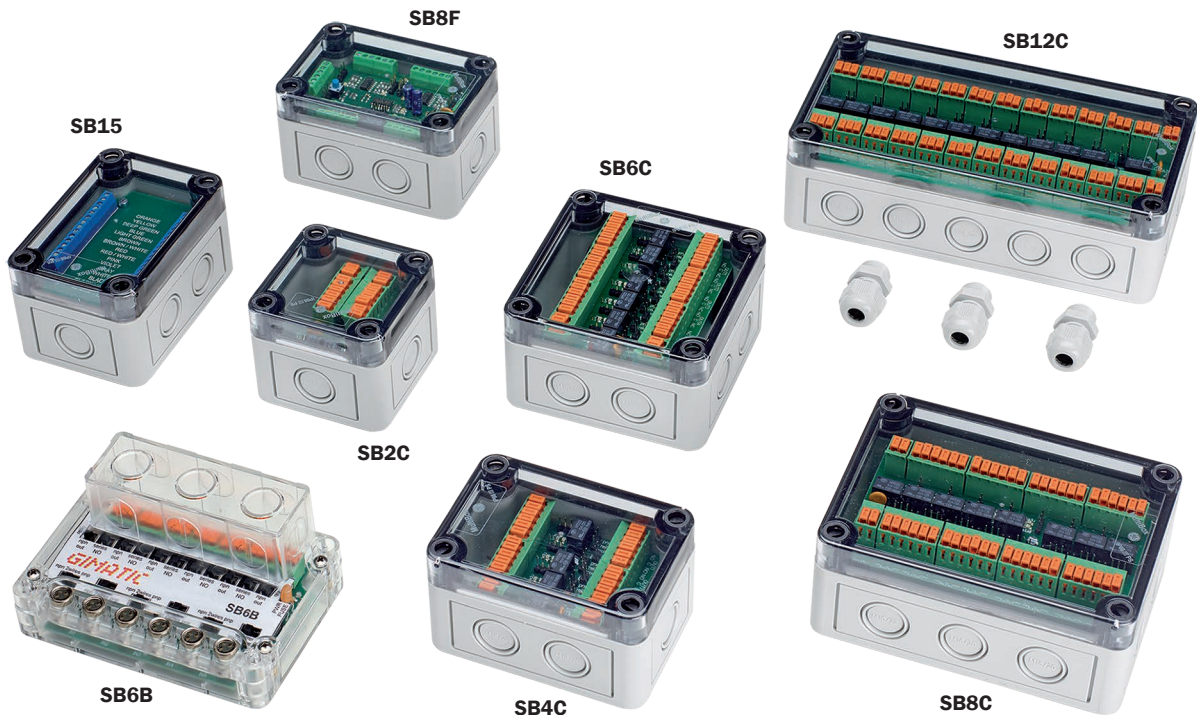


## Scatole di derivazione per sensori serie SB

- Usate per il cablaggio dei sensori degli EOAT.
- Segnali PNP ed NPN possono essere convertiti.
- Ingressi ed uscite possono essere di tipo source (PNP), sink (NPN) o contatto pulito.
- Parecchie scatole possono essere connesse in serie per ampliare il numero di sensori gestibili.
- LED di ripetizione del segnale in ingresso per semplificare la ricerca dei guasti (non per SB15).
- Fornite con serracavo e kit per il fissaggio al profilo.

## Sensor boxes series SB

- Used for sensor wiring on the EOATs.
- PNP and NPN signals can be converted.
- I/O can be current sourcing (PNP), sinking (NPN) or dry contact.
- Several boxes can be connected in a series to manage more sensors.
- Input LED indications for easy trouble-shooting (not for SB15).
- Provided with strain reliefs and kit for fastening to the profile.



La scatola di connessione sensori è un'interfaccia realizzata per condizionare i segnali dei sensori al fine di renderli idonei all'elettronica di comando tipo PLC (Programmable Logic Controller). Incorpora diverse funzionalità tra cui la possibilità di mettere in SERIE sensori anche diversi tra loro, convertirne i segnali, eseguire ricerche guasti, preservare i circuiti di comando, rigenerare i segnali in caso di lunghi cablaggi e preservare i contatti.

Ogni ingresso della scatola di connessione è infatti dotato di selettore a scorrimento o jumper per definire il tipo di sensore (PNP, NPN, 2 fili NO/NC).

Tali segnali sono poi condizionati a mezzo relè o micro-processore per fornire una o più uscite a seconda delle necessità.

A loro volta le uscite sono selezionabili a mezzo di selettore a scorrimento o jumper dandoci la possibilità di avere segnali PNP, NPN o tipo relè, tutti in modalità Normalmente Aperto (NA) oppure Normalmente Chiuso (NC).

Ogni cablaggio è reso veloce e agevole dall'adozione di particolari morsettiere.

Il tutto è protetto da un sistema a fusibile Auto-Ripristinante utile a preservare l'integrità dell'elettronica di comando da eventuali situazioni di corto circuito.

La scheda è dotata di LED di segnalazione visibili dal coperchio trasparente utili per la ricerca di guasti (trouble shooting): talvolta non è agevole vedere se un fine-corsa montato in macchina lavora in maniera corretta.

Il tutto è fornito in una scatola industriale dotata di pressa cavi PG9 che garantisce un grado di protezione della scheda fino all'IP65.

The sensor junction box is an interface designed to condition the sensor signals, in order to make them suitable for the PLC (Programmable Logic Controller) control electronics.

This box integrates several functions, including the possibility to connect sensors – even of different type – in SERIES, convert their signals, perform troubleshooting, protect control circuits, regenerate signals in the case of long wiring and protect contacts.

In fact, each input of the junction box is equipped with a jumper or sliding selector to set the sensor type (PNP, NPN, 2 wire NO/NC).

The signals are then conditioned by relay or microprocessor in order to supply one or more outputs according to needs.

Outputs can also be selected by a jumper or sliding selector to have PNP, NPN or relay signals, all of them in Normally Open (NO) or Normally Closed (NC) mode.

Each wiring is made quicker and easier by using special terminal blocks.

Everything is protected by a self-restoring fuse system which protects the control electronics from possible short-circuits.

The card is equipped with signalling LEDs, visible from the transparent lid, which are very useful for troubleshooting, as it is not generally easy to see if a limit switch fitted to the machine works properly.

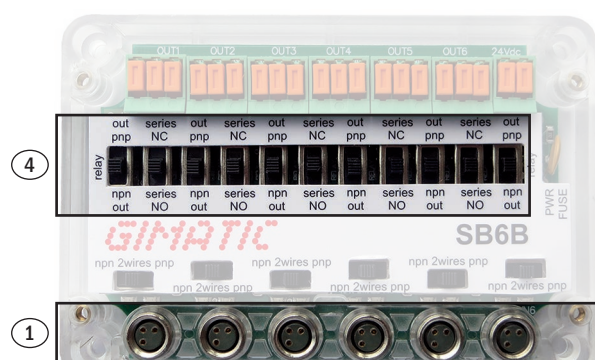
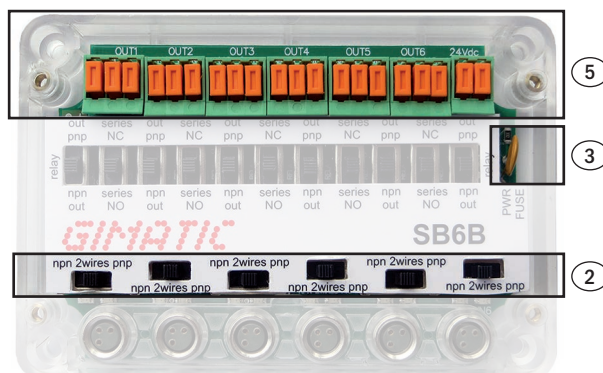
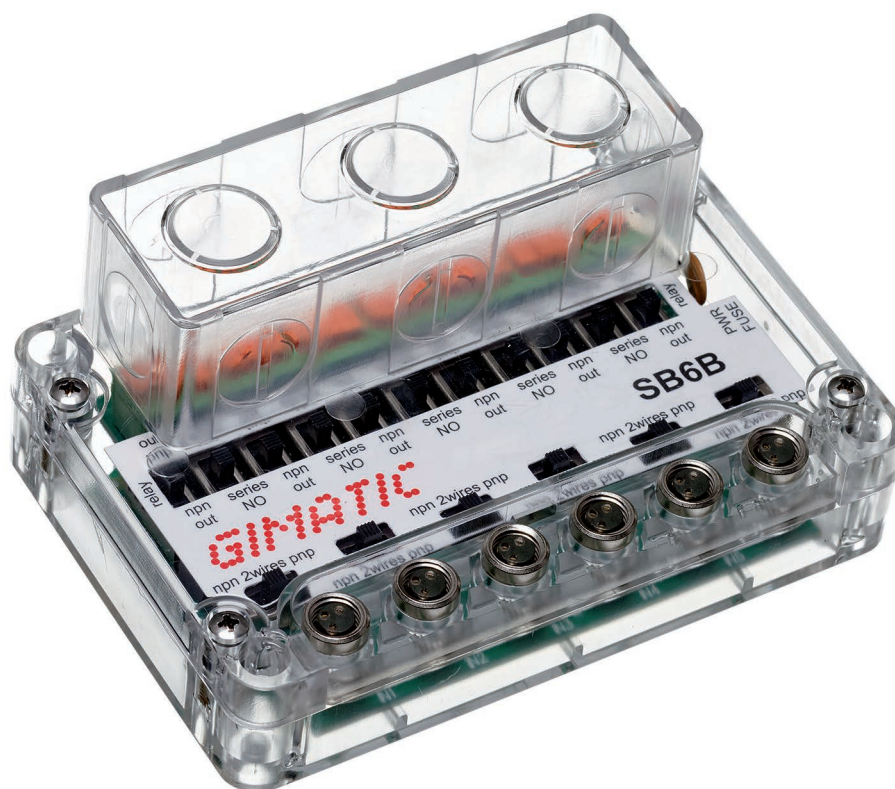
Everything is supplied in a box with PG9 cable glands with a protection degree of up to IP65.

