

For Indirect Operation of Electrical Machinery

COB 80 series

Outline

The COB 80 series are unit selecting type pushbutton stations and a switch unit can be selected from plenty of varieties in accordance with customer's needs.

Button packing is equipped outside the case, button packing exposure structure.










The standard case is formed from shockproof ABS, rendering it lightweight and risk-free in terms of electrical shocks, so it can be used safely. To ensure safety, a screw retention structure is adopted for the cover to prevent screws from dropping when tightening up the case.

The switch units use twin contact with high reliability that can correspond to a minute load. The contact reliability of twin contact is confirmed and proven usable without problems through the test using the circuit condition of DC 12V 10mA.

The easy-to use design, such as a dedicated power display lamp, switch for alert buzzer, and large push buttons are adopted. Please contact us for customization.


The odd-numbered button type COB 803 (3 buttons), COB 805 (5 buttons), COB 807 (7 buttons) have been added to the line-up. An efficient button layout can be realized by allocating one-button type operation switches, selectors, volume controllers, and pilot lamps, etc.

Basic type list


Type name	COB 81	COB 803	COB 82	COB 805	COB83	COB 807	COB 84	COB 85	COB 86
Appearance									
Number of buttons	2	3	4	5	6	7	8	10	12
Button packing	Exposed								

Note: The photos above are the assembled examples.





General specifications

Specifications	
Item	Rating
Degree of protection	IP65 (JIS C 0920) NEMA : Compliant with 4X Electrical Appliance and Material Safety Law  : Rainproof type
Material/ Color	Case: Shockproof ABS Resin <small>Note /</small> Orange (Munsell 7.5YR7/13 equivalent) Case-tightening screws: Stainless (\pm screws) Cable bushing: Synthetic rubber / Black
Vibration proof	Operational Tolerance 10 to 55Hz Displacement: 1.0 mm
Shockproof	Durability 500m/s ²
	Operational Tolerance 100m/s ²
Ambient temperature	-15°C to +40°C (must be free of ice or condensation)
Relative humidity	45 to 85% RH
Installation position	Must be installed with the cabtire cable slot uppermost using appropriate cabtire cabling.

Compliance standards

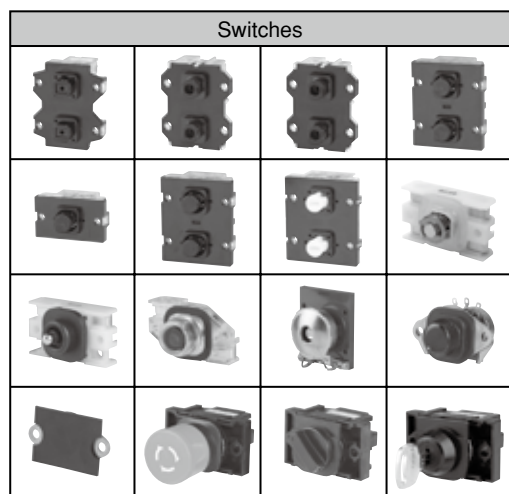
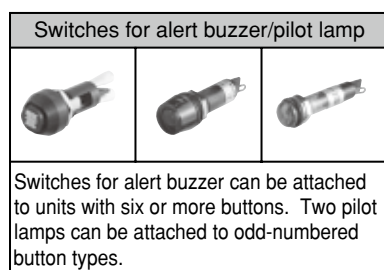
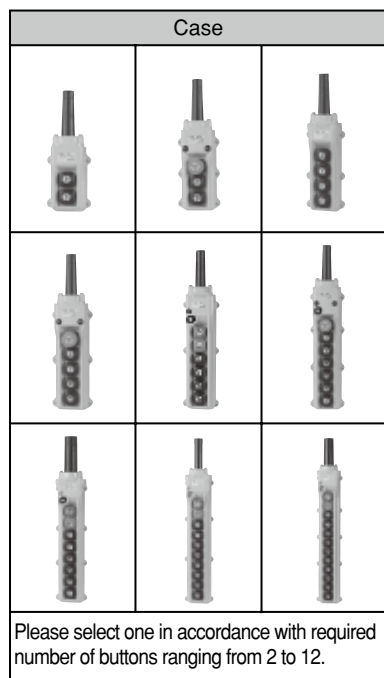
Name of standards	
JIS C 8201-5-1	
JIS C 0920	
NECA C4520	
Electrical Appliance and Material Safety Law  (compliant products)	

Overseas standards (Production on demand)

