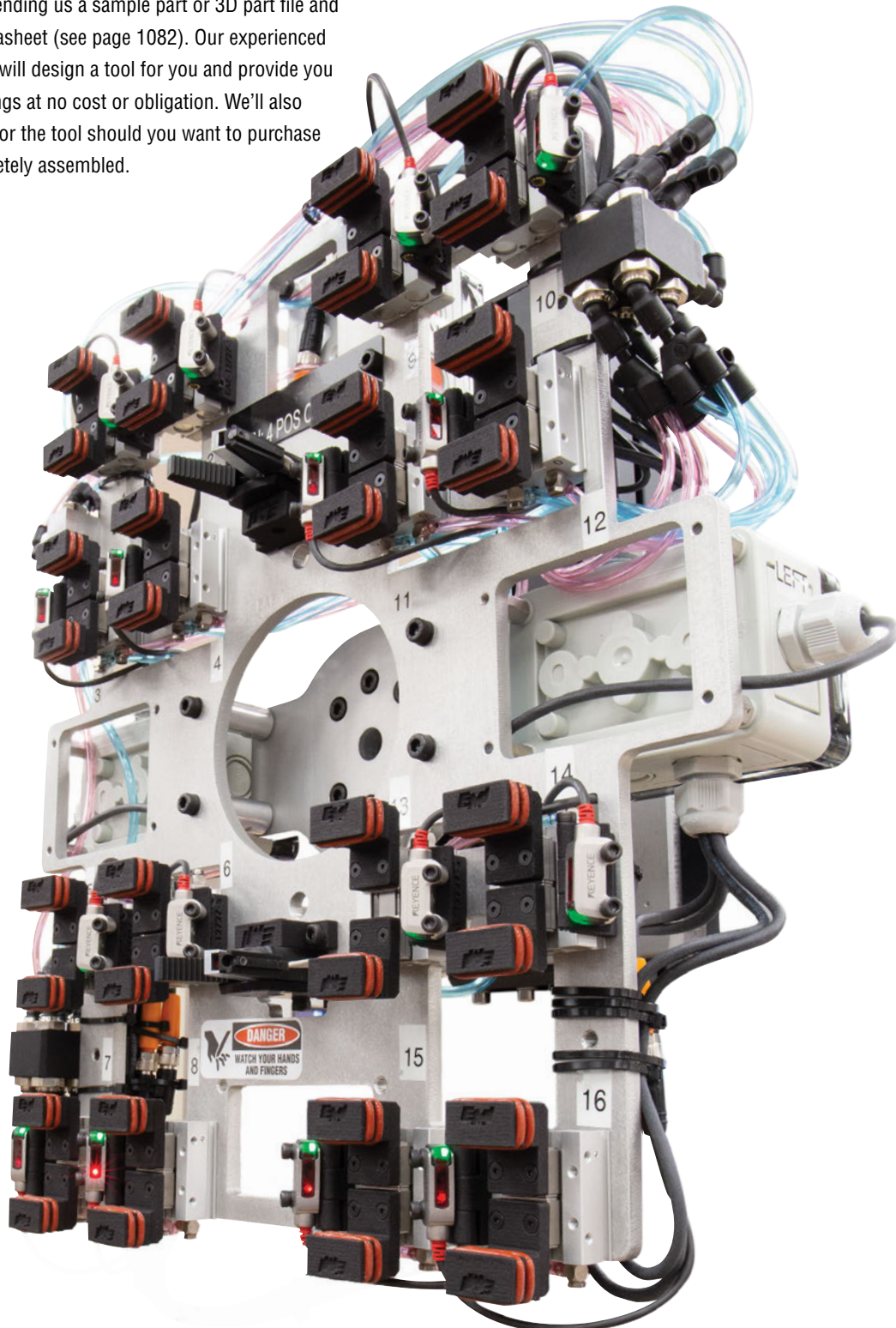


## EOAT Design and Build Service

From the simplest to the most complex EOAT, EMI specializes in designing and building customized End-of-Arm-Tooling— **Priced Competitively.**

Get started by sending us a sample part or 3D part file and a completed datasheet (see page 1082). Our experienced EOAT engineers will design a tool for you and provide you 3D CAD renderings at no cost or obligation. We'll also provide pricing for the tool should you want to purchase the EOAT completely assembled.



**Sensor Overview**

**Photo Eyes**

p.976



**Mini Photo Eyes**

p.974



**Fiber Optic Sensors**

p.966



**Teachable Sensors**

p.978



**Sensor Boxes**

p.988



**Modular Sensor Box**

p.994



**Inductive Sensors**

p.1004



**Capacitive Sensors**

p.983



**Simple Contact Sensors**

p.987



**Vacuum Monitor Switches**

p.986



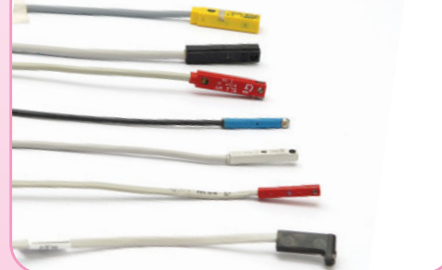
**Cables & Connectors**

p.984



**Sensor Reference Charts**

p.1002



**Sensor Switch Basics**

A sensor switch is an electrical switch that is actuated when it passes through a magnetic field. The magnetic field is created by a magnet typically on the piston of a gripper, cylinder, or slide. In some cases, like many sprue grippers, either a magnet or some other target is embedded in the jaw or in a trigger connected to the jaw that will be picked up by a properly positioned sensor.

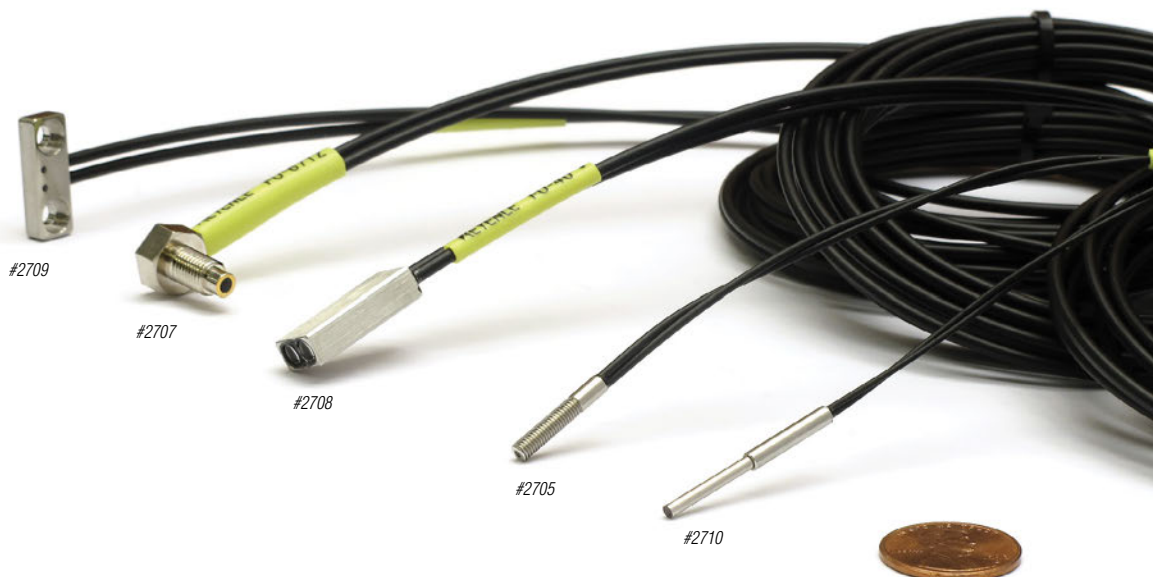
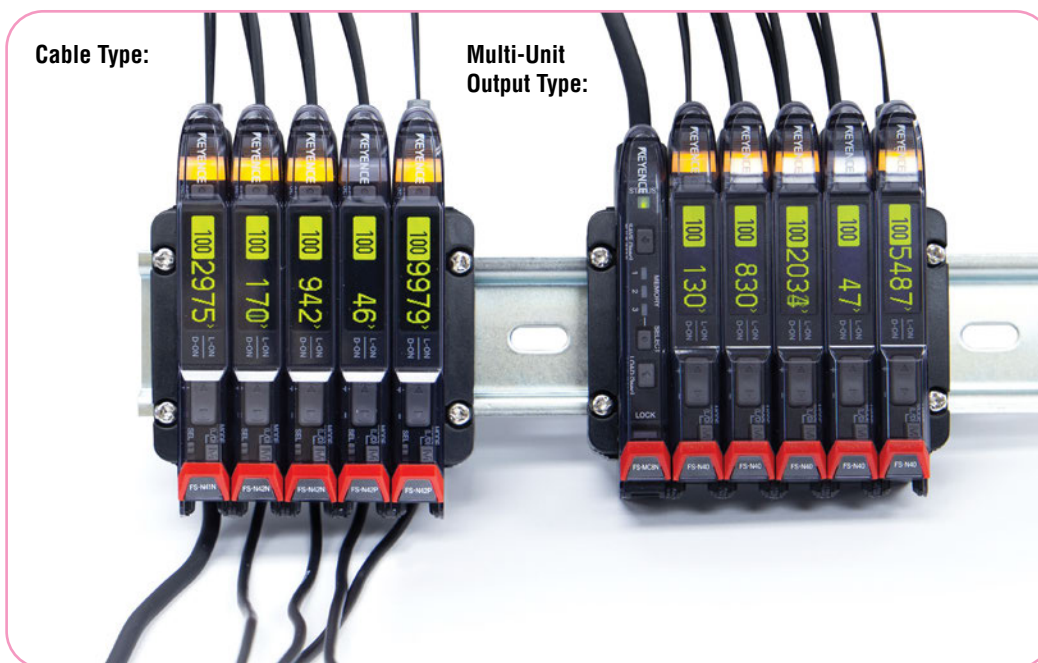
Magneto-resistive sensor switches (also called Solidstate) are electronic switches with no moving parts. They give a very repeatable signal, have long life expectancy, and they operate on low DC supply voltage. They are designated as NPN\* "sinking" if the switch is between ground [-] and the load or PNP "sourcing" if the switch is between positive [+] and the load. Unless a relay is used—as they are in the SB series Sensor Box on page 988. Magneto-resistive sensor switches cannot be connected in series with each other.

Reed sensor switches are electromechanical switches which will operate on either AC or DC voltage. They are subject to current 'spikes' which can occur with capacitive, reactive, or inductive loads. Reed switches can be connected in series, but will experience cumulative voltage drops across each unless relays are used like in the SB series Sensor Box. This style of switch is not as commonly used on robot EOAT as magneto-resistive.

\* Typically, Japanese and American robots use NPN signaling and European robots use PNP signaling.

## Digital Fiber Optic Sensors

- **Easy setup! One click operation!**
- Great for use in applications where a small sensor is needed.
- Multiple configurations of amplifiers and sensors are available to fit a variety of applications.
- Two different types of main power modules that offer either a cleaner layout or allow a larger expansion of sensors: Multi-Output Unit or Conventional Cable Type.
- Ideal for harsh environments – Sensor will automatically adjust if debris causes the light intensity to drop.
- Its high power enables use in a wide range of detection applications including: transparent targets, repeated bending, small targets and variable target positioning.



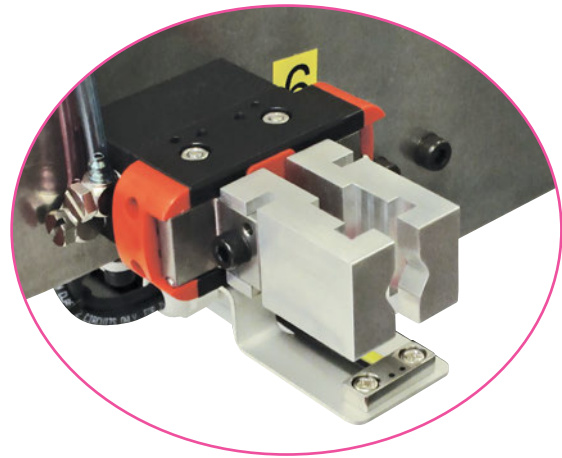
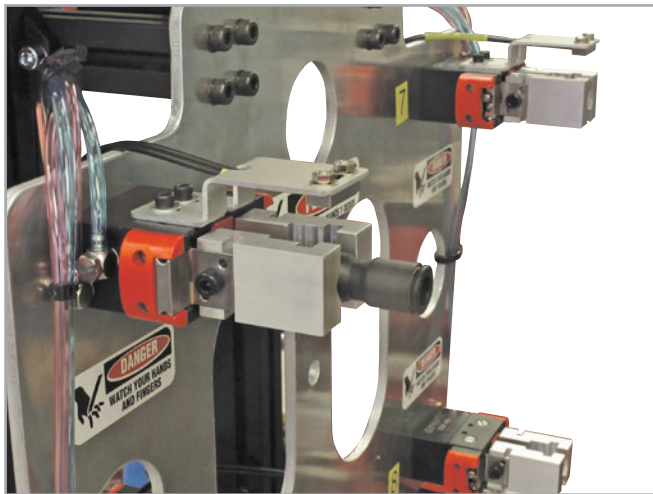
## Digital Fiber Optic Sensors

### Cable Type: 16 sensors max (1 Main Amplifier + 15 Expansion Units)

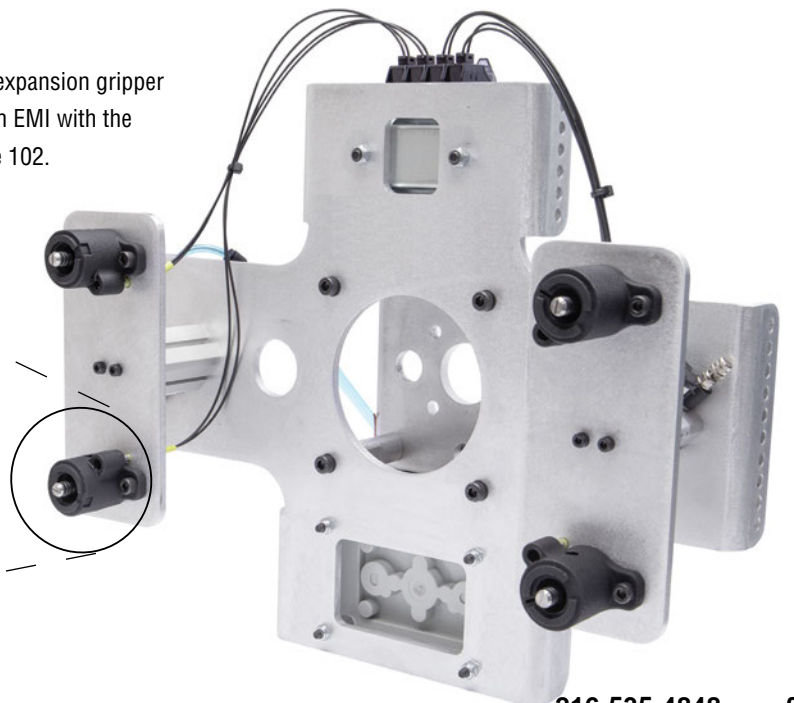
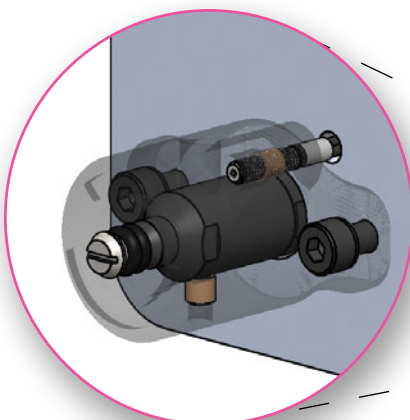
- Configurable with up to 16 sensors (1 Main Amplifier + 15 Expansion Units).
- Main Amplifier DOES control a fiber optic sensor.
- Conventional Amplifier with individual sensor output cables.
- End Units sold separate.

### Multi-Unit Output: 8 sensor max (1 Multi-Unit Output Module + 8 Expansion Units)

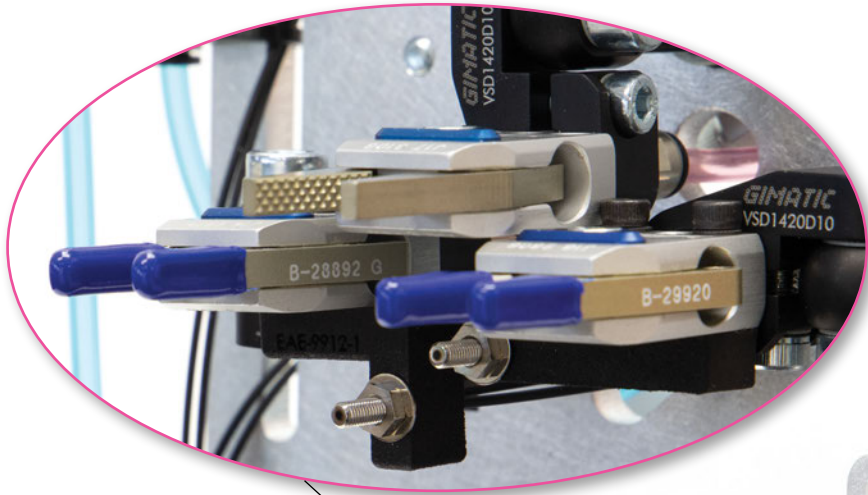
- Configurable with up to 8 sensors (expansion units).
- Multi-Output Unit does NOT control a fiber optic sensor.
- Single cable layout for power supply/outputs for a cleaner set-up.
- Memory Function allows for 3 settings to be saved to eliminate manual calibration. (shown in photo to the right)
- End Units included with Multi-Unit Output module.



This plate-style tooling incorporates fiber optic sensing with an expansion gripper for ID part handling inside of a 3D printed nest. All available from EMI with the help of our EOAT team. Find out more about 3D printing on page 102.



## Digital Fiber Optic Sensors



Fiber optics can be used in applications with limited mounting space or as an alternative to photo eye sensors. Because the electronics are contained in a separate housing that can be remotely located, only the miniature fiber must be mounted by the target. This application example uses eight fiber optic sensors. These sensors are able to detect the part without getting interference from the sprue grippers.

Low-profile photo sensors on page 974.



# Digital Fiber Optic Sensors

**Saturation Cancelling:** This function adjusts the optimum power output to prevent excess light intensity in situations where too much light is returned to the fiber optic that may result in the interference with accurate target detection.

1. Excess light intensity causes the display value to go off the scale.



2.



Navigate to the Saturation Cancel setting and select 'Execute'.

3. Light transmission level and light intensity gain are automatically calibrated so stable detection can be achieved.

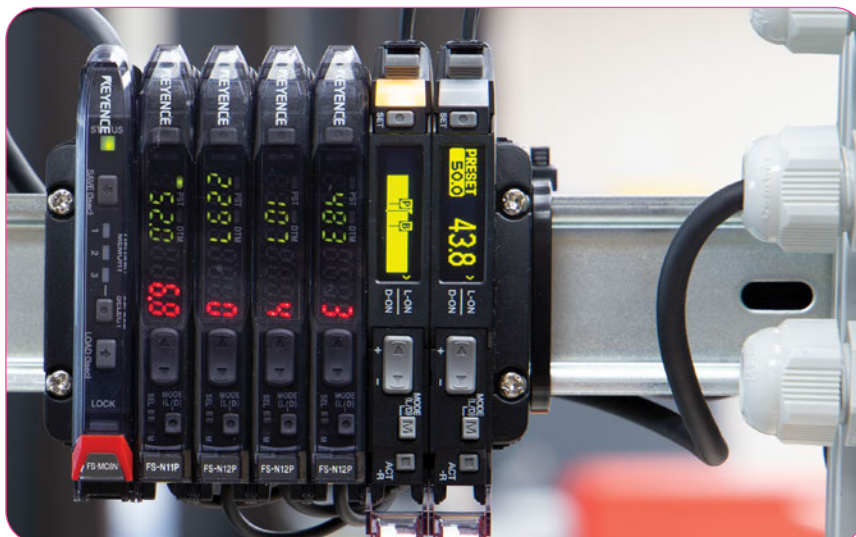


**Light Intensity Description:** The amplifier and expansion units offer several light transmission modes to accommodate a wide variety of applications and environments. The most powerful of these modes is "Tera Mode" and can be activated with a simple flick of a switch on the Cable-type amplifiers, offering the longest detection range as possible. This is also an option for the Multi-output units, but is found by navigating through the main menu.

Maximum Detection Distance (mm) – TERA Mode

	2705	2707	2708	2709	2710	2720	2723	2724
<b>Fine</b>	1–130	1–380	30–530	1120	1–59	1–170	1–170	1–200
<b>Tera</b>	1–590	1–900	30–2700	1–1000	1–340	1–740	1–800	1–1000

**Series Compatibility & Function:** These new fiber optic sensors are completely compatible with the main and sub amplifiers from the FS-NEO product series. If a sub-amplifier fails, or if you wish to upgrade to the new cordless expansion units, simply slide it apart, remove the old amplifier, snap in a new unit, and slide back into place. If you are using the Multi-output's 'Memory function' this will automatically program the new unit!



**Bar Graph Display:** Simplify the display even further by representing the light intensity as a bar graph. This comes complete with a threshold point indicator and peak / bottom value flags.

This is shown to the left where the bar graph and numeric code are displayed on the two units.

# Digital Fiber Optic Sensors

- Compatible with the previous version, FS-NEO series amplifiers: #2698, and #2699
- Memory to program up to 3 setups with lock button to lock settings.
- Amplifiers can be mounted to electrical units using DIN rail.



### Multi-Unit Output (#2712 & #2713 End Units included)

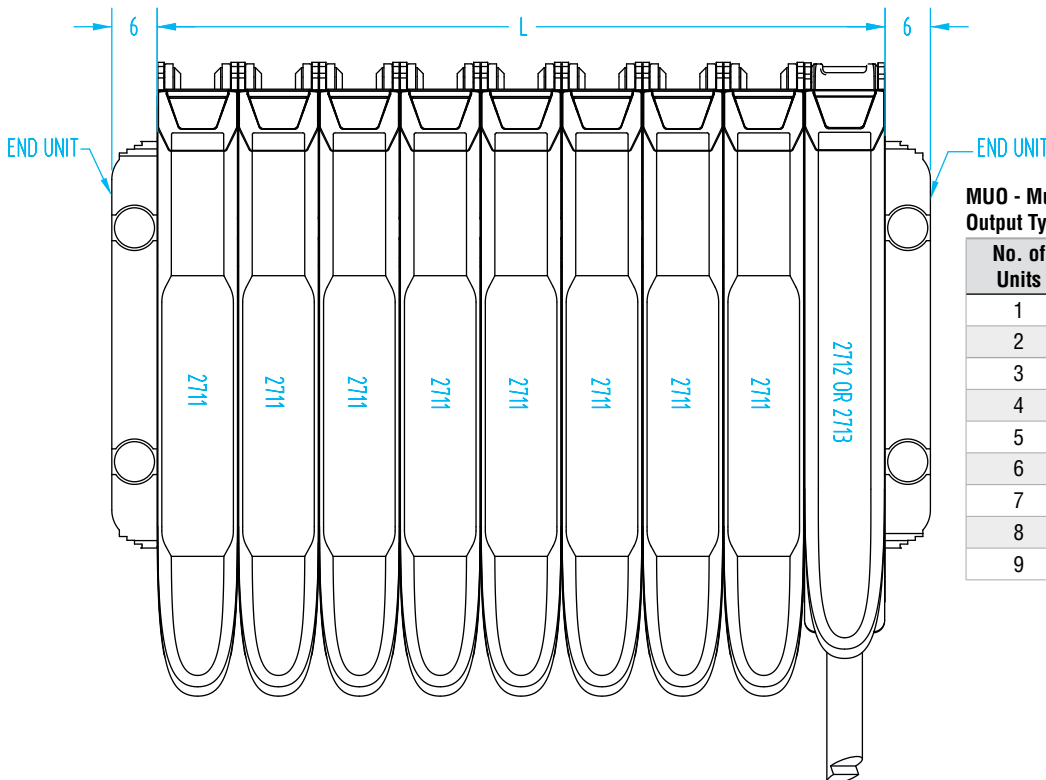
Quick#	Part#	Description	Control Outputs	External Input	Price
2713	GSE-FS-MC8N	Multi-Output Unit – NPN Output	1	0	\$129.00
2712	GSE-FS-MC8P	Multi-Output Unit – PNP Output			\$129.00
2711	GSE-FS-N40	Expansion Unit			\$184.00
<b>Optional - Mounting</b>					
5073	EL-704W	DIN Rail, 1m			\$18.92

### Amplifier - Cable Type

Quick#	Part#	Description	Control Outputs	External Input	Price
2715	GSE-FS-N41N	Main Amplifier - NPN Output	1	0	\$199.00
2716	GSE-FS-N41P	Main Amplifier - PNP Output			\$199.00
2717	GSE-FS-N42N	Expansion Unit - NPN Output			\$199.00
2718	GSE-FS-N42P	Expansion Unit - PNP Output			\$199.00
<b>Optional - Mounting</b>					
2704	OP-26751	End Units, Sold in pairs			\$9.00
2719	GSE-OP-88245	Securing Bracket useful for mounting a single main amplifier to a plate			\$4.50
5073	EL-704W	DIN Rail, 1m			\$18.92

Dimensions when several units are connected (typical configuration shown 100% scale)

\*End units must be used when several units are connected.