### Scatola di derivazione a connessione diretta

- Usate per la connessione dei sensori presenti sulle strutture di presa EOAT.
- Possibilità di collegare sensori Magnetici, Induttivi, meccanici, Fotoelettrici, Capacitivi, Ultrasuoni, ecc...
- Connessione diretta con connettori M8x1 (1).
- Ingressi PNP/NPN/2 fili selezionabili tramite interruttore a scorrimento (2).
- Corpo PA trasparente per la visione dei LED ingressi.
- Protezione corto circuito ripristinabile visibile a mezzo LED rosso (3).
- Uscite PNP/NPN/relè selezionabili tramite interruttore a scorrimento (4).
- Semplici terminali a pressione per le uscite che evitano l'utilizzo di utensili (5).
- Possibilità di convertire segnali ingresso da PNP/NPN/2fili ad uscita PNP/NPN/relè.
- Possibilità di avere uscite singole o serie Normalmente aperte o Normalmente chiuse.
- Profilo basso per integrarsi perfettamente nelle strutture di presa EOAT.
- Peso ridotto per alleggerire la struttura.
- Kit di fissaggio per profili Gimatic incluso.
- Semplice ed intuitivo sistema di settaggio con serigrafia Gimatic.
- O-Ring di tenuta viti coperchio.
- Serracavi PG9 di cablaggio uscite inclusi.
- Connettori M8 maschi a cablare opzionali.

### Terminal box with direct connection

- Used to connect the sensors located on the End-of-Arm Tooling (EOAT).
- Various types of sensors can be connected, magnetic, inductive, mechanical, photoelectric, capacitive, ultrasonic, etc...
- Direct connection with M8x1 connectors (1).
- PNP/NPN/2-wire inputs selectable by sliding switches (2).
- Transparent PA body to increase inputs LED visibility.
- Short circuit protection with auto-fuse and RED led indicator (3).
- PNP/NPN/relay outputs selectable by sliding switches (4).
- Easy push terminals for outputs, no tools required (5).
- Inputs signals from PNP/NPN/2-wire can be converted to PNP/NPN/relay output.
- Single or in series outputs can be set as Normally Open or Normally Closed.
- Low profile for perfect integration into EOAT's structures.
- Low weight to reduce the structure's weight.
- Fastening kit for Gimatic profiles included.
- Easy setting system with Gimatic silkscreen.
- O-Ring for cover screws.
- Output wiring PG9 strain relief included.
- Optional M8 male wiring connectors.



09/2017

**Scatola di derivazione a connessione diretta**

**Funzionamento**

Una volta cablati gli ingressi (AREA GRIGIA) come specificato sulla scheda selezionare a mezzo interruttore a scorrimento o jumper il tipo di segnale d'ingresso (AREA MARRONE). Poi selezionare a mezzo interruttore a scorrimento o jumper il tipo di uscita (PNP, NPN, relay) necessaria (AREA ROSSA) e se le uscite devono essere messe in serie (NA oppure NC senza caduta di tensione) o in parallelo (AREA BLU). Terminata la selezione andiamo a cablare le uscite (AREA GIALLA).

**Alimentazione**

24 V dc ( $\pm 10\%$ )

**Ingressi**

Fino a 6 sensori PNP, NPN o contatto pulito (NA o NC) (AREA GRIGIA) selezionabili tramite jumper (AREA MARRONE).

**Uscite**

Da 1 a 6 uscite PNP, NPN o contatto pulito (NA) (AREA GIALLA) selezionabili tramite jumper (AREA ROSSA).

**Terminal box with direct connection**

**Functioning**

After the inputs have been cabled (Grey Area) as shown on the circuit board you must use "Jumper" to select the Inputs signal type (Brown Area). Then use "Jumper" to define if you want to convert the input signals in NO/NC series or parallel outputs (Blue area). Use "Jumper" 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**

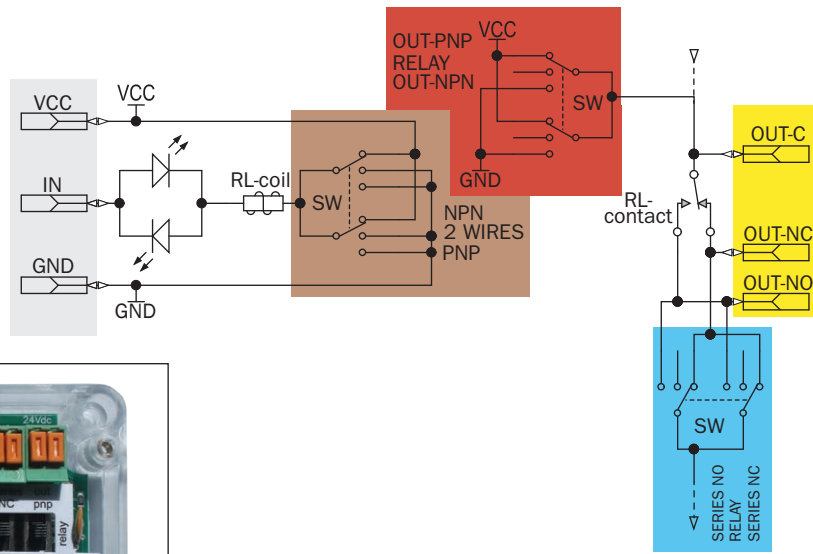
24 V dc ( $\pm 10\%$ )

**Inputs**

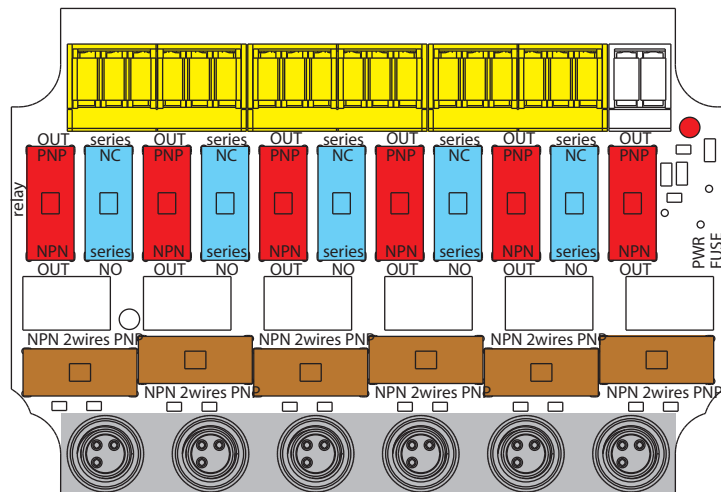
Maximum 6 PNP, NPN or dry contact (NO or NC) (GREY AREA) sensors switched by jumpers (BROWN AREA).