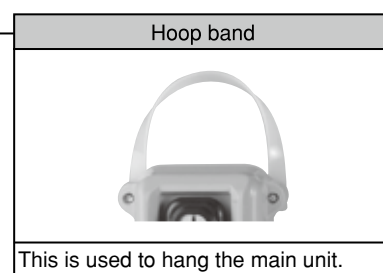
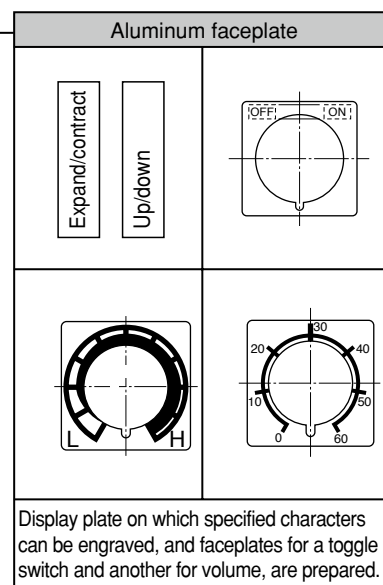
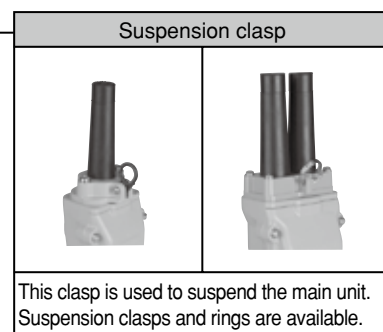
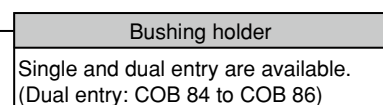
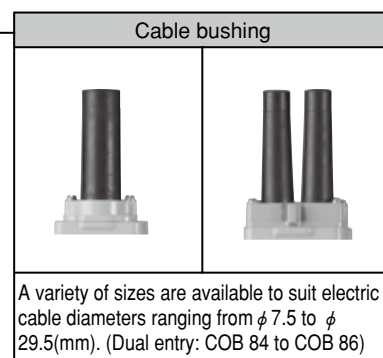
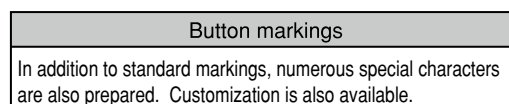
Name of standards	File name
UL 	E134156
CSA 	LR85954
TÜV 	R9750209, R9950248 (not applicable to COB 803, COB 805, COB 807)
CCC 	2005010305168698

Parts Configuration

Required unit can be selected from our extensive range of switches to suit every need.



Various functions and contact-point configurations are available.



For Indirect Operation of Electrical Machinery

COB 80 series

Order Generation

Please use the manufacturing specifications form to specify information and type regarding the following items when placing an order. Please refer to the description example when filling in the specification form.

COB 81 to COB 86

① Basic type name	No. of buttons	Case type	Bushing holder (Specification code) / ② Cable bushing	③ Switch units ④ Lamp/alarm switch	⑤ Button marking Markings sheet	⑥ Aluminum faceplate ⑦ Others
COB 81	2 (1 pair)	UN 81 ST	Single entry small (ST) / COB A1 to COB B2	Refer to page 32	Refer to page 36	Refer to page 37
COB 82	4 (2 pairs)	UN 82 ST or LB	Single entry small (ST) / COB A1 to COB B2			
COB 83	6 (3 pairs)	UN 83 ST or LB	Single entry large (LB) / COB C1 to COB C2			
COB 84	8 (4 pairs)	UN 84 ST or LB or TW	Single entry small (ST) / COB A1 to COB B2			
COB 85	10 (5 pairs)	UN 85 ST or LB or TW	Single entry large (LB) / COB C1 to COB D2			
COB 86	12 (6 pairs)	UN 86 ST or LB or TW	Dual entry (TW) / COB A1 to COB B2			

COB 803, COB 805, COB 807

① Basic type name	No. of buttons	Case type	Bushing holder (Specification code) / ② Cable bushing	③ Switch units ④ Lamp/alarm switch	⑤ Button marking Markings sheet	⑥ Aluminum faceplate ⑦ Others
COB 803	3	UN 803 ST	Single entry small (ST) / COB A1 to COB B2	Refer to page 32	Refer to page 36	Refer to page 37
COB 805	5	UN 805 ST or LB	Single entry large (LB) / COB C1 to COB C2			
COB 807	7	UN 807 ST or LB				

