



SMART ROCKER SWITCHES

series **4500**



LA NUOVA SERIE DI INTERRUTTORI BASCULANTI INTELLIGENTI PORTA IMPORTANTI VANTAGGI IN CABINE CON IMPIANTI COMPLESSI

Il semplice interruttore elettromeccanico è stato ed è ancora una garanzia nella gestione delle interfacce uomo-macchina all'interno delle cabine dei veicoli da lavoro. I principali vantaggi sono il costo contenuto e l'azionamento diretto del carico, il tutto in numerose varianti elettriche ed estetiche. Ci sono tuttavia anche alcuni aspetti negativi, come la necessità di un cablaggio complesso, la durata ridotta in caso di commutazione di carichi elevati e la difficoltà ad aggiungere funzioni non considerate inizialmente. Per superare questi inconvenienti, e aggiungere funzionalità extra, COBO introduce la serie 4500, una nuova famiglia di Smart Rocker Switches.

NEW SERIES OF SMART ROCKER SWITCHES CARRIES IMPORTANT ADVANTAGES IN CROWDED CABINS

The humble electro-mechanical Rocker Switch has been and still is, the workhorse of Man-Machine-Interfaces inside the cabins of off-highway vehicles. Traditional advantages have been low-cost, direct load drive with numerous electrical and aesthetic variants available. However they also have some drawbacks. Extensive power cabling needed to connect to the loads, reduced lifetime when switching high loads and the difficulty to add functions not thought of at first are all common issues when using existing rocker switches. To overcome these drawbacks while adding extra features, COBO introduces a new family of Smart Rocker Switches, series 4500.

4500 range - SMART ROCKER SWITCHES

- Interruttori a bilancere con microprocessore
 - Cablaggio semplificato
 - Connessione BUS seriale a gateway
 - CAN gateway
 - Facile riconfigurabilità
 - Bordi arrotondati in accordo a Mother Regulation
 - Tasto esterno ad ampia superficie di azionamento
 - Retroilluminazione personalizzabile:
 - luce fissa o lampeggiante
 - colore a scelta
 - intensità regolabile
 - Customizzazione dei simboli con incisione laser (ISO 7000, ISO 2575, OEM CUSTOM)
- *Smart Rocker with microprocessor*
 - *Simplified wiring*
 - *Serial BUS connection to gateway*
 - *CAN gateway*
 - *Easy reconfigurability*
 - *Beveled corners according to Mother Regulation*
 - *External key with ample activation surface*
 - *Customizable LED backlight:*
 - *fixed or flashing light*
 - *color of your choice*
 - *adjustable intensity*
 - *Customization of symbols with laser engraving (ISO 7000, ISO 2575, OEM CUSTOM)*

	Alimentazione <i>Power supply</i>	9-36VDC (gateway) I rocker sono alimentati dal gateway <i>Rockers are powered by gateway</i>
	Sorgenti luminose <i>Light sources</i>	2x LED bianchi / <i>white</i> 2x LED RGB
	Simboli <i>Icons</i>	Incisi a laser <i>Laser engraved</i>
	Grado di protezione <i>Sealing degree</i>	IP69K (front) IP66 (rear)
	Temperatura di funzionamento <i>Operating temperature</i>	- 40 °C ÷ + 85 °C
	Consumo elettrico <i>Power consumption</i>	1x rocker: < 100µA in SLEEP < 25µA in DEEP SLEEP
	Connessione BUS <i>BUS connection</i>	seriale 19,2 kbps
	Connettori <i>Connectors</i>	Rocker: 2x 3 pin pitch 2,54 mm Gateway: 1x 24 pin 2 rows
	Connettori controparte <i>Mating connectors</i>	TYCO SLIMSEAL 3 pin; IP67 (rocker) FCI Sicma-2 24 pin (gateway)
	Durata elettromeccanica <i>Electromechanical expected life</i>	500'000 cycles