**Outputs**

1 up to 6 PNP, NPN or dry contact (NO) outputs (YELLOW AREA) switched by jumpers (RED AREA).



Schema circuito  
Layout circuit

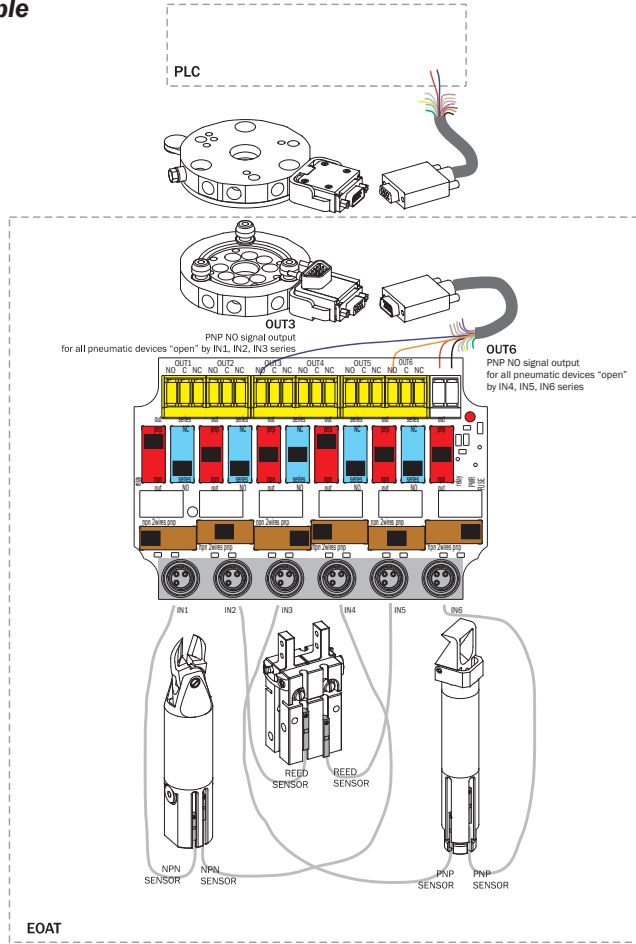


**Esempio di utilizzo / Application example**

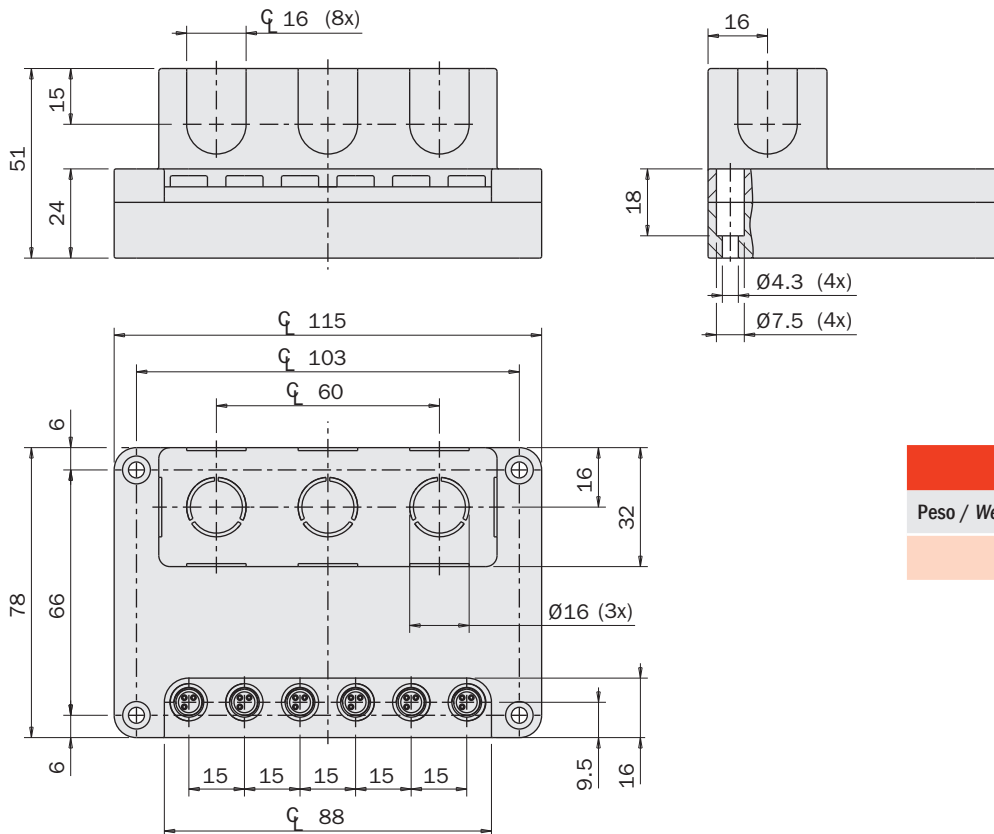
**Alimentazione**  
**Power supply**  
 24 V dc (±10%)

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

**Uscite**  
**Outputs**  
 2 PNP OUTPUT SERIES (OUT3) (OUT6)



**Dimensioni (mm) / Dimensions (mm)**



	<b>SB6B</b>
Peso / Weight	193 g

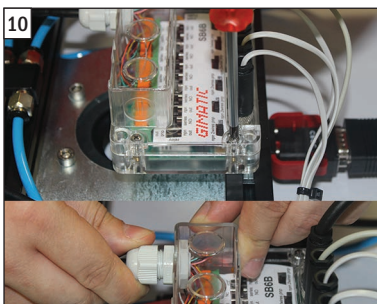
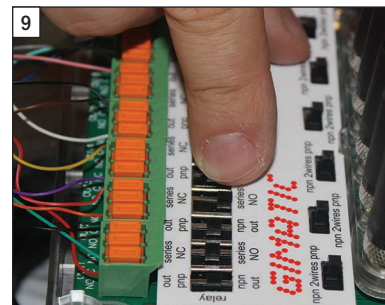
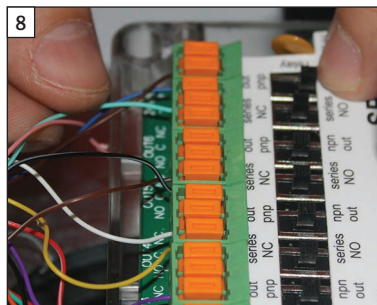
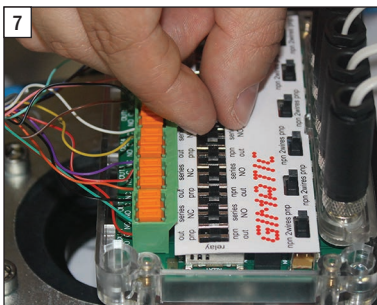
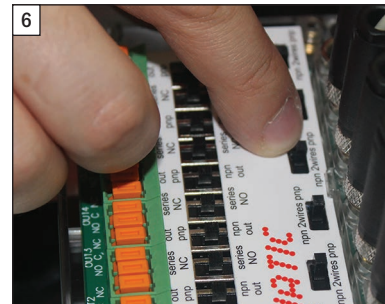
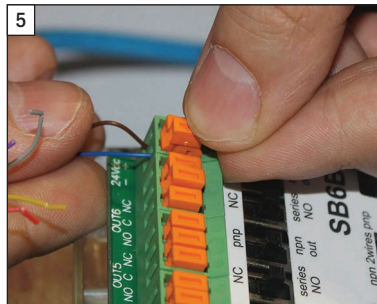
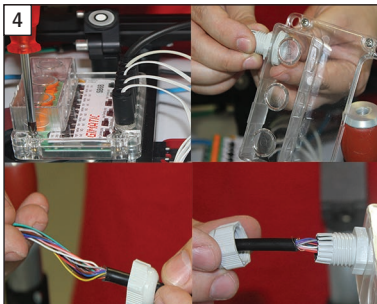
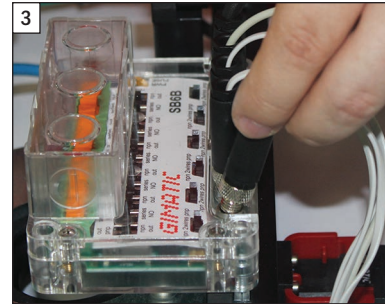
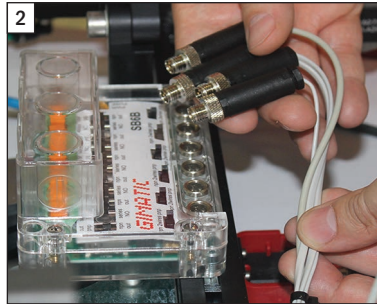
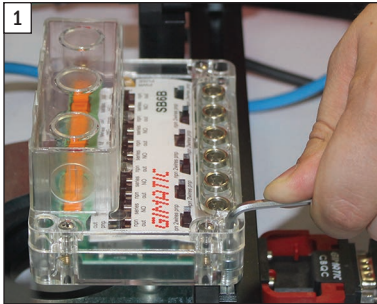
FIRST ANGLE PROJECTION