Pushbutton switch ordering form for 80 series

Customer name		Order date / /	
Tel		Fax	
① Type COB	Quantity	Requested delivery deadline / /	
Cable fixing <input type="checkbox"/> Standard is secured by tightening <input type="checkbox"/> Steel core secured		Cable bushings COB A1, A2, B1, B2 C1, C2, D1, D2 COB A1 A2, B1, B2 ※ Please specify two cables for dual cable wiring.	
Lamp/alarm switch <input type="checkbox"/> LNR 082B 200 V AC red <input type="checkbox"/> LNR 103B 200 V AC red <input type="checkbox"/> UNL alarm		Suspension clasp <input type="checkbox"/> Suspension ring	
Aluminum faceplate Standard position : Left a e i j k h		Internal wire connection, others	
Unit Button marking		Markings sheet No 801 <input type="checkbox"/> No 804 <input type="checkbox"/> No 802 <input type="checkbox"/> No 805 <input type="checkbox"/> No 803 (alphabet) <input type="checkbox"/>	
Sales Office in charge		Order no.	

Manufacturing specification form description example

Refer to the next page and thereafter for further details of each unit.

Power Switches

Hoist Push-Button Switches

Operating Push Button Switches

Foot Switches

Liquid Level Relays

I Case

The case and bushing holder are prepared as a set. The number of buttons (2 to 8, 10, 12) and bushing holder type (single entry small, single entry large, dual entry) are set. Accordingly, when complete products are ordered, the case does not need to be specified. The case type is automatically determined by simply specifying the basic type and cable bushing.

The material of the standard case is high impact ABS.

Product name	Type	General mass (g)
Case for COB 81	UN 81 ST	150
Case for COB 82	UN 82 □	220
Case for COB 83	UN 83 □	290
Case for COB 84	UN 84 □	390
Case for COB 85	UN 85 □	450
Case for COB 86	UN 86 □	520
Case for COB 803	UN 803 □	200
Case for COB 805	UN 805 □	270
Case for COB 807	UN 807 □	330

Remark : Specification code for bushing holder should be entered in the square space after each type.

ST: Single entry small

LB: Single entry large

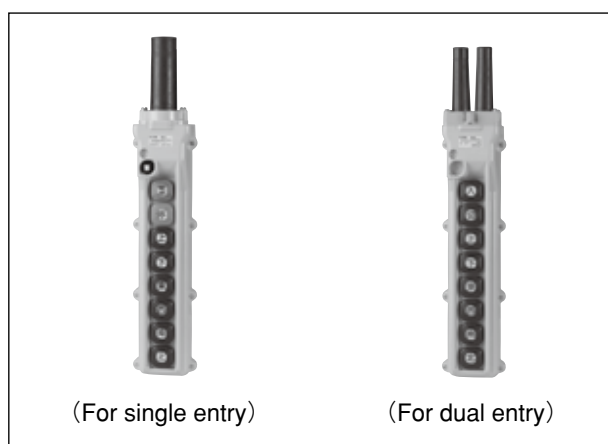
TW: Dual entry

II Cable bushing

Please select the optimal type in accordance with the diameter of the cable used.

The COB 80 series cable bushing consists of waterproof packing to prevent the entry of water or dust, while the bushing part protects the electric cable. Two cables can be wired on the COB 84 to COB 86 units. Please choose two cables from the COB A1 to COB B2 cable bushings. In this case, the case and bushing holder will be dual entry type.

Cable bushing types that can be selected for COB 80 series are as follows.



COB 80 Series cable bushing

Cable bushing type	Appropriate cable diameter range	General mass (g)	Components		Appropriate case								
			Waterproof packing	Bushing type	COB81	COB82	COB83	COB84	COB85	COB86	COB803	COB805	COB807
COB A1	φ 7.5 to φ 10.5	50	CC-A1	CB-A	UN 81 ST	UN 82 ST	UN 83 ST	UN 84 ST	UN 85 ST	UN 86 ST	UN 803 ST	UN 805 ST	UN 807 ST
COB A2	φ 10.3 to φ 13.5	50	CC-A2		(Single entry small)	(Single entry small)	(Single entry small)	(Single entry small)	(Single entry small)	(Single entry small)	(Single entry small)	(Single entry small)	(Single entry small)
COB B1	φ 13.3 to φ 16.5	40	CC-B1	CB-B				UN 84 TW	UN 85 TW	UN 86 TW			
COB B2	φ 16.3 to φ 19.5	30	CC-B2					(Dual entry)	(Dual entry)	(Dual entry)			
COB C1	φ 19.3 to φ 22.5	80	CC-C1	CB-C	—	UN 82 LB	UN 83 LB	UN 84 LB	UN 85 LB	UN 86 LB	—	UN 805 LB	UN 807 LB
COB C2	φ 22.3 to φ 25.5	70	CC-C2			(Single entry large)	(Single entry large)	(Single entry large)	(Single entry large)	(Single entry large)		(Single entry large)	(Single entry large)
COB D1	φ 25.3 to φ 28.5	50	CC-D1	CB-D		—	—					—	—
COB D2	φ 28.3 to φ 29.5	40	CC-D2										