COME SCEGLIERE IL ROCKER CORRETTO / HOW TO CHOOSE THE CORRECT ROCKER

SCEGLI LA VARIANTE MECCANICA
CHOOSE MECHANICAL VARIANT

Variante meccanica <i>Mechanical variant</i>	Posizione 1 <i>Position 1</i>	Posizione 3 <i>Position 3</i>	Posizione 2 <i>Position 2</i>
1	Stabile	Stabile	Stabile
2	Stabile	X	Stabile
3	Unstable	Stabile	Unstable
4	Stabile	X	Unstable
5	Stabile	Stabile	Unstable
6	Unstable	X	Stabile
7	Unstable	Stabile	Stabile

SCEGLI I SIMBOLI
CHOOSE SYMBOLS

	ISO7000 (symbol code)	ISO2575 (symbol code)	CUSTOM user defined
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SCEGLI L'ORIENTAMENTO DEL ROCKER
CHOOSE ROCKER ORIENTATION

Installazione orizzontale <i>Horizontal installation</i> A	Installazione verticale <i>Vertical installation</i> B	Installazione orizzontale <i>Horizontal installation</i> C	Installazione verticale <i>Vertical installation</i> D
Single icon on right side (common)	Single icon up	Single icon on left side (common)	Single icon down (common)

SCEGLI IL COLORE DELLA LUCE DI ATTIVAZIONE PER CIASCUNA ICONA
CHOOSE ACTIVATION LIGHT COLOR FOR EACH ICON

	YELLOW		ORANGE		RED		BLUE		GREEN		WHITE
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ESEMPIO DI SCELTA / CHOOSE EXAMPLE

Variante meccanica <i>Mechanical variant</i>	SIMBOLI <i>SYMBOL</i>		Orientamento <i>Orientation</i>	COLORE DELLA LUCE DI ATTIVAZIONE <i>ACTIVATION LIGHT COLOR</i>	
	Simbolo 1 <i>Symbol 1</i>	Simbolo 2 <i>Symbol 2</i>		Colore simbolo 1 <i>Symbol color 1</i>	Colore simbolo 2 <i>Symbol color 2</i>
1	CUSTOM 	ISO7000 (0083) 	A	GREEN	GREEN

NOTA:

- Se numero di icone = 1, l'icona deve essere in posizione come in figura



- La retroilluminazione del simbolo in ricerca è sempre bianca

NOTE:

- If no. of icons = 1, icon must be in position as shown in the figure



- The backlight is always white (not the activation)

4500 range - SMART ROCKER SWITCHES

ICONE PERSONALIZZABILI CUSTOMIZABLE ICONS



LUCI DI ATTIVAZIONE A LED: Una o due luci di attivazione a LED per pulsante. I colori includono:
LED giallo, ambra, bianco, verde, rosso e blu.
SIMBOLO laserato

LED ACTIVATION LIGHTS: One or two LED activation Lights per switch. Colors include:
LED yellow, amber, white, green, red and blue.
SYMBOL Laser-etched

