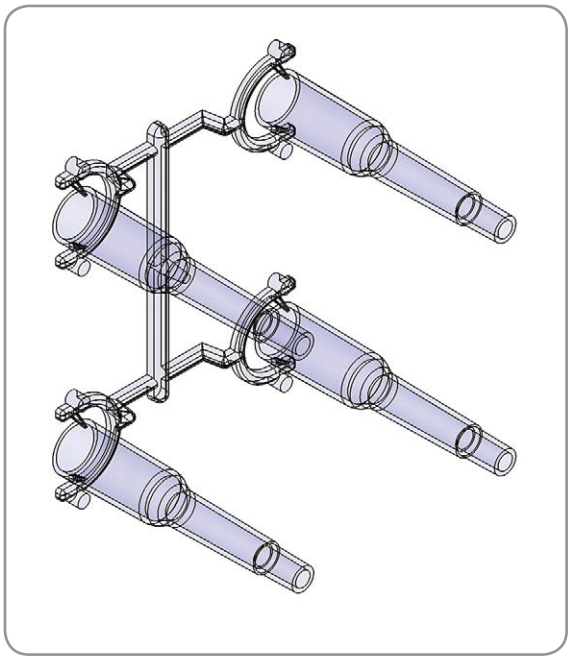
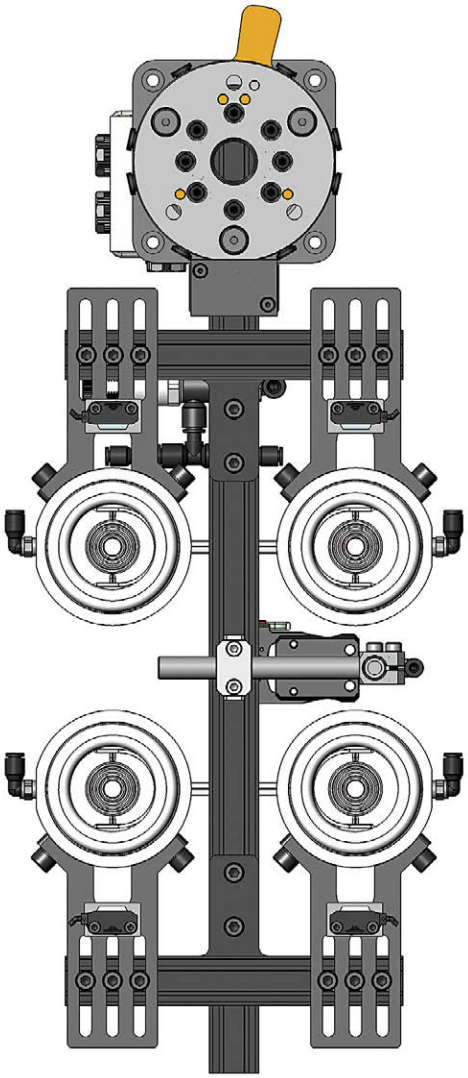
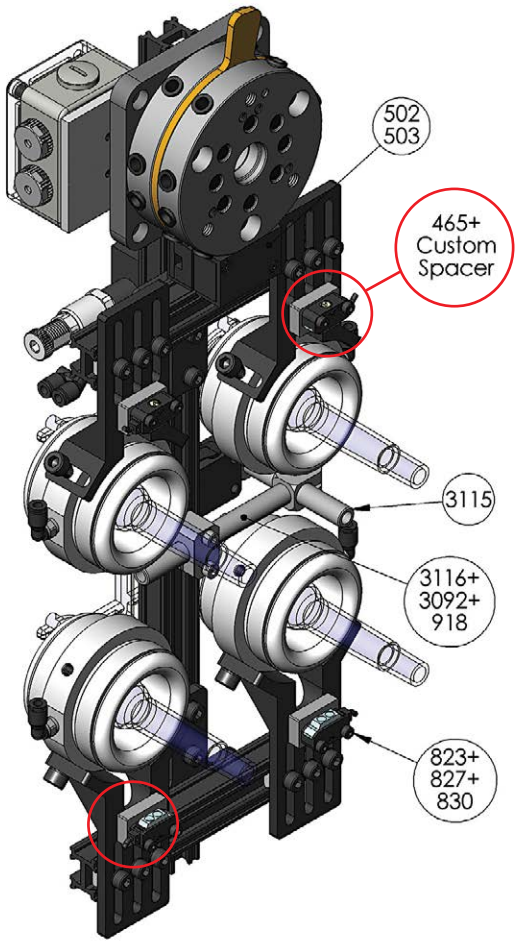
EOAT Design and Build Service

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 972). Our EOAT engineers will design a tool for you and provide you 3D CAD renderings. We'll also provide pricing for the tool should you want to purchase the completely assembled EOAT from EMI. Whether or not you purchase the tool from EMI, there's no cost or obligation to you for the engineering design service.







Sensor Overview

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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 on the piston of a gripper or air cylinder.

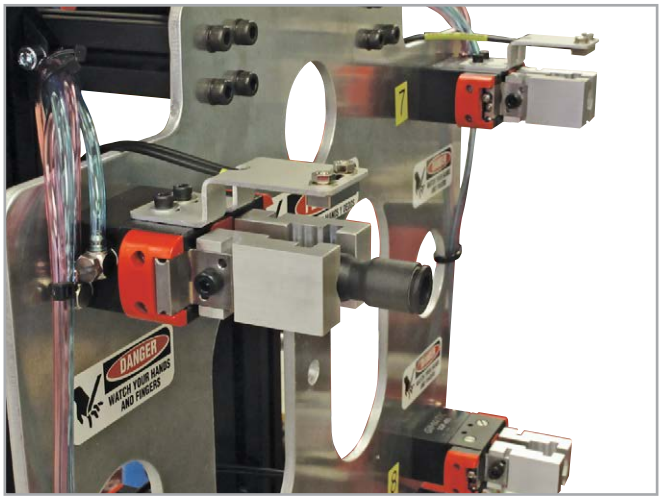
Hall effect sensor switches are electronic switches with no moving parts. They give a very repeatable signal, have long life expectancy, and they operate on low DC supply voltage. They are designated as NPN* "sinking" if the switch is between ground [-] and the load or PNP "sourcing" if the switch is between positive [+] and the load. Unless a relay is used–as they are in the SB6S Sensor Box on page 882–Hall effect sensor switches cannot be connected in series with each other.

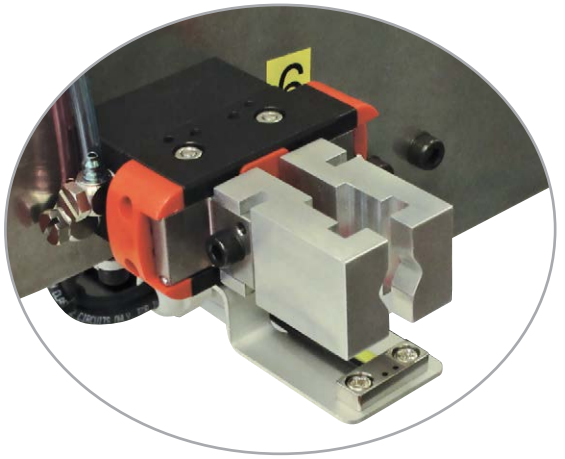
Reed sensor switches are electromechanical switches which will operate on either AC or DC voltage. They are subject to current 'spikes' which can occur with capacitive, reactive, or inductive loads. Reed switches can be connected in series, but will experience cumulative voltage drops across each unless relays are used like in the SB6S Sensor Box. This style of switch is not as commonly used on robot EOAT as Hall effect.

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

Digital Fiber Optic Sensors

- Fiber optic Sensors have a high-functioning amplifier and many sensor head options making them an ideal choice for the most challenging detection conditions.
- Its high power enables use in a wide range of detection applications including: transparent targets, repeated bending, small targets, variable target position.
- Mounting options include: threaded mounting, set screw mounting, integrated bracket mounting, limited space mounting.
- If debris build-up causes the light intensity to drop, the sensor automatically detects the drop in intensity, and recalibrates to the original display state.
- Up to 16 sensors can be powered using 1 main amplifier plus 15 sub amplifiers.





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. The above application example uses four fiber optic sensors. These sensors are able to detect the part without getting interference from the gripper fingers.

Built-in Application Modes: Advanced mode settings are pre-programmed into the amplifier. Simply choose a mode according to the application and the optimal settings are automatically selected.

Interference Prevention: Avoid light interference up to 30,000 lux. Strong resistance to the effects of sunlight and fluorescent lighting enables stable detection.

Power-Saving Sleep Function: This function holds the amplifier in a power save state during external signal input. The normal display is restored after any key is pressed. Once sleep mode is entered, light transmission is stopped and the display monitor switches off. A single segment on the digital monitor pulses across the display.

Automatic Maintenance Function: The automatic maintenance function detects light intensity reduction due to dirt or misalignment, and returns the sensor to its original display state. This feature can cancel the effects of the ambient environment, enabling continuous and highly accurate detection. As build-up occurs, the setting value changes according to light intensity. Datum corrects the setting value based on a running average of this received light intensity value. Since the display values are scaled, the current value is displayed as an even “100.0” rather than an arbitrary value, making target presence evident.

Digital Fiber Optic Sensors

Saturation Avoidance: This function adjusts the optimum power to prevent excess light intensity. When a small target is being detected by a thru beam sensor, or when a reflective sensor experiences background reflections, the ambient light may be too strong and might interfere with accurate target detection.

In this case, simply press two buttons, and this function will automatically adjust the light intensity to the optimum level.

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

No Target *Target Present*

2.

Simply press MODE and SET at the same time.

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

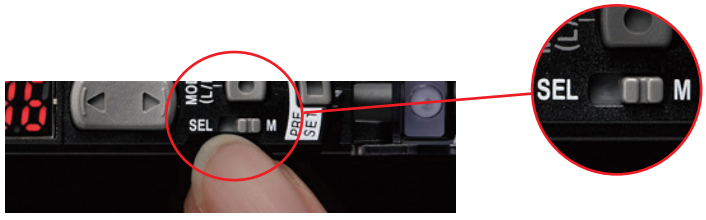
No Target *Target Present*

NEO MEGA Switch: The amplifiers are equipped with 5 light transmission modes for increasing the light intensity. The most powerful of these modes is "MEGA Mode". The power can be increased 64-fold from normal power by simply using 1 switch. With the touch of a button, light intensity can easily be switched to 64 times the normal intensity. This is often needed for long-distance detection or in adverse environmental conditions where strong light intensity is required.

(Normal) FINE Mode	50
(2x) TURBO Mode	100
(4x) SUPER Mode	200
(16x) ULTRA Mode	800
(64x) MEGA Mode	3200

64 times the normal light intensity with one switch!

**There is also a high-speed response HSP mode.*



Simply slide the MEGA switch to the right

Detection Distance (mm)

	2705	2707	2708	2709	2710
Fine	1–72	1–210	30–290	1–70	1–32
Turbo	1–115	1–310	30–410	1–130	1–50
Super	1–190	1–470	30–760	1–190	1–81
Ultra	1–290	1–550	30–1600	1–320	1–130
Mega	1–450	1–210	30–2300	1–500	1–180
Standard target: white matte paper					

Digital Fiber Optic Sensors - Amplifiers

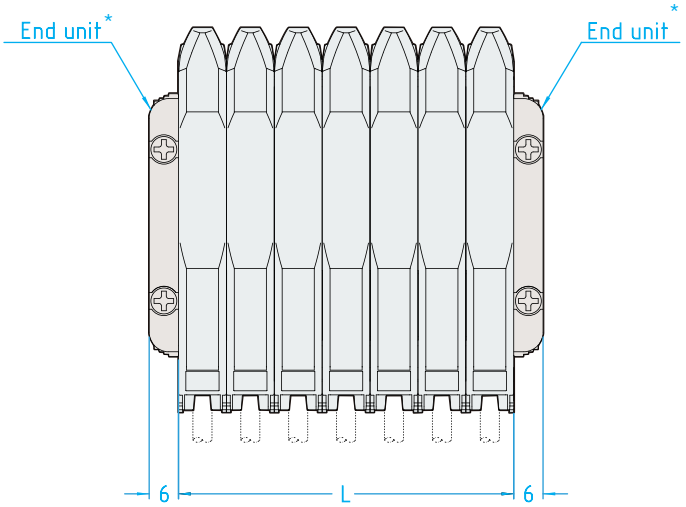
- Up to 16 sensors can be powered using 1 main amplifier plus 15 sub amplifiers.
- Amplifiers can be mounted to electrical units using DIN rail.

Amplifier

Quick#	Part#	Description	Control Outputs	External Input	Price
2698	FS-N11N	Main Amplifier - NPN Output	1	0	$169.00
2699	FS-N11P	Main Amplifier - PNP Output			$169.00
2700	FS-N12N	Sub Amplifier - NPN Output			$169.00
2701	FS-N12P	Sub Amplifier - PNP Output			$169.00
Optional - Mounting					
2704	OP-26751	End Unit	Sold in Pairs		$7.70
5073	EL-704W	DIN Rail	1m		$18.92

Dimensions when several units are connected (typical configuration)

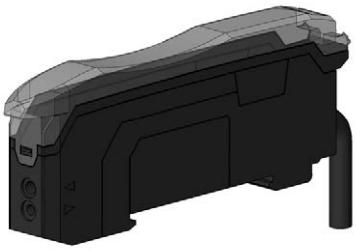
***End units must be used when several units are connected.**

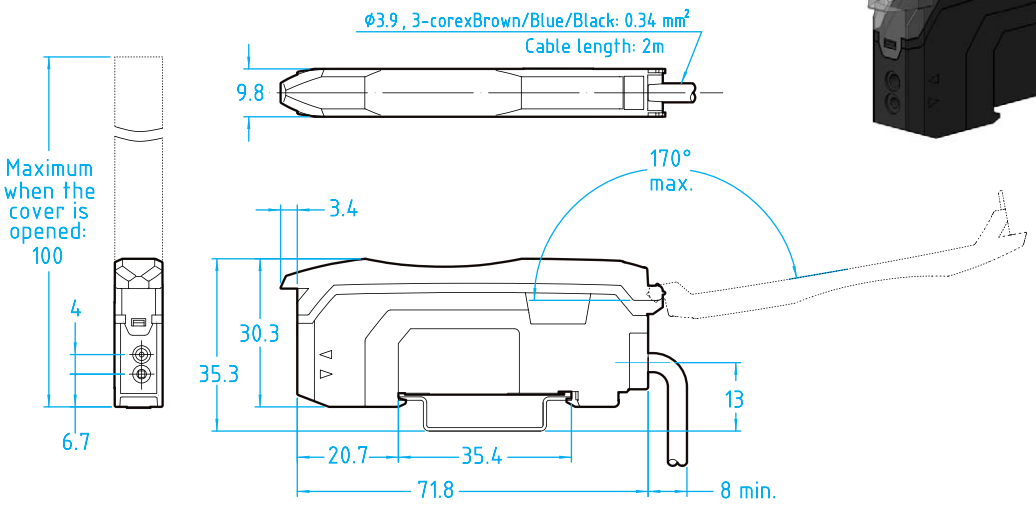


No. of Units	L (mm)
1	9.8
2	19.6
3	29.4
4	39.2
5	49.0
6	58.8
7	68.6
8	78.4
9	88.2
10	98.0
11	107.8
12	117.6
13	127.4
14	137.2
15	147.0
16	156.8
17	166.6

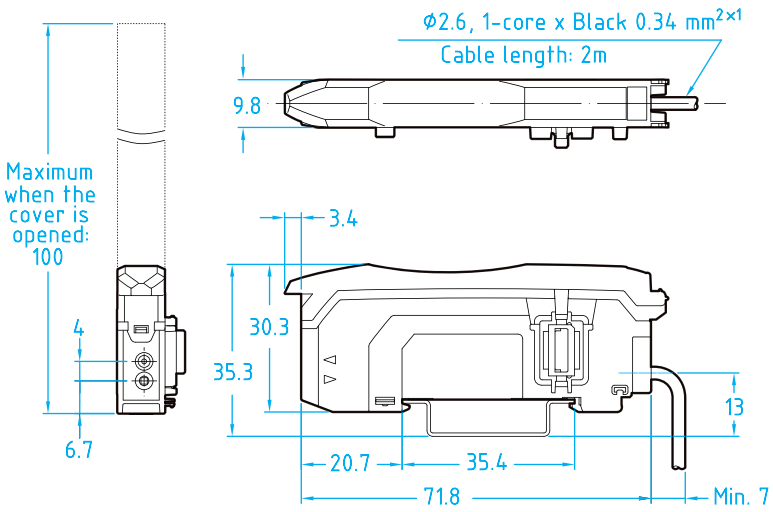
Digital Fiber Optic Sensors - Amplifiers

Cable Type, Main Amplifier

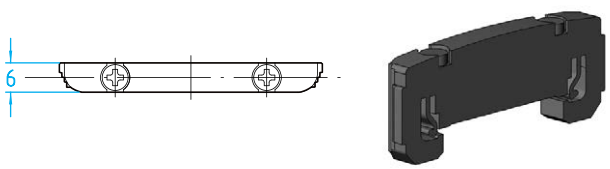




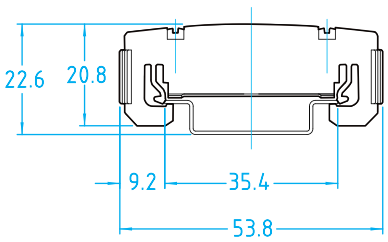
Cable Type, Sub Amplifier



End Unit (OP-26751 sold separately)



DIN-rail mounting



Digital Fiber Optic Sensors

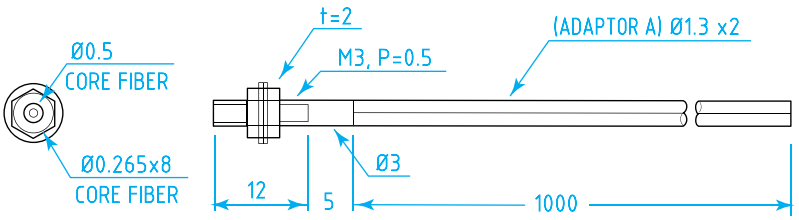
(Dimensioned drawing shown full size)

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

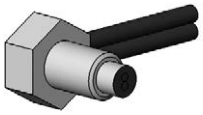
#2705

Threaded Fiber

Quick#	Part#	Optimal Sensing Range* (mm)	Weight	Price
2705	FU-35FZ	White: 1–450 Black: 1–250 Clear: 1–325	6g	$72.00
Must be mounted onto brackets before use.				