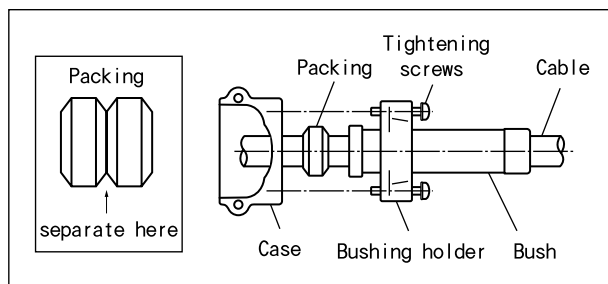
Remark : C7 to CA20 for COB 70 series can also be used.

CA21 to CA28 can be installed using the single entry large (LA) bushing holder that is provided separately.

• How to install the cable bushing

The cable is fed through the bushing holder, bushing, and packing in that order, and the tightening screw used to secure the bushing holder firmly to the case. Two packings are prepared as a set. Check the cable range displayed on the packing, and separate off the applicable one.

Reference : When inserting into the bushing, it is recommended to lubricate the cable and cable slot with wet soap to ease insertion. Do not use lubricating oil, as this may damage the bushing.




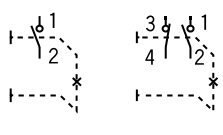

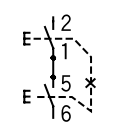

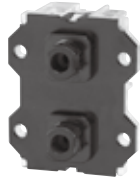
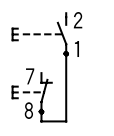
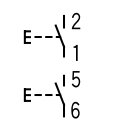
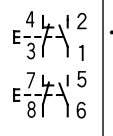

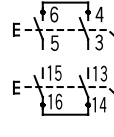
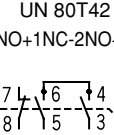
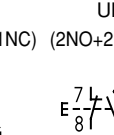
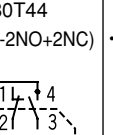
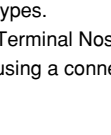
For Indirect Operation of Electrical Machinery

COB 80 series

Ⅲ Switch units, Ⅳ Lamp and alarm buzzer units

Certain contact arrangements other than the following can be produced. Please enquire for details.

(1/5)

Product name/appearance	Type	General mass (g)	Rating	Contact arrangement	Memo
On/Off switch 	UN 80B□ UN 80B10 UN 80B11	— 40 50	Note 1	UN 80B10 (1NO) UN 80B11 (1NO+1NC) 	<ul style="list-style-type: none">• Turn on/off power for operation.• Pressing On button (top) turns power on and self-maintenance is performed.• Press Off button (bottom) to open.• When a complete assembled product is ordered, the On button is green, and Off button is red.
Operation switch with interlock 	UN 80C□ UN 80C20 UN 80C22 UN 80CT□ UN 80CT20 UN 80CT22	— 50 60 — 50 60	Note 1 Note 2	UN 80C20 (1NO-1NO) UN 80C22 (1NO+1NC-1NO+1NC)  Remark : Terminal Nos. 1 to 5 are connected using the connection board. 	<ul style="list-style-type: none">• This is for typical circuits, such as up/down, east/west.• Seesaw-type mechanical interlock is included, so simultaneous use is impossible.• UN80CT□ is the twin contact type name.
General operation switch 	UN 80J□ UN 80J11 UN 80J20 UN 80J22 UN 80JT□ UN 80JT11 UN 80JT20 UN 80JT22	— 50 50 60 — 50 50 60	Note 1 Note 2	UN 80J11 (1NO-1NC) UN 80J20 (1NO-1NO) UN 80J22 (1NO+1NC-1NO+1NC)  Remark : Terminal Nos. 1 to 8 are connected using the connection board.  	<ul style="list-style-type: none">• This is for typical circuits.• No mechanical interlock is included, so two buttons can be operated independently.• UN 80JT□ is the twin contact type.
Operation switch with/without interlock 	UN 80T□ UN 80T40 UN 80T42 UN 80T44 UN 80T□N UN 80T40N UN 80T42N UN 80T44N UN 80TT□ UN 80TT40 UN 80TT42 UN 80TT44 UN 80TT4N UN 80TT40N UN 80TT42N UN 80TT44N	— 80 90 100 — 80 90 100 — 80 90 100 — 80 90 100	Note 1 Note 1 Note 2 Note 2	UN 80T40 (2NO-2NO)  UN 80T42 (2NO+1NC-2NO+1NC) UN 80T44 (2NO+2NC-2NO+2NC)    	<ul style="list-style-type: none">• This is for typical circuits. Maximum 2a2b-2a2b multi-contact type.• Seesaw type mechanical interlock is included, so simultaneous use is impossible. N is added at the end of the type code to denote those without mechanical interlocks.• UN80TT□ and UN80TT□N are twin contact types.• Terminal Nos. 4 to 6 and 14 to 16 are connected using a connection board.