## Procedura applicativa

- Posizionare e fissare la scatola al profilo Gimatic **[1]**.
- Svolgere i cavi sensori fino alla zona ingressi **[2]**.
- Collegare connettore M8 oppure applicare connettori a cablare opzionali (CMGM800300) **[3]**.
- Aprire il coperchio, forare e applicare il PG9 **[4]**.
- Cablare alimentazione +24Vdc **[5]**.
- Definire tipo d'ingresso tramite gli interruttori a scorrimento, alimentare la scatola e verificare se il sensore funziona **[6]**.
- Cablare uscita e selezionare il tipo PNP/NPN/relè tramite interruttore a scorrimento alla prima uscita della serie **[7]**.
- In caso di uscite PNP/NPN è possibile fare riferimento al morsetto dell'alimentazione per +24Vdc e massa **[8]**.
- Selezionare tramite interruttori a scorrimento la logica della serie Normalmente Aperta oppure Normalmente Chiusa **[9]**.
- Chiudere il coperchio e serrare il PG9 **[10]**.

## Fitting procedure

- Position and fix the box to the Gimatic profile **[1]**.
- Unroll the sensor cables to the input area **[2]**.
- Connect the M8 connector or use the optional wiring connectors (CMGM800300) **[3]**.
- Open the transparent cover, drill the holes and fit the PG9 strain relief **[4]**.
- Wire the 24Vdc power supply **[5]**.
- Set the input type by means of the sliding switches, power the box and check if the sensor is working **[6]**.
- Wire the output and select the PNP/NPN/relay type by means of the sliding switch at the first output of the series **[7]**.
- In case of PNP/NPN outputs, reference can be made to the 24Vdc power supply terminal or to the ground **[8]**.
- Select the Normally Open or Normally Closed series logic by means of the sliding switches **[9]**.
- Close the transparent cover and fasten the PG9 strain relief **[10]**.



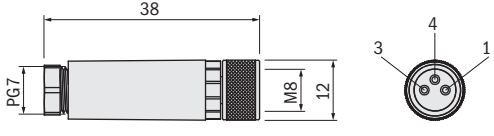
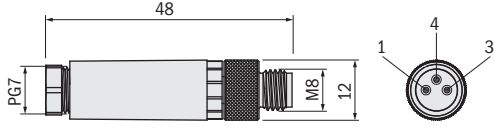


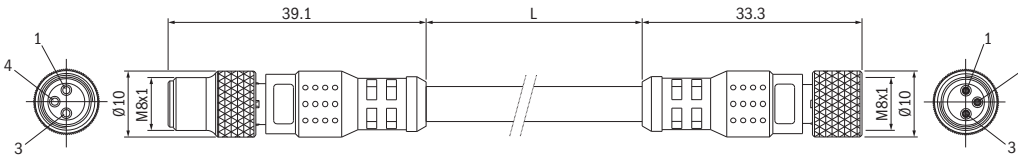
**Connettori M8 a cablare opzionali**

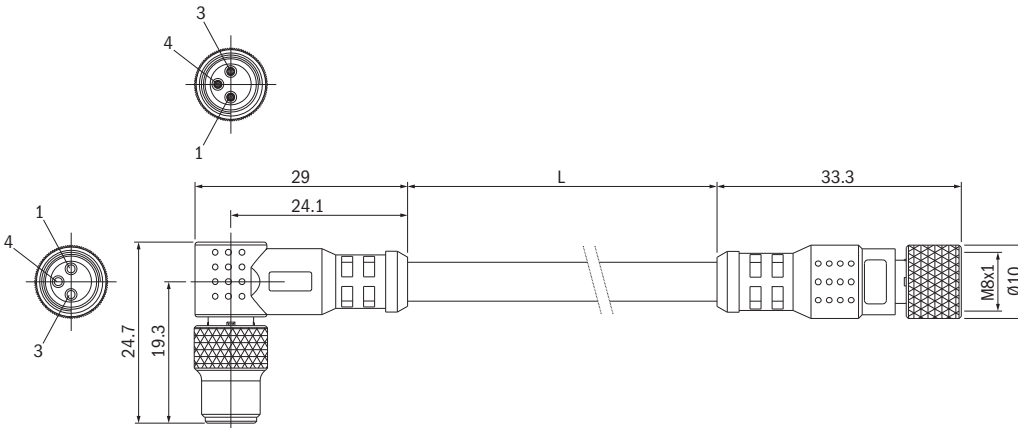
Nel caso di sensori con uscita cavo è possibile tagliare il cavo a misura e connettere un connettore M8 a cablare con terminali a vite.

**Optional M8 male wiring connectors**

In case of sensors with cable output, the cable can be cut to size and a M8 male wiring connector can be fitted with screw terminals.

	CFGM800300	CMGM800300	
Tipo / Type	M8 3 poli 0° femmina M8 3-pole 0° female	M8 3 poli 0° maschio M8 3-pole 0° male	
Peso / Weight	11 g	11 g	
			
			

	CMGM800310CFGM8003	CMGM800320CFGM8003
Tipo / Type	M8 3 poli 0° maschio - M8 3 poli 0° femmina M8 3-pole 0° male - M8 3-pole 0° female	
Cavo / Cable	L= 1m	L= 2m
Peso / Weight	37 g	64 g
		

	CMGM890310CFGM8003	CMGM890320CFGM8003
Tipo / Type	M8 3 poli 90° maschio - M8 3 poli 0° femmina M8 3-pole 90° male - M8 3-pole 0° female	
Cavo / Cable	L= 1m	L= 2m
Peso / Weight	38 g	65 g
		

**Scatola di comando a microprocessore**

**Funzionamento**

Quando si preme il pulsante AUTOSET, il microprocessore memorizza lo stato degli ingressi (AREA GRIGIA). Dopodichè l'uscita (AREA GIALLA) verrà abilitata ogni volta che si ripresenta la medesima configurazione degli ingressi.

**Alimentazione**

24 V dc (±10%)

**Ingressi**

Fino a 8 sensori PNP, NPN o contatto pulito (NA o NC) selezionabili tramite jumper (AREA MARRONE).

**Uscite**

1 uscita PNP, NPN o contatto pulito (NA o NC) (AREA GIALLA).

**Microprocessor sensor box**

**Functioning**

When the autaset button is pressed, the microprocessor memorizes the status of the inputs (GREY AREA). Afterwards the output (YELLOW AREA) will be activated every time the same input configuration happens again.

**Power supply**

24 V dc (±10%)

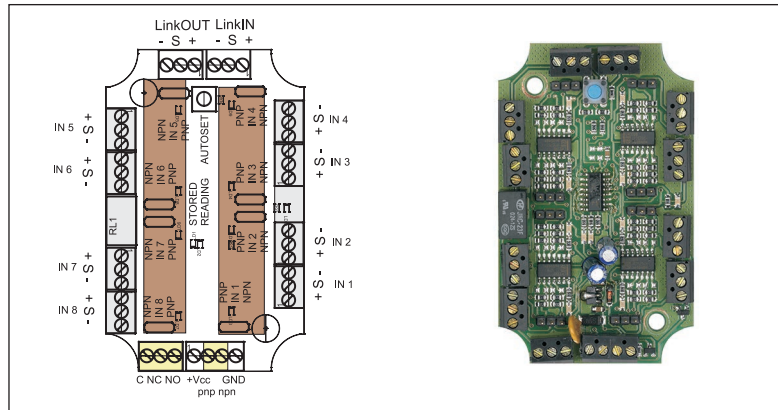
**Inputs**

Maximum 8 PNP, NPN or dry contact (NO or NC) sensors switched by jumpers (BROWN AREA).