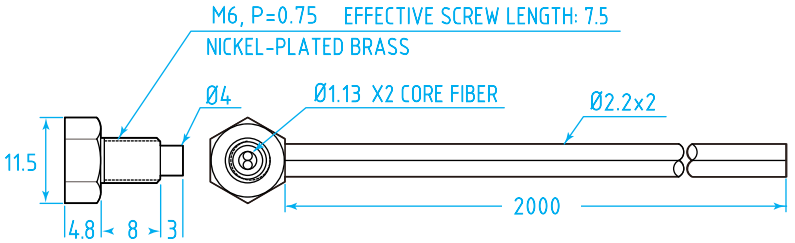


#2707



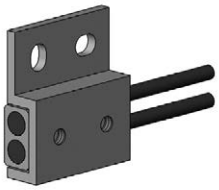
Hex-Shaped Threaded Fiber

Quick#	Part#	Optimal Sensing Range* (mm)	Weight	Price
2707	FU-67TZ	White: 1–710 Black: 1–375 Clear: 1–550	32g	$69.00
Must be mounted onto brackets before use.				



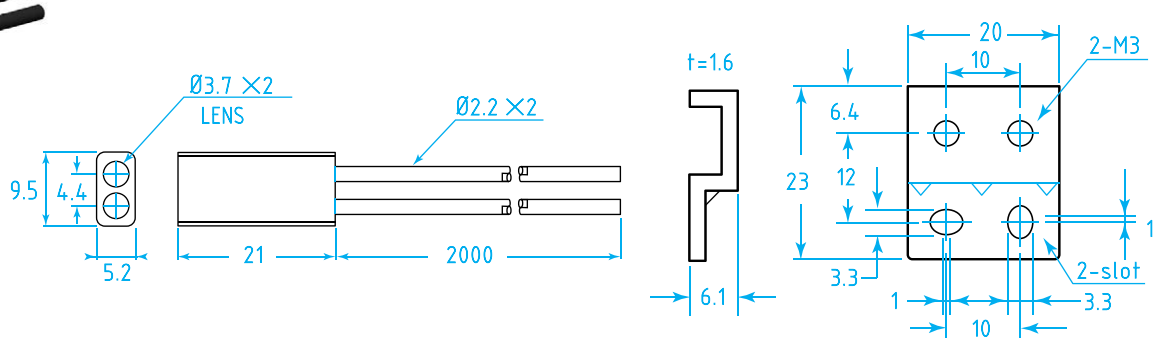
Quick #2708 has a narrow field of view based on focused aperture angle. This sensor reduces stray light for stable target detection. The high-power reflective type with an 8° aperture angle is suitable for detecting objects at longer distances. A mounting bracket is included. This sensor should not be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

#2708 & mounting bracket



Focused Beam / High Power

Quick#	Part#	Optimal Sensing Range* (mm)	Weight	Price
2708	FU-40	White: 30–2300 Black: 30–650 Clear: 30–750	23g	$149.00



Digital Fiber Optic Sensors

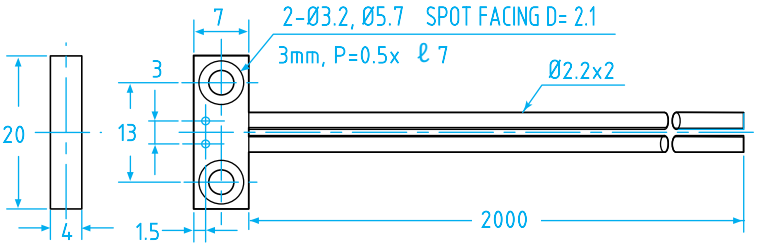
(Dimensioned drawing shown full size)

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.

#2709

Space Saving Type / Flat Bracket Fibers

Quick#	Part#	Optimal Sensing Range* (mm)	Weight	Price
2709	FU-42TZ	White: 1–500 Black: 1–200 Clear: 1–400	24g	$119.00

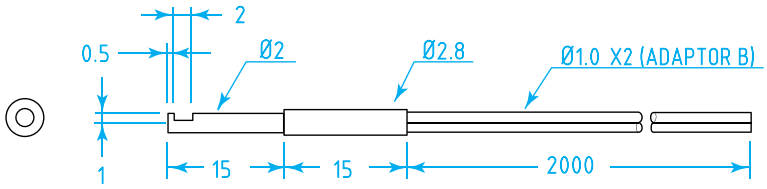


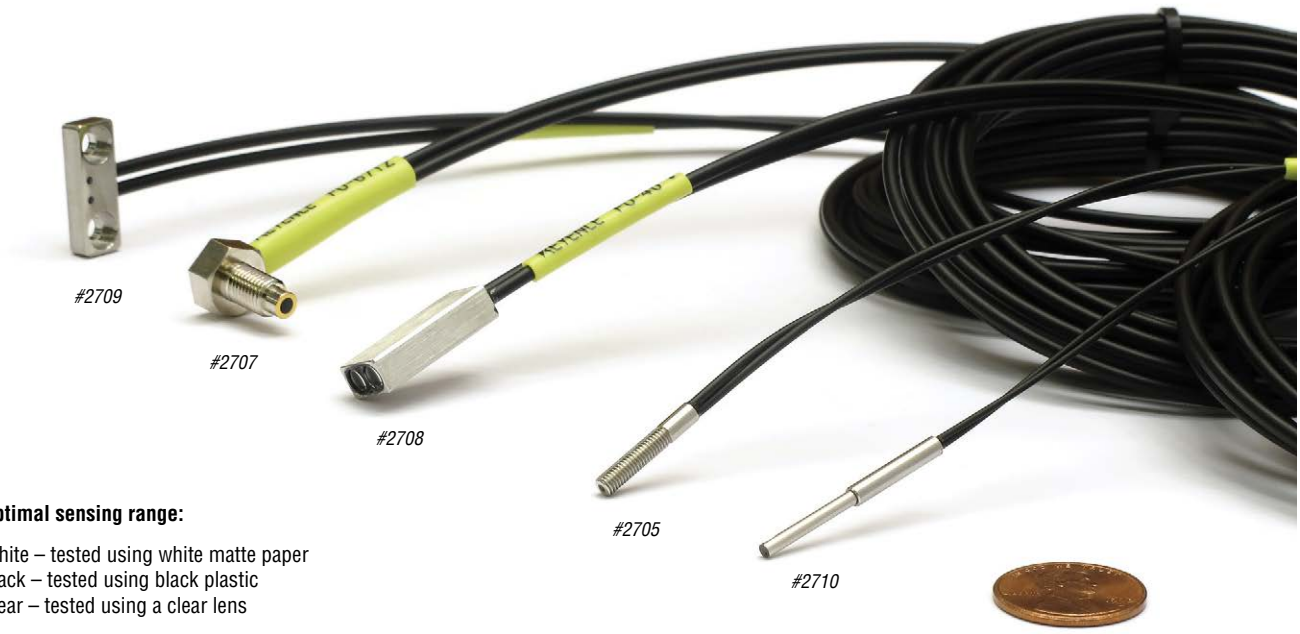
The fiber tip is incorporated into a thin sleeve, and installed by drilling a hole and using a set screw. When determining the smallest detectable object, positioning the sensor too closely to the object causes the object to disappear, making alignment difficult. With the sleeve type, the sensor itself does not become an obstruction and alignment is much easier.

#2710

Space Saving Type / Sleeve

Quick#	Part#	Optimal Sensing Range* (mm)	Weight	Price
2710	FU-31	White: 1–180 Black: 1–45 Clear: 1–115	5g	$194.00



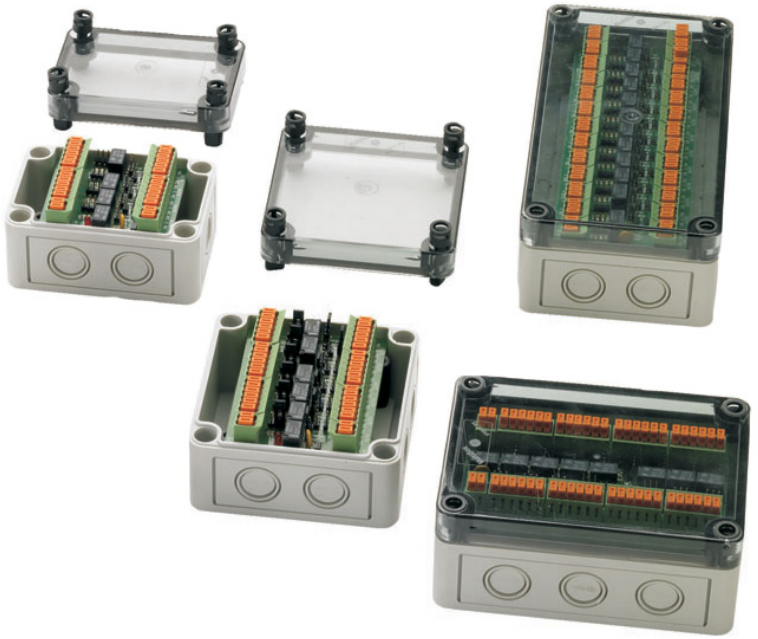


***Optimal sensing range:**

White – tested using white matte paper
Black – tested using black plastic
Clear – tested using a clear lens

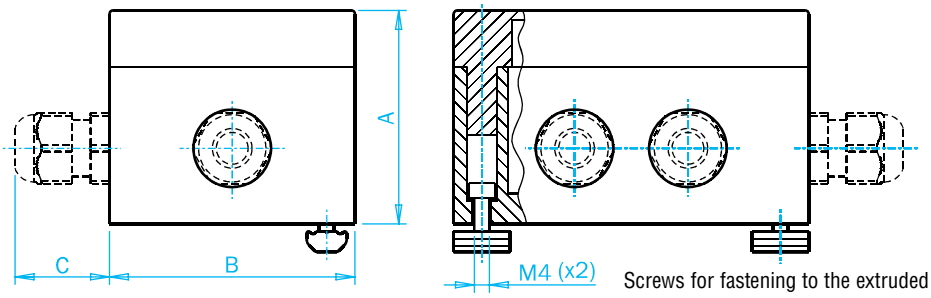
SB - Sensor Junction Box

- 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.

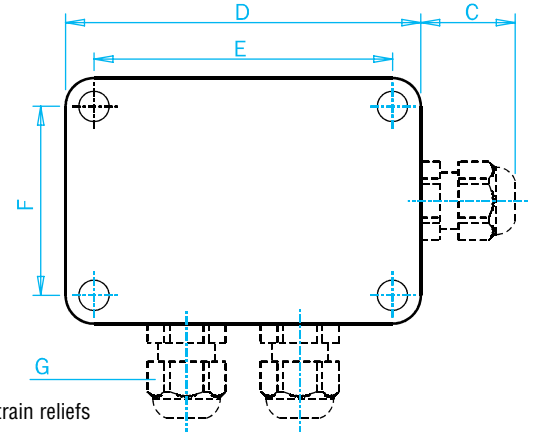


Sensor Junction Box / **Sensor Junction Box Mounting Brackets (optional)**

Quick#	Part#	Max. # of Sensors	Price	Quick#	Part#	Price	Dimensions:
6753	SB2C	2	$64.00	6737	SB2C-MP	$8.50	65x84x3
6754	SB4C	4	$86.00	6738	SB4C-MP	$9.40	94x84x3
6685	SB6C	6	$144.00	6687	SB6C-MP	$10.00	113x94x3
6755	SB8C	8	$157.00	6739	SB8C-MP	$11.50	130x113x3
6686	SB12C	12	$223.00	6688	SB12C-MP	$12.95	180x113x3
Note: All brackets have a 20mm tab for optional mounting position.							