Remark : Specification code for contact arrangement is entered as □ of the type.

Note : Rating for each switch unit

Item	Note 1	Note 2
Rated insulation voltage	500V AC	
Rated thermal current	5A	
Rated operating voltage	220V/440V AC	
Rated operating current	220V AC	2A
AC15 / Inductive load	440V AC	1A
Minute load	—	Twin contact
Insulation resistance	100MΩ or more (500 V DC Megger)	
Withstand voltage	2500 V AC / minute	
Connected terminal	M4 screws (Pressure terminal type)	

※Minute load

• Twin contact type :

In terms of reliability of the twin contact type, tests were conducted under 12 V DC, 10 mA circuit conditions, and usage without restriction was confirmed.

Power Switches

Hoist Push-Button Switches

Operating Push Button Switches





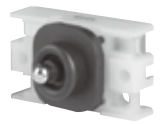
Foot Switches

Liquid Level Relays

For Indirect Operation of Electrical Machinery

COB 80 series

(2/5)

Product name/appearance	Type	General mass (g)	Rating	Contact arrangement	Memo
	UN 80S□	—	Note 1	UN 80S10 (1NO)	<ul style="list-style-type: none"> This is for typical circuits. It is an independent single switch, so flexible arrangement combinations are possible. Maximum 2NO+2NC multi-contact. UN 80ST□ is the twin contact type name.
	UN 80S10	30		UN 80S01 (1NC)	
	UN 80S01	30		UN 80S11 (1NO+1NC)	
	UN 80S11	40			
	UN 80S20	40			
	UN 80S21	40			
	UN 80S22	50			
	UN 80ST□	—	Note 2	UN 80S20 (2NO)	
	UN 80ST10	30		UN 80S21 (2NO+1NC)	
	UN 80ST01	30		UN 80S22 (2NO+2NC)	
	UN 80ST11	40			
	UN 80ST20	40			
	UN 80ST02	40			
	UN 80ST21	40			
	UN 80ST22	50			
	UN 80D□	—	Note 1	UN 80D44 (2NO+2NC-2NO+2NC)	<ul style="list-style-type: none"> This is for speed control and for 2-circuit control. Contacts are operated in two different stages. Seesaw-type mechanical interlock is included, so simultaneous use is impossible. A type in which contacts No. 7 to 8 and 17 to 18 remain on the first layer can also be produced. (1st layer) UN 80DT□ is the twin contact type.
	UN 80D40	80			
	UN 80D44	100			
	UN 80DT□	—	Note 2		
	UN 80DT40	80			
	UN 80DT44	100			
	UN 80W□	—	Note 2	UN 80W60 (3NO-3NO)	<ul style="list-style-type: none"> This is for speed control and for 3-circuit control. Contacts are operated in three different stages. Mechanical interlock is included, so simultaneous use is impossible.
	UN 80W60	90			
	UN 80W62	100			
	UN 80E□	—	Note 3	UN 80E10 (1NO)	<ul style="list-style-type: none"> This is to turn the operating power on/off. Each press of the button turns the power ON or OFF alternately. (Do not use it for purposes subject to shock.)
	UN 80E10	40		UN 80E20 (2NO)	
	UN 80E20	50		UN 80E11 (1NO+1NC)	
	UN 80E11	50			
	UN 80F□	—	Note 4	UN 80F10 (1NO)	<ul style="list-style-type: none"> This is to turn the operating power on/off. Aluminum faceplate is prepared. 3-notch (1NO+1NC) can also be produced. (Type: UN 80FT11) (Do not use it for purposes subject to shock.) Lever operation is left and right. Up and down can also be produced. Degree of protection is IP53.
	UN 80F10	40		UN 80F20 (2NO)	
	UN 80F20	40		UN 80F11 (1NO+1NC)	
	UN 80F11	50			

Remark : Specification code for contact arrangement is entered as □ of the type.