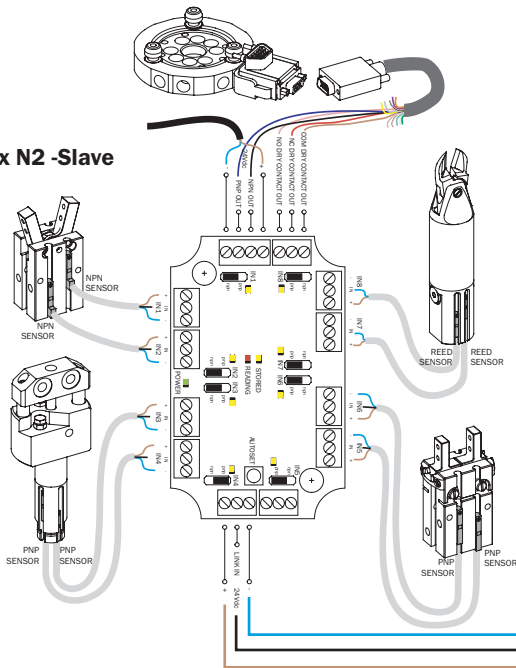
**Outputs**

1 PNP, NPN or dry contact (NO or NC) (YELLOW AREA) output.

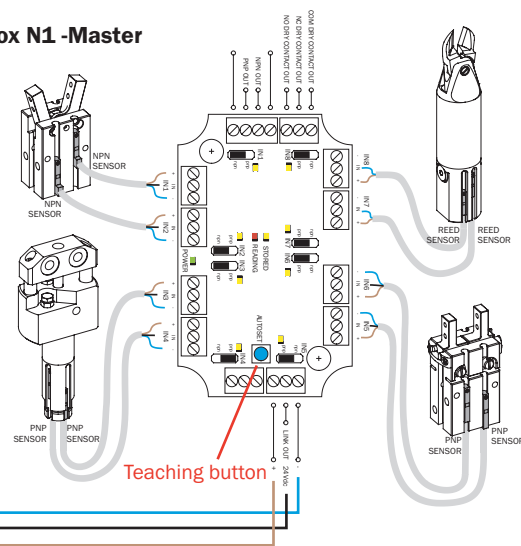
Schema circuito  
Layout circuit



Box N2 -Slave



Box N1 -Master



**Esempio di utilizzo / Application example**

**Alimentazione**

**Power supply**

24 V dc (±10%)

**Ingressi**

**Inputs**

- 2 NPN INPUTS (IN1/IN2)
- 4 PNP INPUTS (IN3/IN4/IN5/IN6)
- 2 DRY CONTACT (IN7/IN8)

**Uscite**

**Outputs**

- 1 PNP OUTPUT
- 1 NPN OUTPUT
- 1 DRY CONTACT NC OUTPUT
- 1 DRY CONTACT NO OUTPUT

## Scatola di derivazione con logica a relè NA/NC

### Funzionamento

Una volta cablati gli ingressi (AREA GRIGIA) come specificato sulla scheda selezionare a mezzo "Jumper" il tipo di segnale d'ingresso (AREA MARRONE). Poi selezionare a mezzo "Jumper" il tipo di uscita (PNP, NPN, relay) necessaria (AREA ROSSA) e se le uscite devono essere messe in serie (NA oppure NC senza caduta di tensione) o in parallelo (AREA BLU). Terminata la selezione andiamo a cablare le uscite (AREA GIALLA).

### Alimentazione:

24 V dc ( $\pm 10\%$ )

### Ingressi

**SB2C** Fino a 2 sensori PNP, NPN o contatto pulito (NA o NC) (AREA GRIGIA) selezionabili tramite jumper (AREA MARRONE).  
**SB4C** Fino a 4 ...  
**SB6C** Fino a 6 ...  
**SB8C** Fino a 8 ...  
**SB12C** Fino a 12 ...

### Uscite

**SB2C** Da 1 a 2 uscite PNP, NPN o contatto pulito (NA) (AREA GIALLA) selezionabili tramite jumper (AREA ROSSA).  
**SB4C** Da 1 a 4 uscite ...  
**SB6C** Da 1 a 6 uscite ...  
**SB8C** Da 1 a 8 uscite ...  
**SB12C** Da 1 a 12 uscite ...

## NO/NC relay logic board

### Functioning

After the inputs have been cabled (Grey Area) as shown on the circuit board you must use "Jumper" to select the Inputs signal type (Brown Area). Then use "Jumper" to define if you want to convert the input signals in NO/NC series or parallel outputs (Blue area). Use "Jumper" 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 ( $\pm 10\%$ )

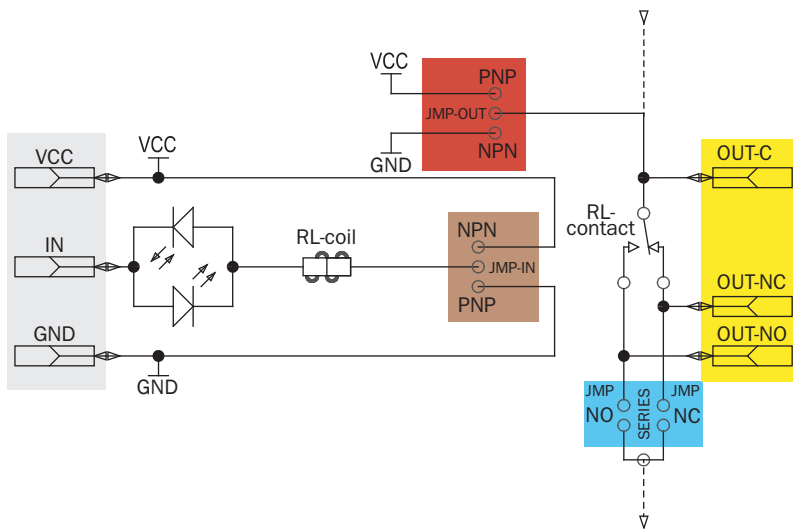
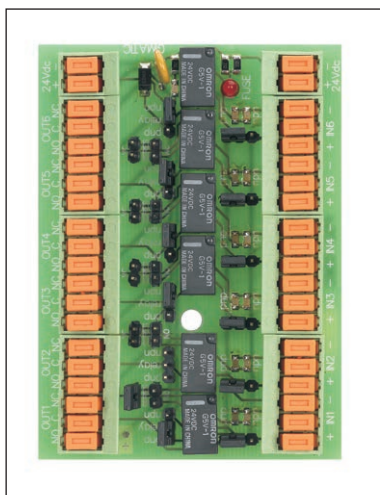
### Inputs

**SB2C** Maximum 2 PNP, NPN or dry contact (NO or NC) (GREY AREA) sensors switched by jumpers (BROWN AREA).  
**SB4C** Maximum 4 ...  
**SB6C** Maximum 6 ...  
**SB8C** Maximum 8 ...  
**SB12C** Maximum 12 ...

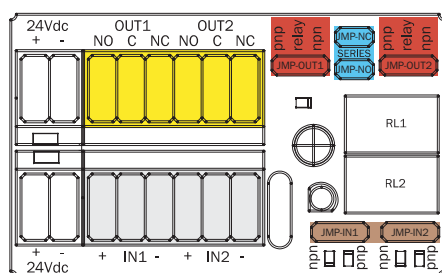
### Outputs

**SB2C** 1 up to 2 PNP, NPN or dry contact (NO) outputs (YELLOW AREA) switched by jumpers (RED AREA).  
**SB4C** 1 up to 4 ...  
**SB6C** 1 up to 6 ...  
**SB8C** 1 up to 8 ...  
**SB12C** 1 up to 12 ...

