01FP•		12-24VDC	10' cable	12"	■			■	■			■			
SM800A-12-00S•	SM801A-12-01S•		12-24VDC	10' cable	12"	■		■					■			
SM800A-12-00	SM801A-12-10		12-24VDC	10' cable	12"	■	■							■		
SM800A-12-00FP	SM801A-12-10FP		12-24VDC	10' cable	12"	■			■	■				■		
SM800A-12-00S	SM801A-12-10S		12-24VDC	10' cable	12"	■		■						■		
SM800A-12-00	SM801A-12-11		12-24VDC	10' cable	12"	■	■									■
SM800A-12-00FP	SM801A-12-11FP		12-24VDC	10' cable	12"	■			■	■						■
SM800A-12-00S	SM801A-12-11S		12-24VDC	10' cable	12"	■		■								■
SM800A-12-02	SM801A-12-00		12-24VDC	10' cable	12"	■	■			■	■					
SM800A-12-02FP	SM801A-12-00FP		12-24VDC	10' cable	12"	■			■	■						
SM800A-12-02S	SM801A-12-00S		12-24VDC	10' cable	12"	■		■			■					
SM800A-12-02	SM801A-12-01		12-24VDC	10' cable	12"	■	■						■			
SM800A-12-02FP	SM801A-12-01FP		12-24VDC	10' cable	12"	■			■	■			■			
SM800A-12-02S	SM801A-12-01S		12-24VDC	10' cable	12"	■		■					■			
SM800A-12-02	SM801A-12-10		12-24VDC	10' cable	12"	■	■			■	■			■		
SM800A-12-02FP	SM801A-12-10FP		12-24VDC	10' cable	12"	■			■	■				■		
SM800A-12-02S	SM801A-12-10S		12-24VDC	10' cable	12"	■		■						■		
SM800A-12-02	SM801A-12-11		12-24VDC	10' cable	12"	■	■									■
SM800A-12-02FP	SM801A-12-11FP		12-24VDC	10' cable	12"	■			■	■						■
SM800A-12-02S	SM801A-12-11S		12-24VDC	10' cable	12"	■		■								■
SM800A-24-00•	SM801A-24-00•		12-24VDC	10' cable	24"	■	■			■	■					
SM800A-24-00FP•	SM801A-24-00FP•		12-24VDC	10' cable	24"	■			■	■						
SM800A-24-00S•	SM801A-24-00S•		12-24VDC	10' cable	24"	■		■								
SM800A-24-00	SM801A-24-01		12-24VDC	10' cable	24"	■	■						■			
SM800A-24-00FP	SM801A-24-01FP		12-24VDC	10' cable	24"	■			■	■			■			
SM800A-24-00S	SM801A-24-01S		12-24VDC	10' cable	24"	■		■					■			
SM800A-24-00	SM801A-24-10		12-24VDC	10' cable	24"	■	■							■		
SM800A-24-00FP	SM801A-24-10FP		12-24VDC	10' cable	24"	■			■	■				■		
SM800A-24-00S	SM801A-24-10S		12-24VDC	10' cable	24"	■		■						■		
SM800A-24-00	SM801A-24-11		12-24VDC	10' cable	24"	■	■									■
SM800A-24-00FP	SM801A-24-11FP		12-24VDC	10' cable	24"	■			■	■						■
SM800A-24-00S	SM801A-24-11S		12-24VDC	10' cable	24"	■		■								■
SM800A-24-02	SM801A-24-00		12-24VDC	10' cable	24"	■	■			■	■					
SM800A-24-02FP	SM801A-24-00FP		12-24VDC	10' cable	24"	■			■	■						
SM800A-24-02S	SM801A-24-00S		12-24VDC	10' cable	24"	■		■								