### MUO - Multi-Unit Output Type

No. of Units	L (mm)
1	10.7
2	21.4
3	32.1
4	42.8
5	53.5
6	64.2
7	74.9
8	85.6
9	95.5

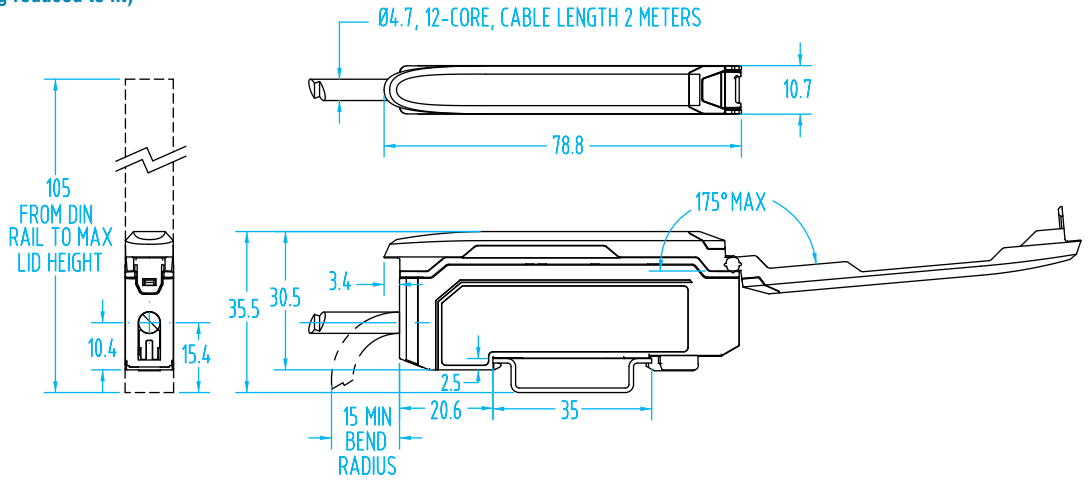
### Cable Type

No. of Units	L (mm)
1	10.7
2	21.4
3	32.1
4	42.8
5	53.5
6	64.2
7	74.9
8	85.6
9	95.5
10	106
11	116.6
12	127.2
13	137.8
14	148.4
15	159
16	169.6

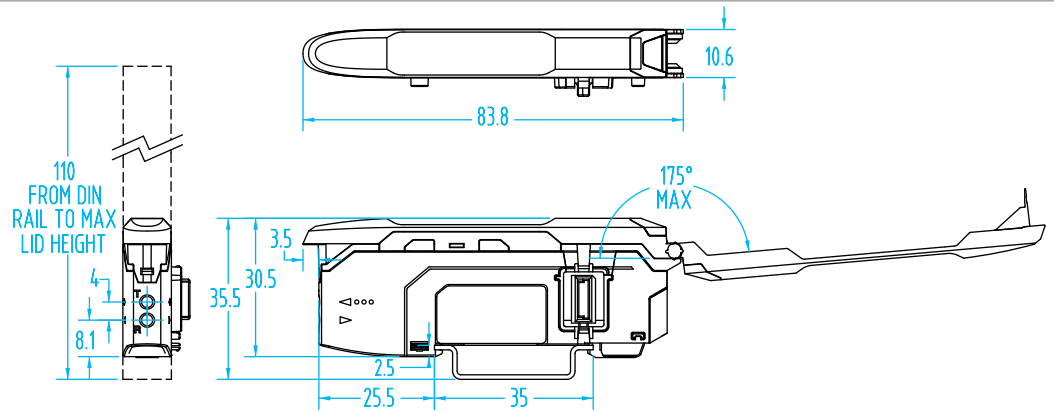
Digital Fiber Optic Sensors

(Dimensioned drawing reduced to fit)

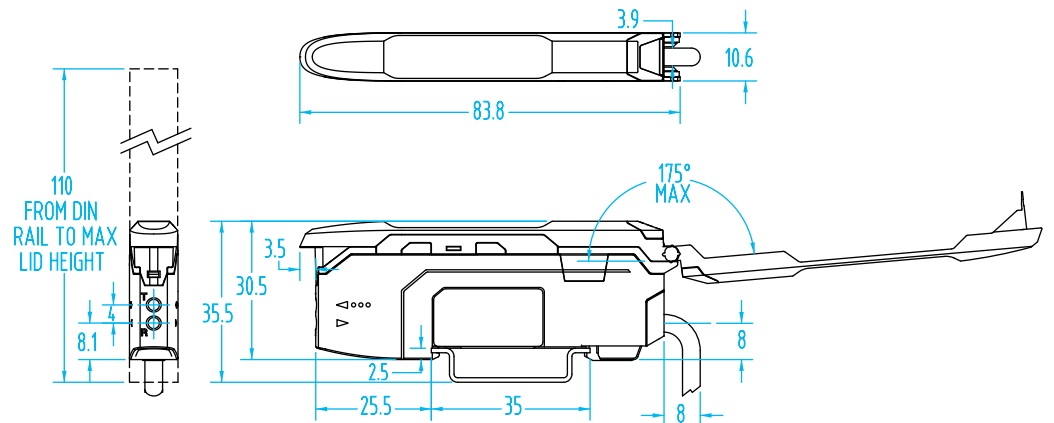
Multi-Output Unit  
#2712 / #2713



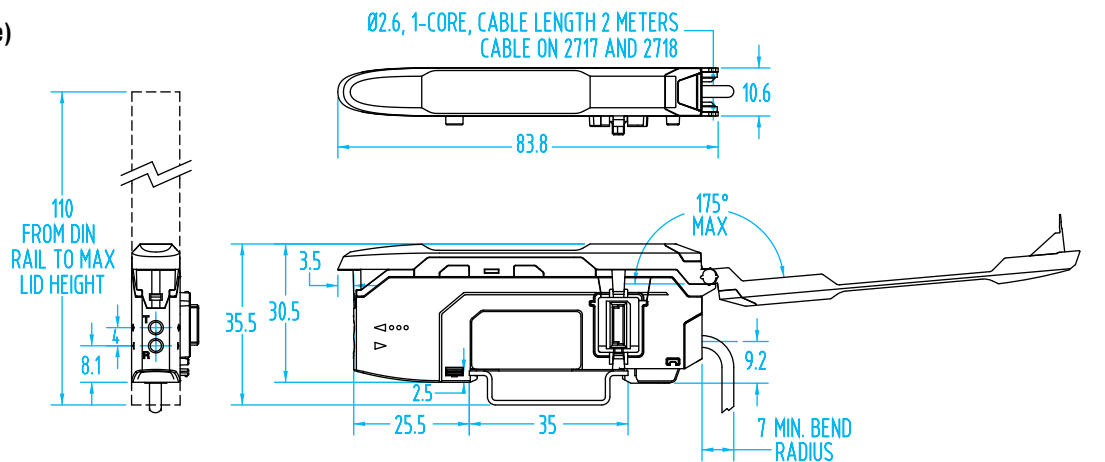
Expansion Unit  
#2711



Main Amplifier (cable type)  
#2715 / #2716



Expansion Unit (cable type)  
#2717 / #2718





# Digital Fiber Optic Sensors – Reflective

(Dimensioned drawing shown full size)

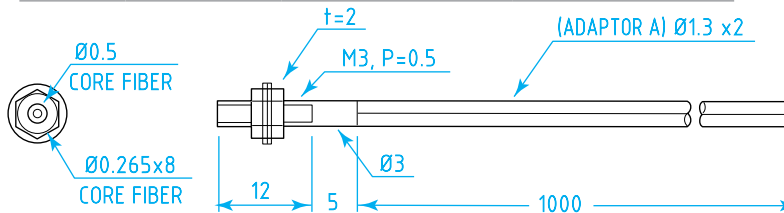
Quick #2705 & #2707 are threaded for easy mounting onto brackets and machine equipment.

### Threaded Fiber

Quick#	Part#	Sensing Range*	Weight	Price
2705	FU-35FZ	1-590mm	6g	\$76.00

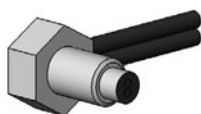


\*Must be mounted onto brackets before use.

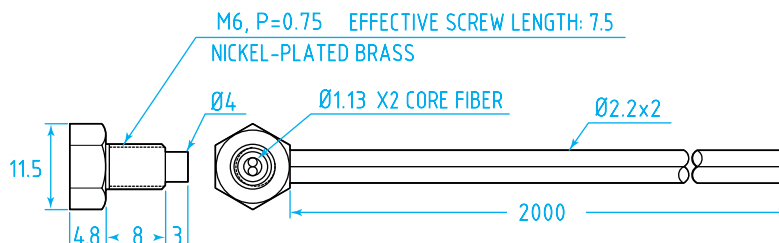


### Hex-Shaped Threaded Fiber

Quick#	Part#	Sensing Range*	Weight	Price
2707	FU-67TZ	1-900mm	32g	\$69.00



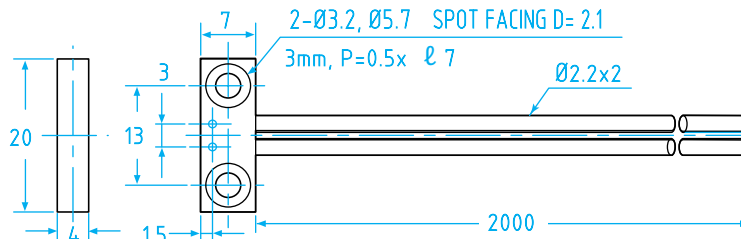
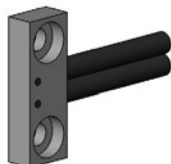
\*Must be mounted onto brackets before use.



This thin profile sensor comes with mounting holes for installation where space is limited and has no openings where dust and other foreign matter can enter. Metal housing eliminates concern about damaged sensors. A mounting bracket and hardware are included.

### Flat Bracket Fibers - Reflective

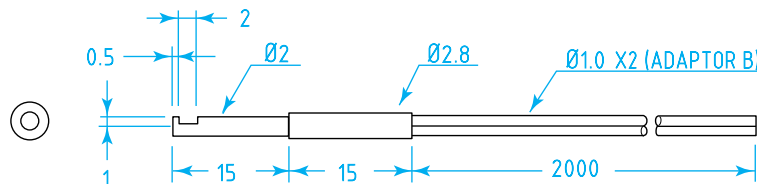
Quick#	Part#	Sensing Range*	Weight	Price
2709	FU-42TZ	1-1000mm	24g	\$129.00



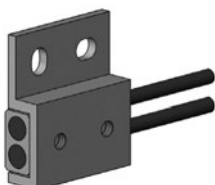
The fiber tip is incorporated into a thin sleeve and installed by drilling a hole and using a set screw. When determining the smallest detectable object, positioning the sensor too closely to the object causes the object to disappear. With the sleeve type, the sensor does'nt become an obstruction and alignment is much easier.

### Space Saving Type / Sleeve

Quick#	Part#	Sensing Range*	Weight	Price
2710	FU-31	1-340mm	5g	\$194.00



### #2708 & mounting bracket



Quick #2708 has a narrow field of view based on focused aperture angle. This sensor reduces stray light for stable target detection. The high-power reflective type with an 8° aperture angle is suitable for detecting objects at longer distances. A mounting bracket is included. This sensor should not be used when sensing objects less than 30mm away.

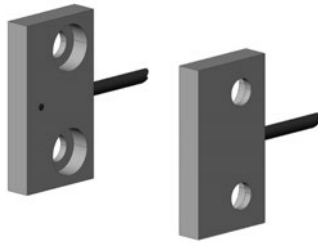
### Focused Beam / High Power

Quick#	Part#	Sensing Range*	Weight	Price
2708	FU-40	30-2700mm	23g	\$149.00

Dimensional drawing found online.

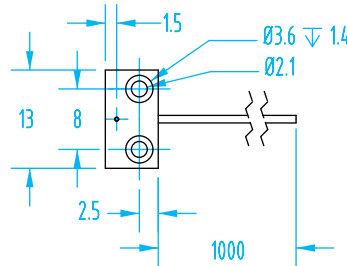
Digital Fiber Optic Sensors – Thru-Beam

(Dimensioned drawing shown full size)

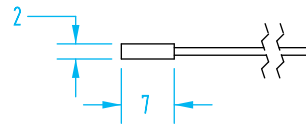


Flat Bracket Fiber - Thru-Beam

Quick#	Part#	Sensing Range*	Weight	Price
2720	GSE-FU-53FZ	1-740mm	10g	\$128.00

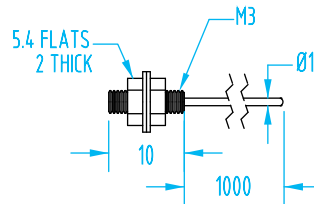
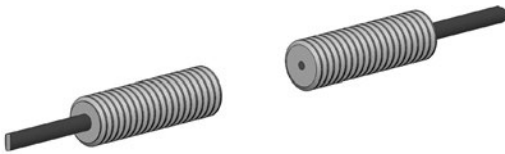


\*There are two sides and either side can be used as the fiber or the receiver. They are a mirror image of each other.



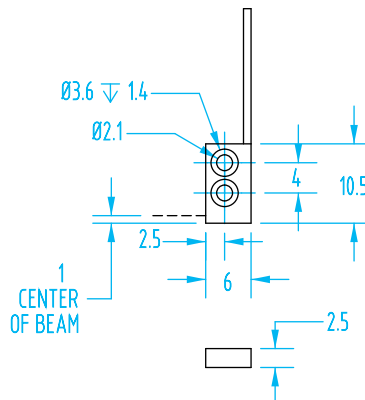
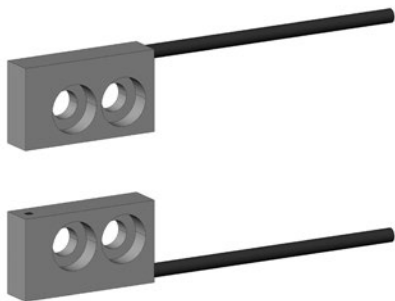
Threaded Fiber - Thru-Beam with High-Flex Cable

Quick#	Part#	Sensing Range*	Weight	Price
2723	GSE-FU-79U	1-800mm	4g	\$129.00



Flat Bracket Fiber- Thru-Beam with High-Flex Cable

Quick#	Part#	Sensing Range*	Weight	Price
2724	GSE-FU-57TE	1-1000mm	5g	\$149.00



\*There are two sides and either side can be used as the fiber or the receiver. They are a mirror image of each other.

\*Sensing ranges may vary depending on the color and opacity of the workpiece.

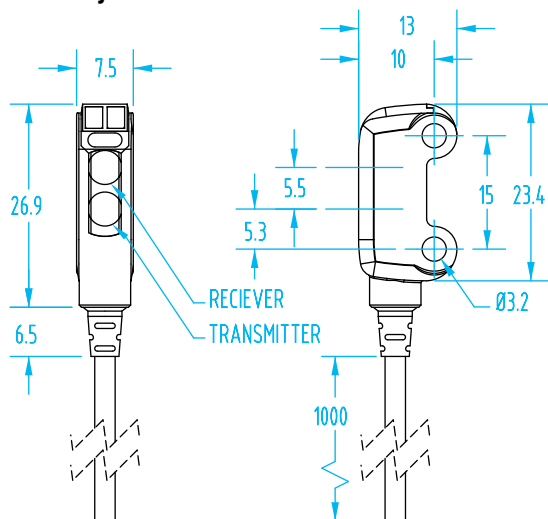
## Miniature Photo Sensors

- Single-unit photo sensor, no reflector needed.
- Nonadjustable detecting range of 1mm–30mm and are equipped with background suppression.
- Detects wide range of material and colors but is NOT RECOMMENDED FOR CLEAR OR TRANSPARENT PARTS.
- Light indicators: Output indicator (Orange), Stable operation indicator (Green)
- 120mm M8 Cable length.
- Light Source: 4 element, Red LED
- Smallest stainless steel photoelectric sensor in its class.
- The heavy duty body is highly resistant to oils, acids, and alkaline detergents and can be used in harsh environments due to its NEMA and IP rated enclosure.
- See page 985 for cables.

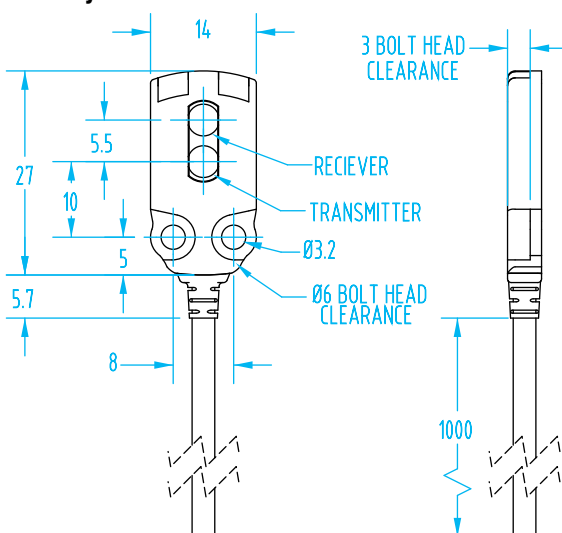


Quick#	Part#	Price	Description	Connection	Weight
2714	GSE-PR-MB30C3PL	\$160.00	Slim PNP, Provides Normally Open Output	3-pin M8	11g
2725	GSE-PR-FB30C3PL	\$160.00	Flat PNP, Provides Normally Open Output		11g
2729	GSE-PR-MB30CN	\$160.00	Slim NPN, Provides Normally Open & Normally Closed Output	4-pin M8	11g
2728	GSE-PR-MB30CP	\$160.00	Slim PNP, Provides Normally Open & Normally Closed Output		11g
2727	GSE-PR-FB30CN	\$160.00	Flat NPN, Provides Normally Open & Normally Closed Output	4-pin M8	11g
2726	GSE-PR-FB30CP	\$160.00	Flat PNP, Provides Normally Open & Normally Closed Output		11g
<b>Mounting Bracket for Sensors - Dimensional Drawings and Application Examples online</b>					
2041	GSC-PEB-2015	\$14.17	Slim Style Mounting Bracket, Hardware included		9g
2042	GSC-PEB-2017	\$18.16	Flat Style Mounting Bracket, Hardware included		11g

**Slim Style:**



**Flat Style:**



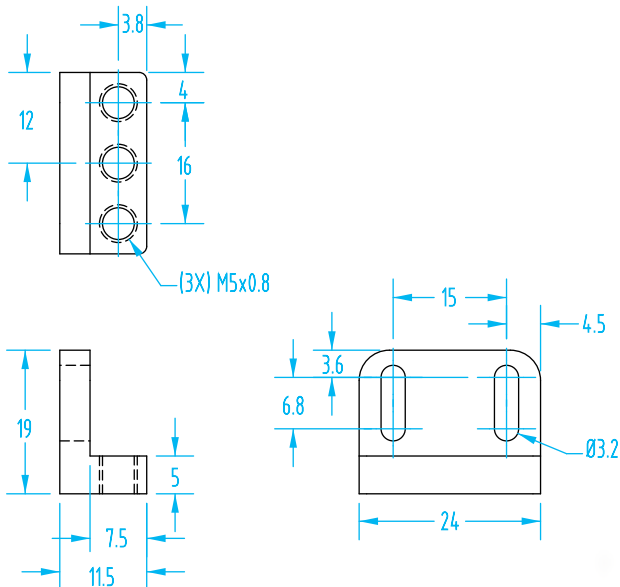
## Miniature Photo Sensors

- Diffuse reflection sensor, no reflector needed.
- Nonadjustable detecting range of 1–30mm and is equipped with precise background suppression - independent of surface color and gloss.
- NOT RECOMMENDED FOR CLEAR OR TRANSPARENT PARTS.
- Precise detection of very small, very flat or highly reflective components.
- Compact size ideal for space restrictive areas.
- Light indicators: Power (Green), Switching status (Yellow).
- Protection rating: IP65, IP67.
- Light Source: Red LED
- See page 985 for cables.

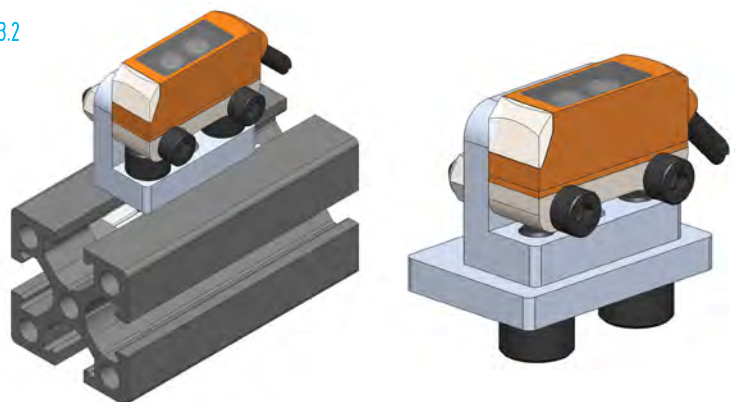
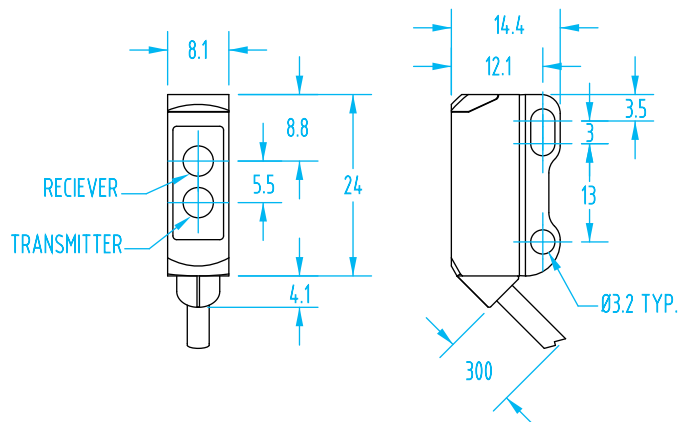


Quick#	Part#	Price	Description	Connection	Weight
2037	GSE-08H208	\$99.00	Slim Reflective Photo Sensor PNP	3-pin with 0.3m M8 connector	20.9g
2038	GSE-08H209	\$99.00	Slim Reflective Photo Sensor NPN		20.9g
2039	GSE-08H210	\$99.00	Slim Reflective Photo Sensor PNP	4-pin with 0.3m M8 connector	20.9g
2040	GSE-08H211	\$99.00	Slim Reflective Photo Sensor NPN		20.9g
<b>Mounting Bracket for Sensors</b>					
2041	GSC-PEB-2015	\$14.17	Slim Style Mounting Bracket, Hardware included		9g

#2041:



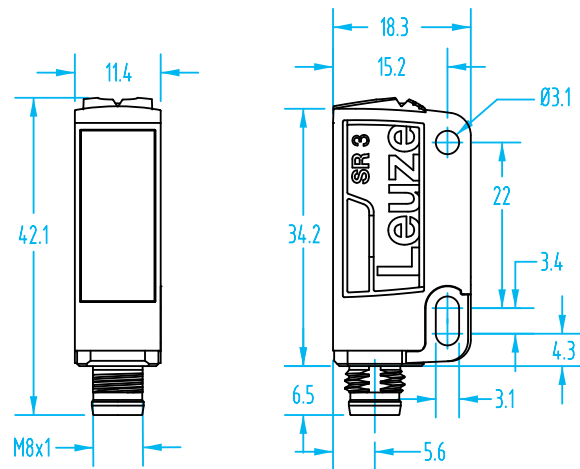
#2037-#2040:



# Photo Sensors

- **New, improved design with 4 times faster response time!**
- Diffuse sensor with background suppression
- Single-unit photo sensor, no reflector required.
- Detects wide range of materials and colors, including translucent and transparent materials.
- Good for general purpose non-contact sensing.
- Automatic interference prevention is incorporated into these sensors so they may be mounted next to one another.
- Range adjustable 0–450mm.
- Outputs both normally open and normally closed signals via 4-pin M8 connection. (Normally open via black signal wire, normally closed via white signal wire).
- IP67 (liquids) , IP69K (dust)
- Light source: Red LED

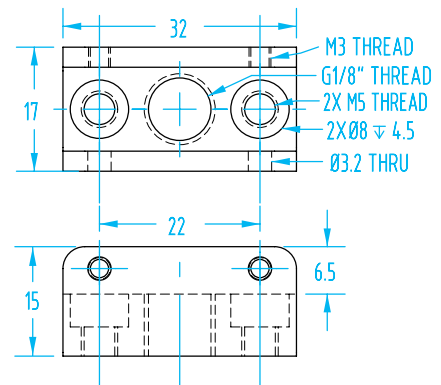
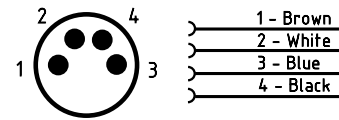
(Shown Actual Size)



Send sample parts for testing

Quick#	Part#	Description	Connection	Price
5476	GSE-HRTR-PNP	Precision Photo Sensor PNP	4-pin M8	\$198.00
5477	GSE-HRTR-NPN	Precision Photo Sensor NPN		\$198.00
<b>Mounting Bracket for Sensors</b>				
5882	GSC-PEB-2011	Fasteners included		\$18.15

See page 985 for cables.