COLORE SIMBOLO: solo bianco
SYMBOL COLOR: only white

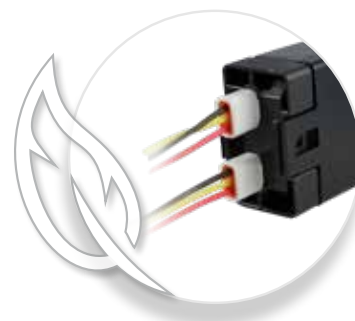


Simbolo
Symbol

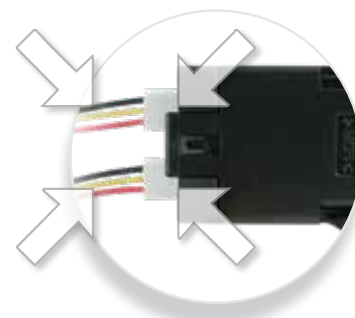
Attivazione
Activation



LIGHTER HARNESS

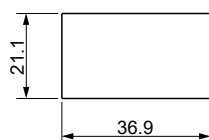


SPACE SAVING

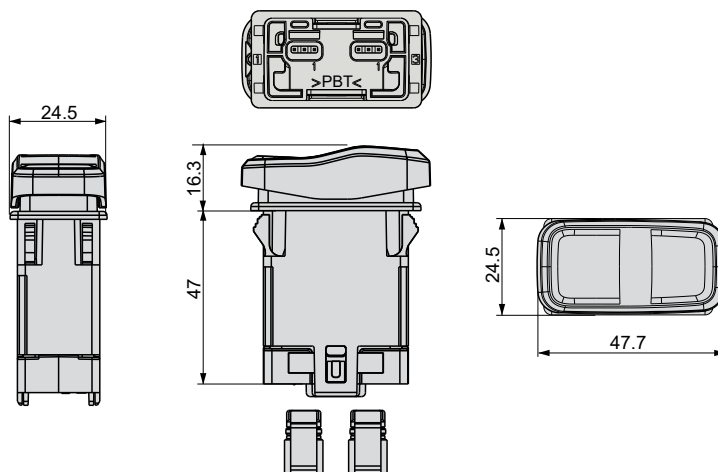


4500 range - SMART ROCKER SWITCHES

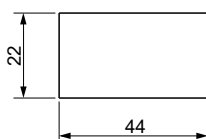
FORATURA - FIXING HOLE 21.1 x 36.9 mm



Spessore pannello / Panel thickness
1.5 - 3.0 mm



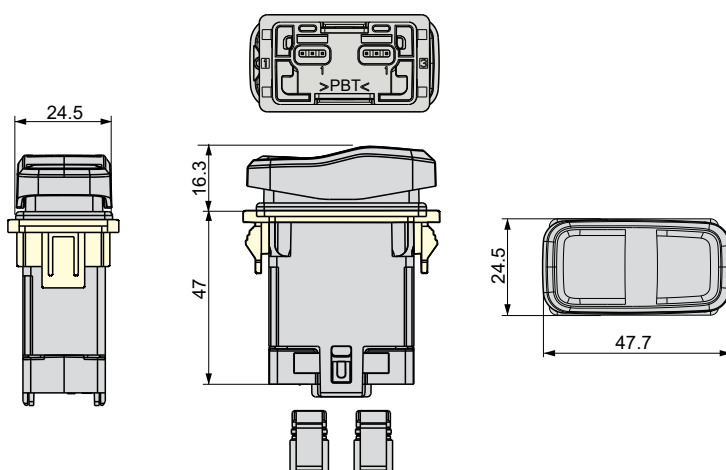
FORATURA CON ADATTATORE FIXING HOLE WITH ADAPTER 22 x 44 mm



Spessore pannello
Panel thickness
1.5 - 3.0 mm

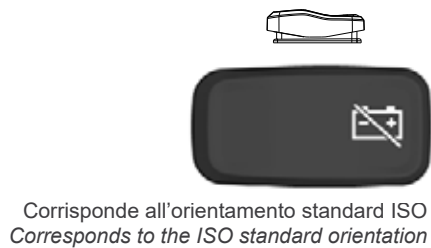


ADAPTER
See page 16



4500 range - SMART ROCKER SWITCHES

ORIENTAMENTO IDEOGRAMMA SUL TASTO / SYMBOL ORIENTATION ON THE SWITCH



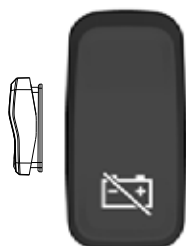
ORIENTAMENTO **A**
ORIENTATION



ORIENTAMENTO **B**
ORIENTATION



ORIENTAMENTO **C**
ORIENTATION



ORIENTAMENTO **D**
ORIENTATION

4500 range - SMART ROCKER SWITCHES

VARIANTE MECCANICA 1 / MECHANICAL VARIANT 1

 1 POSIZIONE STABILE
1 MAINTAINED POSITION

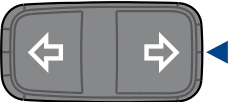























 3 POSIZIONE STABILE
3 MAINTAINED POSITION

 2 POSIZIONE STABILE
2 MAINTAINED POSITION



Parte bassa del tasto
Lower part of the button

Prodotti attualmente disponibili, altri su richiesta
Available products, customisation on request