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COB 80 series

Note : Rating for each switch unit



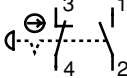








Item		Note 1	Note 2	Note 3	Note 4
Rated insulation voltage		500V AC	500V AC	250V AC	250V AC
Rated thermal current		5A	5A	3A	3A
Rated operating voltage		220V/440V AC	220V/440V AC	220V AC	220V AC
Rated operating current	220V AC	2A	2A	2A	1A
Inductive load (AC15)	440V AC	1A	1A	—	—
Minute load		—	Twin contact	—	—
Insulation resistance		100MΩ or more (500 V DC Megger)			
Withstand voltage		2500 V AC / minute		1500 V AC / minute	
Connected terminal		M4 screws (Pressure terminal type)			

※Minute load

• Twin contact type:

In terms of reliability of the twin contact type, tests were conducted under 12 V DC, 10 mA circuit conditions, and usage without restriction was confirmed.

(3/5)

Product name/appearance	Type	General mass (g)	Rating	Contact arrangement	Memo
	UN 80MK□R	—	Note	UN 80MK01 (1NC)	<ul style="list-style-type: none"> Used for emergency stop. (Button is red.) Pressing the button turns on the power and self-maintenance is performed. Opened by rotating in the direction indicated by the arrow on the button. Erroneous operation is prevented by adopting the safety forced-open feature, and reliably blocks circuits. (TÜV authorization is not target.) Twin contact Faceplate is prepared.
	UN 80MK01R	50		UN 80MK11 (1NO+1NC)	
	UN 80MK11R	50		 	
	UN 80P2□	—	Note	• 2-notch	<ul style="list-style-type: none"> This is used to switch the circuit. (Finger grip is black.) Switch is turned ON/OFF by rotating the finger grip right/left. Twin contact Faceplate is prepared.
	UN 80P210	30		UN 80P210 (1NO) UN 80P211 (1NO+1NC) UN 80P220 (2NO)	
	UN 80P211	40		UN 80P210 (1NO) UN 80P211 (1NO+1NC) UN 80P220 (2NO)	
	UN 80P220	40		Left 	
	UN 80P3□	—		Middle 	
	UN 80P320	40		Right 	
	UN 80PJ2□	—	Note	• 3-notch	<ul style="list-style-type: none"> This is used to switch circuits. Switch is turned ON/OFF by inserting the key into the slot and turning it to the left/right. The key can be extracted in any position. Extraction of the key can be rendered impossible if specially ordered. Please enter the following code at the end of the type when placing your order. NR: No right extraction; NL: No left extraction; NW: No extraction from either side; NCR: No extraction from center/right; NCL: No extraction from center/left Twin contact Backing plate is prepared. For ordering keys only, please name UN 80PJ KEY (with 2P).
	UN 80PJ210	50		UN 80PJ210 (2NO)	
	UN 80PJ211	60		UN 80PJ210 (2NO)	
	UN 80PJ220	60		Left 	
	UN 80PJ3□	—		Middle 	
	UN 80PJ320	60		Right 	

Remark : Specification code for contact arrangement must be entered in the space after each type.

Note : Rating for each switch unit

Item	Note
Rated insulation voltage	500V AC
Rated thermal current	5A
Rated operating voltage	220V/440V AC
Rated operating current	220V AC
Inductive load (AC15)	440V AC
Minute load	Twin contact
Insulation resistance	100MΩ or more (500 V DC Megger)
Withstand voltage	2500 V AC / minute
Connected terminal	M3.5 screws (Pressure terminal type)

※Minute load




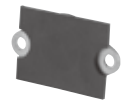
• Twin contact type:

In terms of reliability of the twin contact type, tests were conducted under 12 V DC, 10 mA circuit conditions, and usage without restriction was confirmed.