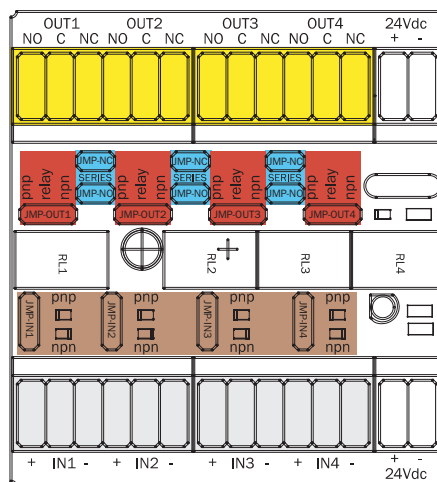
Schema circuito  
Layout circuit



### SB2C

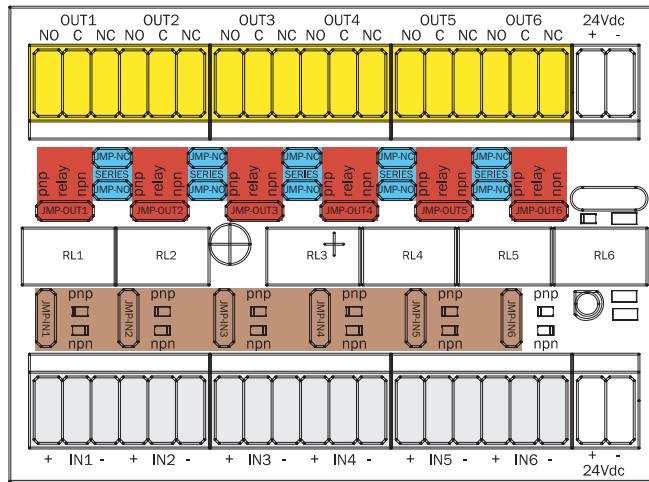


### SB4C

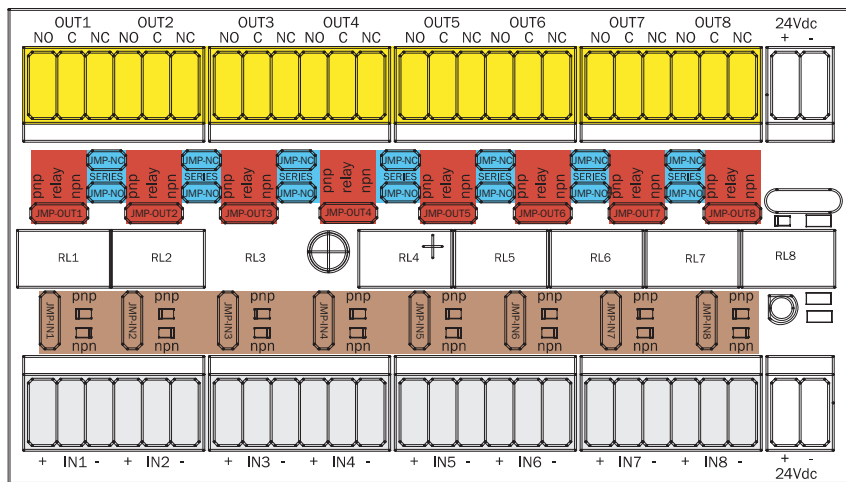




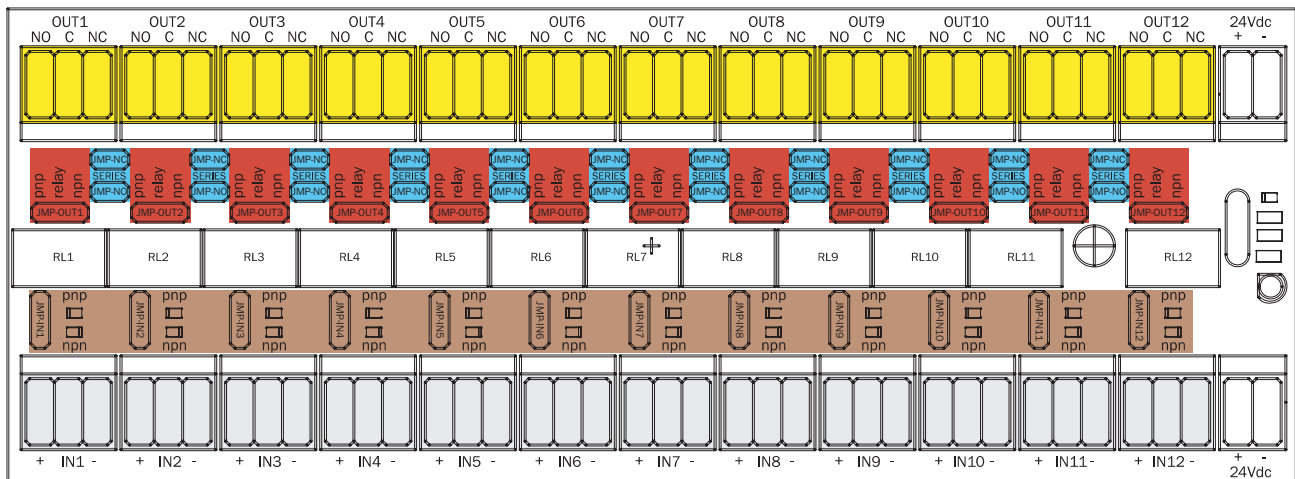
**SB6C**



**SB8C**



**SB12C**



**Esempio di utilizzo / Application example**

**Alimentazione**

**Power supply**

24 V dc (±10%)

**Ingressi**

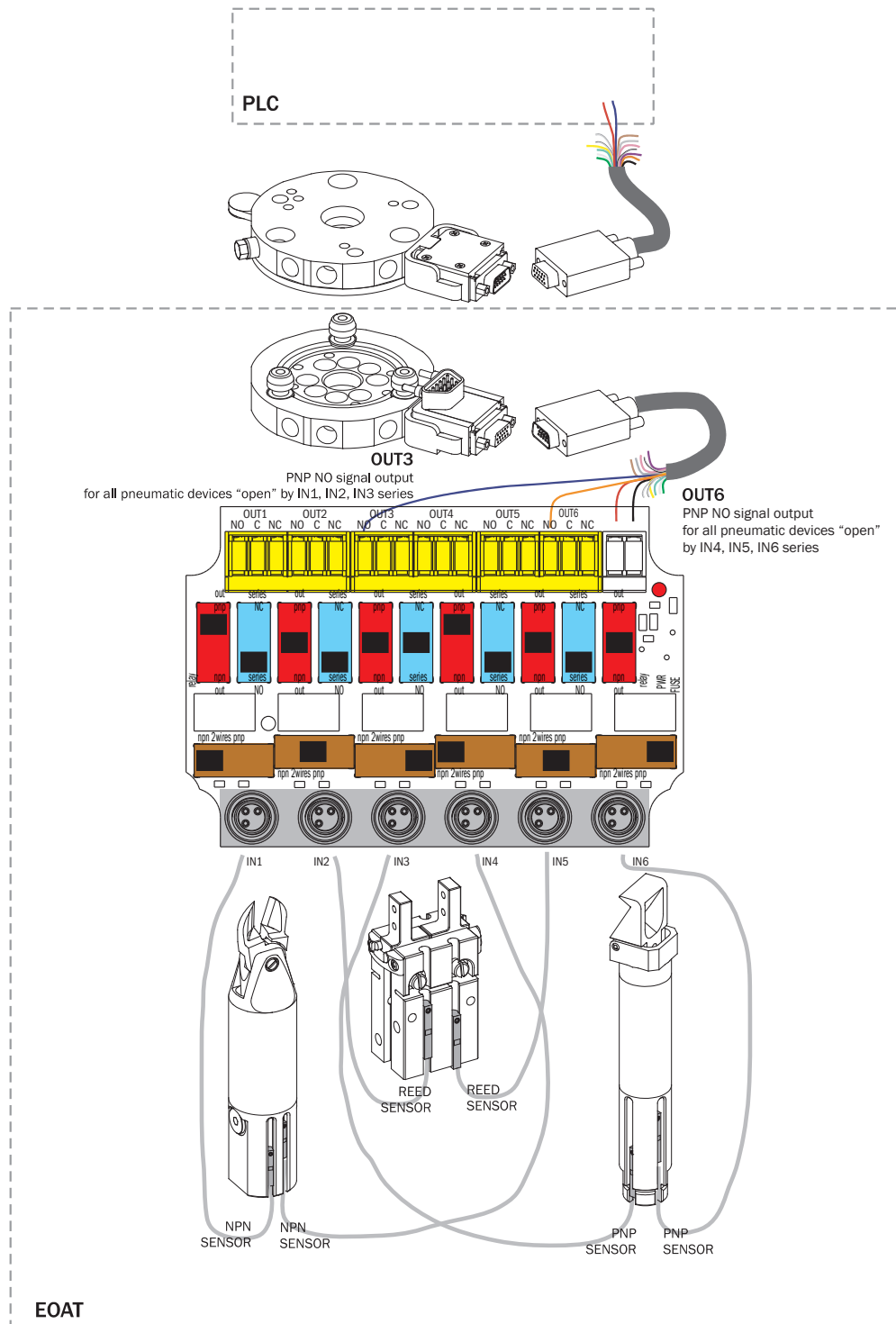
**Inputs**

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

**Uscite**

**Outputs**

- 2 PNP OUTPUT SERIES (OUT3) (OUT6)



## Scatola di cablaggio con terminali

### Funzionamento

Il circuito con terminali a vite è usato per collegare i moduli CAQC e CBQC ai sensori ed alle scatole SB2C, SB4C, SB6C, SB8C, SB12C e SB8F.