P/N	Pkg Q.ty	Key Symbol	Left Side LED Color ON	Symbol Orientation	Right Side LED Color ON	Symbol Orientation	Searching color
1099704 16-4501-1001	1		Turn signal ISO 7000 (0084)  GREEN	A	Turn signal ISO 7000 (0084)  GREEN	A	 WHITE
1099705 16-4501-1002	1		Automatic differential lock Based on ISO 7000 (1662)  GREEN	D	Manual differential lock Based on ISO 7000 (1662)  YELLOW	D	 WHITE
1099706 16-4501-1003	1		Low beam ISO 7000 (0083)  GREEN	D	High beam ISO 7000 (0082)  BLUE	D	 WHITE
1099707 16-4501-1004	1		Windscreen wiper speed 1 Based on ISO 7000 (0086)  YELLOW	D	Windscreen wiper speed 2 Based on ISO 7000 (0086)  YELLOW	D	 WHITE
1099708 16-4501-1005	1		Heated seat level 2 Based on ISO 7000 (0649A)  YELLOW	C	Heated seat level 1 Based on ISO 7000 (0649A)  YELLOW	C	 WHITE
1099709 16-4501-1006	1		Ventilating fan level 1 Based on ISO 7000 (0089)  YELLOW	D	Ventilating fan level 2 Based on ISO 7000 (0089)  YELLOW	D	 WHITE

4500 range - SMART ROCKER SWITCHES

VARIANTE MECCANICA 2 / MECHANICAL VARIANT 2



1 POSIZIONE STABILE
1 MAINTAINED POSITION












































2 POSIZIONE STABILE
2 MAINTAINED POSITION



▲
Parte bassa del tasto
Lower part of the button

Prodotti attualmente disponibili, altri su richiesta
Available products, customisation on request

P/N	Pkg Q.ty	Key Symbol	Left Side LED Color ON	Symbol Orientation	Right Side LED Color ON	Symbol Orientation	Searching color
1099710 16-4502-1001	1		-	-	Hazard warning ISO 7000 (0085) ● RED	C	○ WHITE
1099711 16-4502-1002	1		-	-	Work light front ISO 7000 (1204) ● YELLOW	D	○ WHITE
1099712 16-4502-1003	1		-	-	Work light rear ISO 7000 (1204) ● YELLOW	D	○ WHITE
1099713 16-4502-1004	1		-	-	Beacon front Based on ISO 7000 (1141B-A) ● YELLOW	C	○ WHITE
1099714 16-4502-1005	1		-	-	Beacon rear Based on ISO 7000 (1141B) ● YELLOW	C	○ WHITE
1099715 16-4502-1006	1		-	-	Rear window wiper ISO 7000 (0097) ● YELLOW	D	○ WHITE
1099716 16-4502-1007	1		-	-	Rear window demisting and defrosting ISO 7000 (0636A) ● YELLOW	C	○ WHITE
1102157 16-4502-1008	1		-	-	Beacon ISO 7000 (1141B) ● ORANGE	D	○ WHITE

P/N	Pkg Q.ty	Key Symbol	Left Side LED Color ON	Symbol Orientation	Right Side LED Color ON	Symbol Orientation	Searching color
1102158 16-4502-1009	1		-	-	Exterior rear mirror heating, vertical type ISO 7000 (2470)  GREEN	D	 WHITE
1102159 16-4502-1010	1		-	-	Heated seat ISO 7000 (0649A)  ORANGE	D	 WHITE
1102168 16-4502-1003	1		-	-	Work light ISO 7000 (1204)  GREEN	D	 WHITE
1102169 16-4502-1011	1		-	-	Differential lock ISO 7000 (1662)  ORANGE	D	 WHITE
1102174 16-4502-1012	1		-	-	Accessory lock  ORANGE	D	 WHITE
1102170 16-4502-1013	1		-	-	Hazard warning ISO 7000 (0085)  RED	A	 WHITE
1102171 16-4502-1014	1		-	-	Beacon front Based on ISO 7000 (1141B-A)  YELLOW	A	 WHITE
1102172 16-4502-1015	1		-	-	Beacon rear Based on ISO 7000 (1141B)  YELLOW	A	 WHITE
1102173 16-4502-1016	1		-	-	Rear window demisting and defrosting ISO 7000 (0636A)  YELLOW	A	 WHITE
1103046 16-4502-1017	1		-	-	Work light front ISO 7000 (1204)  YELLOW	C	 WHITE
1103047 16-4502-1018	1		-	-	Work light rear ISO 7000 (1204)  YELLOW	C	 WHITE