For Indirect Operation of Electrical Machinery

COB 80 series










(4/5)

Product name/ appearance	type	General mass (g)	Rating	Memo
	UN 80 G■	20	<ul style="list-style-type: none"> UN 80 G■ (Neon lamp) ^{Note 1} UN 80 GD■ (LED lamp) ^{Note 1} 6V/48V DC and 24V/48V AC can also be produced. M4 screws (pressure terminal type) and soldered terminals can also be produced. Insulation resistance: 100 MΩ or more (500 V DC Megger) Withstand voltage: 1500 V AC / minute Marked on the positive (+) side of the LED lamp. 	<ul style="list-style-type: none"> This lamp is installed in a switch unit hole.
	UN 80 GD■	20		
	UN 80 GD24BC	20		
	UN 80 GD12BC	20		
	UN 80Z□	50	<ul style="list-style-type: none"> Two button holes are needed for installation. M4 screws (pressure terminal type) Insulation resistance: 100 MΩ or more (500 V DC Megger) Withstand voltage: 1000 V AC / minute 	<ul style="list-style-type: none"> This is a loud alert buzzer. Appearance from the case surface is same as UN 80H. (Photo of appearance on rear.)
	UN 80V	50	<ul style="list-style-type: none"> Variable resister: RV24YN, knob attachment (Please specify rating.) ^{Note 2} Soldered terminal Insulation resistance: 100 MΩ or more (500 V DC Megger) Withstand voltage: 500 V AC / minute 	<ul style="list-style-type: none"> Aluminum faceplate is prepared. Degree of protection is IP53.
	UN 80H	10	<ul style="list-style-type: none"> Packing for spare hole: Black rubber Packing holder: Steel plate 	<ul style="list-style-type: none"> This rubber cover also improves the appearance.

Remarks :

- Specification code for rated voltage must be entered on □ at the end of each type.
- Specification code for lamp voltage and color in ■ at the end of each type.

(5/5)

Product name/ appearance	type	General mass (g)	Rating		Memo
Alert buzzer switch 	UN L	10	 Hole size φ 12 Hole size φ 19	<ul style="list-style-type: none">• Soldered terminal• Rated insulation voltage AC250VRated thermal current 5ARated operating voltage AC220VRated operating current 3A (Inductive load AC12)Insulation resistance 100MΩWithstand voltage 2000 V AC• LNR 103B■, LNR 082B■ (Neon lamp) <small>Note 1</small>• LER 103B■, LER 082B■ (LED lamp) <small>Note 1</small>6V DC can also be produced.• Soldered terminal	<ul style="list-style-type: none">• Standard button character is .• Installation position: Hole size φ 19• The following button markings are also available. <div>   (ALARM)  (Plain)</div>
Pilot lamp 	LNR 103B■	40		<ul style="list-style-type: none">• Cannot be installed on COB 81 or 82.• There are no size φ 12 or φ 19 holes in the cases if neither an alert buzzer switch nor pilot lamp is specified for COB 83 to 86 and COB 803 to 807.	<ul style="list-style-type: none">• Installation position: Hole size φ 19
	LER 103B■	40			
	LER 103B24BC	40			
	LER 103B12BC	40			
Pilot lamp 	LNR 082B■	30	<ul style="list-style-type: none">• Installation position: Hole size φ 12 Caution : Cannot be installed on cases with dual cabling.		
	LER 082B■	30			
	LER 082B24BC	30			
	LER 082B12BC	30			

Remark : Specification code for lamp voltage and color in ■ at the end of each type.

Note 1 : Rating for electromagnetic buzzer and pilot lamp is as follows.

■ Electromagnetic buzzer rating

Type	Rated voltage
UN 80Z24	24V AC
UN 80Z100	100V AC
UN 80Z200	200V AC

■ Pilot lamp rating

Type	Rated voltage	Color
UN 80 G	2R	Red
LNR 103B	1R	
LNR 082B (Neon lamp)	2G	Green
	1G	
	2O	
	1O	Orange
	2W	
	1W	White

Type	Rated voltage	Color
UN 80 GD	24R	Red
LER 103B	12R	
LER 082B (LED lamp)	24G	Green
	12G	
	24O	
	12O	Orange
	24W	
	12W	White
	24BC	
	12BC	Blue

Caution : When lead wire is soldered to the pilot lamp of the soldered terminal, solder the lead wire outputting to the terminal from inside of the main unit at the same time.

For Indirect Operation of Electrical Machinery

COB 80 series

Note 2 : Variable resistor rating

- Standard product: RV24YN (Carbon mixed variable resistor)
- Specified product: RA25Y (Wire wound variable resistor)

Resistance law: B

Resistance value	Rated current	Resistance value	Rated current
50 Ω	0.4W	20k Ω	0.25W
100 Ω	0.4W	50k Ω	0.25W
200 Ω	0.4W	100k Ω	0.25W
500 Ω	0.4W	200k Ω	0.25W
1k Ω	0.4W	500k Ω	0.25W
2k Ω	0.3W	1M Ω	0.25W
5k Ω	0.3W	2M Ω	0.25W
10k Ω	0.3W		

(Source: Volume maker standard rating list)

Resistance law: B

Resistance value	Rated current	Resistance value	Rated current
10 Ω	1.2W	1k Ω	1.2W
20 Ω	1.2W	2k Ω	1.2W
50 Ω	1.2W	5k Ω	1.2W
100 Ω	1.2W	10k Ω	1.2W
200 Ω	1.2W		
500 Ω	1.2W		

(Source: Volume maker standard rating list)

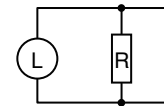
Reference :Erroneous lighting of the neon lamp (half-lighting when switch is turned off)

When the switch is turned off, the neon lamp may appear half lit. The following three causes can be considered.