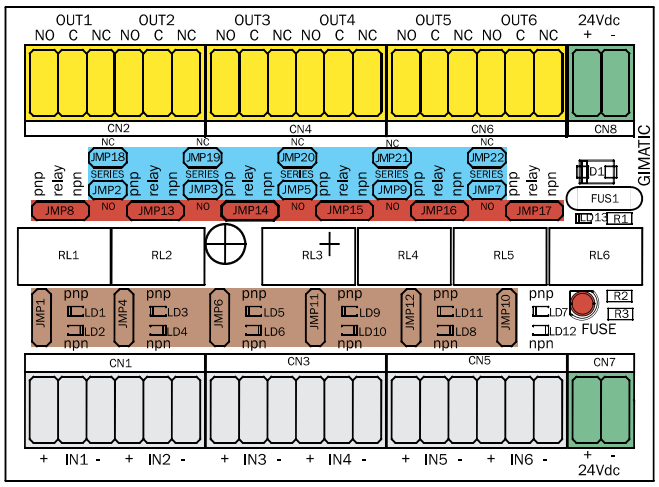


	SB2C	SB4C	SB6C	SB8C	SB12C	SB8F	SB15
A	57	57	57	57	57	57	57
B	65	65	94	94	94	65	65
C	25	25	25	25	25	25	25
D	65	94	94	130	180	94	94
E	50	79	79	115	165	79	79
F	50	50	79	79	79	50	50
G	n°2	n°3	n°4	n°6	n°8	n°3	n°3
Wt.	120g	160g	190g	235g	325g	165g	150g

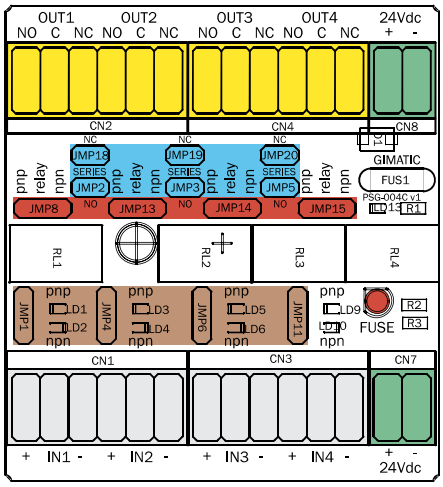


Sensor Junction Box - SB

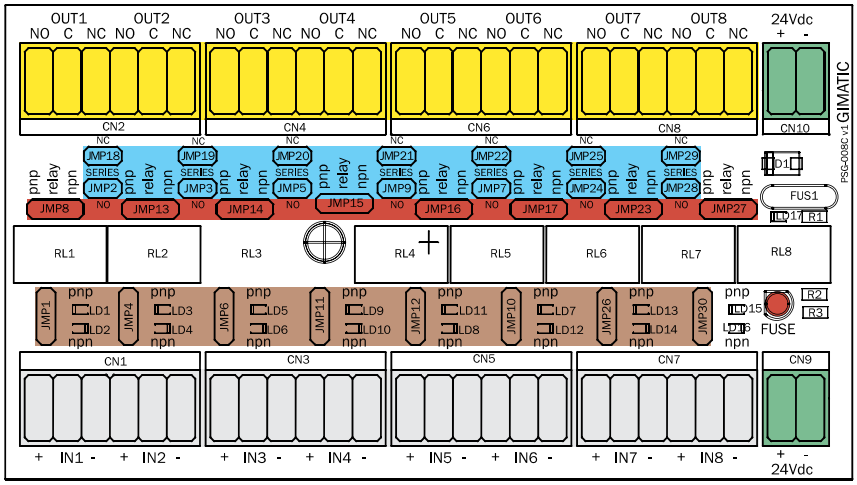
SB6C 6 sensors maximum



SB4C 4 sensors maximum



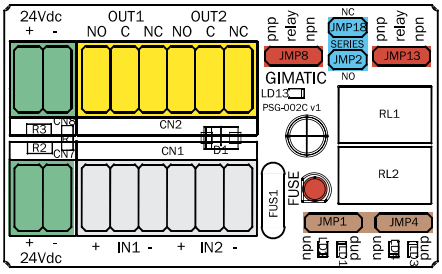
SB8C 8 sensors maximum



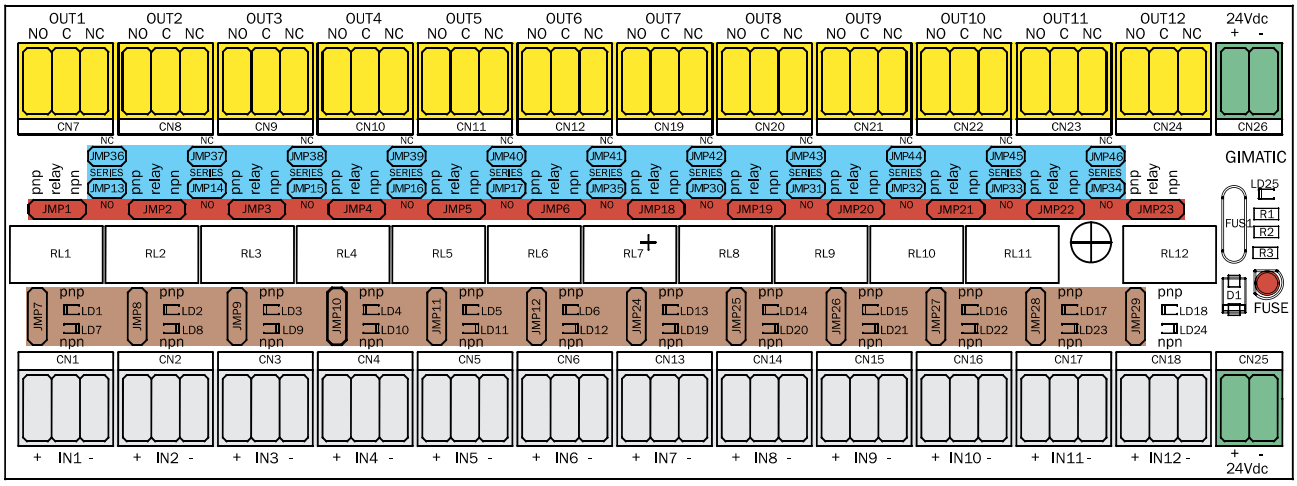
Color legend:

- 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



SB - Sensor Junction Box

Sensor Box Examples:

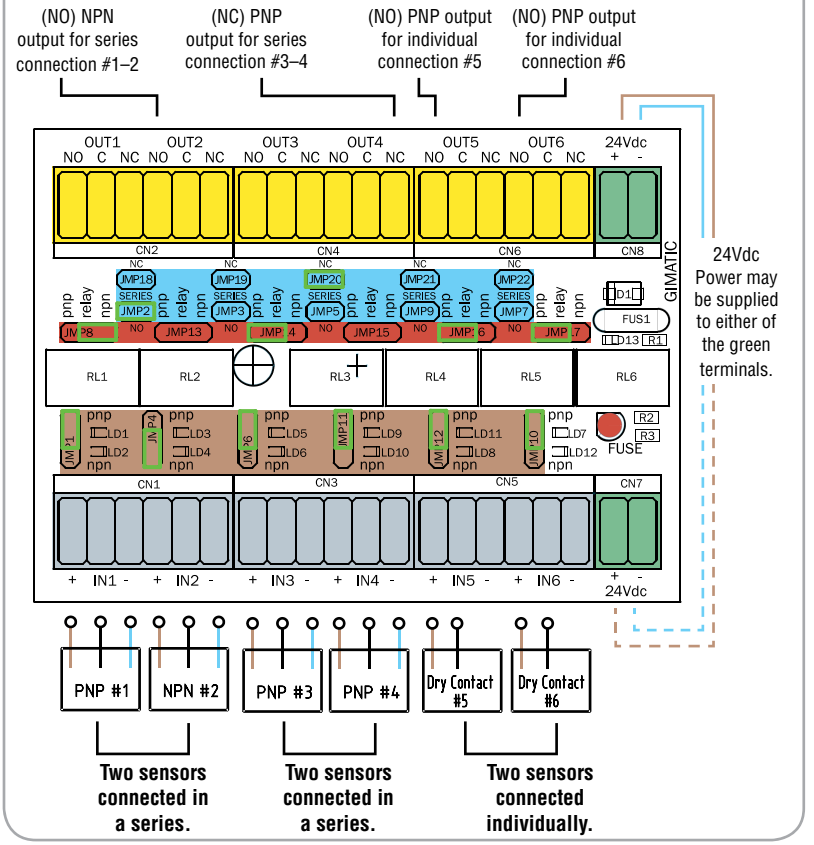
It's necessary to connect all sensors in succession when a series connection is desired. Normally open (NO) or Normally closed (NC).

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

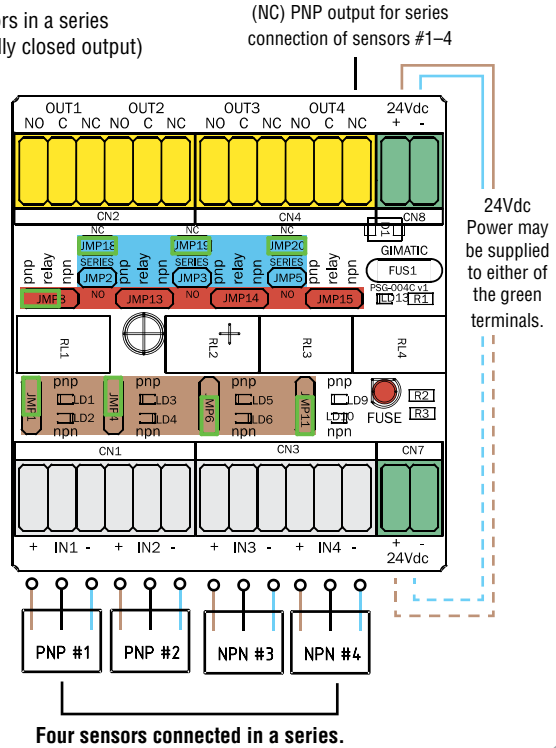
Example 1

SB6C
2 Sensors in a series + 2 sensors in a series + 2 sensors individually



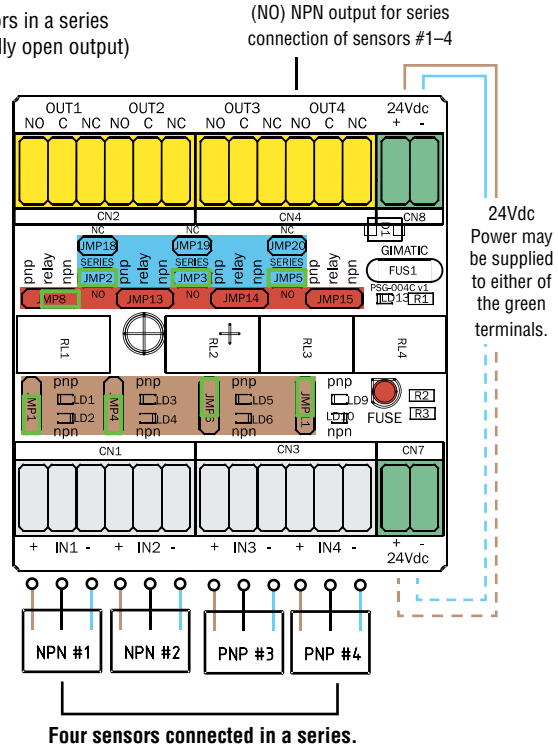
Example 2

SB4C
4 Sensors in a series
(Normally closed output)



Example 3

SB4C
4 Sensors in a series
(Normally open output)



Sensor Junction Box - SB

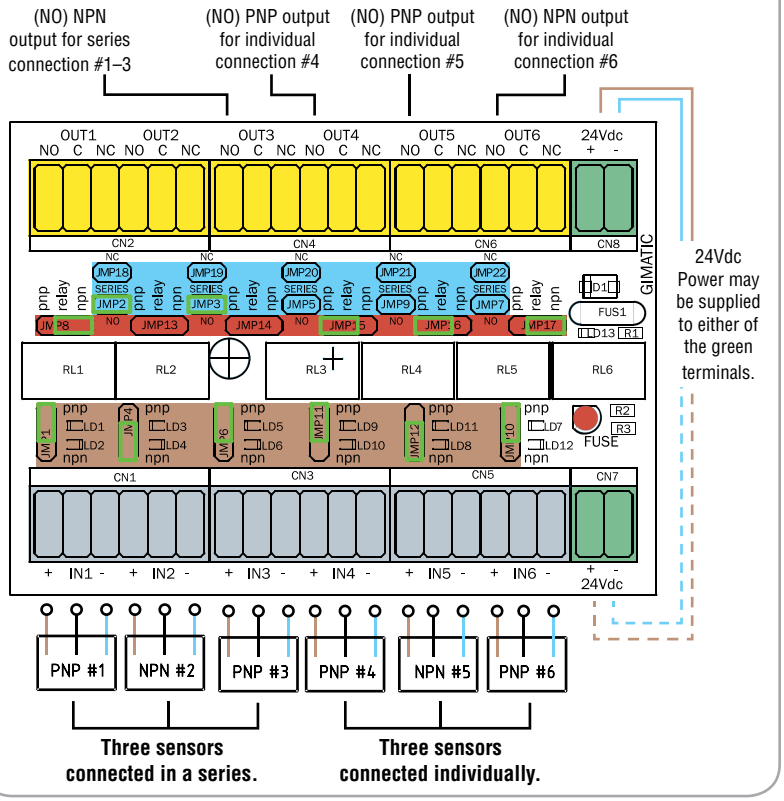
The SB series sensor junction boxes are designed to condition sensor signals and ultimately provide signals suitable for a PLC. The board is equipped with a self-restoring fuse which protects the controls from possible short circuit. The electrical box is equipped with PG9 cable connectors which provide 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

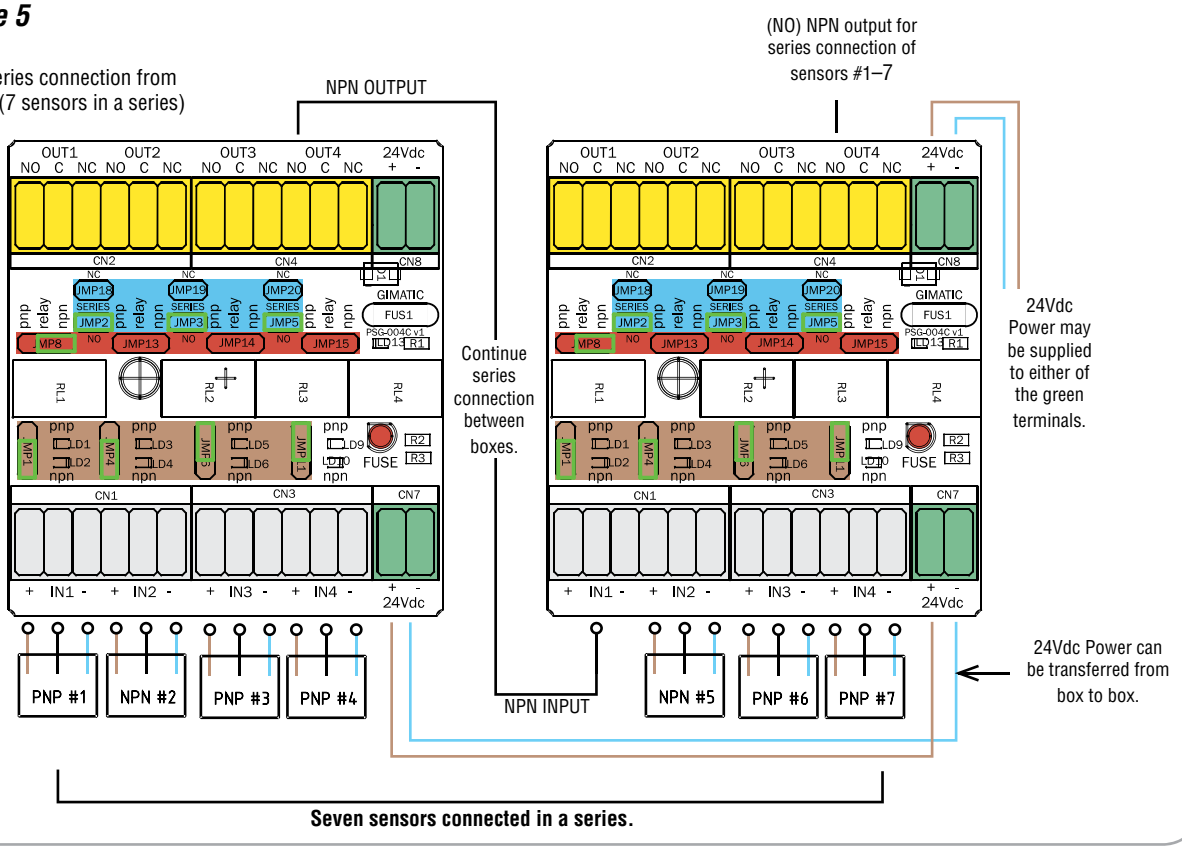
Example 4

SB6C
3 Sensors in a series + 3 sensors individually



Example 5

(2x)SB6C
Continue series connection from box to box (7 sensors in a series)



SB - Microprocessor Box

Microprocessor Sensor Box

(dimensions shown on page 882)

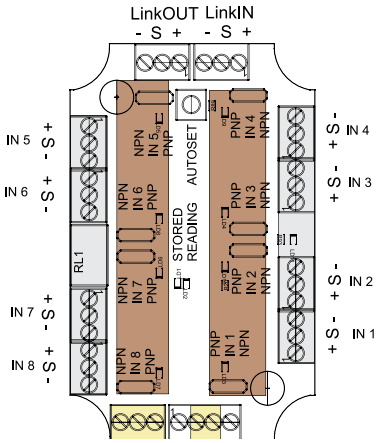
Functioning - When the autoset button is pressed, the microprocessor memorizes the status of the inputs (Gray Area). The output (yellow) area will be activated every time the same conditions are met.