MICROSONIC® THRU-BEAM  
SENSORS

# Selection Chart

## SM800 Series (cont.)

### MICROSONIC® Thru-Beam

Transmitter	Receiver	Model No.	Power Version	Connection Style	Sensing Range	Transducer Materials				Housing			Transmitter			Sensing Variations			Receiver		
						Silicone*	18mm ULTEM®	18mm Stainless	Flat-profile	Standard	Variable Power	Standard	Fast Response 4ms on & off	N.C. Output	N.C. Output	Fast Response	N.C. Output	N.C. Output	Fast Response		
SM800A-24-02	SM801A-24-01		12-24VDC	10' cable	24"	■		■				■						■			
SM800A-24-02FP	SM801A-24-01FP		12-24VDC	10' cable	24"	■					■										
SM800A-24-02S	SM801A-24-01S		12-24VDC	10' cable	24"	■			■												
SM800A-24-02	SM801A-24-10		12-24VDC	10' cable	24"	■		■												■	
SM800A-24-02FP	SM801A-24-10FP		12-24VDC	10' cable	24"	■					■									■	
SM800A-24-02S	SM801A-24-10S		12-24VDC	10' cable	24"	■			■											■	
SM800A-24-02	SM801A-24-11		12-24VDC	10' cable	24"	■		■												■	
SM800A-24-02FP	SM801A-24-11FP		12-24VDC	10' cable	24"	■					■									■	
SM800A-24-02S	SM801A-24-11S		12-24VDC	10' cable	24"	■			■											■	
SM800A-40-00•	SM801A-40-00•		12-24VDC	10' cable	40"	■					■										
SM800A-40-00FP•	SM801A-40-00FP•		12-24VDC	10' cable	40"	■					■										
SM800A-40-00S•	SM801A-40-00S•		12-24VDC	10' cable	40"	■			■												
SM800A-40-00	SM801A-40-01		12-24VDC	10' cable	40"	■		■												■	
SM800A-40-00FP	SM801A-40-01FP		12-24VDC	10' cable	40"	■					■									■	
SM800A-40-00S	SM801A-40-01S		12-24VDC	10' cable	40"	■			■											■	
SM800A-40-00	SM801A-40-10		12-24VDC	10' cable	40"	■		■												■	
SM800A-40-00FP	SM801A-40-10FP		12-24VDC	10' cable	40"	■					■									■	
SM800A-40-00S	SM801A-40-10S		12-24VDC	10' cable	40"	■			■											■	
SM800A-40-00	SM801A-40-11		12-24VDC	10' cable	40"	■		■												■	
SM800A-40-00FP	SM801A-40-11FP		12-24VDC	10' cable	40"	■					■									■	
SM800A-40-00S	SM801A-40-11S		12-24VDC	10' cable	40"	■			■											■	
SM800A-40-02	SM801A-40-00		12-24VDC	10' cable	40"	■		■					■								
SM800A-40-02FP	SM801A-40-00FP		12-24VDC	10' cable	40"	■					■			■							
SM800A-40-02S	SM801A-40-00S		12-24VDC	10' cable	40"	■			■					■							
SM800A-40-02	SM801A-40-01		12-24VDC	10' cable	40"	■		■												■	
SM800A-40-02FP	SM801A-40-01FP		12-24VDC	10' cable	40"	■					■									■	
SM800A-40-02S	SM801A-40-01S		12-24VDC	10' cable	40"	■			■											■	
SM800A-40-02	SM801A-40-10		12-24VDC	10' cable	40"	■		■												■	
SM800A-40-02FP	SM801A-40-10FP		12-24VDC	10' cable	40"	■					■									■	
SM800A-40-02S	SM801A-40-10S		12-24VDC	10' cable	40"	■			■											■	
SM800A-40-02	SM801A-40-11		12-24VDC	10' cable	40"	■		■												■	
SM800A-40-02FP	SM801A-40-11FP		12-24VDC	10' cable	40"	■					■									■	
SM800A-40-02S	SM801A-40-11S		12-24VDC	10' cable	40"	■			■											■	
SM850A-04-00•	SM851A-04-00•		12-24VDC	Micro connector	4"	■		■													
SM850A-04-00FP•	SM851A-04-00FP•		12-24VDC	Micro connector	4"	■					■										
SM850A-04-00S•	SM851A-04-00S•		12-24VDC	Micro connector	4"	■			■												
SM850A-04-00	SM851A-04-01		12-24VDC	Micro connector	4"	■		■												■	
SM850A-04-00FP	SM851A-04-01FP		12-24VDC	Micro connector	4"	■					■									■	
SM850A-04-00S	SM851A-04-01S		12-24VDC	Micro connector	4"	■			■											■	
SM850A-04-00	SM851A-04-10		12-24VDC	Micro connector	4"	■		■												■	
SM850A-04-00FP	SM851A-04-10FP		12-24VDC	Micro connector	4"	■					■									■	
SM850A-04-00S	SM851A-04-10S		12-24VDC	Micro connector	4"	■			■											■	
SM850A-04-00	SM851A-04-11		12-24VDC	Micro connector	4"	■		■												■	
SM850A-04-00FP	SM851A-04-11FP		12-24VDC	Micro connector	4"	■					■									■	
SM850A-04-00S	SM851A-04-11S		12-24VDC	Micro connector	4"	■			■											■	
SM850A-04-02	SM851A-04-00		12-24VDC	Micro connector	4"	■		■					■								
SM850A-04-02FP	SM851A-04-00FP		12-24VDC	Micro connector	4"	■					■			■							
SM850A-04-02S	SM851A-04-00S		12-24VDC	Micro connector	4"	■			■					■							
SM850A-04-02	SM851A-04-01		12-24VDC	Micro connector	4"	■		■												■	
SM850A-04-02FP	SM851A-04-01FP		12-24VDC	Micro connector	4"	■					■									■	
SM850A-04-02S	SM851A-04-01S		12-24VDC	Micro connector	4"	■			■											■	
SM850A-04-02	SM851A-04-10		12-24VDC	Micro connector	4"	■		■												■	
SM850A-04-02FP	SM851A-04-10FP		12-24VDC	Micro connector	4"	■					■									■	
SM850A-04-02S	SM851A-04-10S		12-24VDC	Micro connector	4"	■			■											■	
SM850A-04-02	SM851A-04-11		12-24VDC	Micro connector	4"	■		■												■	
SM850A-04-02FP	SM851A-04-11FP		12-24VDC	Micro connector	4"	■					■									■	
SM850A-04-02S	SM851A-04-11S		12-24VDC	Micro connector	4"	■			■											■	
SM850A-12-00•	SM851A-12-00•		12-24VDC	Micro connector	12"	■		■													
SM850A-12-00FP•	SM851A-12-00FP•		12-24VDC	Micro connector	12"	■					■										
SM850A-12-00S•	SM851A-12-00S•		12-24VDC	Micro connector	12"	■			■												
SM850A-12-00	SM851A-12-01		12-24VDC	Micro connector	12"	■		■												■	
SM850A-12-00FP	SM851A-12-01FP		12-24VDC	Micro connector	12"	■					■									■	