### Alimentazione

24 V dc ( $\pm 10\%$ )

### Ingressi

15 ingressi (diretti all'uscita)

### Uscite

15 uscite (dirette dall'ingresso)

## Terminal cabling box

### Functioning

The terminal circuit board is used to link CAQC and CBQC modules to sensors SB2C, SB4C, SB6C, SB8C, SB12C and SB8F sensor box.

### Power supply

24 V dc ( $\pm 10\%$ )

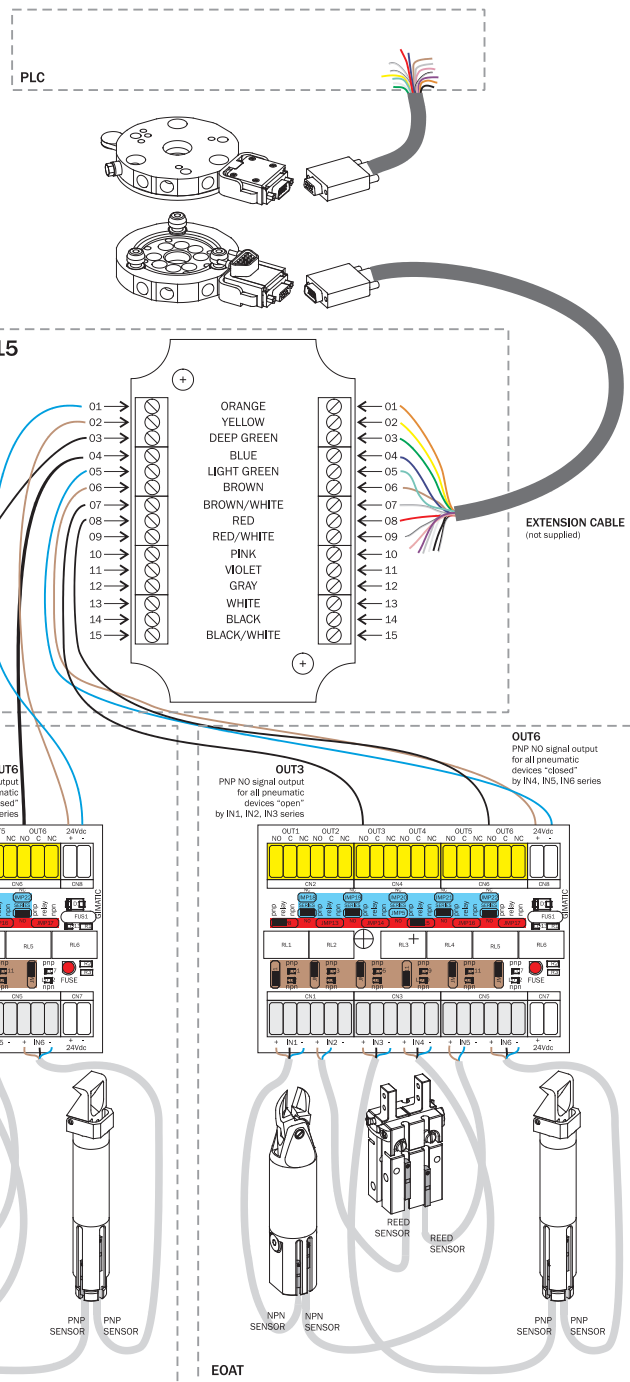
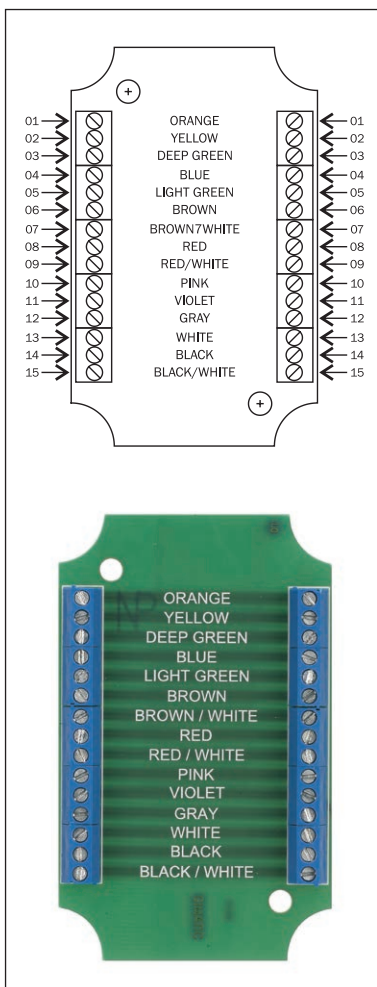
### Inputs

15 inputs (to outputs)

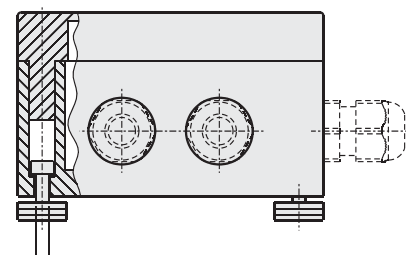
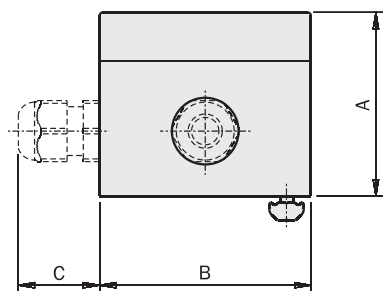
### Outputs

15 outputs (from inputs)

Schema circuito  
Layout circuit



## Dimensioni (mm) / Dimensions (mm)



M4 (x2)

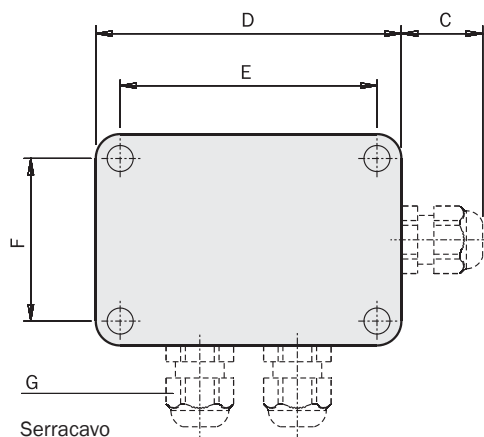
Viti per fissaggio al profilo estruso  
Screws for fastening to the extruded profile

Serracavo (G) e viti per fissaggio forniti  
in confezione

Strain reliefs (G) and fixing screws  
included in the packaging

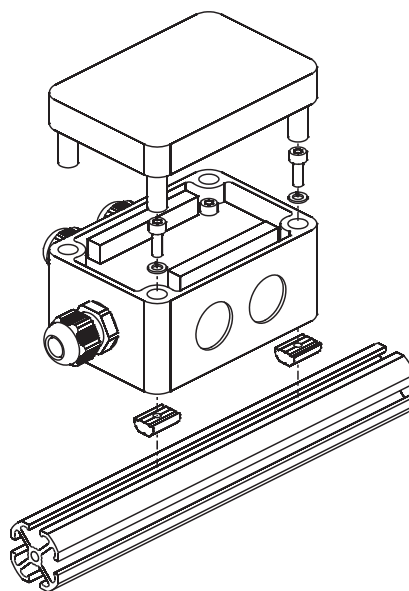
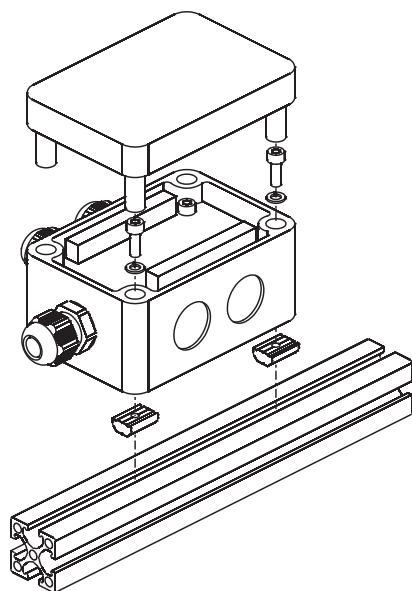