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

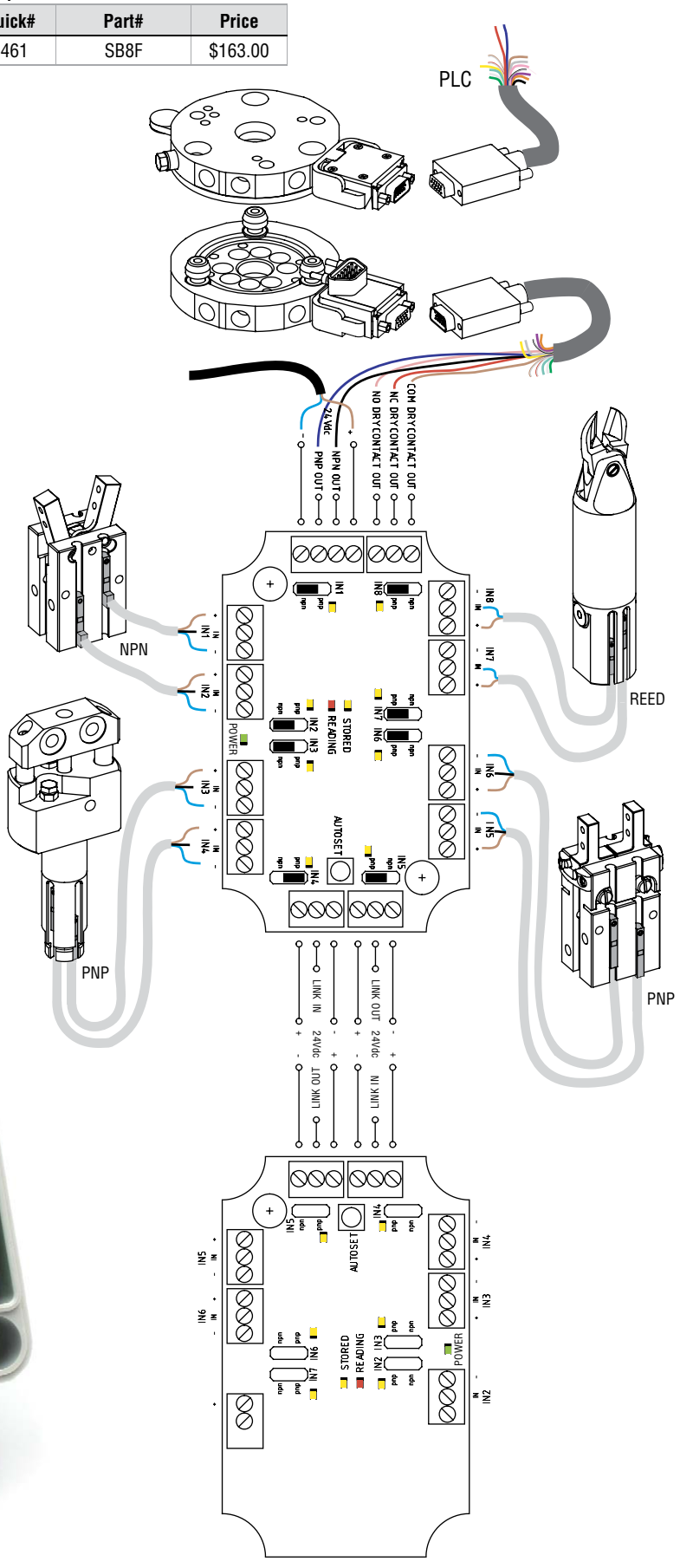
Quick#	Part#	Price
6461	SB8F	$163.00



Application Example:

Power Supply: 24 V dc (±10%)
INPUTS:
2 NPN INPUTS (IN1/IN2)
4 PNP INPUTS (IN3/IN4/IN5/IN6)
2 DRY CONTACT (IN7/IN8)

OUTPUTS:
1 PNP OUTPUT
1 NPN OUTPUT
1 DRY CONTACT NC OUTPUT
1 DRY CONTACT NO OUTPUT



Terminal Box - SB

Terminal Cabling Box

(dimensions shown on page 882)

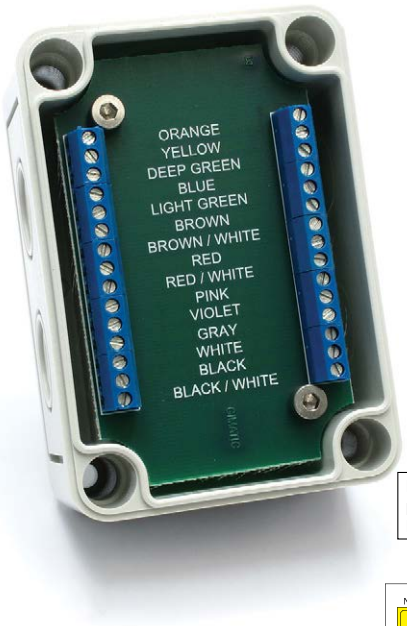
This terminal box is used primarily for EOAT's using multiple electrical boxes. Use this terminal box as a junction area between outputs from multiple electrical boxes and the electrical cable from the quick changer.

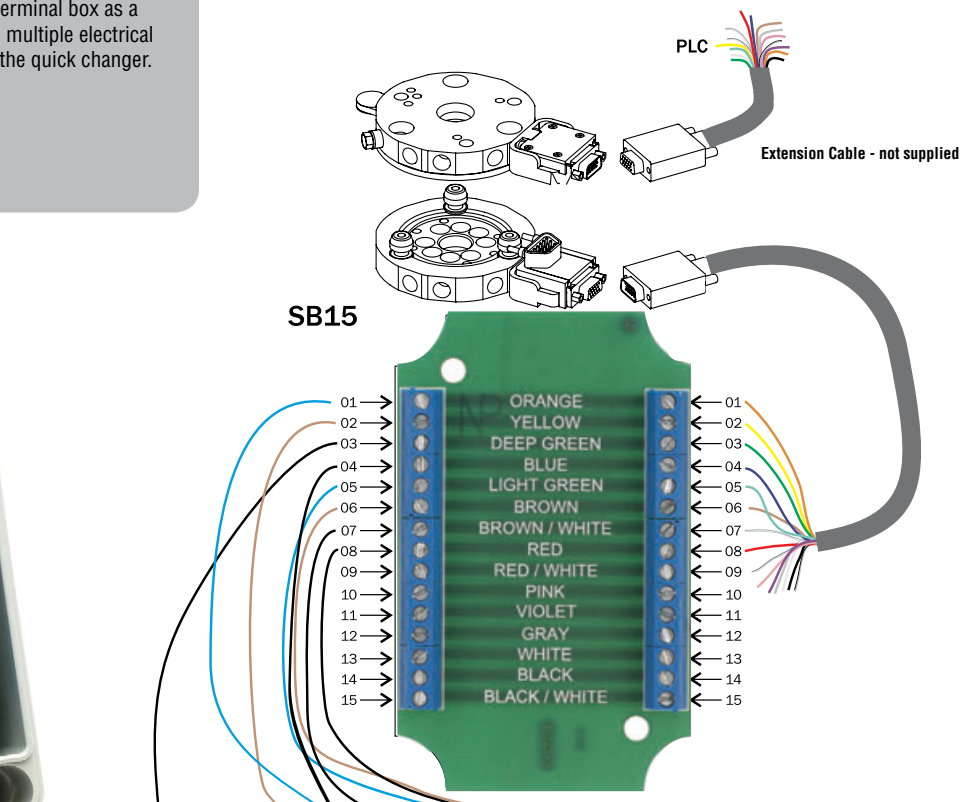
Inputs: 15 inputs (to outputs)

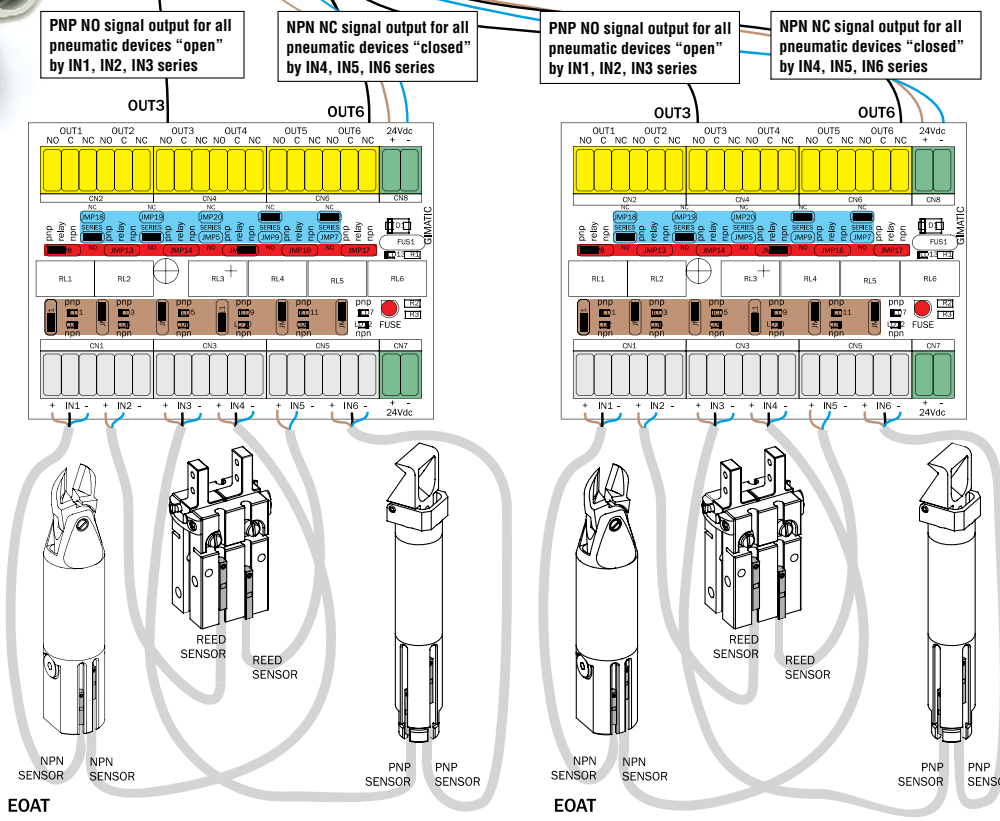
Outputs: 15 outputs (from inputs)

Terminal Cabling Box

Quick#	Part#	Price
5308	SB15	$75.20







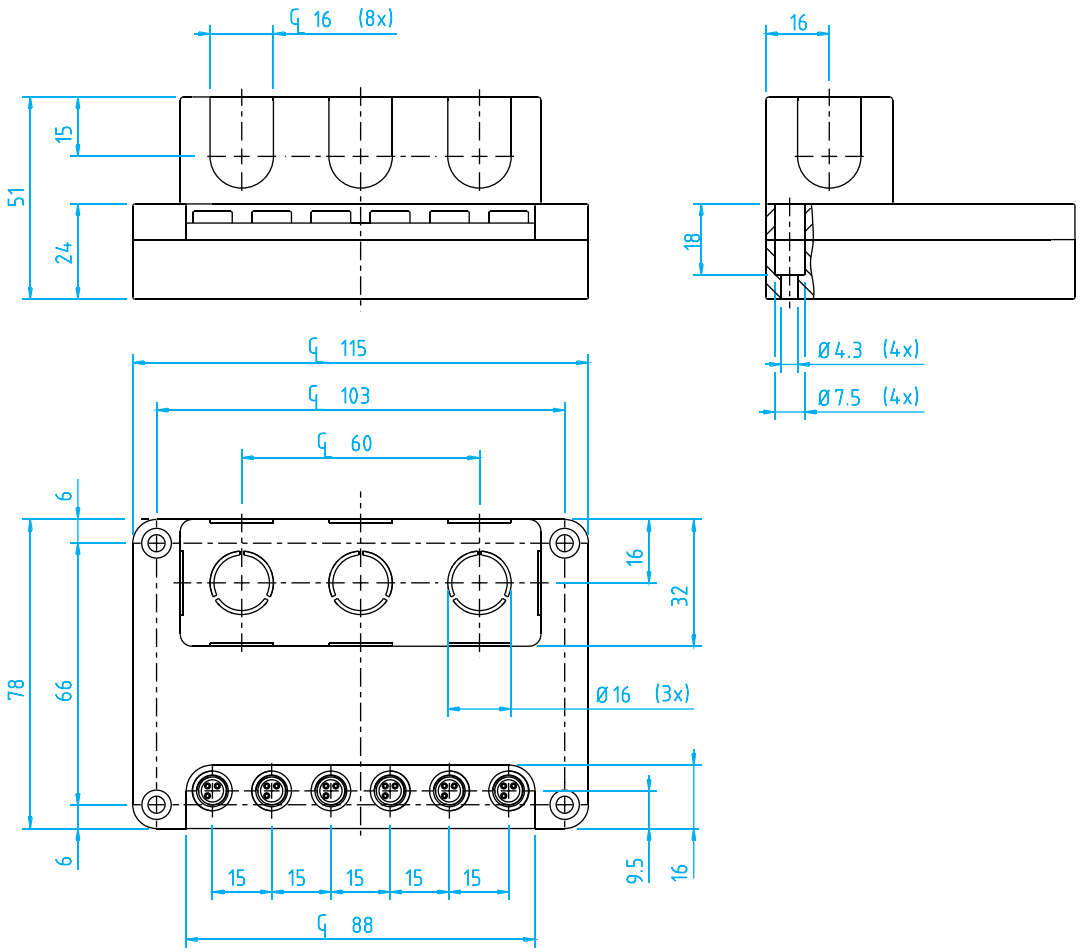
SB - M8 Sensor Junction Box

- **3-pin M8x1 direct connection only.**
- 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.
- Several boxes may be connected in a series to accommodate additional sensors.
- LED indicators allow for easy troubleshooting.
- Regenerates signals & protects contacts.
- Optional M8 male cabling connectors available.
- Strain reliefs provided.

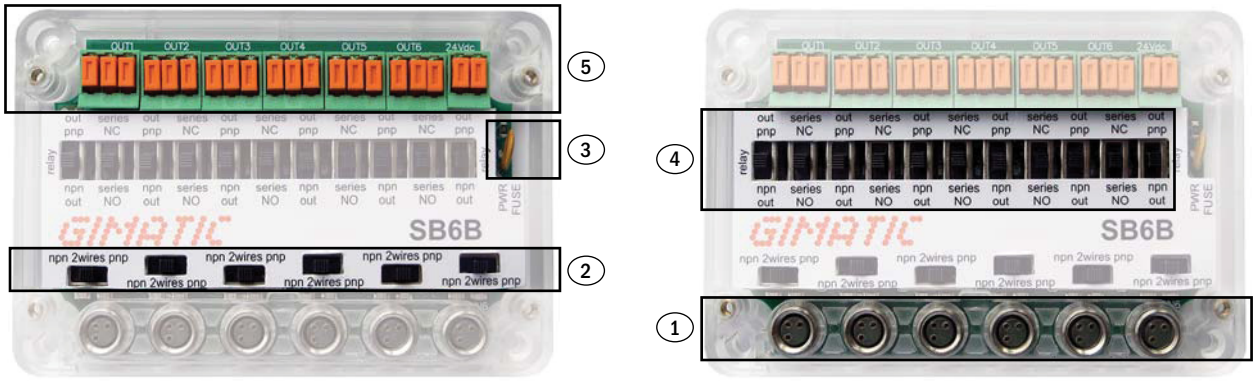
Sensor Junction Box

Quick#	Part#	Description	Weight	Price
7283	SB6B	6 Input Relay Box	193g	$179.00
Note: Only M8 connectors having 3 pins can be use with this junction box.				

#7283 - 6 Input Relay Box



SB - M8 Sensor Junction Box



1. Direct connection with M8x1 3-Pin cables only
2. PNP/NPN/2-wire inputs selectable by sliding switches
3. Short circuit protection with auto-fuse and RED led indicator
4. PNP/NPN/relay outputs selectable by sliding switches
5. Easy push terminals for outputs, no tools required

Cut long sensor cables to the desired length. These connectors have terminal screws to make it easy and fast to make custom length cables. Cutting long cables reduces the overall EOAT weight and helps prevent coils from snagging.

Use the Male version (Q# 7285) when connecting to the SB6B Sensor Box.