## Mounting Examples

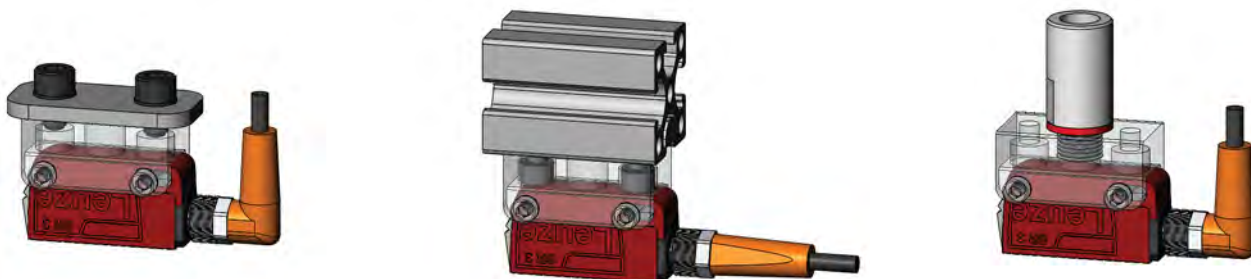
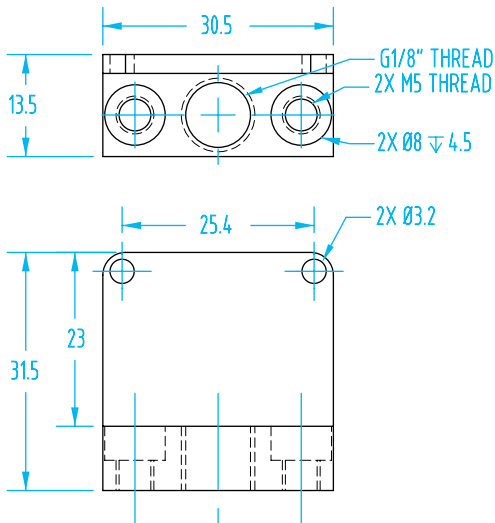
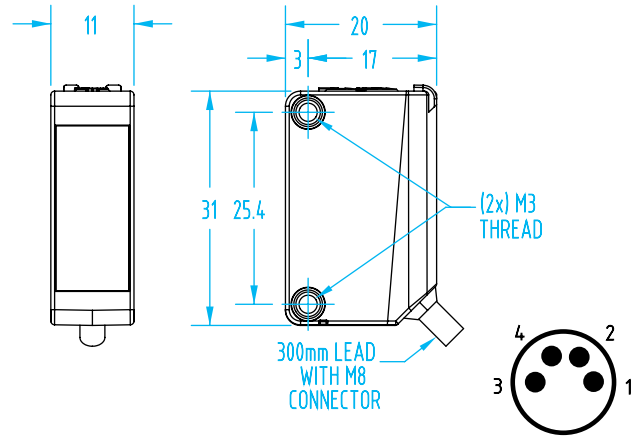


Photo Sensors

(Shown Actual Size)

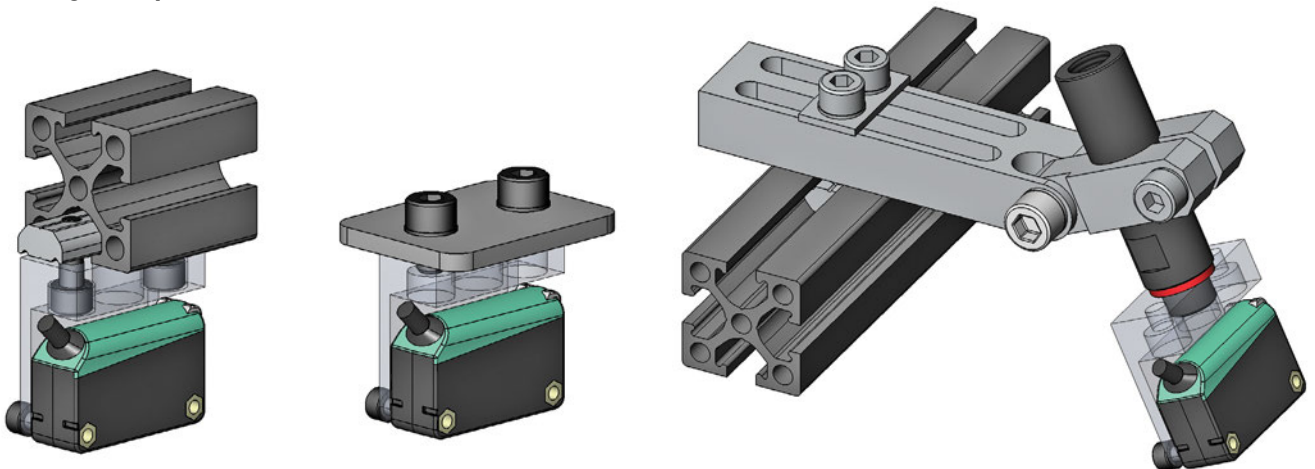
- Easy to set up and use.
- Background suppression feature eliminates detection errors.
- Good for general purpose non-contact sensing.
- Very bright, highly visible target light spot.
- Not sensitive to ambient light.
- Full metal thread mounting.
- Range adjustable 0–350mm.
- NOT RECOMMENDED FOR CLEAR OR TRANSPARENT PARTS.



Quick#	Part#	Description	Connection	Price
5990	GSE-PPE350-PNP	Photo Sensor PNP	4-pin M8	\$123.00
5991	GSE-PPE350-NPN	Photo Sensor NPN		\$123.00
<b>Mounting Bracket for Sensors</b>				
5992	GSC-PEB-2013	Fasteners included		\$15.86

See page 985 for cables.

Mounting Examples



## Gimatic Teachable Sensors – PRO

Gimatic PRO-SS and PRO-SN 5-Wire sensors are digital magnetoresistive sensors with up to 3 programmable output signals, for example: gripper fully open, gripper fully closed, and part gripped.

Configuring the outputs is achieved through a simple one-button interface. It includes a TEACH button and various LED lights, one for power and one for each output signal: 1, 2, and 3. For more details on programming, we have a Programming Procedure that can be found online at: [www.EMlcorp.com](http://www.EMlcorp.com).

- Highly accurate, this sensor is ideal for part confirmation/mid-stroke detection for any size gripper.
- Easy single button programming.
- Ideal for applications where space is limited and multiple output signals are needed.
- For Gimatic C shaped sensor slots and fixed in place with set screw.
- Each output can be independently configured to Normally Open or Normally Closed and is clearly identified by LEDs.
- Wide +/- 30mm sensing range (relative to the magnet and the sensor).
- Adaptor cable #7527 is available for splitting the single 8-pin M8 connector into 3x3-pin M8 connectors. Extension cable #2581 is available to assist with wiring.



### SS.. Programmable Magnetic Sensors for C-Slots

Quick#	Part#	Signal	Style	Description	Wt.	Price
7521	PRO-SS4N225G	PNP	Straight	with leads, 12/24 Vdc, 0.2 A, PUR cable, 2.5m long	50g	\$70.00
7522	PRO-SS4M225G	NPN			50g	\$70.00
7525	PRO-SS3N215G	PNP		with M8 8-pin Connector, 12/24 Vdc, 0.2 A, PUR cable, 1.5m long	70g	\$92.00
7625	PRO-SS3M215G	NPN			70g	\$92.00

### SN.. Programmable Magnetic Sensors for C-Slots

Quick#	Part#	Signal	Style	Description	Wt.	Price
7523	PRO-SN4N225G	PNP	90°	with leads, 12/24 Vdc, 0.2 A, PUR cable, 2.5m long	50g	\$70.00
7524	PRO-SN4M225G	NPN			50g	\$70.00
7526	PRO-SN3N215G	PNP		with M8 8-pin Connector, 12/24 Vdc, 0.2 A, PUR cable, 1.5m long	70g	\$92.00
7626	PRO-SN3M215G	NPN			70g	\$92.00

### SN..HSG Programmable Magnetic Sensors for New Style SGP-S Grippers

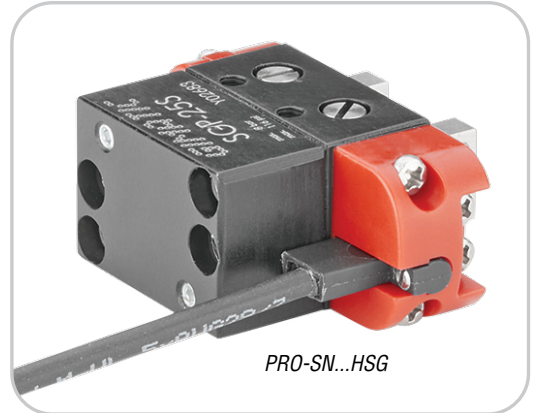
Quick#	Part#	Signal	Style	Description	Wt.	Price
7635	PRO-SN4N225HSG	PNP	90°	with leads, 12/24 Vdc, 0.2 A, PUR cable, 2.5m long	50g	\$70.00
7636	PRO-SN4M225HSG	NPN			50g	\$70.00
7633	PRO-SN3N215HSG	PNP		with M8 8-pin Connector, 12/24 Vdc, 0.2 A, PUR cable, 1.5m long	70g	\$80.00
7634	PRO-SN3M215HSG	NPN			70g	\$80.00

### SSR.. Programmable Magnetic Sensors with 2 Programmable Positions & 1 Driven by NOR logic gate

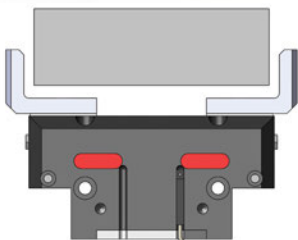
Quick#	Part#	Signal	Style	Description	Wt.	Price
7644	PRO-SSR4N225G	PNP	Straight	with leads, 12/24 Vdc, 0.2 A, PUR cable, 2.5m long	50g	\$70.00
7645	PRO-SSR4M225G	NPN			50g	\$70.00
7646	PRO-SSR3N215G	PNP		with M8 8-pin Connector, 12/24 Vdc, 0.2 A, PUR cable, 1.5m long	70g	\$87.00
7647	PRO-SSR3M215G	NPN			70g	\$87.00

# Gimatic Teachable Sensors – PRO

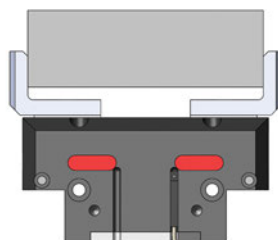
Watch our Teachable PRO SN/SS Sensor YouTube video!  
 Follow us at: [www.youtube.com/EMICorpVideo](http://www.youtube.com/EMICorpVideo)



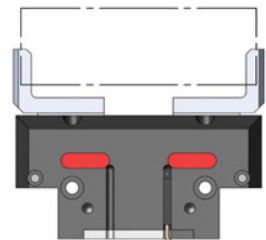
**Output - Gripper Open:**



**Output 2 - Gripper Mid-Stroke: (Part Gripped)**



**Output 3 - Gripper Closed: (Part Missed)**

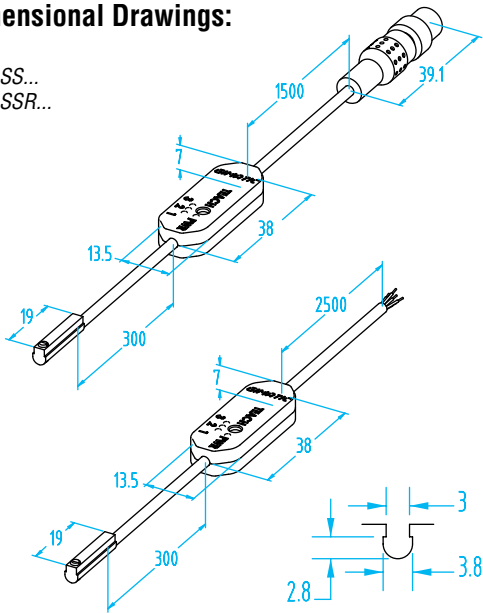




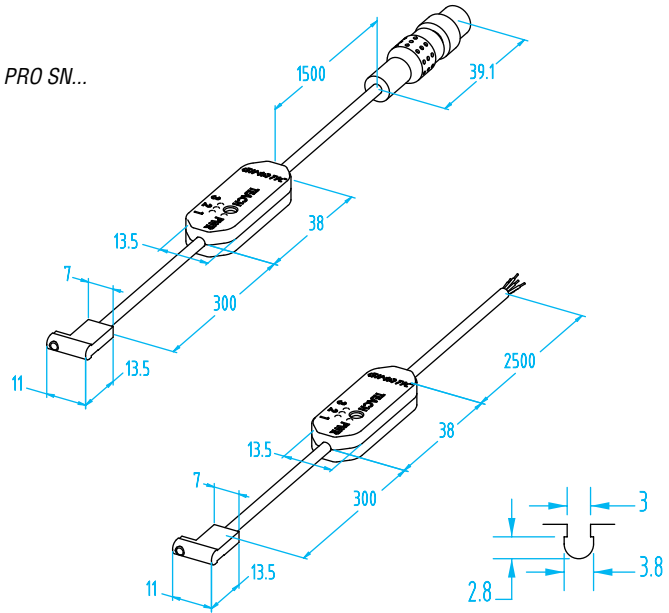
# Gimatic Teachable Sensors – PRO

## Dimensional Drawings:

PRO SS...  
PRO SSR...

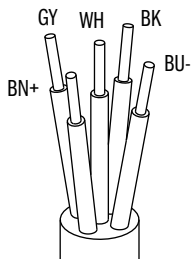


PRO SN...

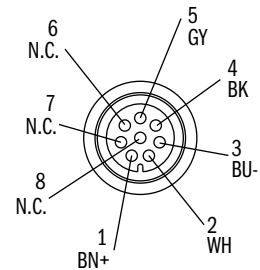
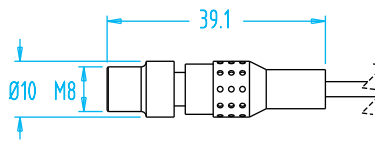


## Wiring Diagram:

with Leads:

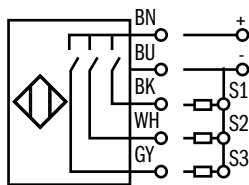


with M8 8-pin Connector:

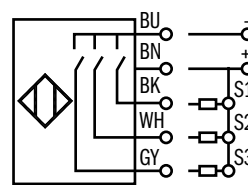


## Connections:


PNP:



NPN:



Product Detail



**7521 Gimatic 5-Wire Teachable C-Slot PNP Sensor with 2.5m lead**

Gimatic PRO-SS sensors are digital magnetoresistive sensors with up to 3 programmable output signals that fit in Gimatic C shaped sensor slots. When the programmed switched position is reached, the corresponding output is activated, and its status is indicated visually with the LEDs.

Item #:PRO SS4N225G  
\$70.00 Each

Quantity:

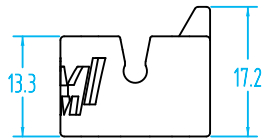
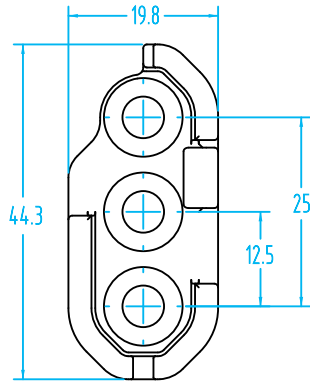
[Add To Cart](#)

Available: In Stock  
[CAD File Download](#)  
[Technical Specifications](#)  
[Additional Specifications](#)  
[Programming Procedure](#)  
[360 Degree View](#)

In addition to our instructional YouTube video, an Operating Procedure pdf is found on our sensor product pages: [www.EMICorp.com](http://www.EMICorp.com) & search for the appropriate Quick#.

# Gimatic Teachable Sensor Mounting Bracket

(Dimensioned drawings shown actual size)



- Easily mount PRO sensors to profile or plate.

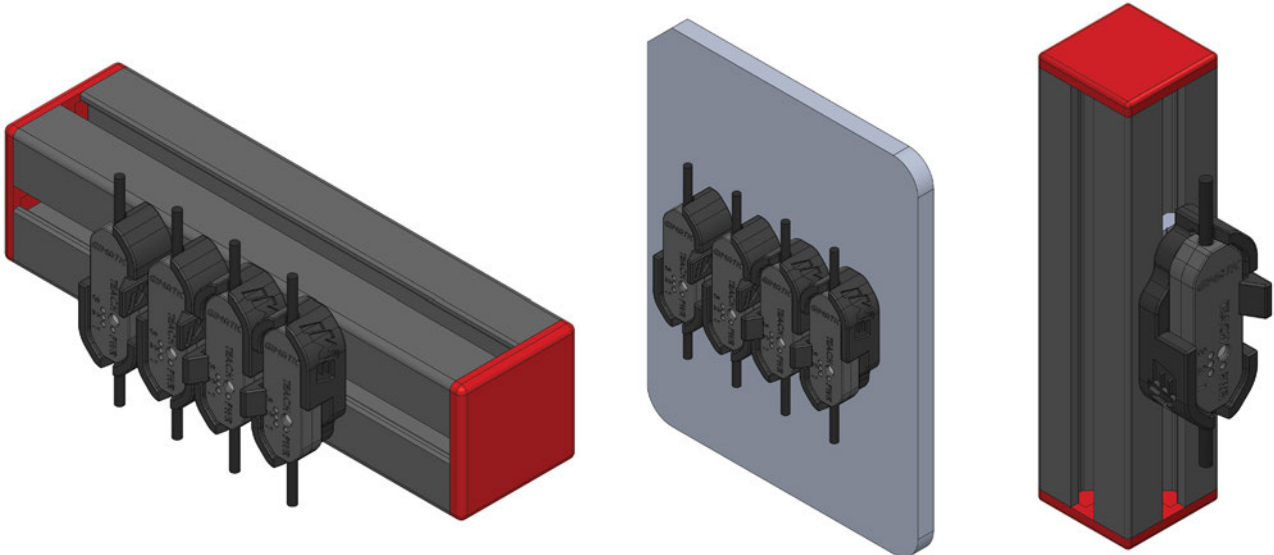
**PRO Sensor Mounting Bracket**

Quick#	Part#	Price
7650	PRO-SPB	\$4.99

*Includes: 2x M5x12 Flat head Socket Head Screws, and 2x Q#7115 Drop-In Channel Nuts*



**Mounting Examples**



# Sensors

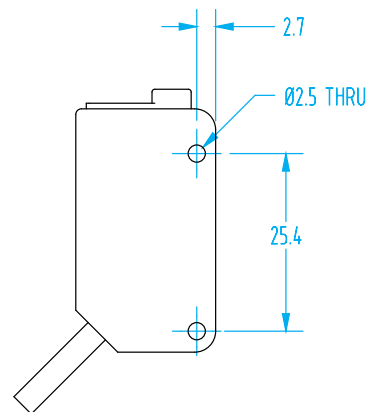
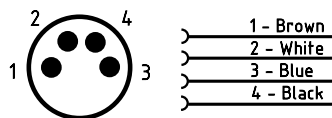
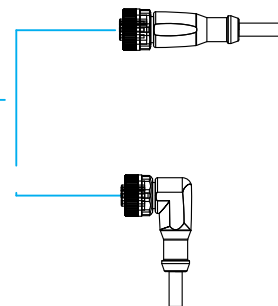
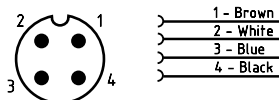
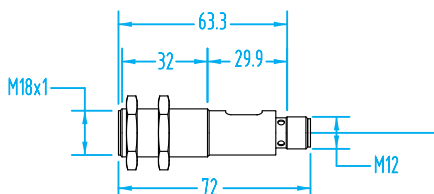
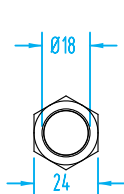
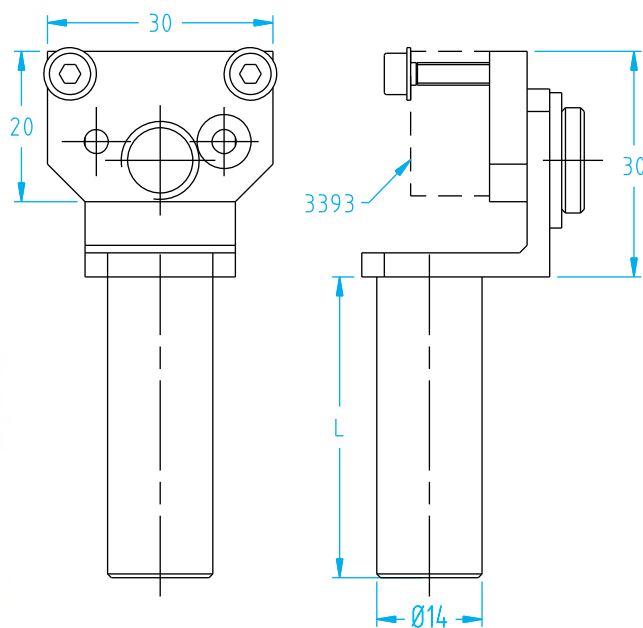


Photo Sensor - 4 pin M8 (no reflector required)

Quick#	Part#	Price	Voltage	Output	Distance	Signal	Cable	Wt.
3393	LES-6-PNP	\$116.00	10-24V DC	100mA	5-300mm	PNP	M8 Connector	15g
3491	LES-6-NPN	\$116.00	10-24V DC	100mA	5-300mm	NPN	M8 Connector	15g

Gripper Arm for LES-6

Quick#	Part#	Price	ØA	Length	Wt.
3394	GGE14-40-F	\$36.23	14	40	32g
3395	GGE14-80-F	\$37.28	14	80	40g
3396	GGE14-120-F	\$38.33	14	120	48g

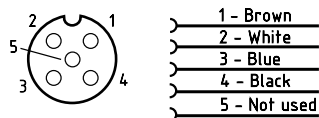


Diffuse Reflection Photoelectric Sensor (no reflector required)

Quick#	Part#	Price	Voltage	Output	Distance	Signal	Sensitivity	Cable	Wt.
3397	LRS-18	\$109.00	10-36V DC	200mA	2-800mm	PNP	Light or Dark	#3398, #3399	59g

M12 Connector Cable for LRS-18

Quick#	Part#	Price	Connection	Cable	Wt.
3398	KG18	\$13.50	Straight	5m	135g
3399	KW18	\$13.50	Elbow 90°	5m	130g

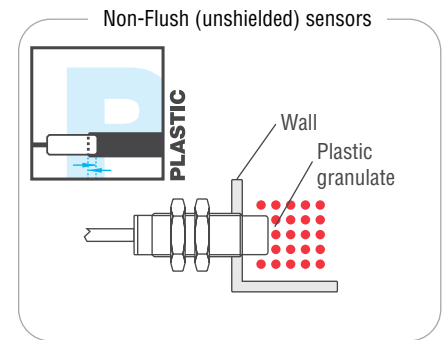
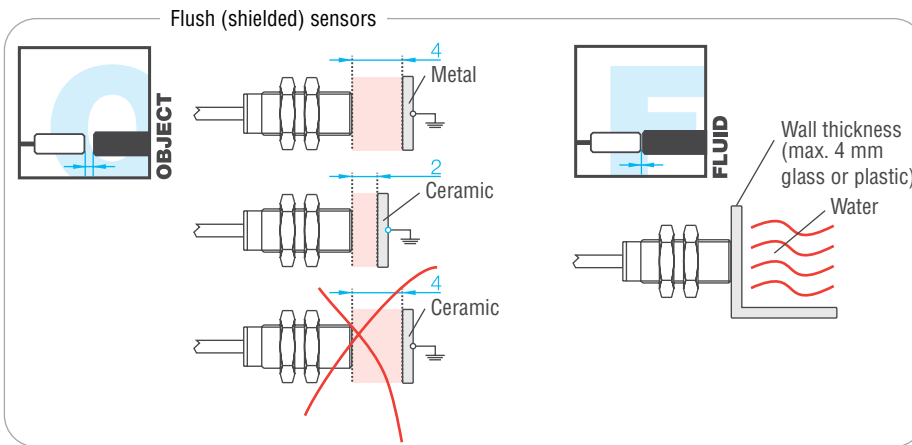


# Capacitive Sensors



- Capacitive sensors feature a straight-line electrical field.
- Detects both solid and transparent plastics, glass, and fluids.
- Stainless steel housing with IP65 protection.
- Visit EMI's website for safety information, mounting restrictions, and sensor adjustment instructions.
- New! Adaptor that allows the Ø6mm sensors Q#2965–2966 to mount to Ø10mm brackets, reference Quick# 2964 below.