# Selection Chart

## SM800 Series (cont.) MICROSONIC® Thru-Beam

Transmitter	Receiver	Model No.	Power Version	Connector Style	Sensing Range	Transducer		Materials				Transmitter		Sensing Variations			
						Silicone*	18mm ULTEM®	18mm Stainless	Flat-profile	Standard	Variable Power	Standard	Fast Response .4ms on & off	Receiver N.C. Output	Receiver N.C. Output Fast Response		
SM850A-12-00S	SM851A-12-01S		12-24VDC	Micro connector	12"	■	■	■									
SM850A-12-00	SM851A-12-10		12-24VDC	Micro connector	12"	■	■										
SM850A-12-00FP	SM851A-12-10FP		12-24VDC	Micro connector	12"	■											
SM850A-12-00S	SM851A-12-10S		12-24VDC	Micro connector	12"	■											
SM850A-12-00	SM851A-12-11		12-24VDC	Micro connector	12"	■	■										
SM850A-12-00FP	SM851A-12-11FP		12-24VDC	Micro connector	12"	■											
SM850A-12-00S	SM851A-12-11S		12-24VDC	Micro connector	12"	■											
SM850A-12-02	SM851A-12-00		12-24VDC	Micro connector	12"	■	■					■	■				
SM850A-12-02FP	SM851A-12-00FP		12-24VDC	Micro connector	12"	■						■	■				
SM850A-12-02S	SM851A-12-00S		12-24VDC	Micro connector	12"	■						■	■				
SM850A-12-02	SM851A-12-01		12-24VDC	Micro connector	12"	■	■										
SM850A-12-02FP	SM851A-12-01FP		12-24VDC	Micro connector	12"	■											
SM850A-12-02S	SM851A-12-01S		12-24VDC	Micro connector	12"	■											
SM850A-12-02	SM851A-12-10		12-24VDC	Micro connector	12"	■	■										
SM850A-12-02FP	SM851A-12-10FP		12-24VDC	Micro connector	12"	■											
SM850A-12-02S	SM851A-12-10S		12-24VDC	Micro connector	12"	■											
SM850A-12-02	SM851A-12-11		12-24VDC	Micro connector	12"	■	■										
SM850A-12-02FP	SM851A-12-11FP		12-24VDC	Micro connector	12"	■											
SM850A-12-02S	SM851A-12-11S		12-24VDC	Micro connector	12"	■											
SM850A-24-00•	SM851A-24-00•		12-24VDC	Micro connector	24"	■	■										
SM850A-24-00FP•	SM851A-24-00FP•		12-24VDC	Micro connector	24"	■											
SM850A-24-00S•	SM851A-24-00S•		12-24VDC	Micro connector	24"	■											
SM850A-24-00	SM851A-24-01		12-24VDC	Micro connector	24"	■	■										
SM850A-24-00FP	SM851A-24-01FP		12-24VDC	Micro connector	24"	■											
SM850A-24-00S	SM851A-24-01S		12-24VDC	Micro connector	24"	■											
SM850A-24-00	SM851A-24-10		12-24VDC	Micro connector	24"	■	■										
SM850A-24-00FP	SM851A-24-10FP		12-24VDC	Micro connector	24"	■											
SM850A-24-00S	SM851A-24-10S		12-24VDC	Micro connector	24"	■											
SM850A-24-00	SM851A-24-11		12-24VDC	Micro connector	24"	■	■										
SM850A-24-00FP	SM851A-24-11FP		12-24VDC	Micro connector	24"	■											
SM850A-24-00S	SM851A-24-11S		12-24VDC	Micro connector	24"	■											
SM850A-24-02	SM851A-24-00		12-24VDC	Micro connector	24"	■	■										
SM850A-24-02FP	SM851A-24-00FP		12-24VDC	Micro connector	24"	■											
SM850A-24-02S	SM851A-24-00S		12-24VDC	Micro connector	24"	■											
SM850A-24-02	SM851A-24-01		12-24VDC	Micro connector	24"	■	■										