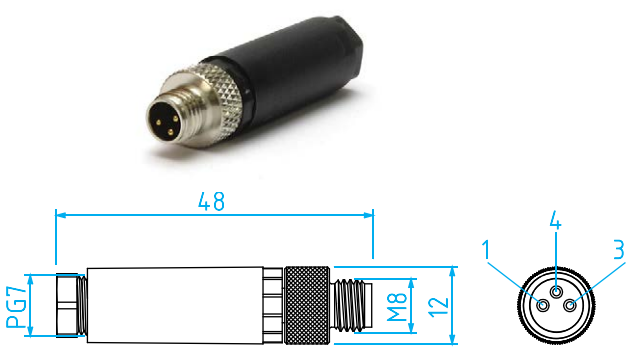
M8 Cables for Sensor Junction Box SB6B

Quick#	Part#	Description	Length	Weight	Price
7335	GSE-CS180-M81	M8x1 3-pole Straight	1m	37g	$16.30
7336	GSE-CS180-M82	M8x1 3-pole Straight	2m	64g	$17.50
7337	GSE-CS90-M81	M8x1 3-pole 90°	1m	38g	$16.30
7338	GSE-CS90-M82	M8x1 3-pole 90°	2m	65g	$17.50

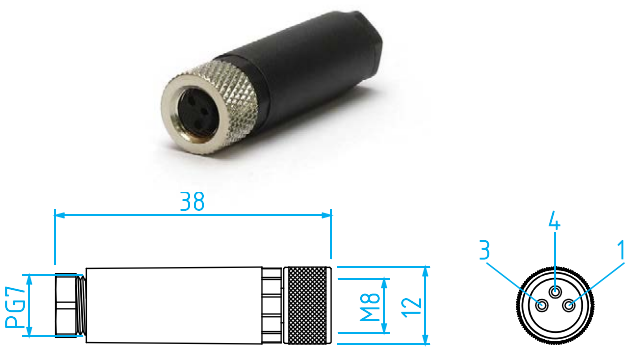
M8 Connectors for Sensor Junction Box SB6B

Quick#	Part#	Description	Weight	Price
7285	CMGM800300	3-pin Male M8 Connector used to connect to SB6B sensor box	11g	$13.47
7284	CFGM800300	3-pin Female M8 Connector	11g	$13.47

#7285 - Male M8 Connector



#7284 - Female M8 Connector



SB - M8 Sensor Junction Box

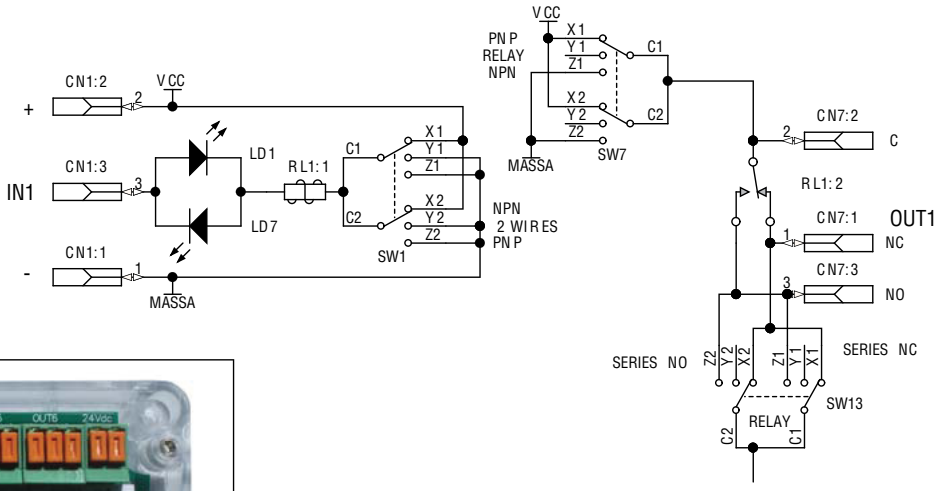
Terminal box with Direct Connection - Functioning

After the inputs have been connected (Grey Area) as shown on the circuit board you must use the switch to select the Inputs signal type (Brown Area). Then use switch to define if you want to convert the input signals in NO/NC series or parallel outputs (Blue area). Use switch also to select the Output signal (PNP; NPN; relay) (Red Area) through a relay circuit so as to avoid the voltage drop. When the selection is completed, the Outputs (Yellow Area) are to be cabled.

Power supply: 24 V dc (±10%)

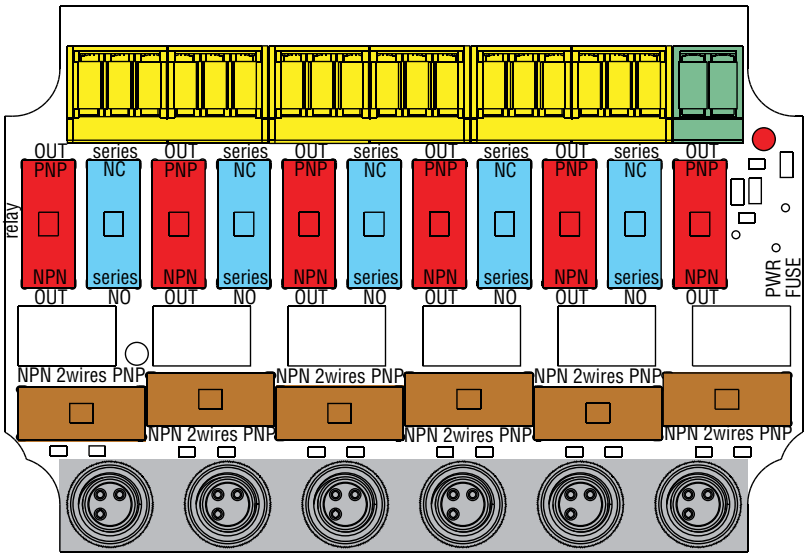
Inputs: Maximum 6 PNP, NPN or dry contact (NO or NC) (GREY AREA) determined by switch position (BROWN AREA).

Outputs: 1 up to 6 PNP, NPN or dry contact (NO) outputs (YELLOW AREA) determined by switch position (RED AREA).



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



SB - M8 Sensor Junction Box

Application Example

Power supply

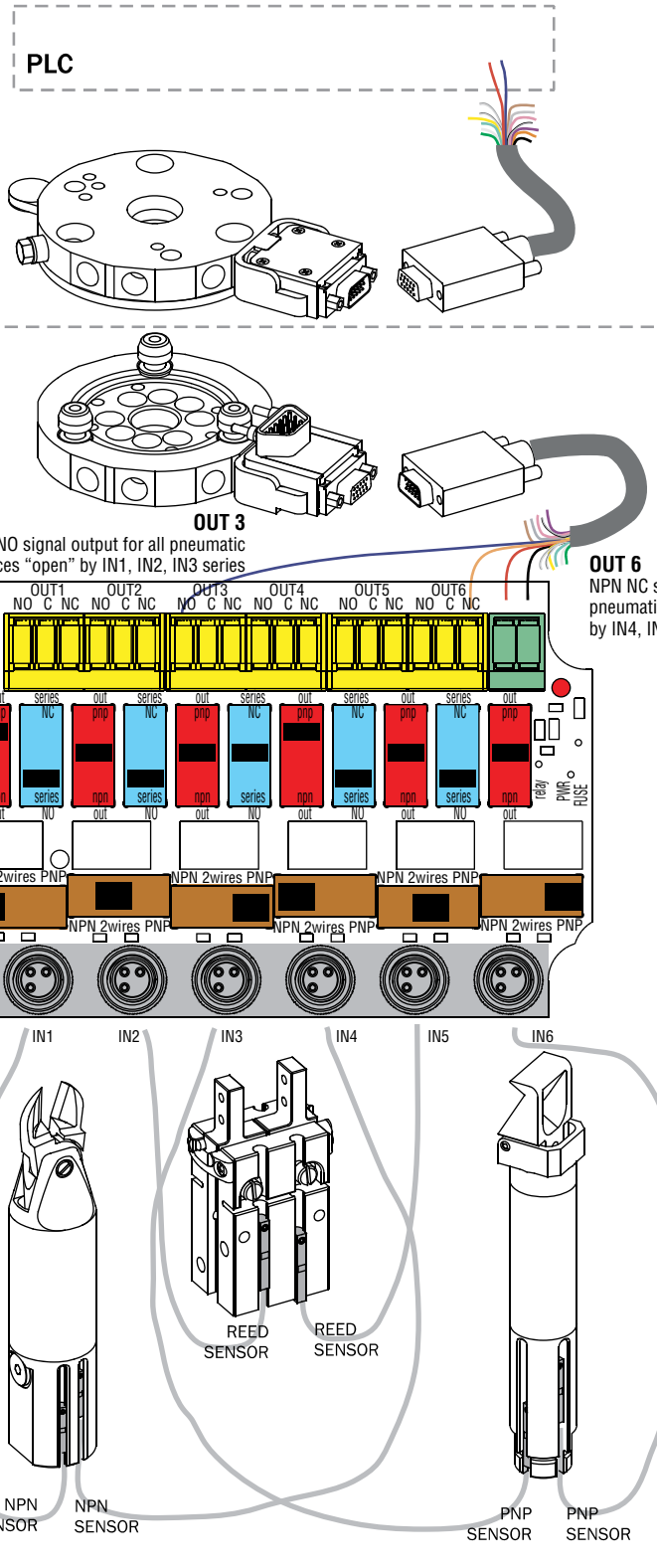
24 V dc (±10%)

Inputs

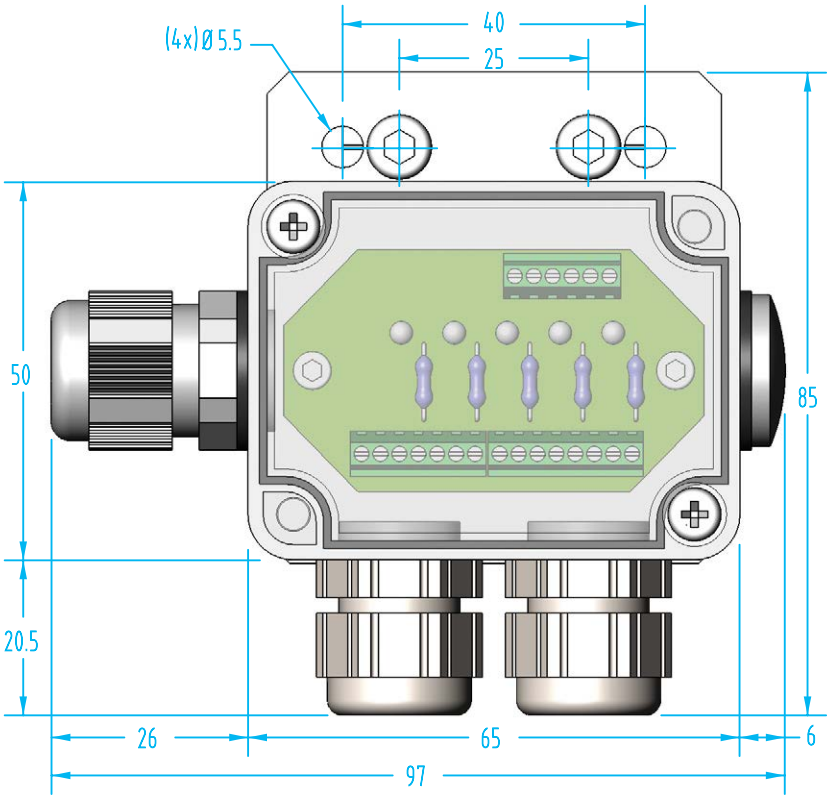
2 NPN INPUTS (IN1/IN4)
2 PNP INPUTS (IN3/IN6)
2 DRY CONTACT (IN2/IN5)

Outputs

1 PNP OUTPUT SERIES (OUT3)
1 NPN OUTPUT SERIES (OUT6)



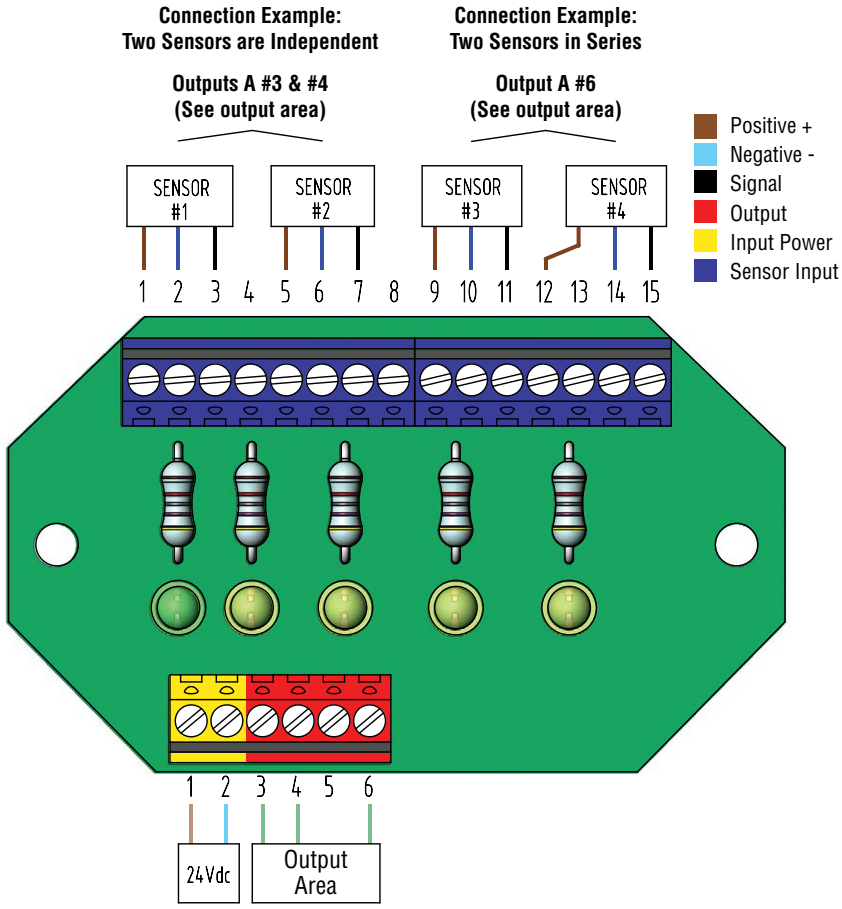
>S< Style Terminal Box KK



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

Terminal Box - KK

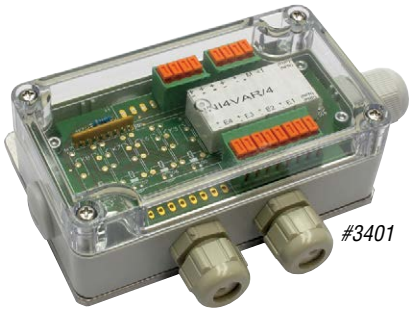
Quick#	Part#	>ASS< #	Price	Wt.
3404	KK1	1-805-20-00	$95.00	115g

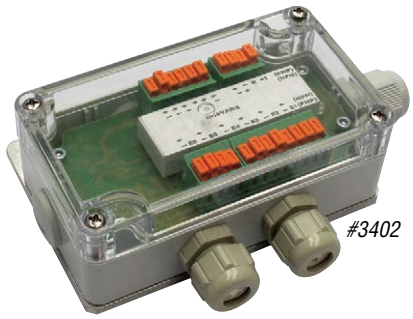


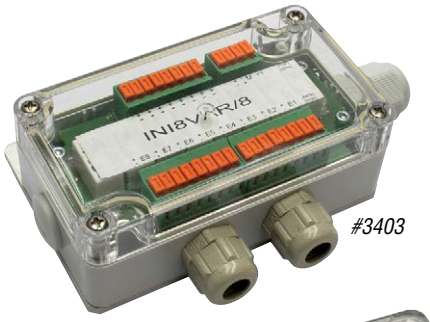
Used for PNP sensors only

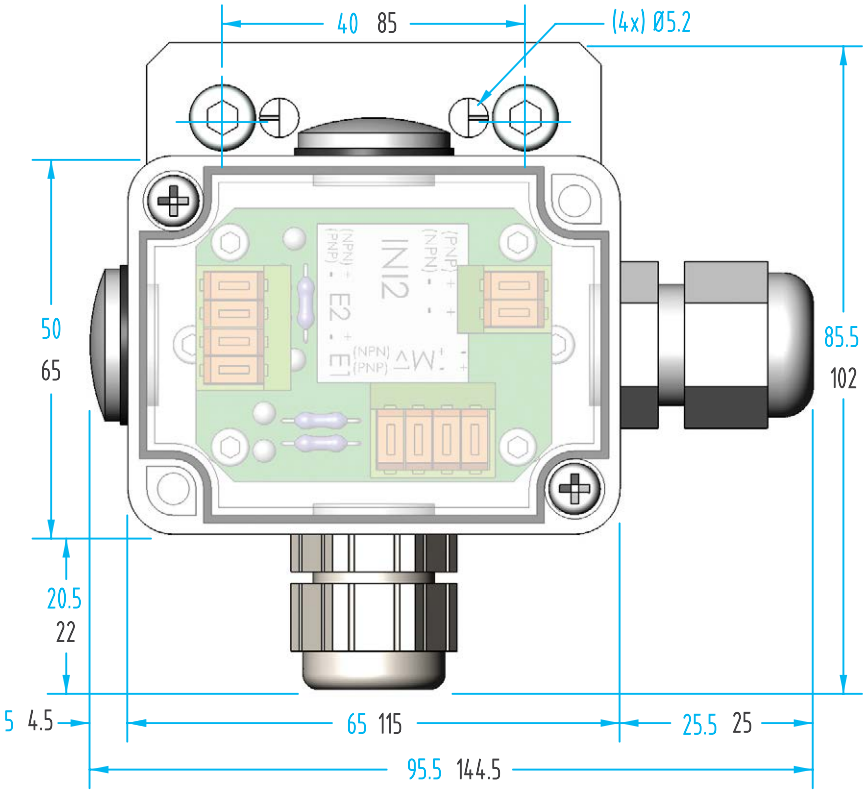
(Enlarged to show detail)