Quick#	2965	2966	2967	2968
Part#	GSE-BCS001L	GSE-BCS001N	GSE-BCS0026	GSE-BCS0028
Price	\$148.00	\$148.00	\$148.00	\$148.00
Description	Ø6mm, 42mm long		M8x1, 42mm	
Connection	3-Wire, 2m long PUR Cable			
Signal	PNP	NPN	PNP	NPN
Detection Range	0.1–1.5mm – Sensitivity switching distance is adjustable			
Power Supply	11–30V DC			
Operating Temp.	-10 to 70°C / 14 to 158°F			



**NEW**

#2964 - for mounting #2965-2966

**6mm to 10mm Mounting Adaptor**

Quick#	Part#	Price
2964	GSC-CSA-10	\$1.00

## Cables & Connectors

### Extension Cables (connector with free lead wire)



Quick#	Part#	End 1 (plug)		Cord		End 2 (free leads reference)	Notes:	Price
		Pins	Connector	Length	Ø			
461	GSF-VMC-90	4 (Female)	90° M8	5m	3.8mm	4 wire 1 - Brown 2 - White 3 - Blue 4 - Black	Standard cable	\$15.00
7719	GSE-TSCE90-M825-4P		90° M8	2.5m	2.5mm		Thin cable	\$14.75
8082	GSE-RFC-M8-4P		Straight M8	5m	4.3mm		Continuous Flex	\$16.00
462	GSF-VMC-S		Straight M8	5m	3.8mm		Standard cable	\$15.00
7718	GSE-TSCE-M825-4P		Straight M8	2.5m	2.5mm	Thin cable	\$14.75	
7161	CFGM890325P	3 (Female)	90° M8	2.5m	4.3mm	3 wire 1 - Brown 3 - Blue 4 - Black	Continuous Flex	\$13.00
2582	GSE-NAN-3A		90° M8	5m	3.8mm		Standard cable	\$15.00
7720	GSE-TSCE90-M825		90° M8	2.5m	2.2mm		Thin cable	\$12.43
7160	CFGM800325P		Straight M8	2.5m	4.3mm		Continuous Flex	\$13.00
7159	CFGM800325		Straight M8	2.5m	3.8mm		Standard cable	\$13.00
2583	GSE-NAN-3F		Straight M8	5m	3.8mm		Standard cable	\$15.00
7715	GSE-TSCE-M825	Straight M8	2.5m	2.2mm	Thin cable	\$12.43		
2581	GSE-RCS-8FS-5000	8 (Female)	Straight M8	5m	5mm	8 wire 1 - White 2 - Brown 3 - Green 4 - Yellow 5 - Gray 6 - Pink 7 - Blue 8 - Red	Standard cable	\$26.75
7683	CFGM1200850P		Straight M12	5m	5mm		Standard cable	\$40.56
8087	CFGM890802P*		90° M8	200mm	5mm		Standard cable	\$33.88
2580	GSE-RCS-8MS-5000	8 (Male)	Straight M8	5m	5mm		Standard cable	\$40.35
8079	CMGM800803P*		Straight M8	300mm	5mm		Standard cable	\$27.92

- Continuous flex cables can handle the high cycle requirements of many automation applications. Thin cables can be used when space is tight and multiple cables are required such as sensor boxes.

### Interface Cables (connectors on both ends)



Quick#	Part#	End 1 (to component)		Cord		End 2 (to robot)		Notes:	Price
		Pins	Connector	Length	Ø	Pins	Connector		
7712	GSE-TSC180-M803	3 (F)	Straight M8	0.3m	2.2mm	3 (M)	Straight M8	Thin cable	\$13.94
7713	GSE-TSC180-M805	3 (F)	Straight M8	0.5m	2.2mm	3 (M)	Straight M8	Thin cable	\$15.08
7714	GSE-TSC180-M812	3 (F)	Straight M8	1.2m	2.2mm	3 (M)	Straight M8	Thin cable	\$16.22
7335	GSE-CS180-M81	3 (F)	Straight M8	1m	4mm	3 (M)	Straight M8	Standard cable	\$17.00
7336	GSE-CS180-M82	3 (F)	Straight M8	2m	4mm	3 (M)	Straight M8	Standard cable	\$17.50
7337	GSE-CS90-M81	3 (F)	Straight M8	1m	4mm	3 (M)	90° M8	Standard cable	\$17.00
7338	GSE-CS90-M82	3 (F)	Straight M8	2m	4mm	3 (M)	90° M8	Standard cable	\$18.20
8084	CRC-650-3P	3 (F)	Straight M8	650mm	4mm	3 (M)	Straight M8	Continuous Flex	\$32.00
8085	CRC-750-3P	3 (F)	Straight M8	750mm	4mm	3 (M)	Straight M8	Continuous Flex	\$32.00
8086	CRC-1000-3P	3 (F)	Straight M8	1000mm	4mm	3 (M)	Straight M8	Continuous Flex	\$32.00
8088	CFGM8908CF8903010*	3 (F)	90° M8	100mm	4.3mm	8 (M)	90° M8	Standard cable	\$33.51
8089	CFGM8908CF8904010*	4 (F)	90° M8	100mm	4.3mm	8 (M)	90° M8	Standard cable	\$35.75

- Reference drawings in the chart above for wiring information and refer to our website for additional information.
- Continuous flex cables can handle the high cycle requirements of many automation applications. Thin cables can be used when space is tight and multiple cables are required such as sensor boxes.

# Cables & Connectors

Additional cables and connectors for Cobots on page 181. Sensor diagrams and other specifications can be found on our online product pages at : [www.EMlcorp.com](http://www.EMlcorp.com)

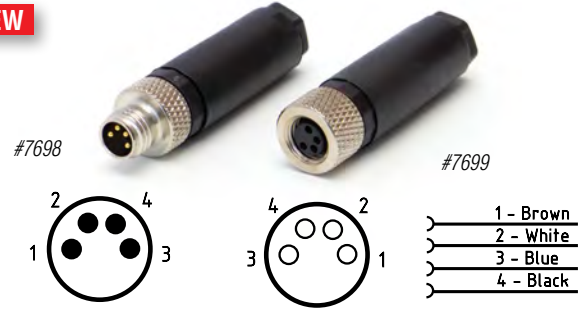


- Use with SB Modular Sensor Boxes.

### 3-Pin Field Wireable M8 Connectors with Screw Terminals

Quick#	Part#	Description	Price
7285	CMGM800300	3-Pin M8 Male Connector	\$14.00
7284	CFGM800300	3-Pin M8 Female Connector	\$14.00

**NEW**



- Use with 4-Pin equipped components including sensors, grippers, etc.

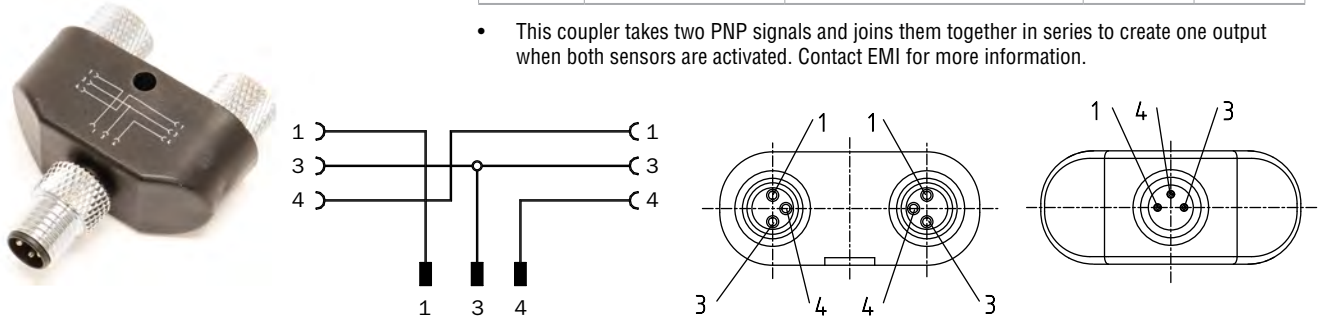
### 4-Pin Field Wireable M8 Connectors with Screw Terminals

Quick#	Part#	Description	Price
7698	CMGM800400	4-Pin M8 Male Connector	\$14.00
7699	CFGM800400	4-Pin M8 Female Connector	\$14.00

### 3-wire M8 Coupler - PNP ONLY

Quick#	Part#	Description	Weight	Price
7401	CMGM8CFGM8X2Y	1x 3 -Pin Male 2x 3-Pin Female	14g	\$35.00

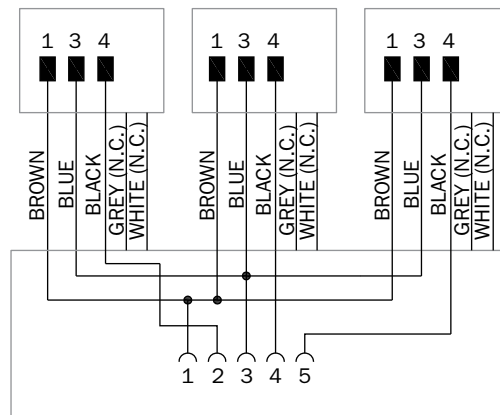
- This coupler takes two PNP signals and joins them together in series to create one output when both sensors are activated. Contact EMI for more information.



### M8 Interface Cable

Quick#	Part#	Description	Length	Price
7527	CFGM8CMGM8X3Y	1x 8-Pin Female, 3x 3-Pin Male	0.3m	\$56.00

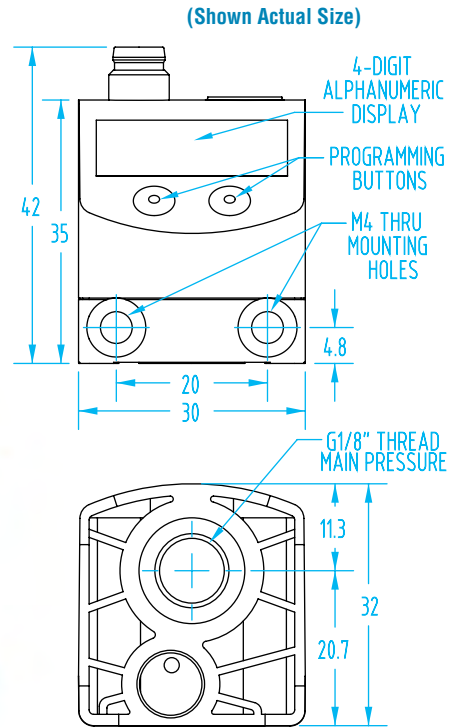
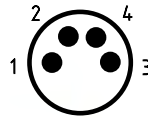
- This cable can be used with Gimatic PRO sensors and modular SBM sensor boxes. M8 8-Pin female connector inlet (only 5 pins connected), outlet with 3x M8 3-Pin male connectors.



## Pressure Sensor for Pneumatics

- This pressure sensor for pneumatics precisely measures the full range of vacuum and pressure typical in robotics and material handling applications.
- Compact & lightweight.
- 2-color, 4-digit alpha-numeric display.
- Simple push-button setup.
- Two programmable switching outputs or one switching and one diagnostic output.
- 4-pin M8 male connection.

Values can be programmed to change color depending on the switching output status (e.g., red: output 1 switched; green: output 1 not switched).

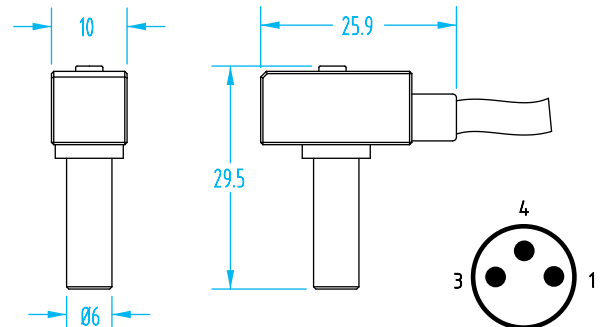


**NEW**

Quick#	2696	2697	2693	2695
Part#	GSE-PQ-7834	GSE-PQ-0834	GSE-PQ-7809	GSE-PQ-0809
Price	\$174.00	\$174.00	\$174.00	\$174.00
Weight	84.5g	85.5g	85g	85.5g
Signal	PNP	NPN	PNP	NPN
Measuring Range	-1...10 bar, -15...145 psi, -30...296 inHG, -100...1000 kPa		-1...1 bar, -14.6...14.6 psi, -29.6...29.6 inHG, -100...100 kPa	
Set Point SP	-0.9...10 bar, -13...145 psi, -26...294 inHg, -90...1000 kPa		-0.98...1 bar, -14.2...14.6 psi, -28.8...29.7 in Hg, -98...100 kPa	
Reset point RP	-0.95...9.95 bar, -14...144 psi, -28...294 inHg, -95...995 kPa		-0.99...0.99 bar, -14.4...14.4 psi, -29.1...29.4 inHg, -99...99 kPa	
In steps of	0.05 bar, 1 psi, 2 inHg, 5 kPa		0.01 bar, 0.2 psi, 0.3 inHg, 1kPa	

## Mini Vacuum Switch

- These are ideal for applications that only need a simple “object gripped” signal, and offer an economical and effective solution for applications with one vacuum generator per vacuum cup.
- Simple plug-in installation.
- Compact & ultra-lightweight.
- 3-pin M8 male connection.
- User may select sensing value.
- Total length of cable: 150mm.



1 - Brown  
3 - Blue  
4 - Black

### Vacuum Monitor Switch

Quick#	Part#	Signal	Wt.	Vacuum connection	Operating Voltage	Measuring Range	Price
1931	PSK-100-D6P	PNP	8.3g	Ø6mm	10.8-30V DC	0 to -14.69 psi	\$96.60
1932	PSK-100-D6N	NPN	8.3g	Ø6mm	10.8-30V DC	0 to -14.69 psi	\$96.60

See page 985 for cables.

Use Quick#s for easy online ordering.

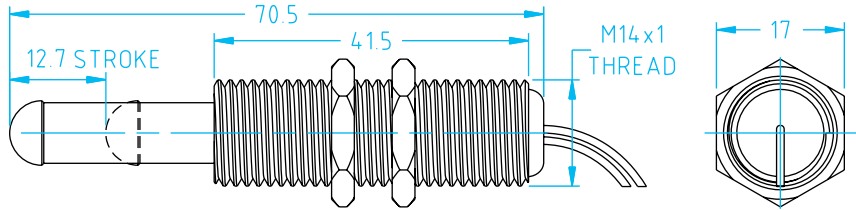
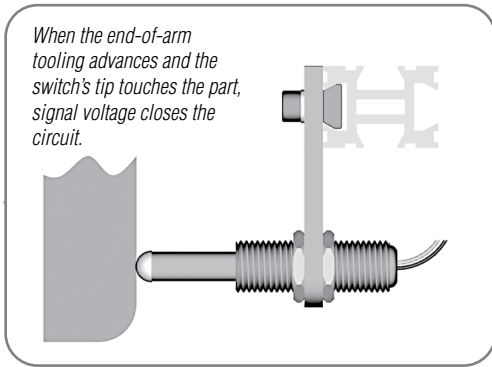
**Sensors & Accessories**

(Dimensioned drawings shown actual size)

- The detecting ranges from 2.5–15mm.

**Sensor Switch**

Quick#	Part#	Weight	Price
1735	GSE-SSW-15	14g	\$31.30
Replacement Silicone Tips			
5287	270449	Qty. of 5	\$10.74

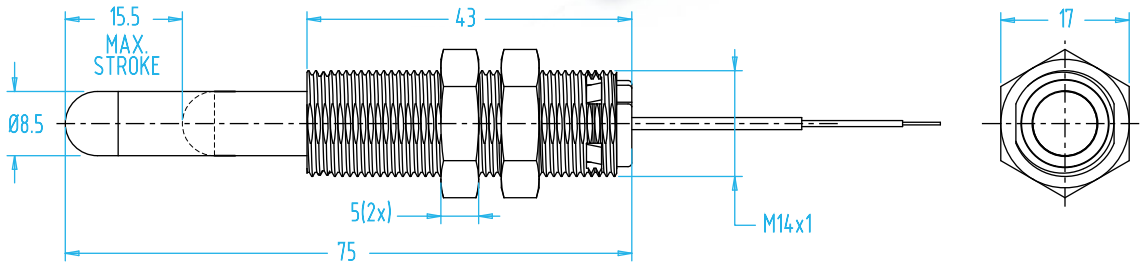


- The detecting ranges from 3–15mm.
- Easy and immediate detection.

**Gimatic Sensor Switch**

**NEW**

Quick#	Part#	Weight	Price
7637	SR1C5G	40g	\$23.40
Replacement Silicone Tip			
7638	SR1C-012	Qty. of 1	\$2.08



**Trigger Sensor Switch (without cable)**

Quick#	Part#	Price	Voltage	Output	Type	Wt.
3405	SEO-5	\$5.45	24V DC	1A	Short	8g
3406	SEO-10	\$27.80	24V DC	1A	Long	37g

**Cover for LONG Trigger Switch (SEO-10)**

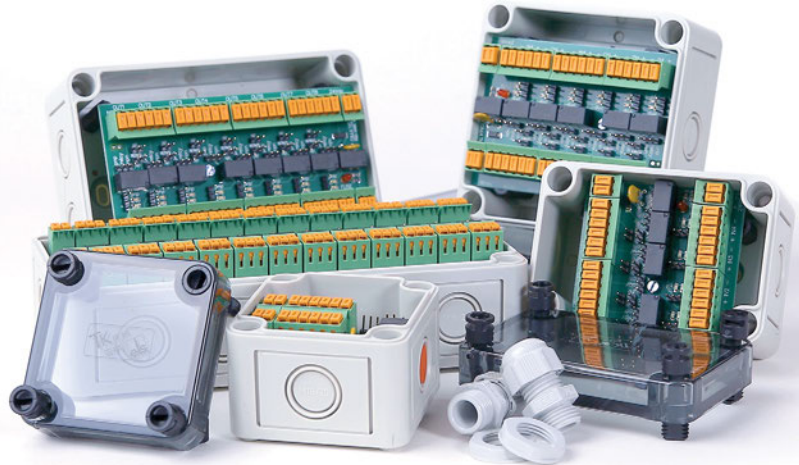
Quick#	Part#	Price	Wt.
3407	GEO-10	\$10.36	17g





## Sensor Junction Box – SB

- Connect different types of sensors individually or in a series.
- Signals can be converted (PNP to NPN & NPN to PNP).
- I/O may be PNP = sourcing, NPN = sinking, or dry contact.
- Self-stripping wire connectors are used for fast & easy wiring.
- Several boxes may be connected in a series to accommodate additional sensors.
- LED indicators allow for easy troubleshooting.
- Regenerates signals & protects contacts.
- Profile mounting kit & four strain reliefs are included.



Watch our How-To Sensor Box Video!

### Sensor Junction Box

### Sensor Junction Box Mounting Brackets (optional)

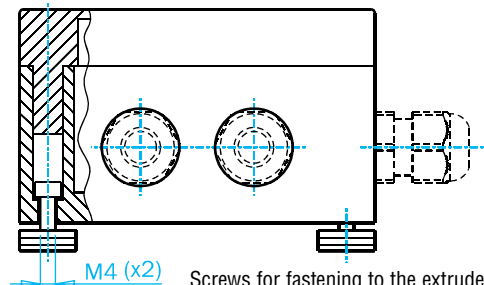
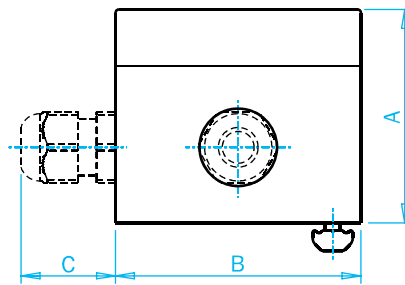
Quick#	Part#	Max. # of Sensors	Price	Quick#	Part#	Price	Dimensions:
6753	SB2C	2	\$67.00	6737	SB2C-MP	\$11.05	65x84x3
6754	SB4C	4	\$89.00	6738	SB4C-MP	\$12.22	94x84x3
6685	SB6C	6	\$150.00	6687	SB6C-MP	\$13.00	113x94x3
6755	SB8C	8	\$163.00	6739	SB8C-MP	\$14.95	130x113x3
6686	SB12C	12	\$232.00	6688	SB12C-MP	\$16.84	180x113x3

*Note: All brackets have a 20mm tab for optional mounting position.*



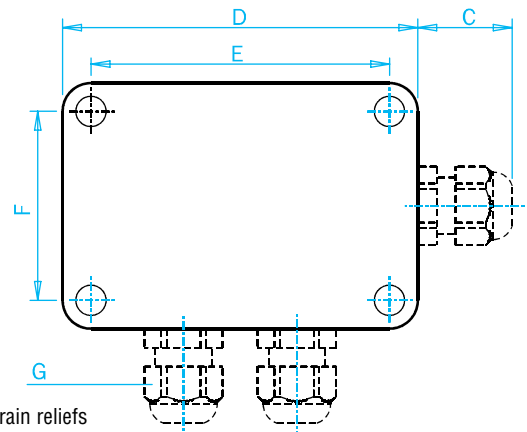
### Replacement Jumpers

Quick#	Part#	Price	Description
7605	SB-JUMPER-18	\$1.60	Qty: 18 Jumpers, For SB2C, SB4C, SB6C
7606	SB-JUMPER-31	\$2.60	Qty: 31 Jumpers, For SB8C, SB12C



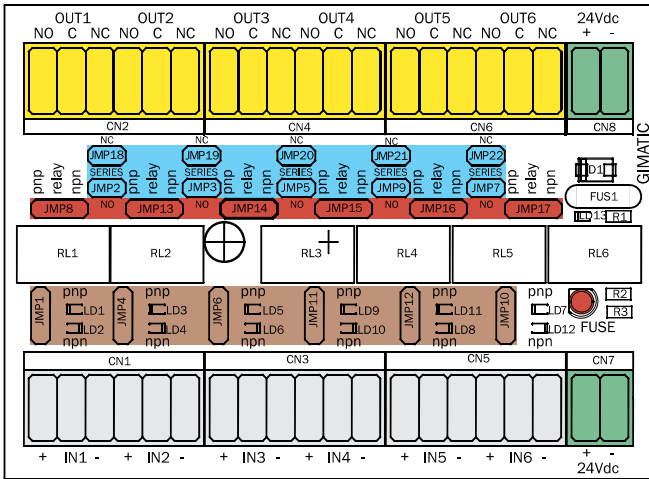
Use Quick#s for easy online ordering.

	SB2C	SB4C	SB6C	SB8C	SB12C	SB8F	SB15T
A	57	57	57	57	57	57	57
B	65	65	94	94	94	65	65
C	25	25	25	25	25	25	25
D	65	94	94	130	180	94	94
E	50	79	79	115	165	79	79
F	50	50	79	79	79	50	50
G	n°2	n°3	n°4	n°6	n°8	n°3	n°3
Wt.	120g	160g	190g	235g	325g	165g	150g

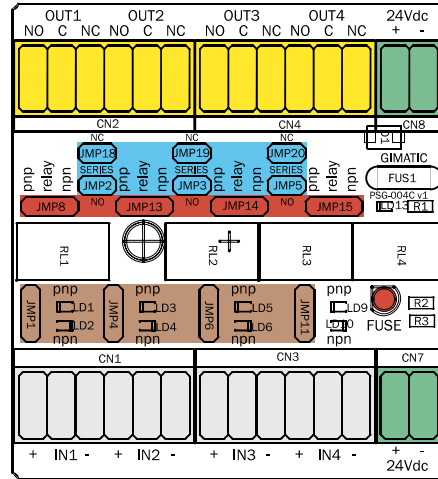


Sensor Junction Box – SB

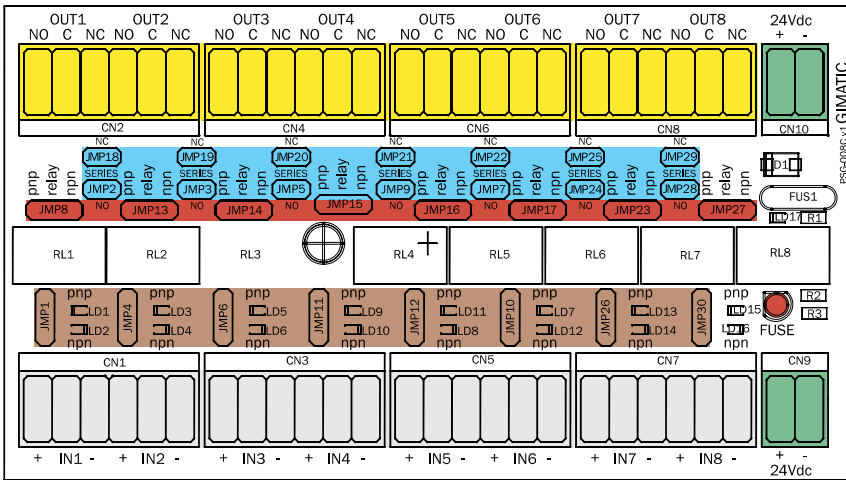
SB6C 6 sensors maximum



SB4C 4 sensors maximum



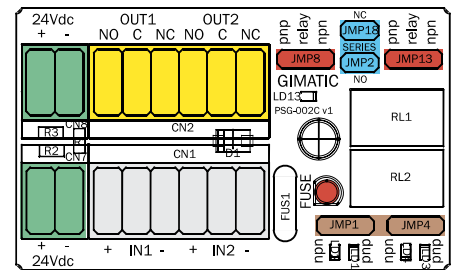
SB8C 8 sensors maximum



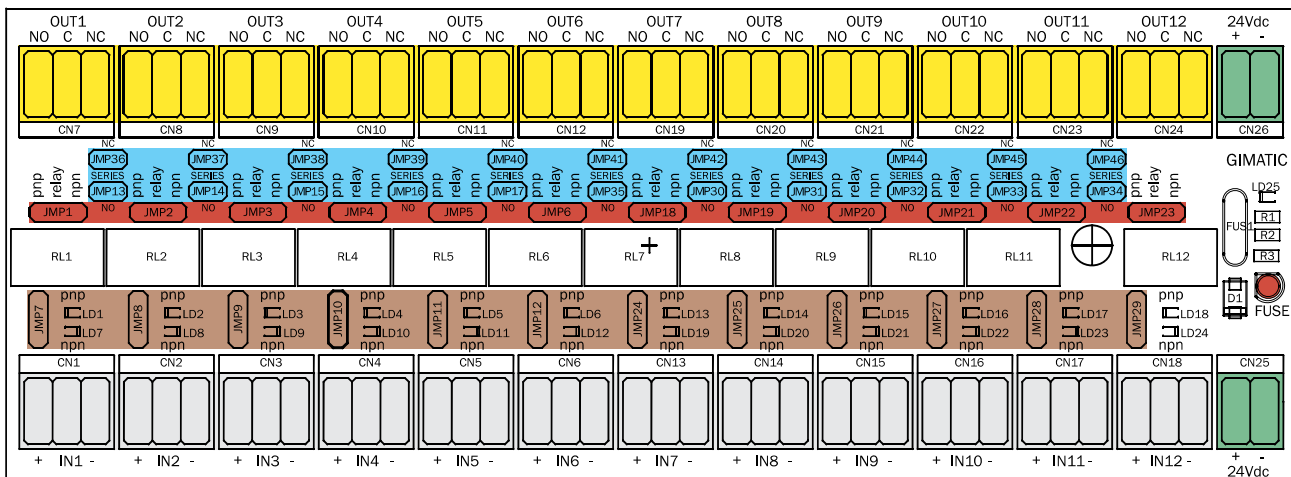
Color legend:

- Green = 24V dc (+/- 10%)
- Gray = Sensor input area
- Brown = Jumper selector for input sensor type
- Red = Jumper selector for desired output
- Blue = Jumper selector for Series connections (NO = Normally Open) or (NC = Normally Closed)
- Yellow = Output area

SB2C 2 sensors maximum



SB12C 12 sensors maximum



# Sensor Junction Box – SB

## Sensor Box Examples:

It's necessary to connect all sensors in succession when a series connection is desired. Normally open (NO) or Normally closed (NC).