SM850A-24-02FP	SM851A-24-01FP		12-24VDC	Micro connector	24"	■											
SM850A-24-02S	SM851A-24-01S		12-24VDC	Micro connector	24"	■											
SM850A-24-02	SM851A-24-10		12-24VDC	Micro connector	24"	■	■										
SM850A-24-02FP	SM851A-24-10FP		12-24VDC	Micro connector	24"	■											
SM850A-24-02S	SM851A-24-10S		12-24VDC	Micro connector	24"	■											
SM850A-24-02	SM851A-24-11		12-24VDC	Micro connector	24"	■	■										
SM850A-24-02FP	SM851A-24-11FP		12-24VDC	Micro connector	24"	■											
SM850A-24-02S	SM851A-24-11S		12-24VDC	Micro connector	24"	■											
SM850A-40-00•	SM851A-40-00•		12-24VDC	Micro connector	40"	■	■										
SM850A-40-00FP•	SM851A-40-00FP•		12-24VDC	Micro connector	40"	■											
SM850A-40-00S•	SM851A-40-00S•		12-24VDC	Micro connector	40"	■											
SM850A-40-00	SM851A-40-01		12-24VDC	Micro connector	40"	■	■										
SM850A-40-00FP	SM851A-40-01FP		12-24VDC	Micro connector	40"	■											
SM850A-40-00S	SM851A-40-01S		12-24VDC	Micro connector	40"	■											
SM850A-40-00	SM851A-40-10		12-24VDC	Micro connector	40"	■	■										
SM850A-40-00FP	SM851A-40-10FP		12-24VDC	Micro connector	40"	■											
SM850A-40-00S	SM851A-40-10S		12-24VDC	Micro connector	40"	■											
SM850A-40-00	SM851A-40-11		12-24VDC	Micro connector	40"	■	■										
SM850A-40-00FP	SM851A-40-11FP		12-24VDC	Micro connector	40"	■											
SM850A-40-00S	SM851A-40-11S		12-24VDC	Micro connector	40"	■											
SM850A-40-02	SM851A-40-00		12-24VDC	Micro connector	40"	■	■										
SM850A-40-02FP	SM851A-40-00FP		12-24VDC	Micro connector	40"	■											
SM850A-40-02S	SM851A-40-00S		12-24VDC	Micro connector	40"	■											
SM850A-40-02	SM851A-40-01		12-24VDC	Micro connector	40"	■	■										
SM850A-40-02FP	SM851A-40-01FP		12-24VDC	Micro connector	40"	■											
SM850A-40-02S	SM851A-40-01S		12-24VDC	Micro connector	40"	■											
SM850A-40-02	SM851A-40-10		12-24VDC	Micro connector	40"	■	■										
SM850A-40-02FP	SM851A-40-10FP		12-24VDC	Micro connector	40"	■											

MICROSONIC® THRU-BEAM  
SENSORS

# Selection Chart

## SM800 Series (cont.) MICROSONIC® Thru-Beam

Transmitter	Model No. Receiver	Power Version	Connecton Style	Sensing Range	Transducer Materials				Housing			Transmitter			Sensing Variations			Receiver	
					Silicone*	18mm ULTEM*	18mm Stainless	Flat-profile	Standard	Variable Power	Standard	Fast Response	Fast Response	Fast Response	Fast Response	Fast Response	N.C. Output	N.C. Output	Fast Response
SM850A-40-02S	SM851A-40-10S	12-24VDC	Micro connector	40"	■		■				■							■	
SM850A-40-02	SM851A-40-11	12-24VDC	Micro connector	40"	■	■					■								■
SM850A-40-02FP	SM851A-40-11FP	12-24VDC	Micro connector	40"	■				■		■								■
SM850A-40-02S	SM851A-40-11S	12-24VDC	Micro connector	40"	■		■				■								■

• = Most commonly stocked sensors  
 \* = See definition in Sensing Terms.  
 All possible sensor configurations are not listed here.