Relay Board RPL







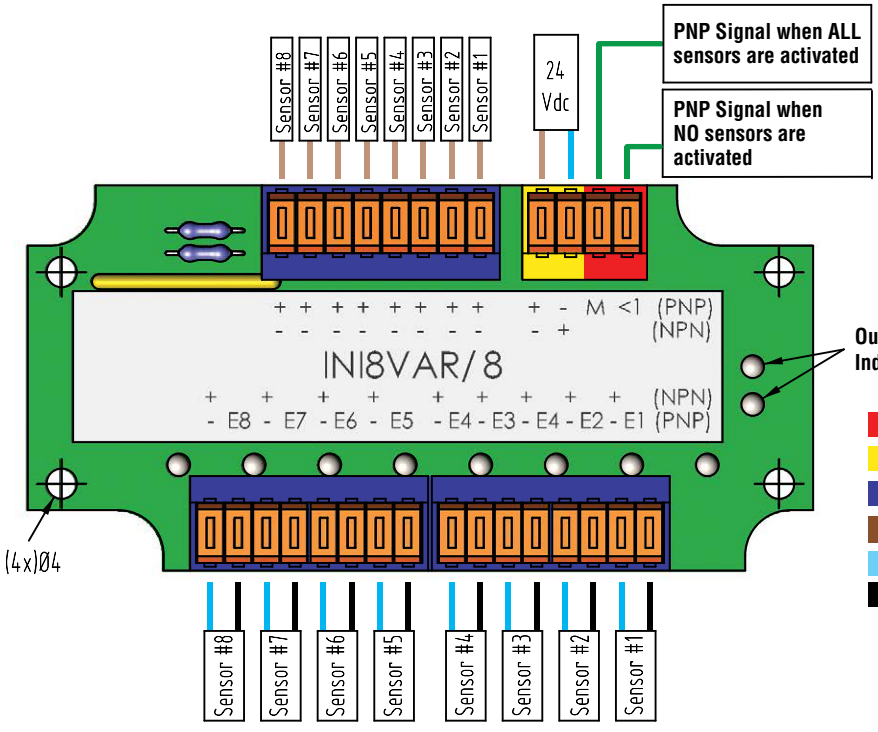


Relay board is used for series connection of multiple sensor signals (22–26Vdc).

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	$92.50	2	22g
3401	RPL4	1-805-12-00	$139.00	4	40g
3402	RPL6	1-805-14-00	$161.50	6	56g
3403	RPL8	1-805-16-00	$180.00	8	76g



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

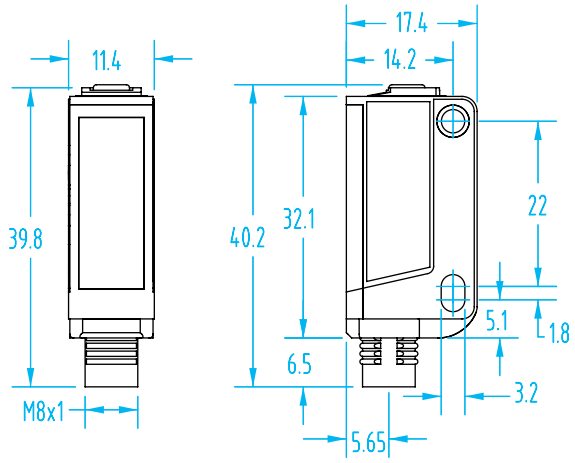
If an NPN output is desired all brown and blue wires will need to be reversed.
(All sensors must be NPN)

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

Photo Sensors

(Shown Actual Size)

- 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).

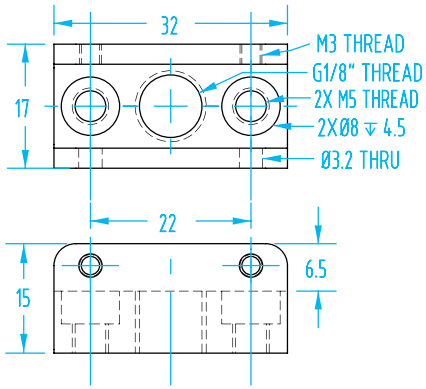


Quick#	Part#	Description	Connection	Price
5476	GSE-HRTR-PNP	Precision Photo Sensor PNP	M8	$160.00
5477	GSE-HRTR-NPN	Precision Photo Sensor NPN	M8	$160.00
Mounting Bracket for Sensors				
5882	GSC-PEB-2011	Fasteners included		$13.96

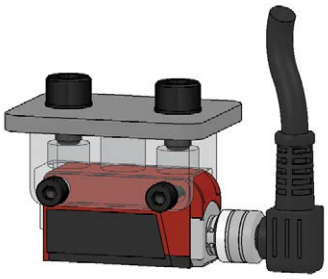
See page 897 for cables.

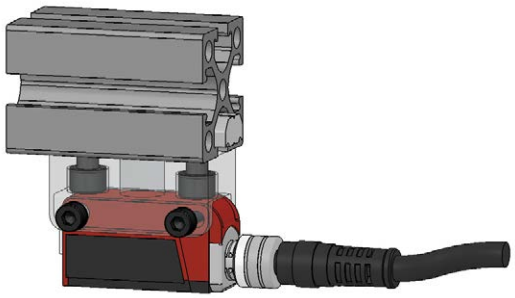
Send sample parts for testing

Mounting Bracket



Mounting Examples





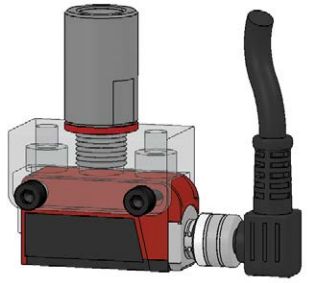
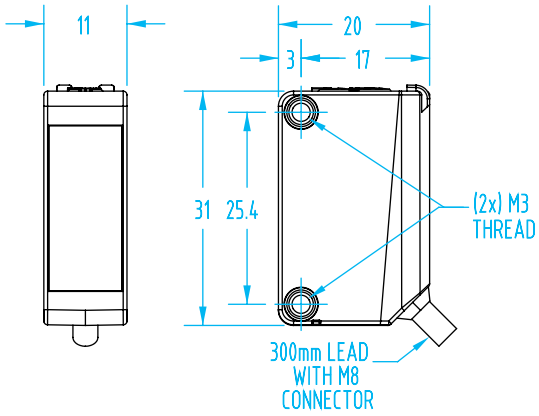


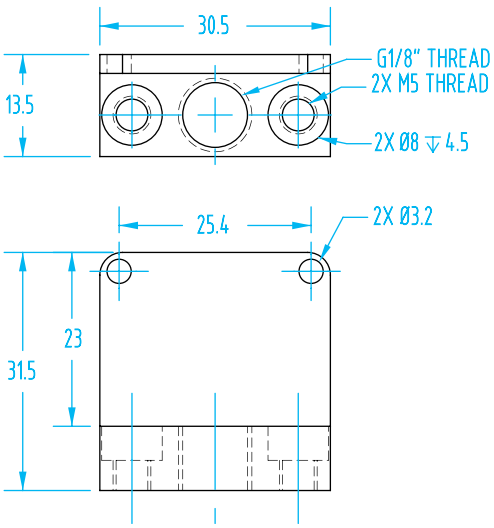
Photo Sensors

(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.
- 300mm “pigtail” & 4-pin M8 male connection for placement flexibility.
- Full metal thread mounting.
- Range adjustable 0–350mm.
- **Not recommended for clear or transparent parts.**



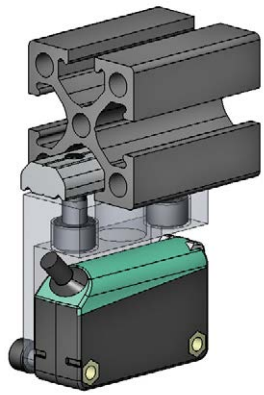
Mounting Bracket

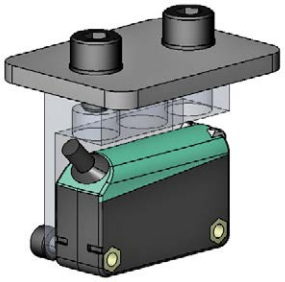


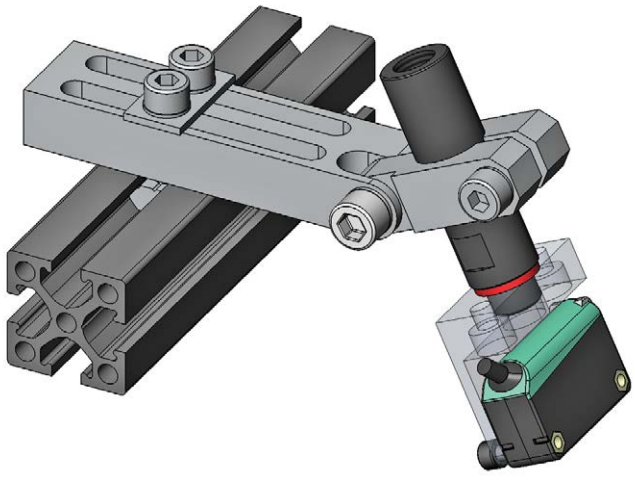
Quick#	Part#	Description	Connection	Price
5990	GSE-PPE350-PNP	Photo Sensor PNP	M8	$122.00
5991	GSE-PPE350-NPN	Photo Sensor NPN	M8	$122.00
Mounting Bracket for Sensors				
5992	GSC-PEB-2013	Fasteners included		$12.20

See page 897 for cables.

Mounting Examples





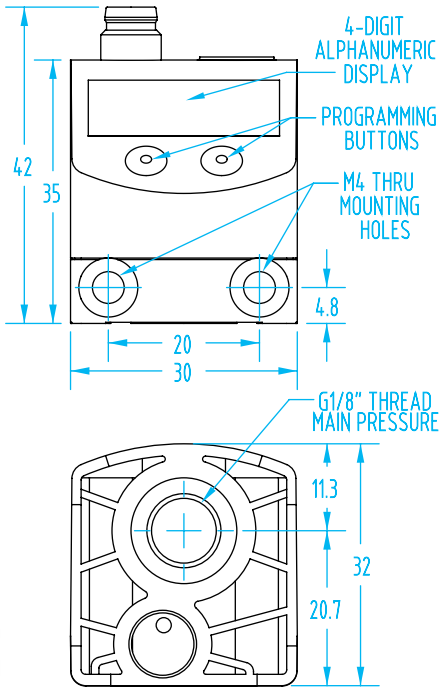


Vacuum Monitor Switches

- This switch 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).

(Shown Actual Size)

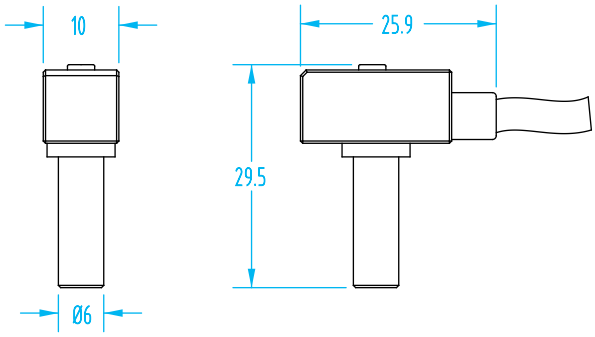


Vacuum Monitor Switch

Quick#	Part#	Signal	Wt.	Vacuum connection	Operating Voltage	Measuring Range	Price
2696	GSE-PQ 7834	PNP	108g	G1/8" Female	18–32V DC	-14.5 to 145 psi	$163.00
2697	GSE-PQ 0834	NPN	108g	G1/8" Female	18–32V DC	-14.5 to 145 psi	$163.00

See page 897 for cables.

- 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.



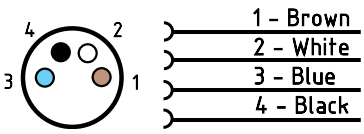
Vacuum Monitor Switch

Quick#	Part#	Signal	Wt.	Vacuum connection	Operating Voltage	Measuring Range	Price
1931	PSK-100-DGP	PNP	8.3g	Ø6mm	10.8–30V DC	0 to -14.69 psi	$92.00
1932	PSK-100-DGN	NPN	8.3g	Ø6mm	10.8–30V DC	0 to -14.69 psi	$92.00

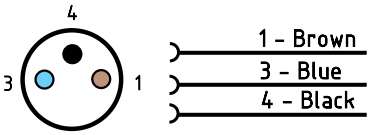
See page 897 for cables.

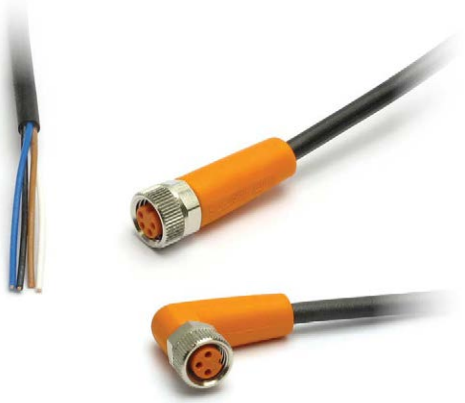
Sensors & Accessories

4-wire configuration (#461, #462)



3-wire configuration (#2583, #2582)



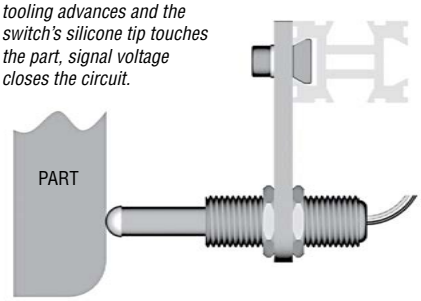


Use these extension cables for Gimatic sensors with M8 connectors and 0.3m leads

Sensor Cables

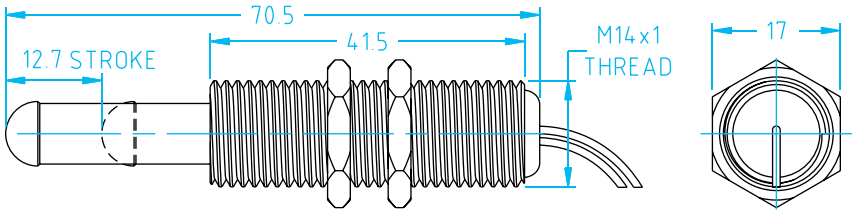
Quick#	Part#	Connection	Cable	Price
461	GSF-VMC-90	90°	4-wire, 5m long cable w/M8 nut	$13.00
462	GSF-VMC-S	Straight	4-wire, 5m long cable w/M8 nut	$13.00
2583	GSE-NAN-3F	Straight	3-wire, 5m long cable w/M8 nut	$13.00
2582	GSE-NAN-3A	90°	3-wire, 5m long cable w/M8 nut	$13.00

When the end-of-arm tooling advances and the switch's silicone tip touches the part, signal voltage closes the circuit.