### Color legend:

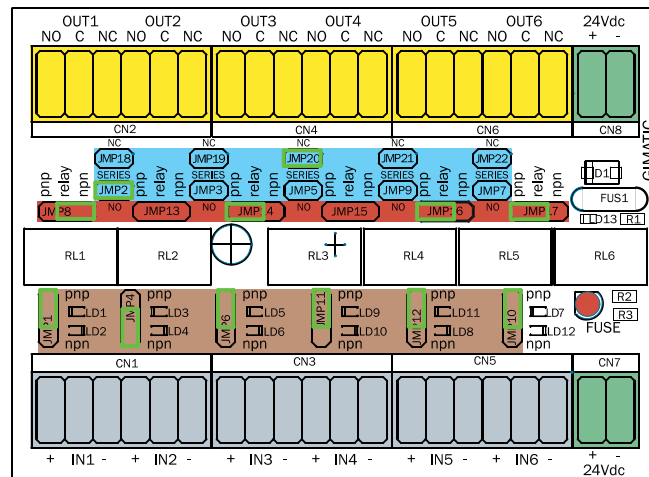
- Green = 24V dc (+/- 10%)
- Gray = Sensor input area
- Brown = Jumper selector for input sensor type
- Red = Jumper selector for desired output
- Blue = Jumper selector for Series connections (NO = Normally Open) or (NC = Normally Closed)
- Yellow = Output area
- Green rectangle= Jumper

### Example 1

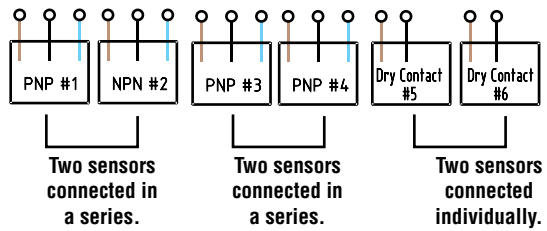
SB6C

2 Sensors in a series + 2 sensors in a series + 2 sensors individually

(NO) NPN output for series connection #1-2      (NC) PNP output for series connection #3-4      (NO) PNP output for individual connection #5      (NO) PNP output for individual connection #6



24Vdc Power may be supplied to either of the green terminals.

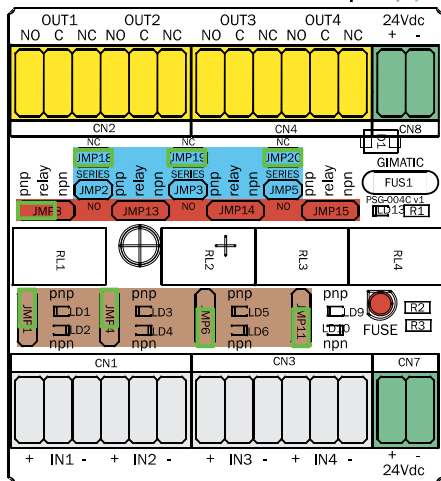


### Example 2

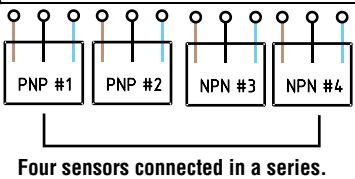
SB4C

4 Sensors in a series (Normally closed output)

(NC) PNP output for series connection of sensors #1-4



24Vdc Power may be supplied to either of the green terminals.

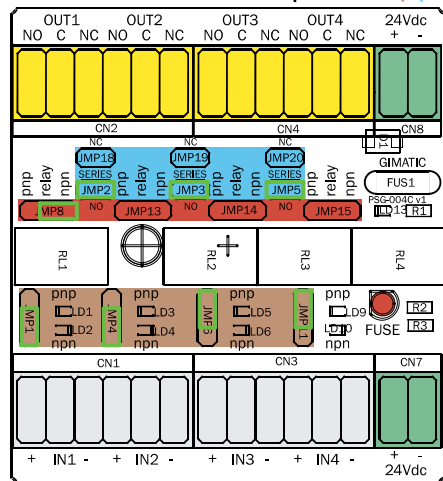


### Example 3

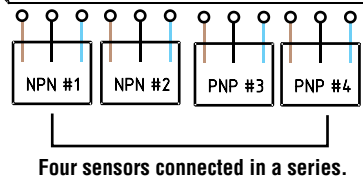
SB4C

4 Sensors in a series (Normally open output)

(NO) NPN output for series connection of sensors #1-4



24Vdc Power may be supplied to either of the green terminals.



# Sensor Junction Box – SB

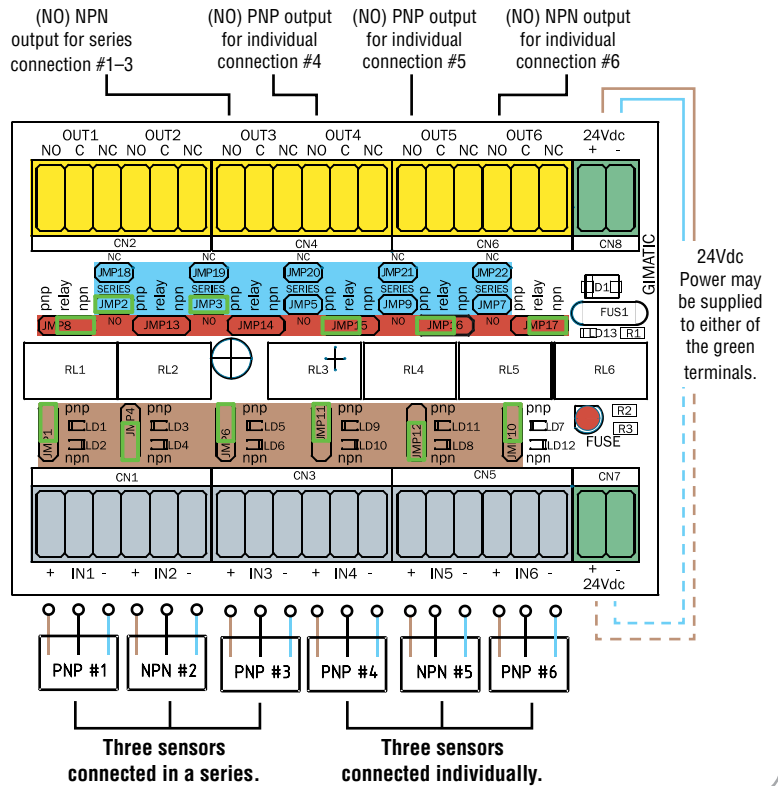
The SB series sensor junction boxes are designed to condition sensor signals and ultimately provide signals suitable for a PLC. The board is equipped with a self-restoring fuse which protects the controls from possible short circuit. The electrical box is equipped with PG9 cable connectors which provide IP65 protection of the board. The push-down wire connectors also strip the wire. A manual included with the sensor box will demonstrate this, and more.

**Color legend:**

- Green = 24V dc (+/- 10%)
- Gray = Sensor input area
- Brown = Jumper selector for input sensor type
- Red = Jumper selector for desired output
- Blue = Jumper selector for Series connections (NO = Normally Open) or (NC = Normally Closed)
- Yellow = Output area
- Green Rectangle= Jumper

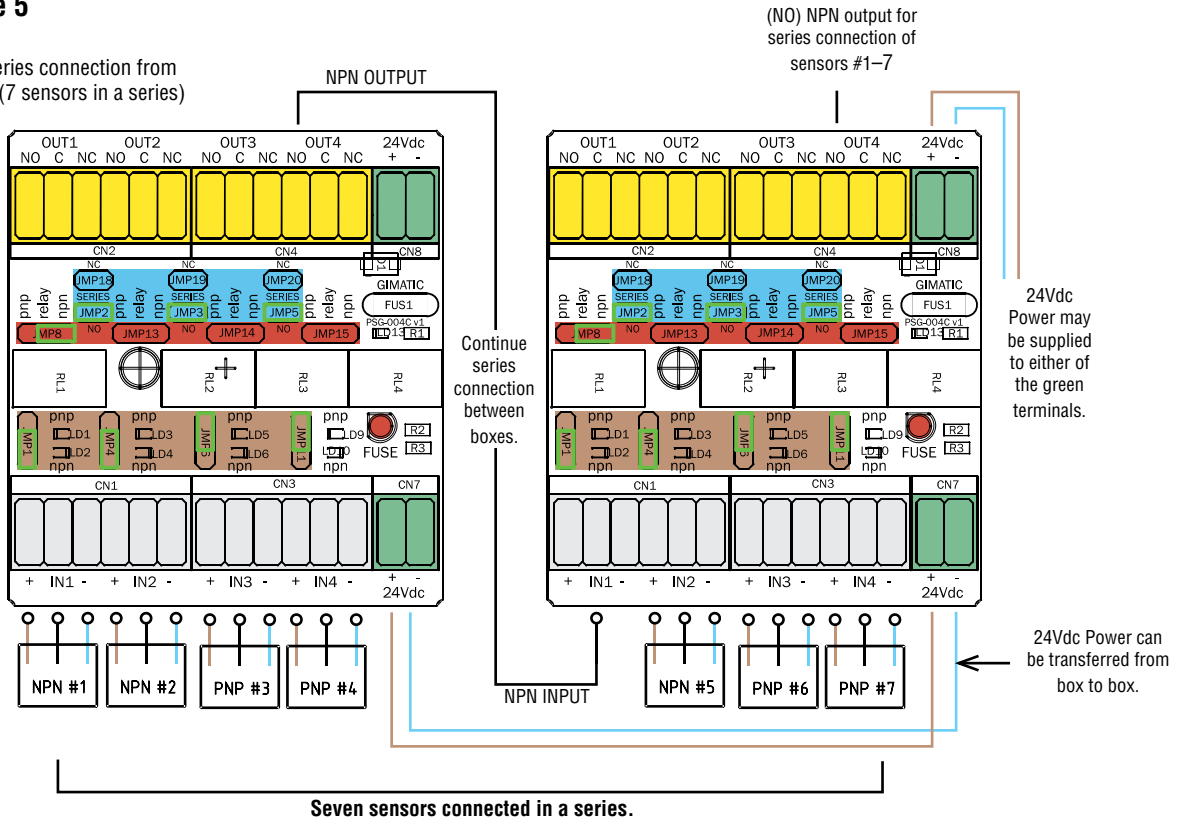
### Example 4

SB6C  
3 Sensors in a series + 3 sensors individually



### Example 5

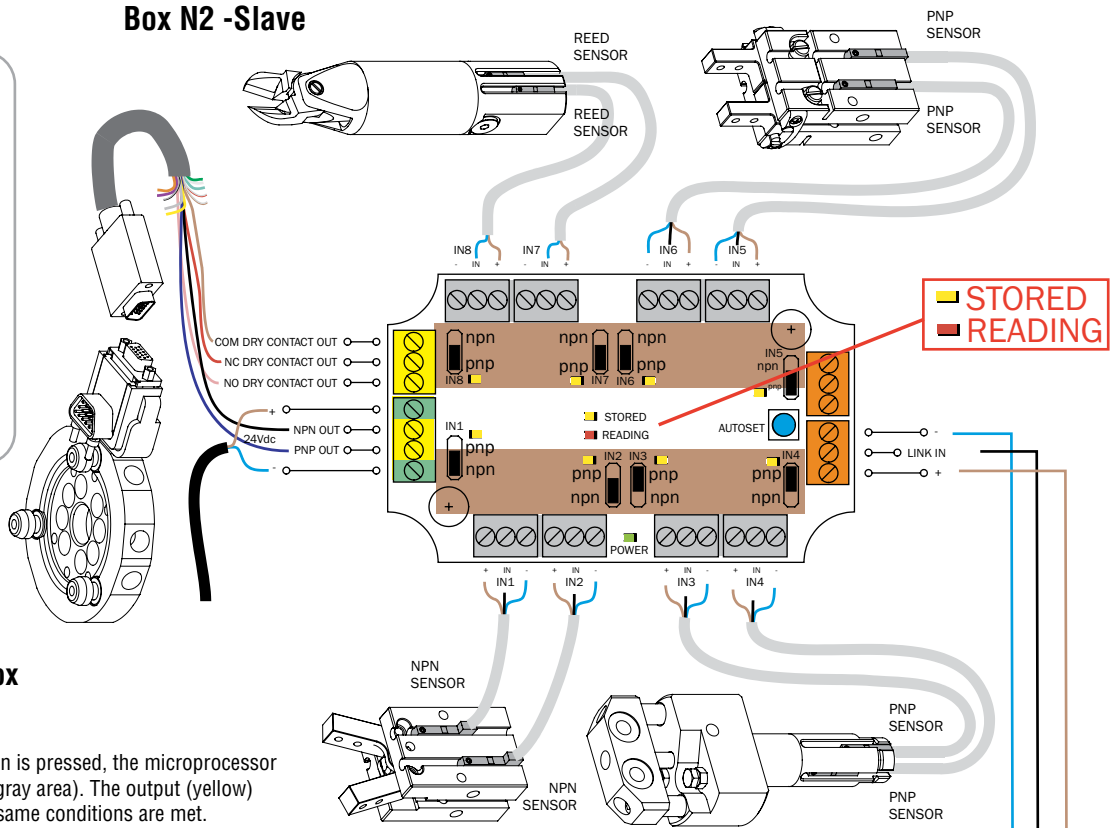
(2x)SB4C  
Continue series connection from box to box (7 sensors in a series)



# SB – Microprocessor Box

### Color legend:

- Green = 24V dc (+/- 10%)
- Gray = Sensor input area
- Brown = Jumper selector for input sensor type
- Orange = For connecting multiple boxes in series
- Blue = Autoset Button
- Yellow = Output area



## Microprocessor Sensor Box

(Dimensions shown on page 988)

**Functioning:** When the autoset button is pressed, the microprocessor memorizes the status of the inputs (gray area). The output (yellow) area will be activated every time the same conditions are met.

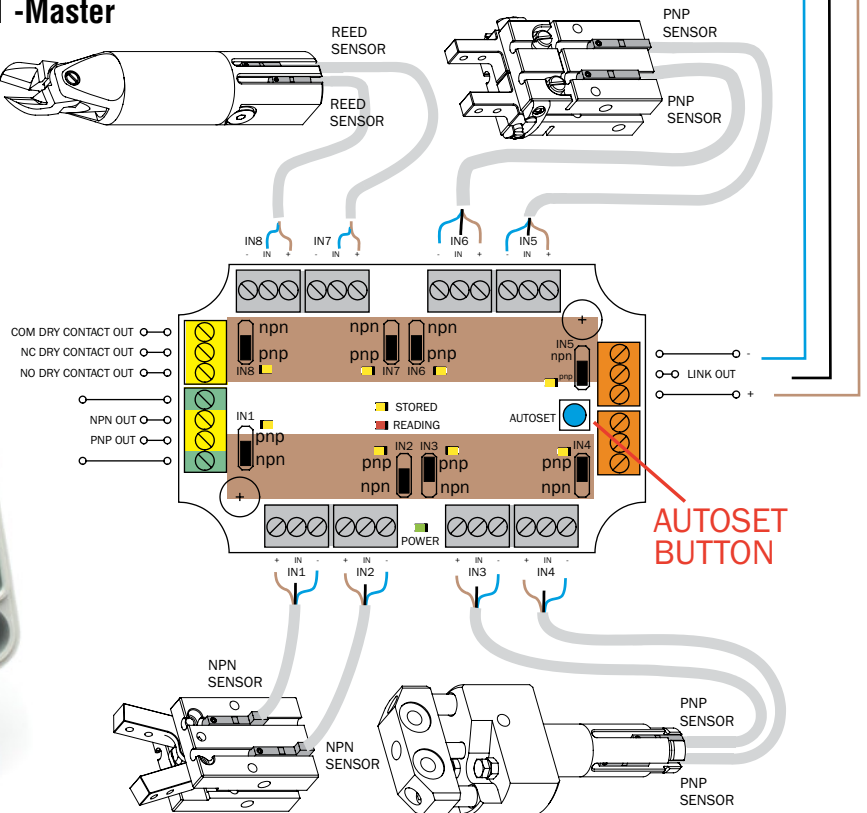
**Inputs:** Maximum 8 PNP, NPN or dry contact (NO or NC) sensors switched by jumpers (brown area).

**Outputs:** 1 PNP, NPN or dry contact (NO or NC) (yellow area) output.

### Microprocessor Sensor Box

Quick#	Part#	Price
6461	SB8F	\$170.00

### Box N1 -Master



# Terminal Box – SB

## Terminal Cabling Box

(Dimensions shown on page 988)

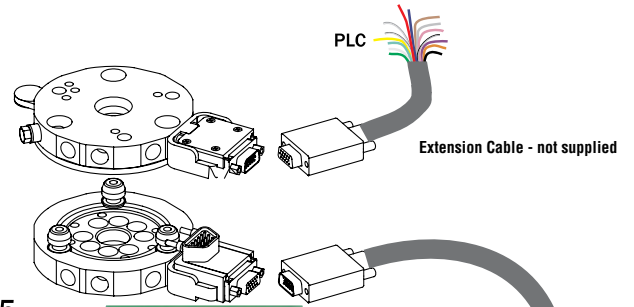
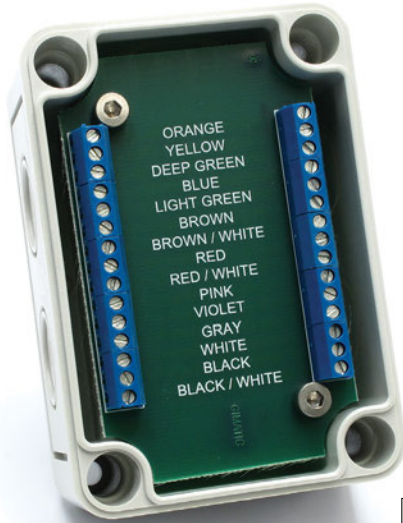
This terminal box is used primarily for EOAT's using multiple electrical boxes. Use this terminal box as a junction area between outputs from multiple electrical boxes and the electrical cable from the quick changer.

**Inputs:** 15 inputs (to outputs)

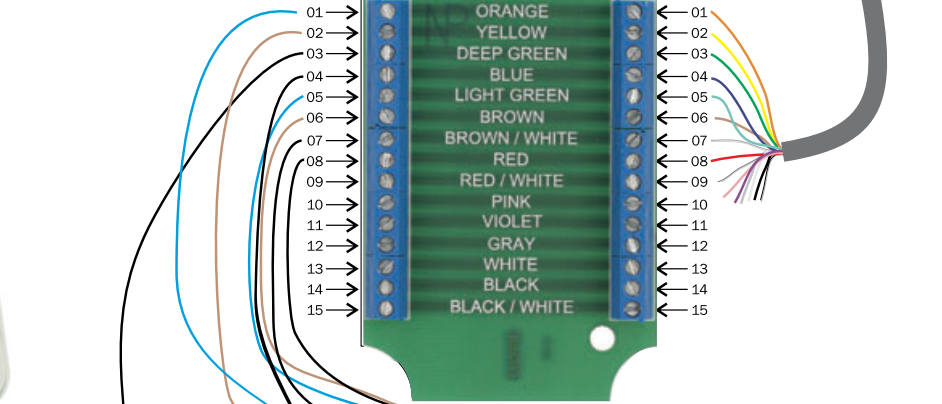
**Outputs:** 15 outputs (from inputs)

### Terminal Cabling Box

Quick#	Part#	Price
5308	SB15T	\$78.20



SB15

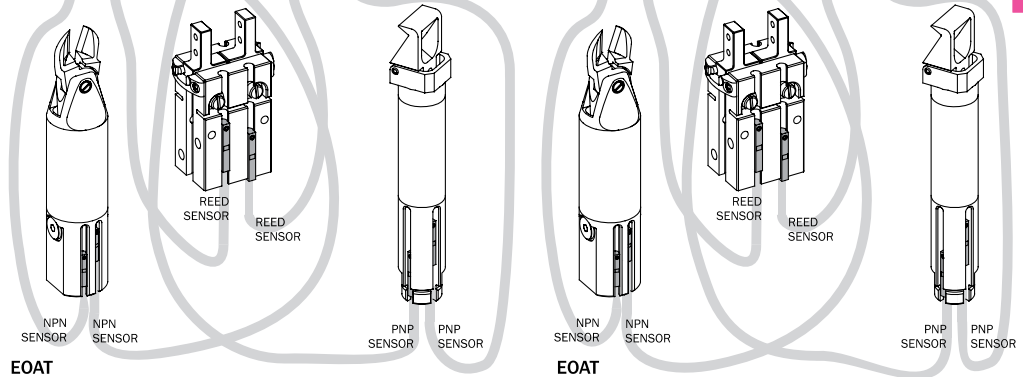
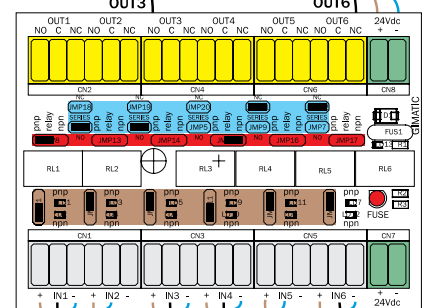
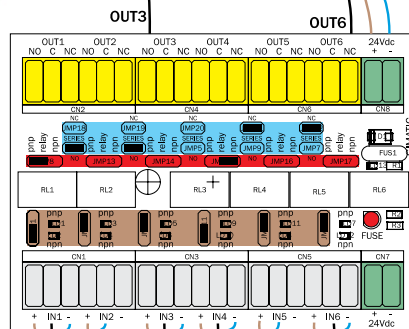


PNP NO signal output for all pneumatic devices "open" by IN1, IN2, IN3 series

NPN NC signal output for all pneumatic devices "closed" by IN4, IN5, IN6 series

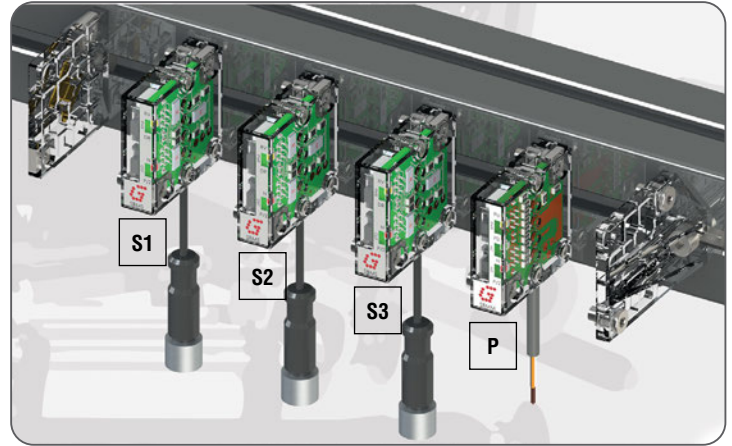
PNP NO signal output for all pneumatic devices "open" by IN1, IN2, IN3 series

NPN NC signal output for all pneumatic devices "closed" by IN4, IN5, IN6 series

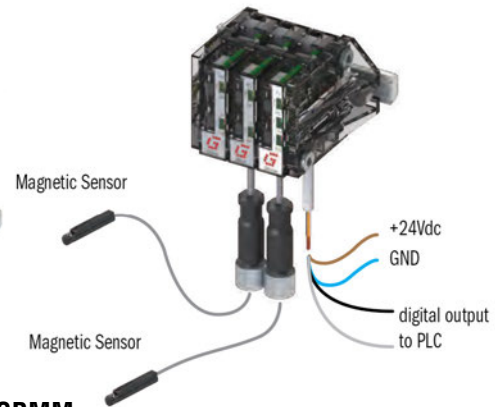


## SBMS & SBMM Modular Sensor Box – (NO & NC Simultaneous Outputs)

- Connect M8 3-pin sensors (pnp or npn) in series or individually.
- Connect up to 20 secondary modules to one primary module.
- Secondary units can reverse Normally Open (NO) / Normally Closed (NC) sensor logic.
- Primary module has NO & NC signal LED indicators.
- Primary module can send either pnp or npn outputs back to PLC.
- Easy configuration using switches (see below).
- LED sensor status indicators for easy troubleshooting.
- 12-24 Vdc (+/- 10%) power requirement.
- IP40 rating
- End caps allow direct mounting on standard aluminum profile.
- A modular, very compact, scalable solution.
- All modules (primary, secondary, end cap) are 36mm x 34mm x 10mm.
- See page 985 for: M8 3-pin extension cable, Y-splitter for easy connection to PRO teachable sensors, and field wireable 3-Pin M8 connector for easy connection of sensors with leads.