4500 range - SMART ROCKER SWITCHES

VARIANTE MECCANICA 3 / MECHANICAL VARIANT 3



1 POSIZIONE INSTABILE
1 MOMENTARY POSITION



3 POSIZIONE STABILE
3 MAINTAINED POSITION





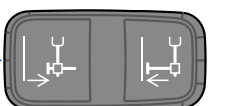
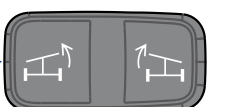



2 POSIZIONE INSTABILE
2 MOMENTARY POSITION



▲
Parte bassa del tasto
Lower part of the button

Prodotti attualmente disponibili, altri su richiesta
Available products, customisation on request

P/N	Pkg Q.ty	Key Symbol	Left Side LED Color ON	Symbol Orientation	Right Side LED Color ON	Symbol Orientation	Searching color
1099717 16-4503-1001	1		Window lift ISO 7000 (0648) ○ WHITE	D	Window lift ISO 7000 (0648) ○ WHITE	D	○ WHITE
1099718 16-4503-1002	1		Windscreen washer ISO 7000 (0099) ○ WHITE	D	Rear window washer ISO 7000 (0099) ○ WHITE	D	○ WHITE
1102148 16-4503-1003	1		Ascent cab ● GREEN	D	Descent cab ● GREEN	D	○ WHITE
1102150 16-4503-1004	1		Turn cab up ● GREEN	D	Turn cab down ● GREEN	D	○ WHITE
1102151 16-4503-1005	1		Stabilizer vertical extension ISO 7000 (0750A) ● GREEN	D	Stabilizer vertical retraction ISO 7000 (0751A) ● GREEN	C	○ WHITE
1102152 16-4503-1006	1		Seat recline up ● GREEN	D	Seat recline down ● GREEN	D	○ WHITE
1102153 16-4503-1007	1		Control levelling clockwise ISO 7000 (2390) ● GREEN	C	Control levelling anticlockwise ISO 7000 (2389) ● GREEN	C	○ WHITE
1102154 16-4503-1008	1		Stabilizer horizontal retraction ISO 7000 (0747A) ● GREEN	C	Stabilizer horizontal extension ISO 7000 (0746A) ● GREEN	C	○ WHITE

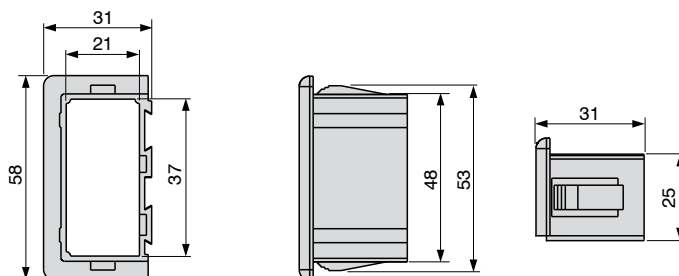
ACCESSORIES
and
HARNESSES

ACCESSORIES - series 4500

Cornice modulare singola laterale
End modular bezel



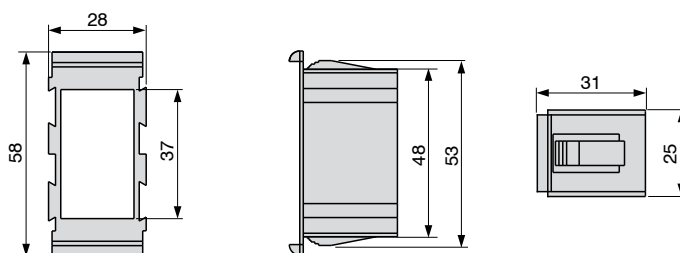
P/N	Q.ta Q.ty
1024200	10
1024201	150
16-600-036	