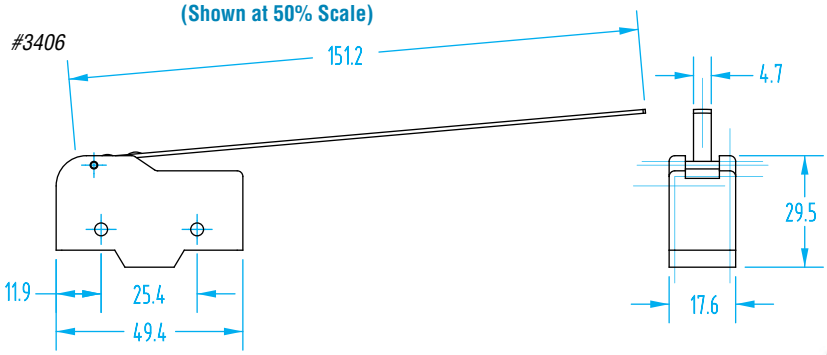
Sensor Switch

Quick#	Part#	Weight	Price
1735	GSE-SSW-15	14g	$22.78
Replacement Tips			
5287	270449	Qty. of 5	$11.05



(Shown at 50% Scale)

#3406



#3405

Trigger Sensor Switch (without cable)

Quick#	Part#	Price	Voltage	Output	Type	Wt.
3405	SEO-5	$5.00	24V dc	1A	Short	8g
3406	SEO-10	$15.50	24V dc	1A	Long	37g

Cover for LONG Trigger Switch (SEO-10)

Quick#	Part#	Price	Wt.
3407	GEO-10	$13.00	17g

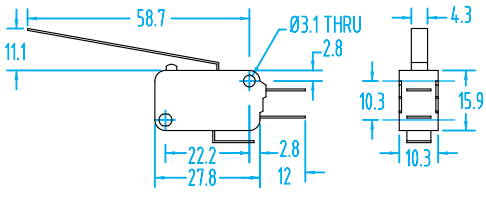
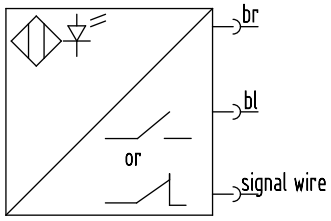


Photo Sensor & Accessories



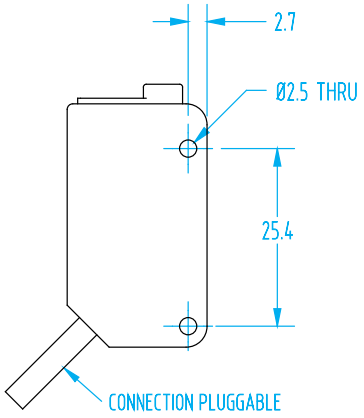
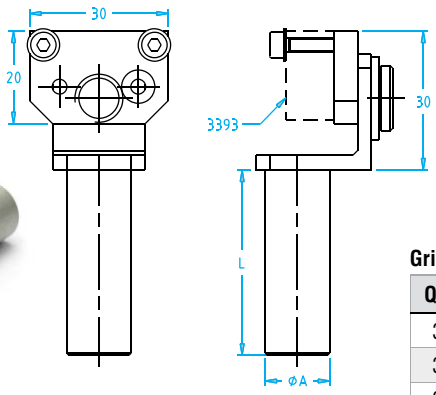


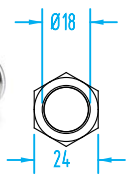
Photo Sensor (no reflector required)

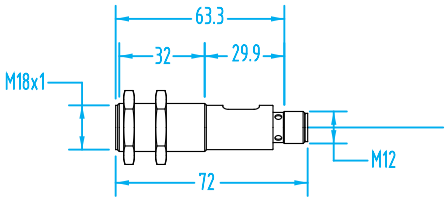
Quick#	Part#	Price	Voltage	Output	Distance	Signal	Cable	Wt.
3393	LES-6-PNP	$146.00	10-36V dc	200mA	20–600mm	PNP	M8 Connector	44g
3491	LES-6-NPN	$146.00	10-36V dc	200mA	20–600mm	NPN	M8 Connector	44g

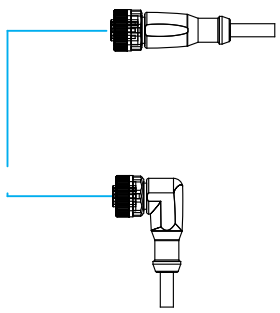


Gripper Arm for LES-6

Quick#	Part#	Price	ØA	Length	Wt.
3394	GGE14-40-F	$34.50	14	40	32g
3395	GGE14-80-F	$35.50	14	80	40g
3396	GGE14-120-F	$36.50	14	120	48g







Connector Cable for LRS-18

Quick#	Part#	Price	Connection	Cable	Wt.
3398	KG18	$12.75	Straight	5m	135g
3399	KW18	$12.75	Elbow 90˚	5m	130g

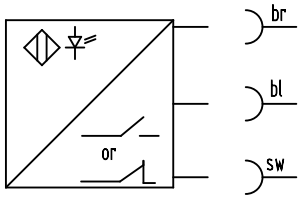
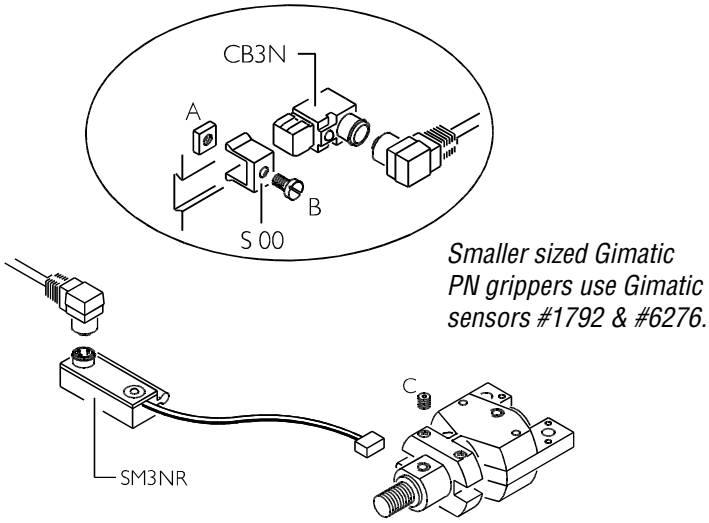


Photo Sensor (no reflector required)

Quick#	Part#	Price	Voltage	Output	Distance	Signal	Sensitivity	Cable	Wt.
3397	LRS-18	$98.00	10-36V dc	200mA	20–600mm	PNP	Light or Dark	#3398, #3399	22g

Sensors

#6591



Smaller sized Gimatic PN grippers use Gimatic sensors #1792 & #6276.

3-wire Hall Effect Sensors

Quick#	Part#	Signal	Cable	Price	Power Supply	Maximum Switching Frequency	Operating Temperature
1792	SM3MR2-G	NPN	M8 Connector *	$28.40	6–30V dc	200 KHz	-10 to +70°C
6276	SM3NR2-G	PNP	M8 Connector *	$28.40			
(*) Purchase extension cable #6591 separate for these sensors.							
6591	CFSM890325	$6.90	3m 3-wire extension with M8 female connector				

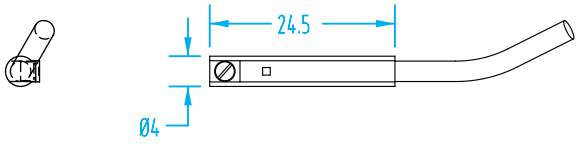
Inductive Sensors

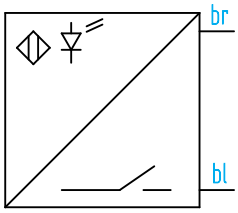
Quick#	Part#	Description	Signal	Power supply	Operating Temp.	Price
2429	GSG-IS-NPN	4mm N.O. Inductive Sensor	NPN	10–30V dc	-25 to +70°C	$58.50
2430	GSG-IS-PNP		PNP			$58.50
2602	GSG-IS3-NPN	3mm N.O. Inductive Sensor	NPN			$92.00
2603	GSG-IS3-PNP		PNP			$92.00

- **Two-wire sensors**
- This two-wire reed switch can be used to return either a PNP or an NPN signal.
- To wire either type to a PNP robot, connect the Brown wire to a +24Vdc terminal and the Blue wire to the robot input terminal.
- To wire to an NPN robot, connect the Brown wire to the robot input terminal and the Blue wire to a -24Vdc terminal.

2-wire Reed Sensor (electro-mechanical)

Type	Quick#	Part#	Price	Voltage	Output	Cable
Reed	3409	RRK-93	$16.25	24V dc	200 mA	2-wire, 0.5m

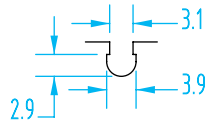




Gimatic® C-Slot Sensors

C-Slot Sensors

Part#	Quick#	Price	Type	Signal	Connection	Power Supply	Max. Switching Frequency	Voltage Drop	Operating Temperature	IEC Rating	Cable
SS4N225Y*	1882	$26.14	3-wire Hall effect	PNP	2.5m lead	6–30V dc	200 KHz	1V dc	-10 to +70°C	IP 67	PUR Sheath
SS4M225Y*	1883	$26.14	3-wire Hall effect	NPN	2.5m lead	6–30V dc	200 KHz	1V dc	-10 to +70°C	IP 67	PUR Sheath
SS3N203Y*	6282	$29.96	3-wire Hall effect	PNP	.3m lead & M8	6–30V dc	200 KHz	1V dc	-10 to +70°C	IP 67	PUR Sheath
SS3M203Y*	1884	$29.96	3-wire Hall effect	NPN	.3m lead & M8	6–30V dc	200 KHz	1V dc	-10 to +70°C	IP 67	PUR Sheath
SS1C225-G	6600	$17.60	2-wire REED	PNP/ NPN	2.5m lead	3–30V AC/DC	500 Hz	3V	-10 to +70°C	IP 67	PUR Sheath
SS2C203-G	6601	$18.20	2-wire REED	PNP/ NPN	.3m lead & M8	3–30V AC/DC	500 Hz	3V	-10 to +70°C	IP 67	PUR Sheath
Note: Reed Sensors are not recommended for grippers (Cylinders only).											
SN4N225G	6278	$26.14	3-wire Hall effect	PNP	2.5m Lead	6–30V dc	200 KHz	1V dc	-10 to +70°C	IP 67	PUR Sheath
SN4M225G	6357	$26.14	3-wire Hall effect	NPN	2.5m Lead	6–30V dc	200 KHz	1V dc	-10 to +70°C	IP 67	PUR Sheath
SN3N203G	6277	$29.96	3-wire Hall effect	PNP	.3m lead & M8	6–30V dc	200 KHz	1V dc	-10 to +70°C	IP 67	PUR Sheath
SN3M203G	6356	$29.96	3-wire Hall effect	NPN	.3m lead & M8	6–30V dc	200 KHz	1V dc	-10 to +70°C	IP 67	PUR Sheath
*The SS.004.000 adapter is included with these 'SS' sensors to allow 'C' channel sensors to work in 'T' channel slots.											



C-Slot dimensional drawing

Gimatic PB gripper #6230 and Gimatic SS sensor #6282.

Senvex Sensor Finger with Gimatic SS-style sensors.

Gimatic DD20-16RS sprue gripper #5839 and two Gimatic SS sensors #1882.

Gimatic T-Slot & Dovetail Sensors

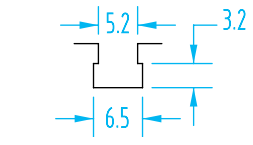
T-Slot Sensors

Part#	Quick#	Price	Type	Signal	Connection	Power Supply	Max. Switching Frequency	Voltage Drop	Operating Temperature	IEC Rating	Cable
SL4N225Y	792	$26.14	3-wire Hall effect	PNP	2.5m lead	6–30V dc	200 KHz	1V dc	-10 to +70°C	IP 67	PUR Sheath
SL4M225Y	793	$26.14	3-wire Hall effect	NPN	2.5m lead	6–30V dc	200 KHz	1V dc	-10 to +70°C	IP 67	PUR Sheath
SL3N203Y	6274	$29.96	3-wire Hall effect	PNP	.3m lead & M8	6–30V dc	200 KHz	1V dc	-10 to +70°C	IP 67	PUR Sheath
SL3M203Y	6456	$29.96	3-wire Hall effect	NPN	.3m lead & M8	6–30V dc	200 KHz	1V dc	-10 to +70°C	IP 67	PUR Sheath
SC3N203G	6455	$33.29	3-wire Hall effect	PNP	.3m lead & M8	6–30V dc	200 KHz	1V dc	-10 to +70°C	IP 67	PUR Sheath
SC3M203-G	6457	$33.29	3-wire Hall effect	NPN	.3m lead & M8	6–30V dc	200 KHz	1V dc	-10 to +70°C	IP 67	PUR Sheath
SC4N225G	6273	$29.13	3-wire Hall effect	PNP	2.5m lead	6–30V dc	200 KHz	1V dc	-10 to +70°C	IP 67	PUR Sheath
SC4M225-G	1796	$29.13	3-wire Hall effect	NPN	2.5m lead	6–30V dc	200 KHz	1V dc	-10 to +70°C	IP 67	PUR Sheath

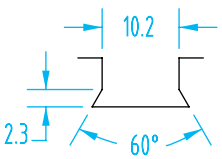
Dovetail-Slot Sensors

Part#	Quick#	Price	Type	Signal	Connection	Power Supply	Max. Switching Frequency	Voltage Drop	Operating Temperature	IEC Rating	Cable
CB3N2-G	6126	$22.00	3-wire Hall effect	PNP	M8 Connector*	6–30V dc	200 KHz	1V dc	-10 to +70°C	IP 67	6591
CB3M2-G	1794	$22.00	3-wire Hall effect	NPN	M8 Connector*	6–30V dc	200 KHz	1V dc	-10 to +70°C	IP 67	6591

(*) Purchase extension cable #6591 separate for these sensors. See page 899.



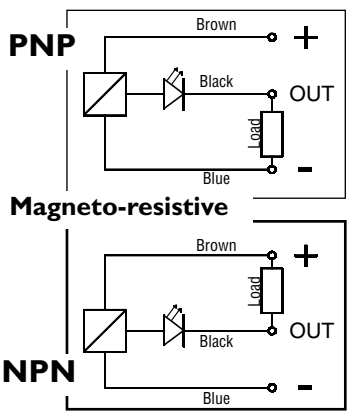
T-Slot dimensional drawing



Dovetail dimensional drawing

For Gimatic SP gripper #6281 use Gimatic SC & SL sensors.

3-Wire Configuration:



SMC® Sensors

SMC Sensors

SMC Sensors	Quick#	Price	Type	Signal	Connection	Power Supply	Voltage Drop	Operating Temperature	IEC Rating	Cable
Y7PL-PNP	2243	$44.00	3-wire Hall effect for T slot	PNP	3m lead	4.5–28V dc	1V	-10 to +60°C	IP 67	PVC
Y59AL-NPN	2244	$34.95	3-wire Hall effect for T slot	NPN	3m lead	4.5–28V dc	1V	-10 to +60°C	IP 67	PVC
Y59BL-REED	2245	$33.90	2-wire REED for T slot	PNP/ NPN	3m lead	24V dc	4V	-10 to +60°C	IP 67	PVC
D-M9PL	5430	$33.70	3-wire Hall effect straight	PNP	3m lead	4.5–28V dc	1V	-10 to +60°C	IP 67	PVC
D-M9NL	2412	$33.70	3-wire Hall effect straight	NPN	3m lead	4.5–28V dc	1V	-10 to +60°C	IP 67	PVC
GSE-D-M9PVL	2403	$37.20	3-wire Hall effect 90˚	PNP	3m lead	4.5–28V dc	1V	-10 to +60°C	IP 67	PVC
GSE-D-M9NVL	2404	$37.20	3-wire Hall effect 90˚	NPN	3m lead	4.5–28V dc	1V	-10 to +60°C	IP 67	PVC
D-M9P-SAPC	5497	$42.06	3-wire Hall effect straight	PNP	3m lead & M8 connector	4.5–28V dc	1V	-10 to +60°C	IP 67	PVC
D-M9N-SAPC	5498	$42.06	3-wire Hall effect straight	NPN	3m lead & M8 connector	4.5–28V dc	1V	-10 to +60°C	IP 67	PVC
RRK-93	3409	$16.25	2-wire REED straight	PNP/ NPN	0.5m lead	24V dc	2.5V	-10 to +60°C	IP 67	PVC

SMC Short-Stoke Cylinders use SMC D-M9... sensors.