Modules can mount to end caps in either direction.



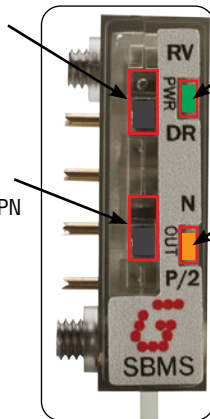
### Secondary Module SBMS:

**Choose sensor logic:**

Select "RV" to set sensor output status to NC  
Select "DR" to set sensor output status to NO.

**Choose sensor type:**

Select "N" if connecting NPN sensors.  
Select "P/2" if connecting PNP or 2 wire sensors.



Power indicator supplied by primary module.

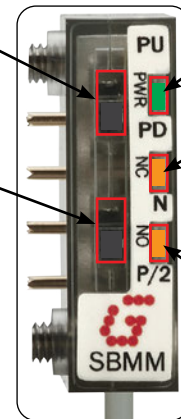
**Sensor output indicator:**  
Sensor logic status (NO or NC) will effect this output.

### Primary Module SBMM:

**Choose output type:**

Select "PU" for NPN output.  
Select "PD" for PNP output.

Select "N" for NPN output.  
Select "P/2" for PNP output.



Power indicator.

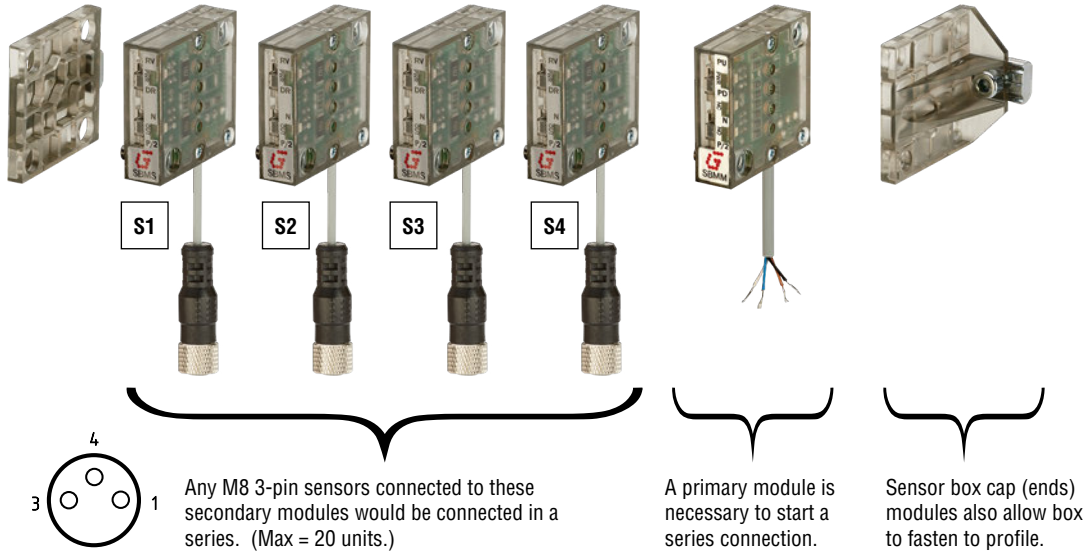
Main output indicator showing NC output to PLC. (Depending on sensor logic)

Main output indicator showing NO output to PLC. (Depending on sensor logic)

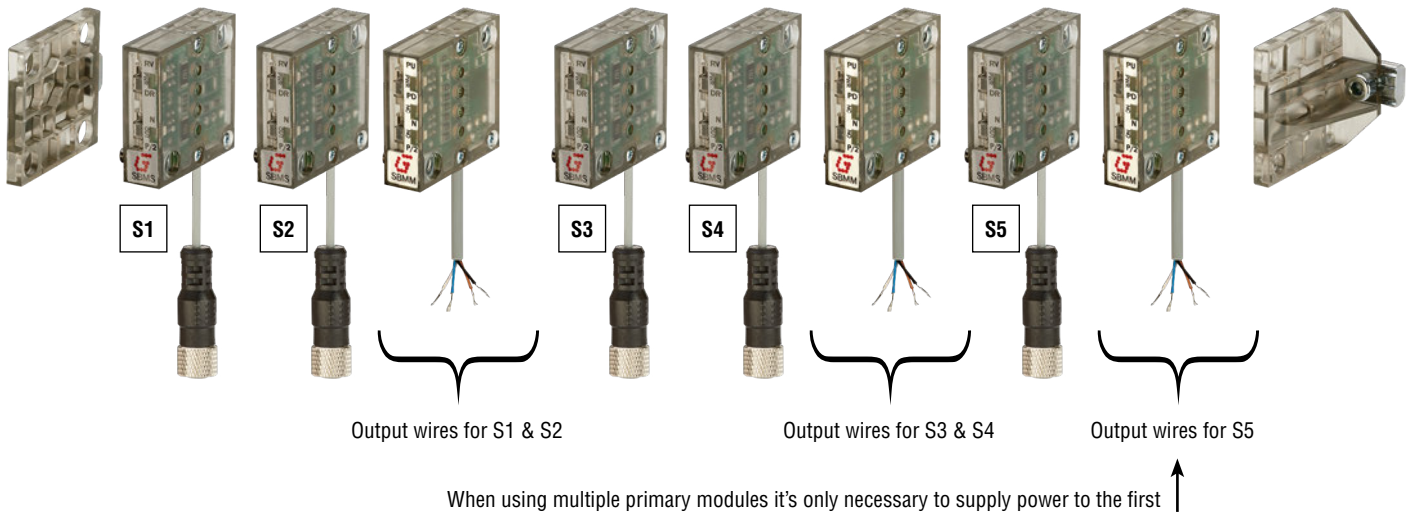
Quick#	7403	7402
Part#	SBMS	SBMM
Price	\$55.00	\$77.00
Electrical Connection	1 female M8 3-pin connector, 150mm long	4 wire unterminated cable, 1m long
Weight	50g	50g
Formation	3x0.096mm <sup>2</sup>	4x0.14mm <sup>2</sup>
Blue wire	GND	
Brown wire	Vcc from 12-24 Vdc (+/- 10%)	
Black wire	Sensor output signal (input for secondary module)	Series of secondary NO (depending on configuration)
White wire	-	Series of secondary NC (depending on configuration)
Dimensions	36mm x 34mm x 10mm	

## SBMS & SBMM Modular Sensor Box – (NO & NC Simultaneous Outputs)

### Application Example: (single series connection)



### Application Example: (multiple series + parallel connection)



### Choose SBMM & SBMS when NO and NC outputs needed to be supplied to PLC SIMULTANEOUSLY



Secondary Module

Quick#	Part#	Price
7403	SBMS	\$55.00

- Max. Supply current to sensor: 200mA
- Module current consumption: 30mA



Primary Module

Quick#	Part#	Price
7402	SBMM	\$77.00

- Max current of NO output: 1A
- Max current of NC output: 150 mA
- Max supply current: 2A
- Module current consumption: 30mA



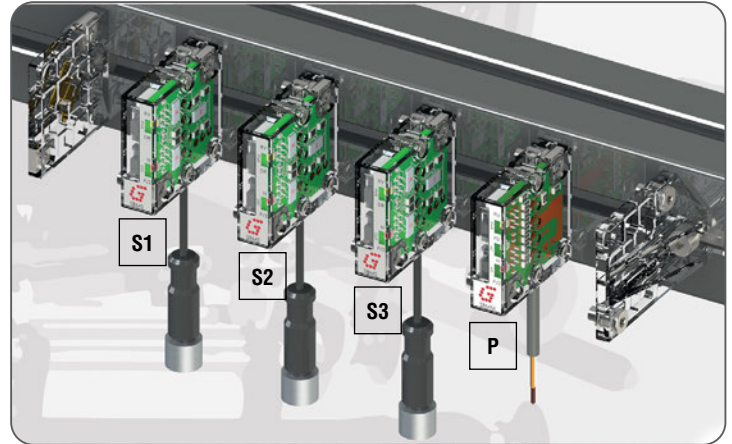
End Caps (both sides included)

Quick#	Part#	Price
7404	SBMK	\$10.89

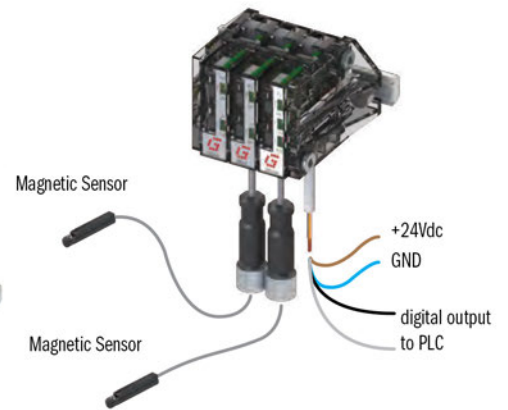


## SBMS-E & SBMM-E Modular Sensor Box – (NO & NC Outputs, Not Simultaneous)

- Connect M8 3-pin sensors (pnp or npn) in series or individually.
- Connect up to 20 secondary modules to one primary module.
- Secondary units can reverse Normally Open (NO) / Normally Closed (NC) sensor logic.
- Primary module has one NO signal LED indicators, but can be switched to NC by changing sensor logic.
- Primary module can send either pnp or npn outputs back to PLC.
- Easy configuration using switches (see below).
- LED sensor status indicators for easy troubleshooting.
- 12-24 Vdc (+/- 10%) power requirement.
- IP40 rating
- End caps allow direct mounting on standard aluminum profile.
- A modular, very compact, scalable solution.
- All modules (primary, secondary, end cap) are 36mm x 34mm x 10mm.
- See page 985 for: M8 3-pin extension cable, Y-splitter for easy connection to PRO teachable sensors, and field wireable 3-Pin M8 connector for easy connection of sensors with leads.



Modules can mount to end caps in either direction.



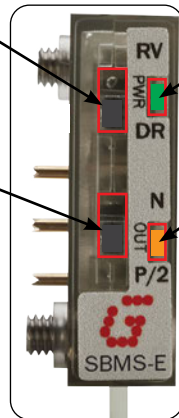
### Secondary Module SBMS-E:

**Choose sensor logic:**

Select "RV" to set sensor output status to NC  
 Select "DR" to set sensor output status to NO.

**Choose sensor type:**

Select "N" if connecting NPN sensors.  
 Select "P/2" if connecting PNP or 2 wire sensors.



Power indicator supplied by primary module.

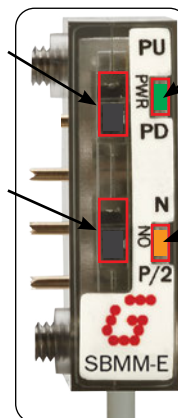
**Sensor output indicator:**  
 Sensor logic status (NO or NC) will effect this output.

### Primary Module SBMM-E:

**Choose output type:**

Select "PU" for NPN output.  
 Select "PD" for PNP output.

Select "N" for NPN output.  
 Select "P/2" for PNP output.



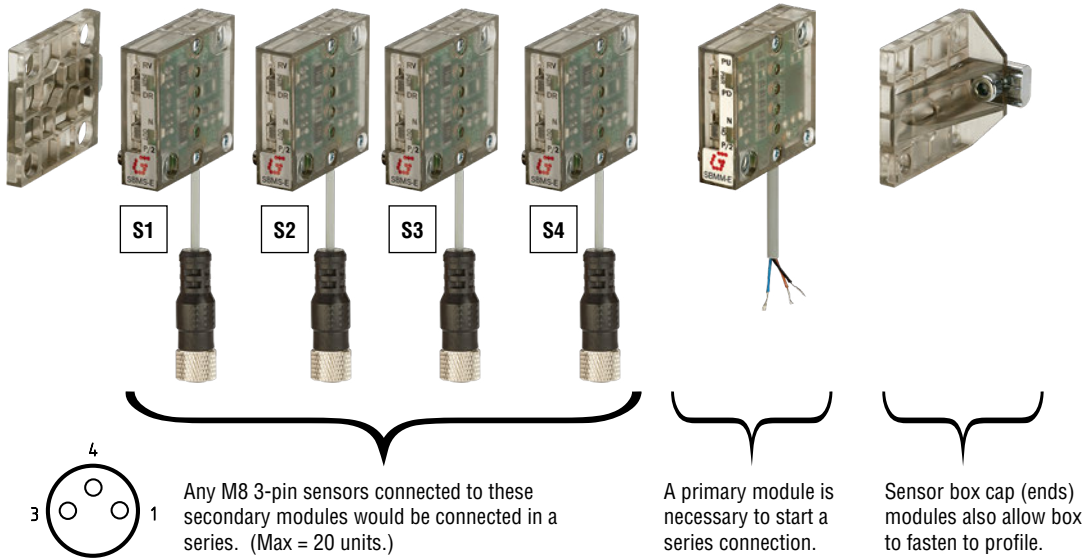
Power indicator.

Main output indicator showing NO or NC output to PLC. (Depending on sensor logic.)

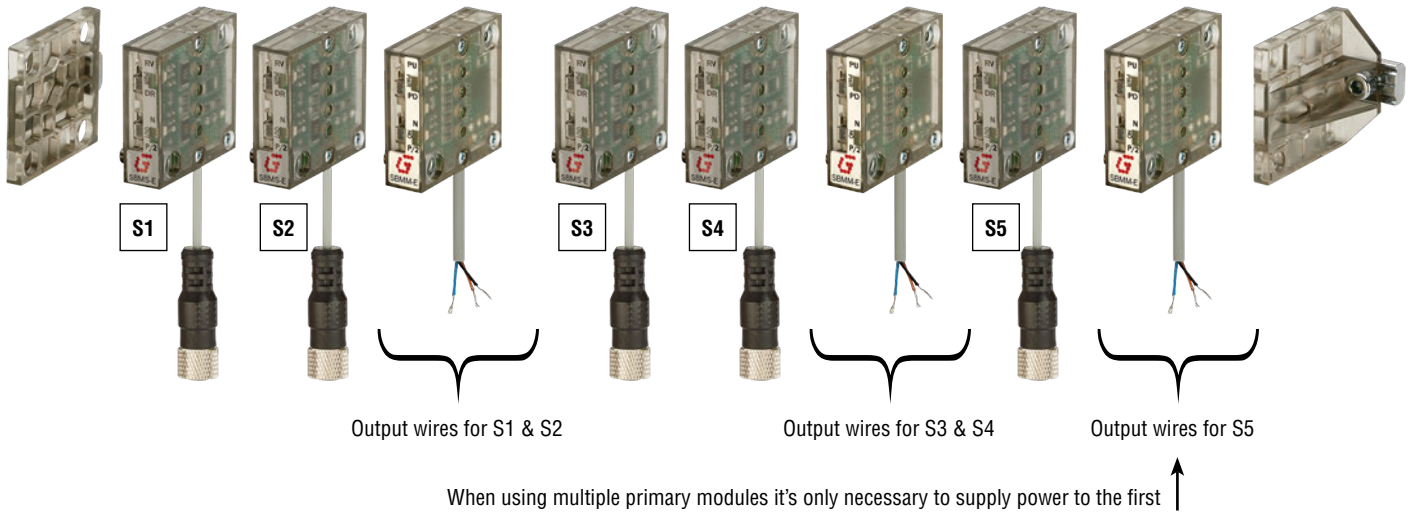
Quick#	7406	7405
Part#	SBMS-E	SBMM-E
Price	\$42.00	\$49.00
Electrical Connection	1 female M8 3-pin connector, 150mm long	3 wire unterminated cable, 1m long
Weight	50g	50g
Formation	3x0.096mm <sup>2</sup>	3x0.14mm <sup>2</sup>
Blue wire	GND	
Brown wire	Vcc from 12-24 Vdc (+/- 10%)	
Black wire	Sensor output signal (input for secondary module)	Series of secondary NO (depending on configuration)
Dimensions	36mm x 34mm x 10mm	

# SBMS-E & SBMM-E Modular Sensor Box – (NO & NC Outputs, Not Simultaneous)

## Application Example: (single series connection)



## Application Example: (multiple series + parallel connection)



**Choose SBMM-E & SBMS-E when either a NO and NC\* output is needed to be supplied to PLC. BOTH SIGNALS CANNOT BE SUPPLIED SIMULTANEOUSLY** \*NC output is possible by changing sensor logic, see page 996



Secondary Module

Quick#	Part#	Price
7406	SBMS-E	\$42.00

- Max. Supply current to sensor: 200mA
- Module current consumption: 30mA



Primary Module

Quick#	Part#	Price
7405	SBMM-E	\$49.00

- Max current of NO output: 1A
- Max supply current: 2A
- Module current consumption: 30mA



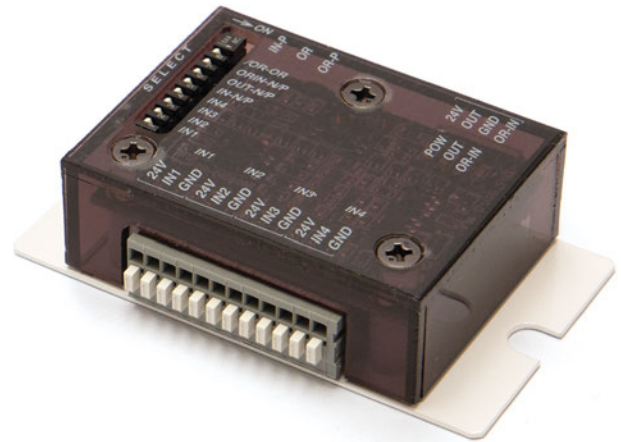
End Caps (both sides included)

Quick#	Part#	Price
7404	SBMK	\$10.89

# Star® AND Circuit Sensor Board

(Dimensioned drawing shown actual size)

- AND output (series) for 1 to 4 sensors
- Compact design
- Signals can be converted (PNP to NPN & NPN to PNP)
- All sensors in a box must be NPN or PNP, except in a series of boxes where entire boxes can be different.
- LED indicators allow for easy troubleshooting
- Strip wires before inserting them into the box. (Maximum Exposed Conductor Length: 10mm)
- Ensure copper conductors are tightly twisted together before inserting.
- Minimum wire size: 28 AWG (0.08 mm<sup>2</sup>)



Multi AND Board

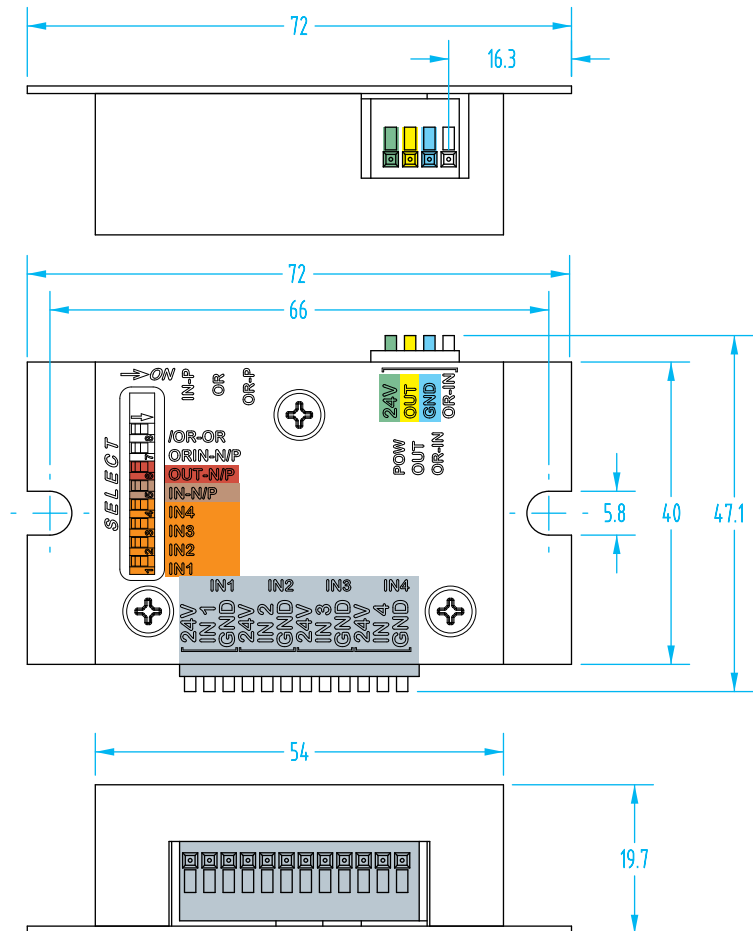
Quick#	Part#	Description	Weight	Price
2689	GSE-AND-EU-4P	4 Inputs, DC24V	57g	\$125.26

Note: M5 mounting hardware is not included.

With these AND boxes, simply push a switch to turn off sensors that you don't want the box to recognize. There is no need to place wire jumpers on unused sensor slots like other sensor boxes.

**Color legend:**

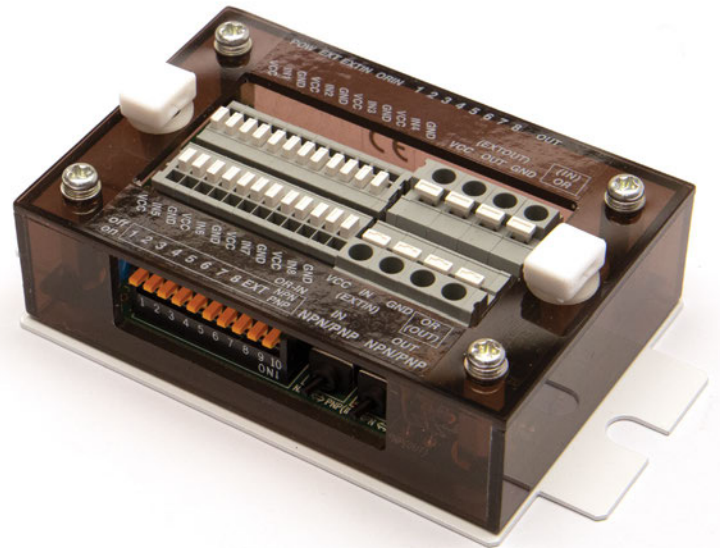
- Green = Input Power (24V dc)
- Blue = Input Power (0V dc)
- Yellow = Output
- Gray = Sensor input area
- Brown = Switch selector for input sensor type
- Red = Switch selector for desired output
- Orange = Sensor On/Off Switches



# Star AND Circuit Sensor Board

(Dimensioned drawing shown actual size)

- AND output (series) for 1 to 8 sensors
- Compact design
- Signals can be converted (PNP to NPN & NPN to PNP)
- All sensors in a box must be NPN or PNP, except in a series of boxes where entire boxes can be different.
- LED indicators allow for easy troubleshooting
- Expandable up to 32 inputs with additional boxes (4 boxes total).
- Strip wires before inserting them into the box. (Maximum Exposed Conductor Length: 10mm)
- Ensure copper conductors are tightly twisted together before inserting.
- Minimum wire size: 28 AWG (0.08 mm<sup>2</sup>)



### Multi AND Board

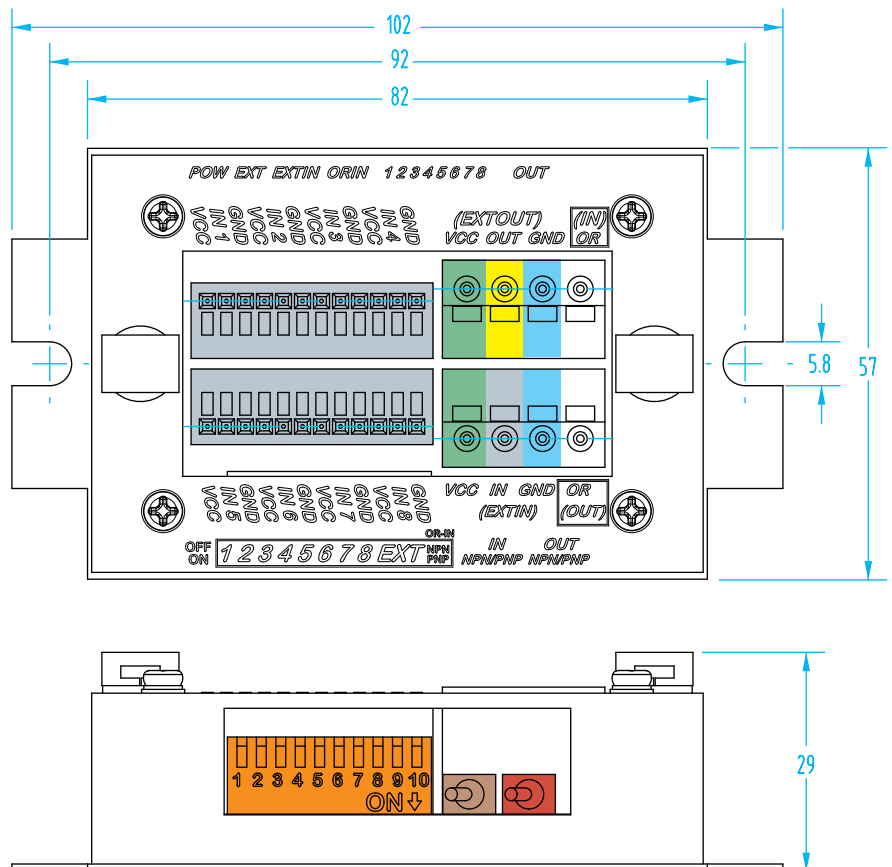
Quick#	Part#	Description	Weight	Price
2690	GSE-AND-EU-8P	8 Inputs, DC24V	115g	\$178.95

Note: M5 mounting hardware is not included.