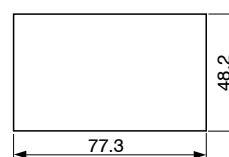
Cornice modulare singola centrale
Center modular bezel



P/N	Q.ta Q.ty
1024202	10
1024203	150
16-600-037	



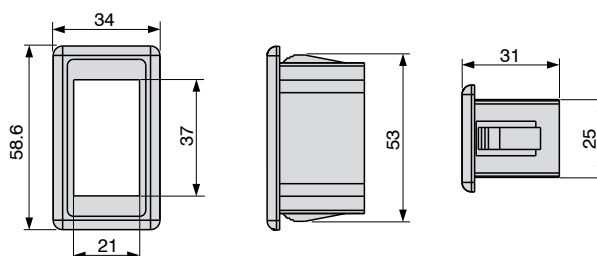
Foratura di applicazione per: 2 cornicette laterali + 1 cornicetta centrale
Fixing hole for: 2 end bezels + 1 center bezel



Cornice singola
Single bezel



P/N	Q.ta Q.ty
1024198	10
1024199	100
16-600-035	

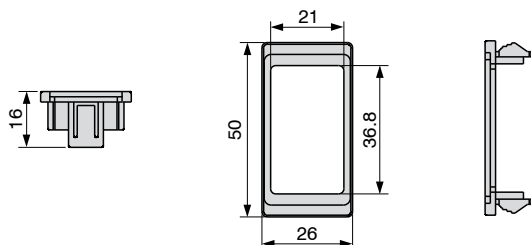


ACCESSORIES - series 4500

Adattatore per foratura 22 x 44 mm
Adapter for fixing hole 22 x 44 mm



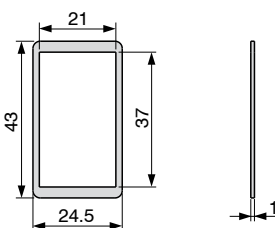
P/N	Q.ta Q.ty
1024194	30
1024195	150
16-600-020	



Guarnizione
Gasket



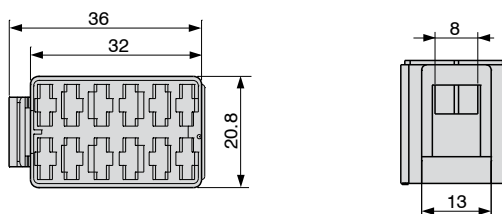
P/N	Q.ta Q.ty
1024206	100
16-600-039	



Connettore serie 6,35 mm con linguetta 12 vie
12 pins connector 6.35 mm series with tab



P/N	Q.ta Q.ty
1024716	100
16-650-003	



Utensile per rimuovere i tasti
Tool for rocker switch removal



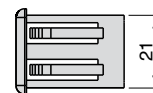
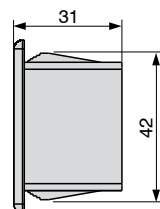
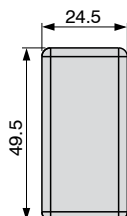
P/N	Q.ta Q.ty
1021722	1
16-0600-0170	

ACCESSORIES - series 4500

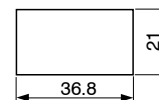
Tappo copertura
Cover



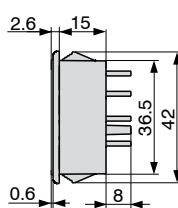
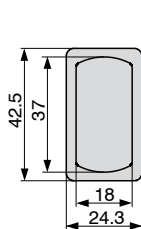
P/N	Q.ta Q.ty
1024204	10
1024205	150
16-600-038	