SMC Short-Stoke Cylinders with Clamp Arms also use SMC D-M9... sensors.

SMC parallel and angular grippers use SMC sensors #2243 & #2244.

Sensors for >ASS<®

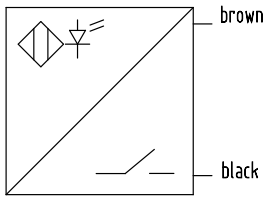
Sensors used for >ASS< items

>ASS< Sensors	Quick#	Price	Type	Signal	Connection	Power Supply	Max. Switching Frequency	Voltage Drop	Operating Temperature	IEC Rating	Cable
MFS-T2-3-7	3809	$69.00	4-wire Hall effect for C slot	PNP	M8 & .5m lead	12–30V dc	1000 Hz	2.2V	-20 to +75°C	IP 67	PUR
UAI-IEK-8-PNP	2215	$45.00	3-wire Hall effect rectangle	PNP	2.5m lead	12–30V dc	2000 Hz	1.8V	-30 to +85°C	IP 67	PUR
UAI-IEK-8-NPN	2216	$49.00	3-wire Hall effect rectangle	NPN	2.5m lead	12–30V dc	2000 Hz	1.8V	-30 to +85°C	IP 67	PUR
IES-8-PNP	3805	$45.50	3-wire Hall effect rectangle	PNP	M8 & .16m lead	12–30V dc	2000 Hz	1.8V	-30 to +85°C	IP 67	PUR
IES-8-NPN	3806	$60.00	3-wire Hall effect rectangle	NPN	M8 & .16m lead	12–30V dc	2000 Hz	1.8V	-30 to +85°C	IP 67	PUR

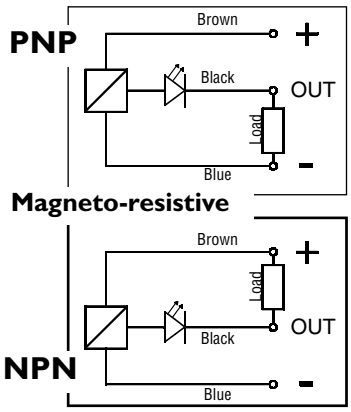
>ASS< sprue gripper #3672 uses >ASS< IES sensors #3805 & #3806

>ASS< sprue gripper #3615 uses >ASS< IES... sensors.

2-wire configuration:



3-wire configuration:



Sensor Quick Reference

1. GENERAL PURPOSE GRIPPERS & GRIPPER FINGERS

Gripper Part#		Slot Type	2nd Slot Type	SS3M203Y	SS3N203Y	SS4N225Y	SS4M225Y	SL4N225Y	SL4M225Y	SL3M203Y	SL3N203Y	SN3N203G	SN4N225G	SN3M203G	SN4M225G	SC3M203G	SC3N203G	SC4N225G	SC4M225G
	Quick#			1884	6282	1882	1883	792	793	6456	6274	6277	6278	6356	6357	6457	6455	6273	1796
Signal:				NPN	PNP	PNP	NPN	PNP	NPN	NPN	PNP	PNP	PNP	NPN	NPN	NPN	PNP	PNP	NPN
Style: (A= with M8 Connector, B= with 2.5m lead C= with .3m lead & M8)				A	A	B	B	B	B	C	C	C	B	C	B	C	C	B	B
DH	All	C		☑	☑	☑	☑					☑	☑	☑	☑				
GS10	6325	T		☑	☑	☑	☑	☑	☑	☑	☑								
GS16	6326	C	T	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
GS20	6327	C	T	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
GS25	6328	C	T	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
GS32	6784	C	T	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
GS40	6785	C	T	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
GW10	6337	T		☑	☑	☑	☑	☑	☑	☑	☑								
GW16	6338	C		☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑				
GW20	6339	C		☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑				
GW25	6340	C		☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑				
GX-S10	6349	C		☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑				
GX-S16	6350	C		☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑				
GX-S20	6351	C		☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑				
GX-S25	6352	C		☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑				
JP	All	T		☑	☑	☑	☑	☑	☑	☑	☑					☑	☑	☑	☑
MGX	All	C		☑	☑	☑	☑					☑	☑	☑	☑				
OFA	All	C		☑	☑	☑	☑					☑	☑	☑	☑				
OFN	5320	C		☑	☑	☑	☑												
OFR	All	C		☑	☑	☑	☑					☑	☑	☑	☑				
OFS	All	C		☑	☑	☑	☑					☑	☑	☑	☑				
PE	All	D																	
PN10	All	O																	
PN16	All	O																	
PN25	All	D																	
PN40	All	D																	
PQ	All	C		☑	☑	☑	☑					☑	☑	☑	☑				
SGP20S	6780	O																	
SGP25S	6781	O																	
SGP32S	6782	O																	
SGP40S	6783	O																	
SH	All	O		☑	☑	☑	☑	☑	☑	☑	☑								
SX	All	C		☑	☑	☑	☑					☑	☑	☑	☑				
SXT	All	C										☑	☑	☑	☑				
SZ	All	C		☑	☑	☑	☑					☑	☑	☑	☑				
T30	6284	T		☑	☑	☑	☑									☑	☑	☑	☑
T40	6285	D		☑	☑	☑	☑												
T63	6286	D		☑	☑	☑	☑												
TH	All	C		☑	☑	☑	☑					☑	☑	☑	☑				
XA	All	T		☑	☑	☑	☑	☑	☑	☑	☑					☑	☑	☑	☑
XP	All	T		☑	☑	☑	☑	☑	☑	☑	☑					☑	☑	☑	☑
XR	All	T		☑	☑	☑	☑	☑	☑	☑	☑					☑	☑	☑	☑
XT	All	T		☑	☑	☑	☑	☑	☑	☑	☑					☑	☑	☑	☑

Sensor Quick Reference

GENERAL PURPOSE GRIPPERS (PART 2)

Gripper Part#		Slot Type	2nd Slot Type	CB3N2G	CB3M2G	SM3MR2G	SM3NR2G	GSGISNPN	GSGISPNP	GSGIS3NPN	GSGIS3PNP
	Quick#			6126	1794	1792	6276	2429	2430	2602	2603
Signal:				PNP	NPN	PNP	NPN	NPN	PNP	NPN	PNP
Style: (A= with M8 Connector, D= with M8 connector & 3m Wire)				A	D	A	A	B	B	B	B
DH	All	C						☑	☑		
GS10	6325	T									
GS16	6326	C	T								
GS20	6327	C	T								
GS25	6328	C	T								
GS32	6784	C	T								
GS40	6785	C	T								
GW10	6337	T									
GW16	6338	C									
GW20	6339	C									
GW25	6340	C									
GX-S10	6349	C									
GX-S16	6350	C									
GX-S20	6351	C									
GX-S25	6352	C									
JP	All	T									
MGX	All	C						☑	☑		
OFA	All	C									
OFN	5320	C									
OFR	All	C									
OFS	All	C									
PE	All	D		☑	☑						
PN10	All	O				☑	☑				
PN16	All	O				☑	☑				
PN25	All	D		☑	☑						
PN40	All	D		☑	☑						
PQ	All	C									
SGP20S	6780	O								☑	☑
SGP25S	6781	O						☑	☑		
SGP32S	6782	O						☑	☑		
SGP40S	6783	O						☑	☑		
SH	All	O						☑	☑		
SX	All	C									
SXT	All	C									
SZ	All	C									
T30	6284	T									
T40	6285	D		☑	☑						
T63	6286	D		☑	☑						
TH	All	C									
XA	All	T									
XP	All	T									
XR	All	T									
XT	All	T									

Choosing the Right Sensor for Your Application:

Find the correct chart:

General Grippers - page 904
Gripper Fingers - page 904
Specialty Grippers - page 906
Sprue Grippers - page 906
Cylinders - page 907
Nippers - page 907
Rotaries - page 907

Find the Item you want to put a sensor on:

Many 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#.

Choose the correct signal (PNP, NPN), and the correct style (A, B, C, D).

Notice the slot type. In some cases an application can use more than one, and that is shown in the '2nd Slot Type' column.

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

For more information on these sensors specifications, see page 900–903.

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

Sensor Quick Reference

2. SPECIALTY GRIPPERS

Gripper Part#		Slot Type	SS3M203Y	SS3N203Y	SS4N225Y	SS4M225Y	SL4N225Y	SL4M225Y	SL3M203Y	SL3N203Y	SN3N203G	SN4N225G	SN3M203G	SN4M225G	SC3M203G	SC3N203G	SC4N225G	SC4M225G
	Quick#		1884	6282	1882	1883	792	793	6456	6274	6277	6278	6356	6357	6457	6455	6273	1796
Signal:			NPN	PNP	PNP	NPN	PNP	NPN	NPN	PNP	PNP	PNP	NPN	NPN	NPN	PNP	PNP	NPN
Style: (A= with M8 Connector, B= with 2.5m lead C= with .3m lead & M8)			A	A	B	B	B	B	C	C	C	B	C	B	C	C	B	B
AGG	All	C	☑	☑	☑	☑					☑	☑	☑	☑				
MFD	All	C	☑	☑	☑	☑					☑	☑	☑	☑				
MFU	All	C	☑	☑	☑	☑					☑	☑	☑	☑				
MPBM	All	C	☑	☑	☑	☑					☑	☑	☑	☑				
MPBS	All	C	☑	☑	☑	☑					☑	☑	☑	☑				
MPLM	All	C	☑	☑	☑	☑					☑	☑	☑	☑				
MPPM	All	C	☑	☑	☑	☑					☑	☑	☑	☑				
MPRE	All	C	☑	☑	☑	☑					☑	☑	☑	☑				
MPRM	All	O																
MPTM	All	C	☑	☑	☑	☑					☑	☑	☑	☑				
MPXM	All	C	☑	☑	☑	☑					☑	☑	☑	☑				
MRE	All	O																
TFA	All	C	☑	☑	☑	☑					☑	☑	☑	☑				

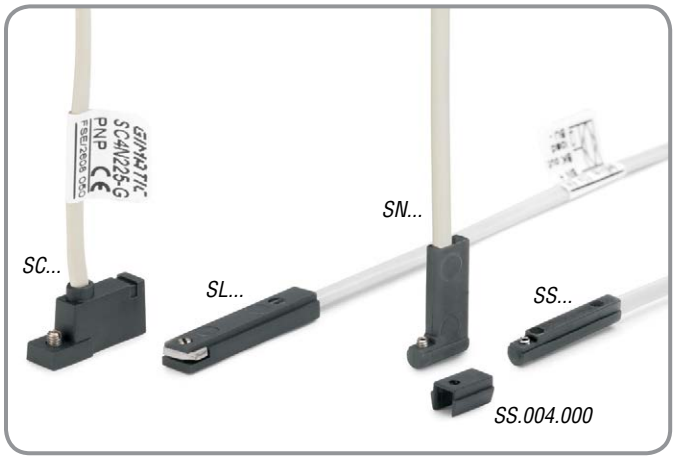
3. SPRUE GRIPPERS

Part#		Slot Type	SS3M203Y	SS3N203Y	SS4N225Y	SS4M225Y	SL4N225Y	SL4M225Y	SL3M203Y	SL3N203Y	SN3N203G	SN4N225G	SN3M203G	SN4M225G
	Quick#		1884	6282	1882	1883	792	793	6456	6274	6277	6278	6356	6357
Signal:			NPN	PNP	PNP	NPN	PNP	NPN	NPN	PNP	PNP	PNP	NPN	NPN
Style: (A= with M8 Connector, B= with 2.5m lead C= with .3m lead & M8)			A	A	B	B	B	B	C	C	C	B	C	B
AA20NO	790	T	☑	☑	☑	☑	☑	☑	☑	☑				
AA20	791	T	☑	☑	☑	☑	☑	☑	☑	☑				
AA22NO	1473	T	☑	☑	☑	☑	☑	☑	☑	☑				
AA22	1474	T	☑	☑	☑	☑	☑	☑	☑	☑				
AA21NO	1476	T	☑	☑	☑	☑	☑	☑	☑	☑				
AA21	1477	T	☑	☑	☑	☑	☑	☑	☑	☑				
AA23NO	1753	T	☑	☑	☑	☑	☑	☑	☑	☑				
AA23	1754	T	☑	☑	☑	☑	☑	☑	☑	☑				
AA26NO	1880	C	☑	☑	☑	☑	☑	☑	☑	☑				
AA26	1881	C	☑	☑	☑	☑	☑	☑	☑	☑				
AA35NO	6625	C	☑	☑	☑	☑	☑	☑	☑	☑				
AA35	6626	C	☑	☑	☑	☑	☑	☑	☑	☑				
BB13NO	6554	C	☑	☑	☑	☑					☑	☑	☑	☑
BB14NO	6555	C	☑	☑	☑	☑					☑	☑	☑	☑
DD20-16	All	C	☑	☑	☑	☑					☑	☑	☑	☑
PB0013	1878	C	☑	☑	☑	☑					☑	☑	☑	☑
PB0180	6988	C	☑	☑	☑	☑								
PB0181	6999	C	☑	☑	☑	☑								
PB0182S	7287	C	☑	☑	☑	☑								
PB0009S	7280	C	☑	☑	☑	☑								

Sensor Quick Reference

SPECIALTY GRIPPERS (PART 2)

Gripper Part#		Slot Type	CB3N2G	CB3M2G	SM3MR2G	SM3NR2G	GSGISNPN	GSGISPNP	GSGIS3NPN	GSGIS3PNP
	Quick#		6126	1794	1792	6276	2429	2430	2602	2603
Signal:			PNP	NPN	PNP	NPN	NPN	PNP	NPN	PNP
Style: (A= with M8 Connector, B= with 2.5m lead C= with .3m lead & M8)			A	A	A	A	B	B	B	B
AGG	All	C								
MFD	All	C								
MFU	All	C								
MPBM	All	C								
MPBS	All	C								
MPLM	All	C								
MPPM	All	C								
MPRE	All	C								
MPRM	All	O					☑	☑		
MPTM	All	C								
MPXM	All	C								
MRE	All	O					☑	☑		
TFA	All	C								



4. AIR CYLINDERS, SLIDES, ROTARIES, & NIPPER BODIES

Part#		Slot Type	SS3M203Y	SS3N203Y	SS4N225Y	SS4M225Y	SL4N225Y	SL4M225Y	SL3M203Y	SL3N203Y	SN3N203G	SN4N225G	SN3M203G	SN4M225G	CB3N2G	CB3D2G
	Quick#		1884	6282	1882	1883	792	793	6456	6274	6277	6278	6356	6357	6126	1794
Signal:			NPN	PNP	PNP	NPN	PNP	NPN	NPN	PNP	PNP	PNP	NPN	NPN	PNP	NPN
Style: (A= with M8 Connector, B= with 2.5m lead C= with .3m lead & M8)			A	A	B	B	B	B	C	C	C	B	C	B	A	A
D32	All	T	☑	☑	☑	☑	☑	☑	☑	☑						
GN	All	C	☑	☑	☑	☑					☑	☑	☑	☑		
GNS	All	C	☑	☑	☑	☑					☑	☑	☑	☑		
ITSC	All	D													☑	☑
L40	All	T	☑	☑	☑	☑	☑	☑	☑	☑						
M25	All	T	☑	☑	☑	☑	☑	☑	☑	☑						
OFB	All	C	☑	☑	☑	☑					☑	☑	☑	☑		
OFL	All	C	☑	☑	☑	☑					☑	☑	☑	☑		
P25	All	T	☑	☑	☑	☑	☑	☑	☑	☑						
R	All	T	☑	☑	☑	☑	☑	☑	☑	☑						
RBT	All	C	☑	☑	☑	☑					☑	☑	☑	☑		
RT	All	C	☑	☑	☑	☑										
TRB	All	C	☑	☑	☑	☑					☑	☑	☑	☑		
Z	All	T	☑	☑	☑	☑	☑	☑	☑	☑						
ZA	All	C	☑	☑	☑	☑					☑	☑	☑	☑		
ZE-P	All	C	☑	☑	☑	☑					☑	☑	☑	☑		
ZG	All	C	☑	☑	☑	☑					☑	☑	☑	☑		
ZJ	6384	C	☑	☑	☑	☑					☑	☑	☑	☑		