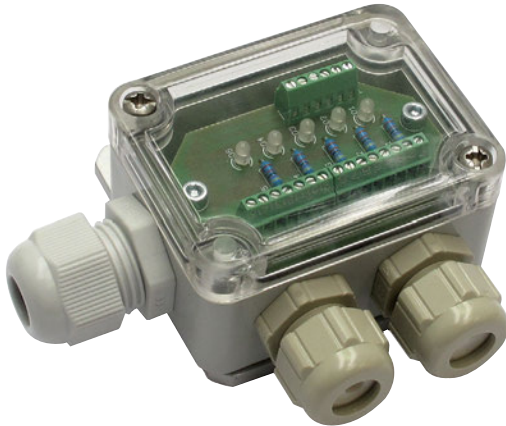
### Color legend:

- Green = Input Power (24V dc)
- Blue = Input Power (0V dc)
- Yellow = Output
- Gray = Sensor input area
- Brown = Switch selector for input sensor type
- Red = Switch selector for desired output
- Orange = Sensor On/Off Switches

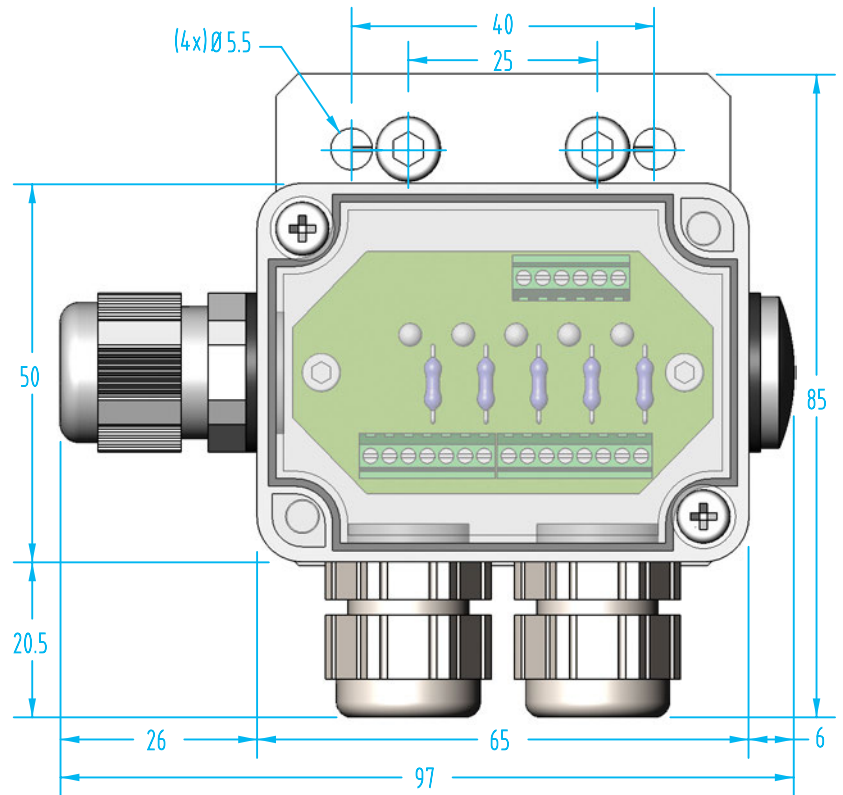
When adding an additional sensor box in a series, the Output Switch on the added sensor boxes must be set to NPN even if sensors are PNP. The first box can either be NPN or PNP, based on your robot.



## >S< Style Terminal Box KK



Terminal box is used to connect up to four PNP sensors in series or individually.

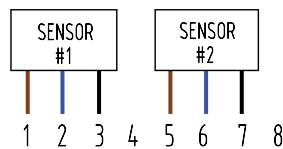


### Terminal Box - KK

Quick#	Part#	>ASS< #	Price	Wt.
3404	KK1	1-805-20-00	\$103.55	115g

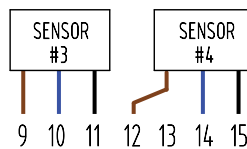
**Connection Example:**  
Two Sensors are Independent

Outputs A #3 & #4  
(See output area)

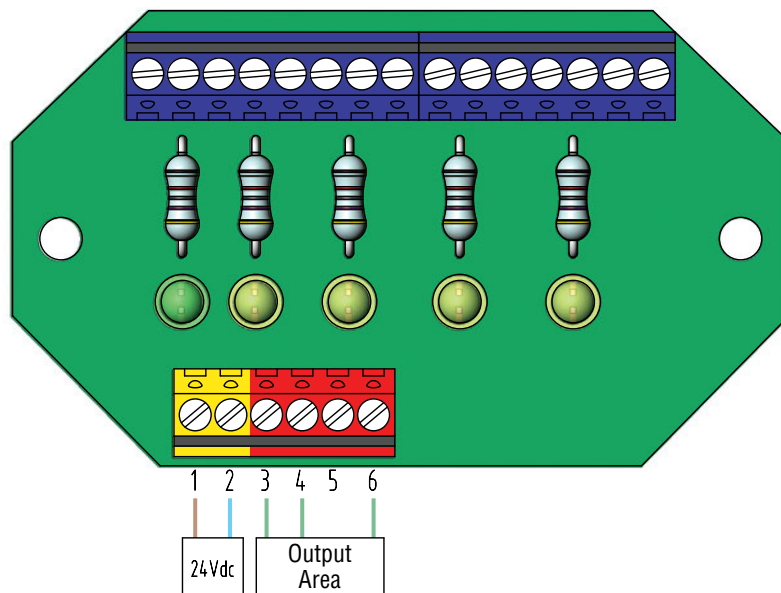


**Connection Example:**  
Two Sensors in Series

Output A #6  
(See output area)

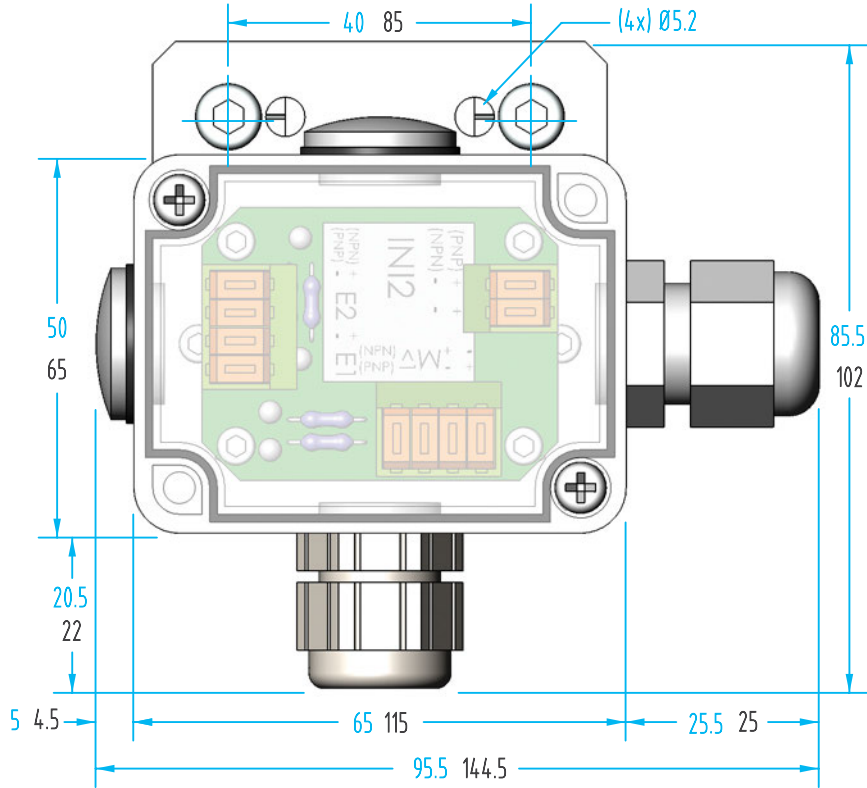
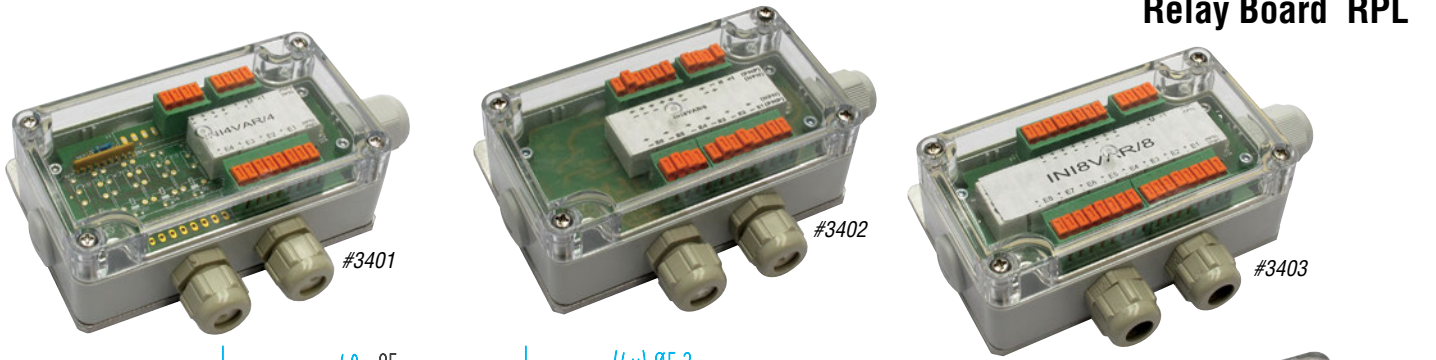


- Positive +
- Negative -
- Signal
- Output
- Input Power
- Sensor Input



**Used for PNP sensors only**  
(Enlarged to show detail)

# Relay Board RPL



Relay board is used for series connection of multiple sensor signals (22–26Vdc).

**Dimensions for #3400 in Blue,**  
**Dimensions for #3401-#3403 in Black.**

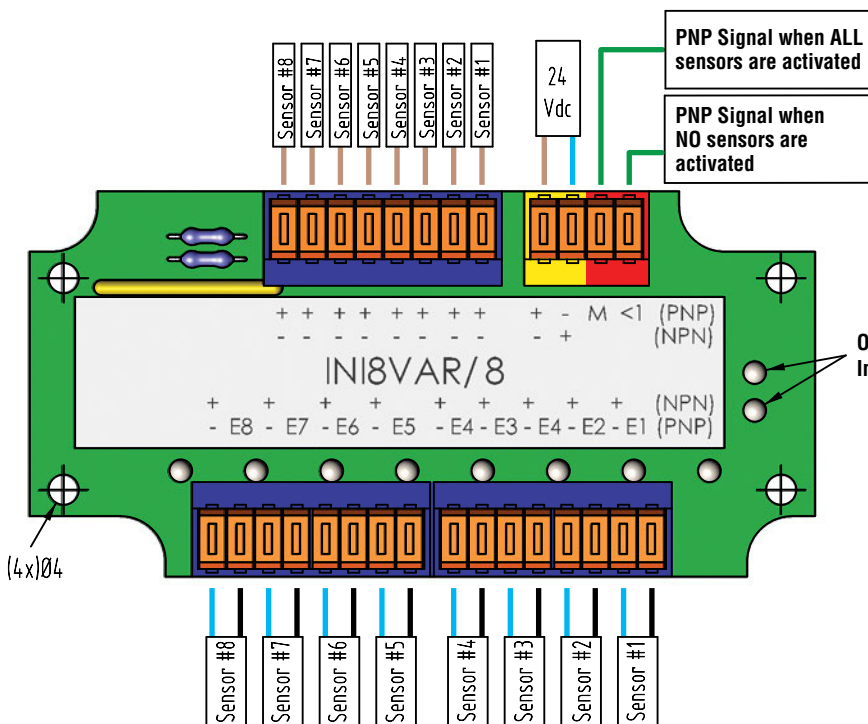
### Relay Board

Quick#	Part#	>ASS< #	Price	Inputs	*Wt.
3400	RPL2	1-805-10-00	\$100.83	2	156g
3401	RPL4	1-805-12-00	\$151.51	4	319g
3402	RPL6	1-805-14-00	\$176.04	6	360g
3403	RPL8	1-805-16-00	\$196.20	8	367g

*\*Weight includes aluminum mounting plate and plastic housing.*

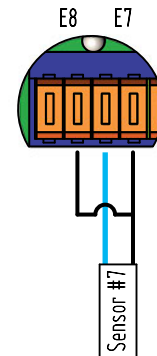
A PNP output wiring example is shown.  
(All sensors must be PNP)

If an NPN output is desired all brown and blue wires will need to be reversed.  
(All sensors must be NPN)



Output Indicator

- Output
- Input Power
- Sensor Input
- Positive +
- Negative -
- Signal



If using fewer sensors than sensor inputs, all E Terminals must be jumped.

## Gimatic® C-Slot Sensors

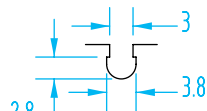
- Power Supply: 6–30V dc
- Max. Switching Frequency: 200 KHz
- Operating Temp.: -10° to 70°C
- Voltage Drop: 1V dc
- IEC Rating: IP 67
- Cable: PUR



*New SSY. Precision Sensors for use with New Style PB S2 Grippers. See Sensor Reference Guide on pages 1006–1011 to determine PB gripper compatibility.*

**NEW**

*Due to the high sensitivity of SSQ sensors, EMI does not recommend the use of SSQ sensors in most applications. PRO-SSR sensors are easier to use and are appropriate for most applications. Please confer with engineering for application specific questions.*



C-Slot dimensional drawing

### C-Slot Magnetoresistive Sensors

Part#	Quick#	Price	Type	Signal	Connection
SS4N225G	1882	\$27.20	Standard 3-Wire	PNP	lead, 2.5m long
SS4M225G	1883	\$27.20	Standard 3-Wire	NPN	
SS3N203G	6282	\$31.16	Standard 3-Wire	PNP	M8 connector, 0.3m long
SS3M203G	1884	\$31.16	Standard 3-Wire	NPN	
SSY4N225G	7591	\$27.20	Precision 3-Wire	PNP	lead, 2.5m long
SSY4M225G	7590	\$27.20	Precision 3-Wire	NPN	
SSY3N203G	7589	\$31.16	Precision 3-Wire	PNP	M8 connector, 0.3m long
SSY3M203G	7588	\$31.16	Precision 3-Wire	NPN	
SSQ4N225G	7707	\$27.20	High Precision 3-Wire	PNP	lead, 2.5m long
SSQ4M225G	7709	\$27.20	High Precision 3-Wire	NPN	
SSQ3N203G	7708	\$31.16	High Precision 3-Wire	PNP	M8 connector, 0.3m long
SSQ3M203G	7710	\$31.16	High Precision 3-Wire	NPN	
SN4N225G	6278	\$27.20	90° Standard 3-Wire	PNP	lead, 2.5m long
SN4M225G	6357	\$27.20	90° Standard 3-Wire	NPN	
SN3N203G	6277	\$31.16	90° Standard 3-Wire	PNP	M8 connector, 0.3m long
SN3M203G	6356	\$31.16	90° Standard 3-Wire	NPN	

Use Quick#s for easy online ordering.

- Reed Sensors are not recommended for grippers (Cylinders only).
- Power Supply: 3–30V ac/dc
- Max. Switching Frequency: 500 Hz
- Operating Temp.: -10° to 70°C
- Voltage Drop: 3V dc
- IEC Rating: IP 67
- Cable: PUR



### C-Slot Reed Sensors

Part#	Quick#	Price	Type	Signal	Connection
SS1C225-G	6600	\$18.30	2-wire REED	PNP/ NPN	lead, 2.5m long
SS2C203-G	6601	\$18.93	2-wire REED	PNP/ NPN	M8 connector, 0.3m long



### Sensor Slot Adaptors

Part#	Quick#	Price	Description
K-SENS	7440	\$4.82	Adapter allows C slot sensors to work in T slots, D slots, and more.

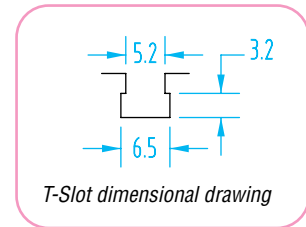
## Gimatic T-Slot & Dovetail Sensors

### T-Slot Magneto-resistive Sensors

Part#	Quick#	Price	Type	Signal	Connection
SL4N225G	792	\$27.20	Standard 3-wire	PNP	lead, 2.5m long
SL4M225G	793	\$27.20	Standard 3-wire	NPN	
SL3N203G	6274	\$31.16	Standard 3-wire	PNP	M8 connector, 0.3m long
SL3M203G	6456	\$31.16	Standard 3-wire	NPN	
SC4N225G	6273	\$30.30	90° Standard 3-Wire	PNP	lead, 2.5m long
SC4M225-G	1796	\$30.30	90° Standard 3-Wire	NPN	
SC3N203G	6455	\$34.62	90° Standard 3-Wire	PNP	M8 connector, 0.3m long
SC3M203-G	6457	\$34.62	90° Standard 3-Wire	NPN	

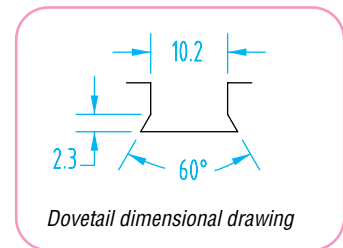


- Power Supply: 6–30V dc
- Max. Switching Frequency: 200 KHz
- Operating Temp.: -10° to 70°C
- Voltage Drop: 1V dc
- IEC Rating: IP 67
- Cable: PUR



### Dovetail Magneto-resistive Sensors

Part#	Quick#	Price	Type	Signal	Connection
CB3N2-G	6126	\$22.90	Standard 3-wire	PNP	M8 Connector*
CB3M2-G	1794	\$22.90	Standard 3-wire	NPN	M8 Connector*



(\*) Purchase extension cable #6591 separate for these sensors.

Quick#	Part#	Price	Description
6591	CFSM890325	\$7.17	3-Wire 90° For CB Series Sensor, 2.5m long

### Replacement Set Screw for Gimatic Sensors

Quick#	Part#	Price	Description
995	GSC-SSS-2.5X4	\$0.25	Set Screw for new style sensors, M2.5x4mm

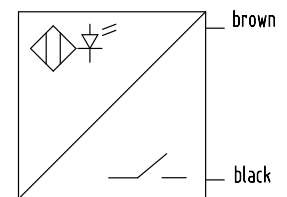


Sensor diagrams and other specifications can be found on our online product pages at : [www.EMICorp.com](http://www.EMICorp.com) and search by Quick#.

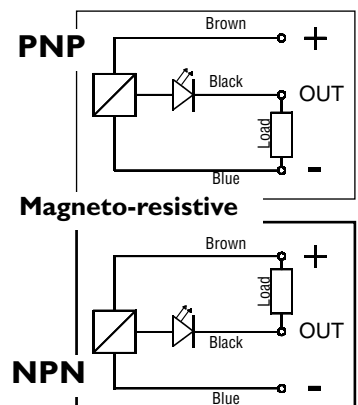
New Gimatic Teachable Sensors for C-Slots are available on page 978.



### 2-wire configuration:



### 3-wire configuration:





## Sensors

- Power Supply: 4.5–28V dc
- Operating Temp.: -10° to 60°C
- Voltage Drop: 1V dc
- IEC Rating: IP 67
- Cable: PVC



### 3-Wire Magnetoresistive Sensors

Part #	Quick#	Price	Type	Signal	Connection
D-M9PL	5430	\$33.70	3-Wire for C-Slot with Midstroke detection	PNP	lead, 3m long
D-M9NL	2412	\$33.70	3-Wire for C-Slot with Midstroke detection	NPN	
D-M9P-SAPC	5497	\$42.06	3-Wire for C-Slot with Midstroke detection	PNP	M8 connector, 0.5m long
D-M9N-SAPC	5498	\$42.06	3-Wire for C-Slot with Midstroke detection	NPN	
GSE-D-M9PVL	2403	\$37.20	3-Wire 90° for C slot	PNP	lead, 3m long
GSE-D-M9NVL	2404	\$37.20	3-Wire 90° for C slot	NPN	
Y7PL-PNP	2243	\$44.00	3-Wire for T slot	PNP	lead, 3m long
Y59AL-NPN	2244	\$34.95	3-Wire for T slot	NPN	

- Power Supply: 24V dc
- Operating Temp.: -10° to 60°C
- IEC Rating: IP 67
- Cable: PVC

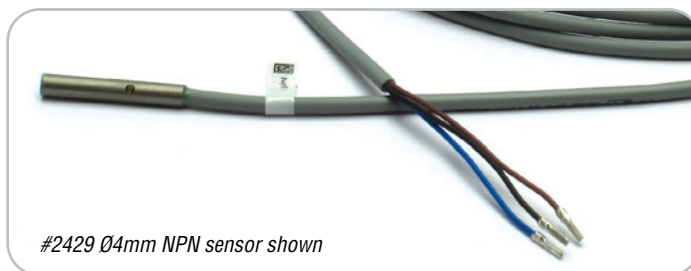


### 2-Wire REED Sensors

Part #	Quick#	Price	Type	Signal	Connection	Voltage Drop
Y59BL-REED	2245	\$33.90	2-Wire REED for T slot	PNP/ NPN	lead, 3m long	4V
RRK-93	3409	\$20.90	2-Wire REED for C slot	PNP/ NPN	lead, 3m long	2.5V

- This two-wire reed switch can be used to return a signal to a PNP or NPN-type control system.
- PNP robot wiring: connect the Brown wire to a 24Vdc terminal and the Blue wire to one of the robot's Digital Input terminals.
- NPN robot wiring: connect the Blue wire to a 0Vdc terminal and the Brown wire to one of the robot's Digital Input terminals.

- 0.8mm Operating distance.
- Ø3mm or Ø4mm diameter.
- Power Supply: 10–30V dc
- Max. Switching Frequency: 3000 Hz
- Operating Temp.: -25° to 70°C
- IEC Rating: IP 67
- Cable: PVC



#2429 Ø4mm NPN sensor shown

### 3-Wire Inductive Sensors

Part#	Quick#	Price	Type	Signal	Connection	Voltage Drop
GSG-IS-NPN	2429	\$62.00	Ø4mm N.O. Inductive	NPN	lead, 2m long	3V
GSG-IS-PNP	2430	\$62.00		PNP		
GSG-IS3-NPN	2602	\$98.00	Ø3mm N.O. Inductive	NPN		
GSG-IS3-PNP	2603	\$98.00		PNP		
GSG-IS4-M8-PNP	8083	\$80.00	Ø4mm N.O. Inductive	PNP	with M8 Connector	3V

Sensor diagrams and other specifications can be found on our online product pages at : [www.EMICorp.com](http://www.EMICorp.com) and search by Quick#.

This sensor has two programmable output signals. Instructions on how to program the sensor are included.

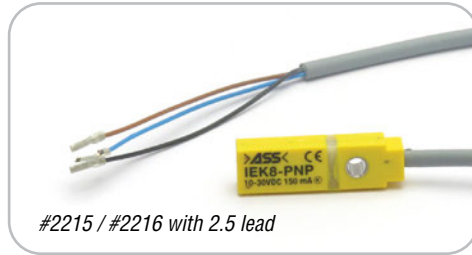


- Power Supply: 12–30V dc
- Max. Switching Frequency: 1000 Hz
- Operating Temp.: -20° to 75°C
- Voltage Drop: 2.2V dc
- IEC Rating: IP 67
- Cable: PUR

**4-Wire Magnetoresistive Sensors**

Part #	Quick#	>ASS< Part #	Price	Type	Signal	Connection
MFS-T2-3-7	3809	1-808-30-00	\$75.21	4-wire Programable Sensor for C slot	PNP	M8, .5m long

Many >ASS< sprue grippers use >ASS< IES.. or IEK.. sensors.

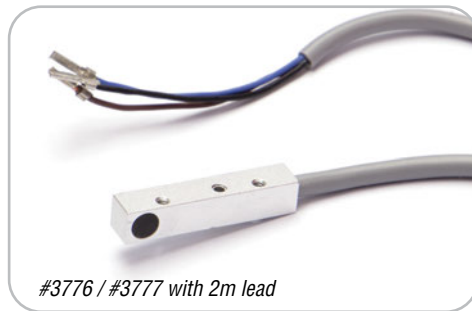


**3-Wire Magnetoresistive Sensors**

Part #	Quick#	>ASS< Part #	Price	Type	Signal	Connection
UAI-IEK-8-PNP	2215	1-808-12-00	\$49.05	3-wire for GRZ grippers	PNP	lead, 2.5m long
UAI-IEK-8-NPN	2216	1-808-14-00	\$59.95	3-wire for GRZ grippers	NPN	
IES-8-PNP	3805	1-808-16-00	\$49.60	3-wire for GRZ grippers	PNP	M8 connector, 0.16m long
IES-8-NPN	3806	1-808-18-00	\$65.40	3-wire for GRZ grippers	NPN	

- Power Supply: 12–30V dc
- Max. Switching Frequency: 2000 Hz
- Operating Temp.: -30° to 85°C
- Voltage Drop: 1.8V dc
- IEC Rating: IP 67
- Cable: PUR

>ASS< GRZ 10-08 sprue grippers use IE-AL-K.. sensors.