FIRST ANGLE  
PROJECTION



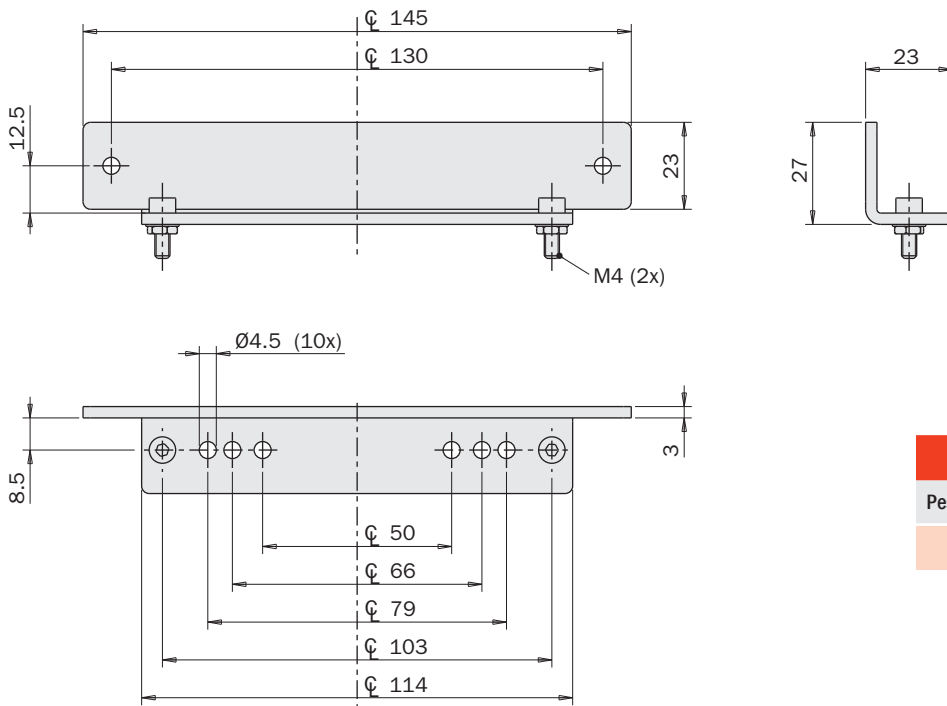
G  
Serracavo  
Strain reliefs

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

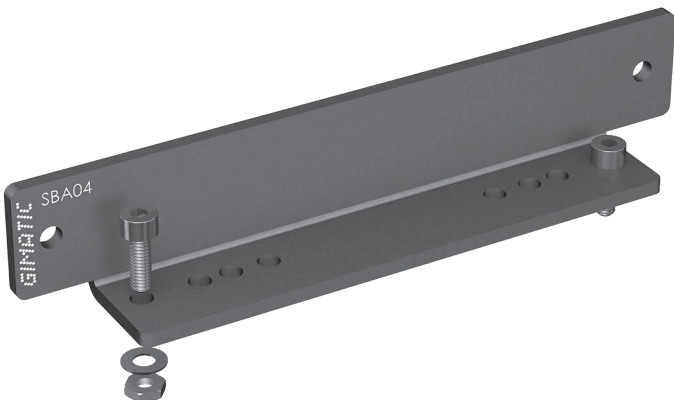
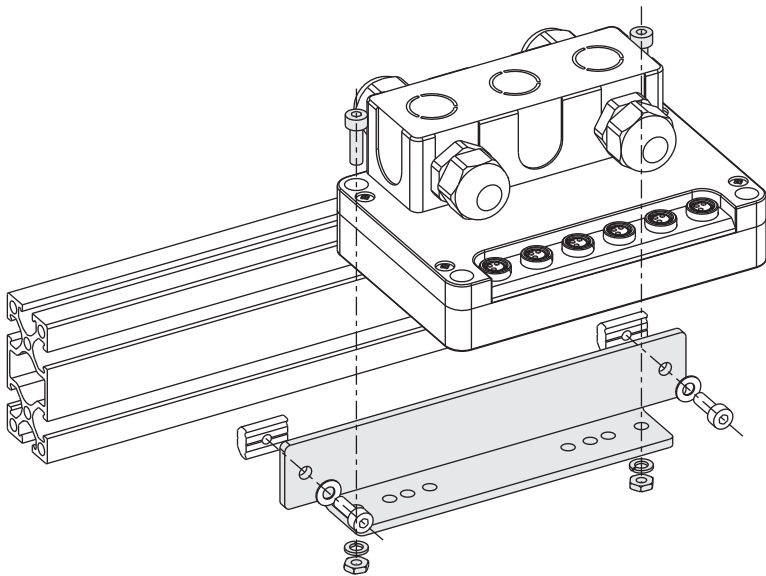


Staffa di fissaggio

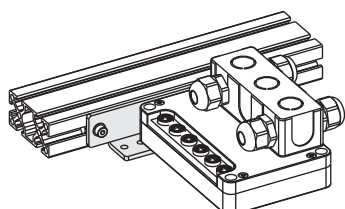
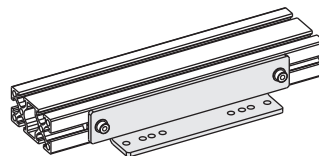
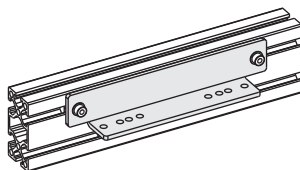
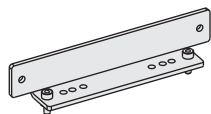
Mounting bracket



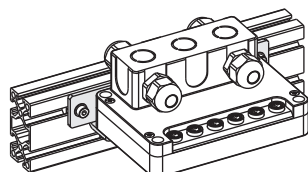
	<b>SBA04</b>
Peso / Weight	140 g



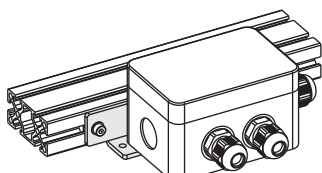
Esempio di utilizzo / Application example



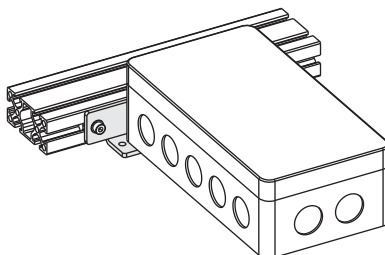
SB6B



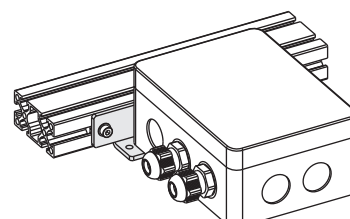
SB6B



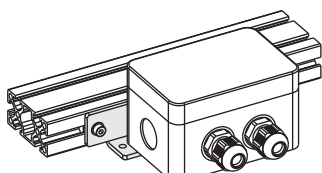
SB15



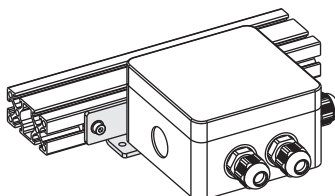
SB12C



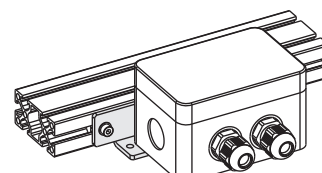
SB8C



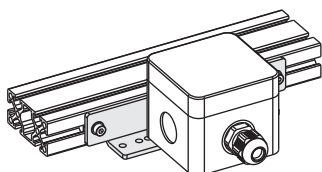
SB8F



SB6C



SB4C



SB2C