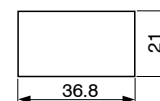
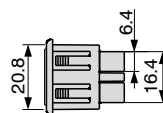
Foratura di applicazione
Fixing hole

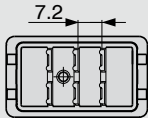
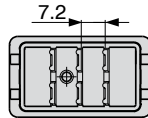
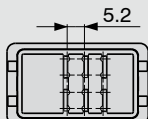
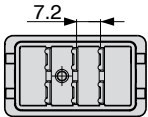
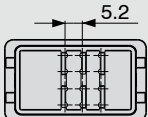


Tappo copertura (con lamelle plastiche)
Cover (with dummy plastic blades)



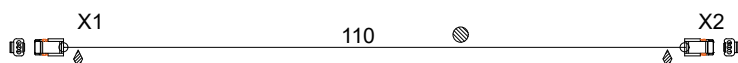
Foratura di applicazione
Fixing hole



P/N	Q.ta Q.ty	Colore tappo Cap color	Vista posteriore Rear view
1023394 1023395 16-1400-0012	10 150	BLACK	
1023402 16-1400-0900	100	BLACK with GASKET	
1023397 1023398 16-1400-0800	10 150	BLACK	
1023399 1023400 16-1400-0801	10 150	GRAY	
1023401 16-1400-0802	150	GRAY	

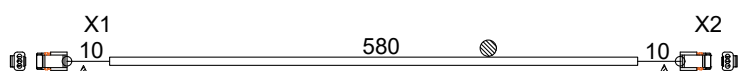
HARNESSES - series 4500

Cablaggio Bridge Smart Rocker L = 110 mm
Bridge Smart Rocker L = 110 mm



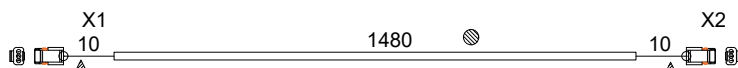
P/N	Q.ta Q.ty
1097500 0A062549	1

Cablaggio Bridge Smart Rocker L = 600 mm
Bridge Smart Rocker L = 600 mm



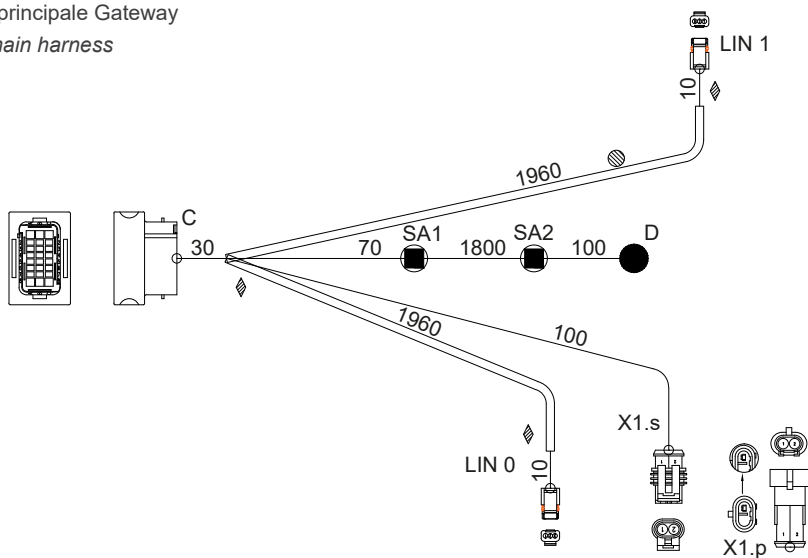
P/N	Q.ta Q.ty
1097501 0A062550	1

Cablaggio Bridge Smart Rocker L = 1500 mm
Bridge Smart Rocker L = 1500 mm



P/N	Q.ta Q.ty
1097502 0A062551	1

Cablaggio principale Gateway
Gateway main harness



P/N	Q.ta Q.ty
1097503 0A062552	1

CAN Gateway fino a 30 Smart Rocker
CAN Gateway up to 30 Smart Rockers



P/N	Q.ta Q.ty
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