- Power Supply: 10–30V dc
- Max. Switching Frequency: 3000 Hz
- Operating Temp.: 25° to 70°C
- Voltage Drop: 2.5V dc
- IEC Rating: IP 67
- Cable: PUR

**3-Wire Inductive Sensors**

Part #	Quick#	>ASS< Part #	Price	Type	Signal	Connection
IE-AL-K	3776	1-808-38-00	\$95.92	3-wire Inductive	PNP	lead, 2m long
IE-AL-K-NPN	3777	1-808-39-00	\$95.92	3-wire Inductive	NPN	

Use Quick#s for easy online ordering.

## Sensor Quick Reference

### Choosing the Right Sensor for Your Application:

Many Gimatic grippers that are in the same family, use the same sensor(s). In this case, in the Quick# column, it will read: 'ALL'. When the family does not use the same sensor(s), you will find them by size, and with its corresponding Quick#.

Notice the slot type. In some cases an application can use more than one, example: GS16 has both the C & T sensor slots.

For more information on these sensors, see page 1002–1005.

**For further help, call EMI and we can help find the correct sensor for your application.**

**Style:** A = with extended 3-Pin M8 Snap Connector, B = With lead, 2.5m long, C = With M8 Connector, 0.3m long, D = with 3-Pin M8 Snap Connector

**Slot Type:** C = C-slot sensor, T = T-slot sensor, D = Dovetail-slot sensor, O = Other

**Compatibility Key:** ★ = Fully Open, Full Close Only ◆ = Full Open, Full Close, Midstroke ▼ = Presence Confirmation

**Sensor Requires Key:** □ = Requires K-Sens Kit Q#7440 ○ = Requires Sensor Band

### GRIPPER FINGERS / TILT UNITS

Gripper Part#	Slot Type	SS4M225G	SS4N225G	SS3M203G	SS3N203G	SN4M225G	SN4N225G	SN3M203G	SN3N203G	SSQ4M225G	SSQ4N225G	SSQ3M203G	SSQ3N203G
		Quick#	1883	1882	1884	6282	6357	6278	6356	6277	7709	7707	7710
Signal:		NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP
Style		B	B	C	C	B	B	C	C	B	B	C	C
Price:		\$27.20	\$27.20	\$31.16	\$31.16	\$27.20	\$27.20	\$31.16	\$31.16	\$27.20	\$27.20	\$31.16	\$31.16
OFR	<Ø50 BODY	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○
OFR-S	ALL	★	★	★	★	★	★	★	★	★	★	★	★
OFA	<Ø50 BODY	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○
OFA-S	ALL	★	★	★	★	★	★	★	★	★	★	★	★
OFN	ALL	◆○	◆○	◆○	◆○	◆○	◆○	◆○	◆○	◆○	◆○	◆○	◆○
OFN-S	ALL	C	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
OFF	ALL	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○
OFFX	ALL	★○	★○	★○	★○	★○	★○	★○	★○	◆○	◆○	◆○	◆○



### GRIPPER FINGERS / TILT UNITS (CONTINUED)

Gripper Part#	Slot Type	PRO-SS4M225G	PRO-SS4N225G	PRO-SS3M215G	PRO-SS3N215G	PRO-SN4M225G	PRO-SN4N225G	PRO-SN3M215G	PRO-SN3N215G	PRO-SSR4M225G	PRO-SSR4N225G	PRO-SSR3M215G	PRO-SSR3N215G
		Quick#	7522	7521	7625	7525	7524	7523	7626	7526	7645	7644	7647
Signal:		NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP
Style		B	B	C	C	B	B	C	C	B	B	C	C
Price:		\$70.00	\$70.00	\$92.00	\$92.00	\$70.00	\$70.00	\$92.00	\$92.00	\$70.00	\$70.00	\$92.00	\$92.00
OFR	<Ø50 BODY	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○
OFR-S	ALL	★	★	★	★	★	★	★	★	★	★	★	★
OFA	<Ø50 BODY	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○
OFA-S	ALL	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○
OFN	ALL	◆○	◆○	◆○	◆○	◆○	◆○	◆○	◆○	◆○	◆○	◆○	◆○
OFN-S	ALL	C	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
OFF	ALL	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○
OFFX	ALL	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○

Sensor Quick Reference

CYLINDERS / SLIDES / ROTARIES / NIPPERS

Gripper Part#	Quick#	Slot Type	SS4M225G	SS4N225G	SS3M203G	SS3N203G	SL4M225G	SL4N225G	SL3M203G	SL3N203G	SN4M225G	SN4N225G	SN3M203G	SN3N203G	SC4M225G	SC4N225G	SC3M203G	SC3N203G	SS04M225G	SS04N225G	SS03M203G	SS03N203G
			1883	1882	1884	6282	793	792	6456	6274	6357	6278	6356	6277	1796	6273	6457	6455	7709	7707	7710	7708
Signal:			NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP
Style			B	B	C	C	B	B	C	C	B	B	C	C	B	B	C	C	B	B	C	C
Price:			\$27.20	\$27.20	\$31.16	\$31.16	\$27.20	\$27.20	\$31.16	\$31.16	\$27.20	\$27.20	\$31.16	\$31.16	\$30.30	\$30.30	\$34.62	\$34.62	\$27.20	\$27.20	\$31.16	\$31.16
OFL	ALL	C	◆	◆	◆	◆					◆	◆	◆	◆					◆	◆	◆	◆
OFB	ALL	C	◆	◆	◆	◆					◆	◆	◆	◆					◆	◆	◆	◆
OFC	ALL	C	◆	◆	◆	◆					◆	◆	◆	◆					◆	◆	◆	◆
ZJ	6384	C	◆	◆	◆	◆					◆	◆	◆	◆					◆	◆	◆	◆
ZL		C	◆	◆	◆	◆					◆	◆	◆	◆					◆	◆	◆	◆
ZE-P	ALL	C	◆	◆	◆	◆					◆	◆	◆	◆					◆	◆	◆	◆
Z	ALL	T	◆□	◆□	◆□	◆□	◆	◆	◆	◆					◆	◆	◆	◆	◆□	◆□	◆□	◆□
RT	ALL	C	◆	◆	◆	◆					◆	◆	◆	◆					◆	◆	◆	◆
R	ALL	T	◆□	◆□	◆□	◆□	◆	◆	◆	◆					◆	◆	◆	◆	◆□	◆□	◆□	◆□
ITSC	ALL	D	◆□	◆□	◆□	◆□													◆□	◆□	◆□	◆□
GN-xxS	ALL	C	★	★	★	★													★	★	★	★
GNS (BLADE)	ALL	C	★	★	★	★													★	★	★	★
GNS (SLIDE)	ALL	C	★	★	★	★													★	★	★	★
ZG		C	★	★	★	★													★	★	★	★

CYLINDERS / SLIDES / ROTARIES / NIPPERS (CONTINUED)

Gripper Part#	Quick#	Slot Type	CB3M2G	CB3M2G	PRO-SS4M225G	PRO-SS4N225G	PRO-SS3M215G	PRO-SS3N215G	PRO-SN4M225G	PRO-SN4N225G	PRO-SN3M215G	PRO-SN3N215G	PRO-SSR4M225G	PRO-SSR4N225G	PRO-SSR3M215G	PRO-SSR3N215G
			6126	1794	7522	7521	7625	7525	7524	7523	7626	7526	7645	7644	7647	7646
Signal:			PNP	NPN	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP
Style			D	D	B	B	C	C	B	B	C	C	B	B	C	C
Price:			\$22.88	\$22.90	\$70.00	\$70.00	\$92.00	\$92.00	\$70.00	\$70.00	\$92.00	\$92.00	\$70.00	\$70.00	\$87.00	\$87.00
OFL	ALL	C			◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
OFB	ALL	C			◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
OFC	ALL	C			◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
ZJ	6384	C			◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
ZE-P	ALL	C			◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
ITSC	ALL	D	◆	◆	★□	★□	★□	★□					★□	★□	★□	★□
GNS (BLADE)	ALL	C			★	★	★	★	★	★	★	★	★	★	★	★
GNS (SLIDE)	ALL	C			★	★	★	★	★	★	★	★	★	★	★	★
ZG		C			★	★	★	★	★	★	★	★	★	★	★	★



Style: A = with extended 3-Pin M8 Snap Connector, B = With lead, 2.5m long, C = With M8 Connector, 0.3m long, D = with 3-Pin M8 Snap Connector

Slot Type: C = C-slot sensor, T = T-slot sensor, D = Dovetail-slot sensor, O = Other

Compatibility Key: ★ = Fully Open, Full Close Only ◆ = Full Open, Full Close, Midstroke ▼ = Presence Confirmation

Sensor Requires Key: □ = Requires K-Sens Kit Q#7440 ○ = Requires Sensor Band

# Sensor Quick Reference

## SPRUE GRIPPERS

Gripper Part#	Slot Type	SS4M225G	SS4N225G	SS3M203G	SS3N203G	SL4M225G	SL4N225G	SL3M203G	SL3N203G	SN4M225G	SN4N225G	SN3M203G	SN3N203G	SC4M225G	SC4N225G	SC3M203G	SC3N203G	SSY3M203G	SSY3N203G	SSY4M225G	SSY4N225G	
		Quick#	1883	1882	1884	6282	793	792	6456	6274	6357	6278	6356	6277	1796	6273	6457	6455	7588	7589	7590	7591
Signal:		NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	
Style:		B	B	C	C	B	B	C	C	B	B	C	C	B	B	C	C	C	C	B	B	
Price:		\$27.20	\$27.20	\$31.16	\$31.16	\$27.20	\$27.20	\$31.16	\$31.16	\$27.20	\$27.20	\$31.16	\$31.16	\$30.30	\$30.30	\$34.62	\$34.62	\$31.16	\$31.16	\$27.20	\$27.20	
AA20/NO	BOTH	T				◆	◆	◆	◆					◆	◆	◆	◆					
AA22/NO	BOTH	T				◆	◆	◆	◆					◆	◆	◆	◆					
AA21/NO	ALL	T				◆	◆	◆	◆					◆	◆	◆	◆					
AA23/NO	BOTH	T				◆	◆	◆	◆					◆	◆	◆	◆					
AA26/NO	BOTH	C/T	▼	▼	▼	▼	◆	◆	◆	◆	▼	▼	▼	▼	◆	◆	◆	◆				
AA35/NO	BOTH	C/T	▼	▼	▼	▼	◆	◆	◆	◆	▼	▼	▼	▼	◆	◆	◆	◆				
DD20-16M2	7551	C	▼	▼	▼	▼				▼	▼	▼	▼									
DD20-16L2	7552	C	▼	▼	▼	▼				▼	▼	▼	▼									
DD20-16W2	7550	C	▼	▼	▼	▼				▼	▼	▼	▼									
DD20-16B2	7553	C	▼	▼	▼	▼				▼	▼	▼	▼									
PB-0013S	1878	C	▼	▼	▼	▼				▼	▼	▼	▼									
PB-0013-S2	7700	C																	▼	▼	▼	▼
PB-0180-S	6988	C	▼	▼	▼	▼				▼	▼	▼	▼									
PB-0180-S2	7701	C																	▼	▼	▼	▼
PB-0181-S	6999	C	▼	▼	▼	▼				▼	▼	▼	▼									
PB-0182-S	7287	C	▼	▼	▼	▼				▼	▼	▼	▼									
PB-0187-S	7250	C	▼	▼	▼	▼				▼	▼	▼	▼									
PB-0187-S2	7702	C																	▼	▼	▼	▼
PB-0007-S3	7461	C																				
PB-0008-S3	7280	C																				

## SPRUE GRIPPERS (CONTINUED)

Gripper Part#	Slot Type	PRO-SS4M225G	PRO-SS4N225G	PRO-SS3M215G	PRO-SS3N215G	PRO-SN4M225G	PRO-SN4N225G	PRO-SN3M215G	PRO-SN3N215G	PRO-SSR4M225G	PRO-SSR4N225G	PRO-SSR3M215G	PRO-SSR3N215G
		Quick#	7522	7521	7625	7525	7524	7523	7626	7526	7645	7644	7647
Signal:		NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP
Style:		B	B	C	C	B	B	C	C	B	B	C	C
Price:		\$70.00	\$70.00	\$92.00	\$92.00	\$70.00	\$70.00	\$92.00	\$92.00	\$70.00	\$70.00	\$87.00	\$87.00
AA26/NO	BOTH	C	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
AA35/NO	BOTH	C	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
DD20-16M2	7551	C	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
DD20-16L2	7552	C	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
DD20-16W2	7550	C	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
DD20-16B2	7553	C	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
PB-0013-S2	7700	C	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
PB-0180-S	6988	C	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
PB-0180-S2	7701	C	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
PB-0181-S	6999	C	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
PB-0182-S	7287	C	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
PB-0187-S2	7702	C	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
PB-0007-S3	7461	C	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
PB-0008-S3	7280	C	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼

**Style:** A = with extended 3-Pin M8 Snap Connector, B = With lead, 2.5m long, C = With M8 Connector, 0.3m long, D = with 3-Pin M8 Snap Connector

**Slot Type:** C = C-slot sensor, T = T-slot sensor, D = Dovetail-slot sensor, O = Other

**Compatibility Key:** ★ = Fully Open, Full Close Only ◆ = Full Open, Full Close, Midstroke ▼ = Presence Confirmation

**Sensor Requires Key:**  
 = Requires K-Sens Kit Q#7440  
 = Requires Sensor Band

## Sensor Quick Reference

**Style:** A = with extended 3-Pin M8 Snap Connector, B = With lead, 2.5m long, C = With M8 Connector, 0.3m long, D = with 3-Pin M8 Snap Connector

**Slot Type:** C = C-slot sensor, T = T-slot sensor, D = Dovetail-slot sensor, O = Other

**Compatibility Key:** ★ = Fully Open, Full Close Only ◆ = Full Open, Full Close, Midstroke ▼ = Presence Confirmation

**Sensor Requires Key:** □ = Requires K-Sens Kit Q#7440 ○ = Requires Sensor Band

### SPECIALTY GRIPPERS

Gripper Part#	Quick#	Slot Type	SS4M225G	SS4N225G	SS3M203G	SS3N203G	SN4M225G	SN4N225G	SN3M203G	SN3N203G	SSQ4M225G	SSQ4N225G	SSQ3M203G	SSQ3N203G	GSGISNPN	GSGISPNP
			1883	1882	1884	6282	6357	6278	6356	6277	7709	7707	7710	7708	2429	2430
<b>Signal:</b>			NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP
<b>Style:</b>			B	B	C	C	B	B	C	C	B	B	C	C	B	B
<b>Price:</b>			\$27.20	\$27.20	\$31.16	\$31.16	\$27.20	\$27.20	\$31.16	\$31.16	\$27.20	\$27.20	\$31.16	\$31.16	\$58.50	\$58.50
TFA20-25S	6697	C	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆		
AGG19	7130	C	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○		
AGG21/AGG30	BOTH	C	★	★	★	★	★	★	★	★	★	★	★	★		
MFD27 – MFD63	ALL	C	★	★	★	★	★	★	★	★	★	★	★	★		
MFU27 – MFU63	ALL	C	★	★	★	★	★	★	★	★	★	★	★	★		
PT28/PT23S/PT30S	ALL	C	★	★	★	★	★	★	★	★	★	★	★	★		
MAG20	7383	C	★	★	★	★	★	★	★	★	★	★	★	★		
MPPM	ALL	C	★	★	★	★	★	★	★	★	◆	◆	◆	◆		
MPXM	ALL	C	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆		
MPLM	ALL	C	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆		
MPBM	ALL	C	★	★	★	★	★	★	★	★	★	★	★	★		
MPRM	ALL	O													◆	◆
MPRJ	7408	O													◆	◆
MPBS	ALL	C	★	★	★	★	★	★	★	★	★	★	★	★		
MPBS (JAW TRIGGER)	BOTH	C	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼		
MPTM	ALL	C	★	★	★	★	★	★	★	★	◆	◆	◆	◆		
MRE	ALL	O													★	★

### SPECIALTY GRIPPERS (CONTINUED)

Gripper Part#	Quick#	Slot Type	PRO-SS4M225G	PRO-SS4N225G	PRO-SS3M215G	PRO-SS3N215G	PRO-SN4M225G	PRO-SN4N225G	PRO-SN3M215G	PRO-SN3N215G	PRO-SSR4M225G	PRO-SSR4N225G	PRO-SSR3M215G	PRO-SSR3N215G
			7522	7521	7625	7525	7524	7523	7626	7526	7645	7644	7647	7646
<b>Signal:</b>			NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP
<b>Style:</b>			B	B	C	C	B	B	C	C	B	B	C	C
<b>Price:</b>			\$70.00	\$70.00	\$92.00	\$92.00	\$70.00	\$70.00	\$92.00	\$92.00	\$70.00	\$70.00	\$87.00	\$87.00
TFA20-25S	6697	C	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
AGG19	7130	C	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○	★○
AGG21/AGG30	BOTH	C	★	★	★	★	★	★	★	★	★	★	★	★
MFD27 – MFD63	ALL	C	★	★	★	★	★	★	★	★	★	★	★	★
MFU27 – MFU63	ALL	C	★	★	★	★	★	★	★	★	★	★	★	★
PT28/PT23S/PT30S	ALL	C	★	★	★	★	★	★	★	★	★	★	★	★
MAG20	7383	C	★	★	★	★	★	★	★	★	★	★	★	★
MPPM	ALL	C	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
MPXM	ALL	C	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
MPLM	ALL	C	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
MPBM	ALL	C	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
MPBS	ALL	C	★	★	★	★	★	★	★	★	★	★	★	★
MPBS (JAW TRIGGER)	BOTH	C	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
MPTM	ALL	C	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆



# Sensor Quick Reference

## GENERAL PURPOSE GRIPPERS

Gripper Part#	Slot Type	SS4M225G	SS4N225G	SS3M203G	SS3N203G	SL4M225G	SL4N225G	SL3M203G	SL3N203G	SN4M225G	SN4N225G	SN3M203G	SN3N203G	SC4M225G	SC4N225G	SC3M203G	SC3N203G	SSQ4M225G	SSQ4N225G	SSQ3M203G	SSQ3N203G
		Quick#	1883	1882	1884	6282	793	792	6456	6274	6357	6278	6356	6277	1796	6273	6457	6455	7709	7707	7710
Signal:		NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP
Style:		B	B	C	C	B	B	C	C	B	B	C	C	B	B	C	C	B	B	C	C
Price:		\$27.20	\$27.20	\$31.16	\$31.16	\$27.20	\$27.20	\$31.16	\$31.16	\$27.20	\$27.20	\$31.16	\$31.16	\$29.13	\$29.13	\$34.62	\$34.62	\$27.20	\$27.20	\$31.16	\$31.16
GS10	ALL	T	★□	★□	★□	★□	★	★	★	★				★	★	★	★	◆□	◆□	◆□	◆□
GS16 – GS25	ALL	C/T	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	◆	◆	◆	◆
GS32/ GS40	ALL	C/T	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
GW10	6337	T	★□	★□	★□	★□	★	★	★	★				★	★	★	★	◆□	◆□	◆□	◆□
GW16 – GW25	ALL	C	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	◆	◆	◆	◆
SZ-08 – SZ-20	7655/6760/6761/7657	C	★	★	★	★				★	★	★	★					◆	◆	◆	◆
SZ-25 – SZ-40	6762 – 6764	C	◆	◆	◆	◆				◆	◆	◆	◆					◆	◆	◆	◆
MGX	ALL	C/O	★	★	★	★				★	★	★	★					◆	◆	◆	◆
PN10/ PN16	ALL	O																			
PN25/ PN40	ALL	D	★□	★□	★□	★□												◆□	◆□	◆□	◆□
GX-S	ALL	C	◆	◆	◆	◆				◆	◆	◆	◆					◆	◆	◆	◆
PE	ALL	D	◆□	◆□	◆□	◆□												◆□	◆□	◆□	◆□
XP/XT/XA	ALL	T	★□	★□	★□	★□	★	★	★	★				★	★	★	★	◆□	◆□	◆□	◆□
XR	ALL	T	◆□	◆□	◆□	◆□	◆	◆	◆	◆				◆	◆	◆	◆	◆□	◆□	◆□	◆□
SX2510	7164	C	★	★	★	★				★	★	★	★					◆	◆	◆	◆
SX2520 – SX6380	ALL	C	◆	◆	◆	◆				◆	◆	◆	◆					◆	◆	◆	◆
SXT2505 / SXT4008	7172/ 7173	C								★	★	★	★								
SXT5012 / SXT6315	7174/ 7175	C								◆	◆	◆	◆								
DH1905	7180	C								★	★	★	★					◆	◆	◆	◆
DH22 / DH27	ALL	C/O	★	★	★	★				★	★	★	★					◆	◆	◆	◆
DH35 – DH87	ALL	C/O	◆	◆	◆	◆				◆	◆	◆	◆					◆	◆	◆	◆
TH27 / TH33	ALL	C																◆	◆	◆	◆
TH45 – TH125	ALL	C/O	★	★	★	★				★	★	★	★					◆	◆	◆	◆
PQ1608 – PQ3015	ALL	C	★	★	★	★				★	★	★	★					◆	◆	◆	◆
PQ3523 – PQ6063	ALL	C	◆	◆	◆	◆				◆	◆	◆	◆					◆	◆	◆	◆
T30	6284	T	★□	★□	★□	★□								★	★	★	★	◆□	◆□	◆□	◆□
T40 / T63	6285/6286	D	★□	★□	★□	★□												◆□	◆□	◆□	◆□
JP	ALL	T	★□	★□	★□	★□	★	★	★	★				★	★	★	★	◆□	◆□	◆□	◆□

Note: SGP-S Gripper Sensor options are listed on product pages 654 –655.

Style: A = with extended 3-Pin M8 Snap Connector, B = With lead, 2.5m long, C = With M8 Connector, 0.3m long, D = with 3-Pin M8 Snap Connector

Slot Type: C = C-slot sensor, T = T-slot sensor, D = Dovetail-slot sensor, O = Other

Compatibility Key: ★= Fully Open, Full Close Only ◆= Full Open, Full Close, Midstroke ▼= Presence Confirmation

Sensor Requires Key: □= Requires K-Sens Kit Q#7440 ○= Requires Sensor Band

## Sensor Quick Reference

### GENERAL PURPOSE GRIPPERS (CONTINUED)

Gripper Part#	Slot Type	Quick#	CB3N2G	CB3M2G	SM3MR2G	SM3NR2G	GSGISNPN	GSGISPNP	GSGIS3NPN	GSGIS3PNP	PRO-SS4M225G	PRO-SS4N225G	PRO-SS3M215G	PRO-SS3N215G	PRO-SN4M225G	PRO-SN4N225G	PRO-SN3M215G	PRO-SN3N215G	PRO-SSR4M225G	PRO-SSR4N225G	PRO-SSR3M215G	PRO-SSR3N215G
			6126	1794	1792	6276	2429	2430	2602	2603	7522	7521	7625	7525	7524	7523	7626	7526	7645	7644	7647	7646
Signal:			PNP	NPN	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP
Style:			D	D	A	A	B	B	B	B	B	B	C	C	B	B	C	C	B	B	C	C
Price:			\$22.88	\$22.88	\$29.50	\$29.54	\$58.50	\$58.50	\$92.00	\$92.00	\$70.00	\$70.00	\$92.00	\$92.00	\$70.00	\$70.00	\$92.00	\$92.00	\$70.00	\$70.00	\$87.00	\$87.00
GS10	ALL	T									◆	◆	◆	◆					◆	◆	◆	◆
GS16 – GS40	ALL	C / T									◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
GW10	ALL	T									◆	◆	◆	◆					◆	◆	◆	◆
GW16 – GW25	ALL	C / T									◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
SZ-08		C									◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
SZ-12 – SZ-40	ALL	C									◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
MGX	ALL	C / O					◆	◆			◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
PN10/ PN16	ALL	O			★	★																
PN25/ PN40	ALL	D	◆	◆							◆	◆	◆	◆					◆	◆	◆	◆
GX-S	ALL	C									◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
PE	Stroke <= 80	D	◆	◆							◆	◆	◆	◆					◆	◆	◆	◆
XP/XT/ XR/XA	ALL	T									◆	◆	◆	◆					◆	◆	◆	◆
SX	Stroke <80	C									◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
SXT	ALL	C									◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
DH	ALL	C									◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
TH	ALL	C									◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
PQ	ALL	C									◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
T	ALL	T									◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
JP	ALL	T									◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆

Note: SGP-S Gripper Sensor options are listed on product pages 654–655.

Style: A = with extended 3-Pin M8 Snap Connector, B = With lead, 2.5m long, C = With M8 Connector, 0.3m long, D = with 3-Pin M8 Snap Connector

Slot Type: C = C-slot sensor, T = T-slot sensor, D = Dovetail-slot sensor, O = Other

Compatibility Key: ★ = Fully Open, Full Close Only ◆ = Full Open, Full Close, Midstroke ▼ = Presence Confirmation

Sensor Requires Key: □ = Requires K-Sens Kit Q#7440 ○ = Requires Sensor Band

### Choosing the Right Sensor for Your Application:

Many Gimatic grippers that are in the same family, use the same sensor(s). In this case, in the Quick# column, it will read: 'ALL'. When the family does not use the same sensor(s), you will find them by size, and with its corresponding Quick#.

Notice the slot type. In some cases an application can use more than one, example: GS16 has both the C & T sensor slots.

For more information on these sensors, see page 1002–1005.

**For further help, call EMI and we can help find the correct sensor for your application.**