1. Effect from inductive power within the parallel line
2. Effect from current leaking from the condenser between contacts
3. Effect from current leaking due to reduced insulation between contacts

The following methods should be used to counteract the above.

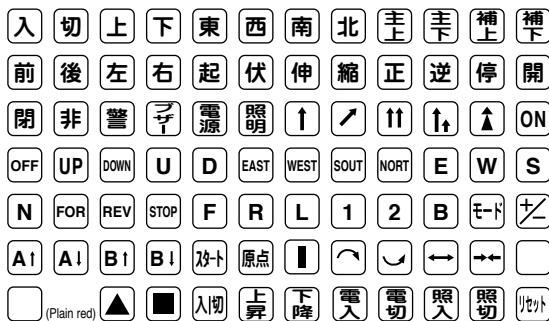
1. Light does not come on if the voltage is maintained at the same as or lower than discharge lamp through partial pressure by inserting a parallel resistor. Lower resistance value is more effective, but about 100k Ω/W is sufficient.
2. Light does not come on if the voltage is maintained at the same as or lower than discharge lamp through partial pressure based on parallel resistance. 100k Ω/W or less is needed.



Parallel resistor

V Button markings, markings sheet

Standard markings (Black characters)



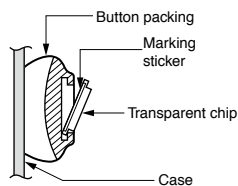
※Characters other than the above can also be produced. Please contact us for details.

Special markings (Black characters)



Attachment of the marked board

Please attach the marking stickers to the transparent chip, and use a gem clip, or suchlike to push and tease out the button packing surface without damage, and fit the chip into it.



Markings sheet

Markings sheets on which standard characters are set are also available.

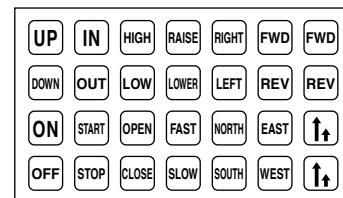
COB80No801



COB80No802



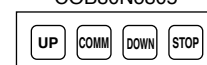
COB80No803



COB80No804



COB80No805



VI Aluminum faceplate

(a) Display plate

Specified characters are to be engraved. Please use it for auxiliary explanation of switches. Standard attachment position is to the left of the switch unit. Please specify position a to k as shown on the manufacturing specifications. It can be left/right of the switch unit for COB 803 to COB 807.



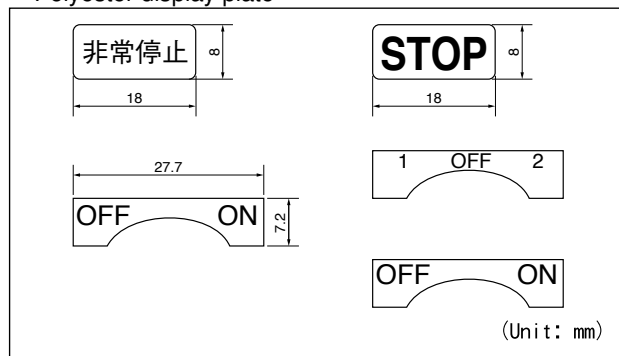
Character size	Maximum number of characters
3mm	6
4mm	5
5mm	4

(Unit: mm)

(c) Display plate for selector

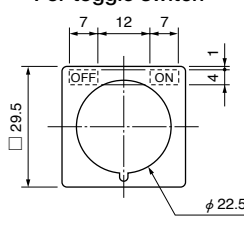
Polyester display plate (5 types) and aluminum faceplate (requested characters are to be engraved) are also available. Please contact us for details.

• Polyester display plate

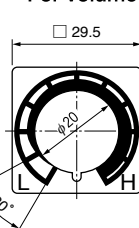


(b) Aluminum faceplate

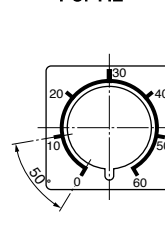
• For toggle switch Note



• For volume



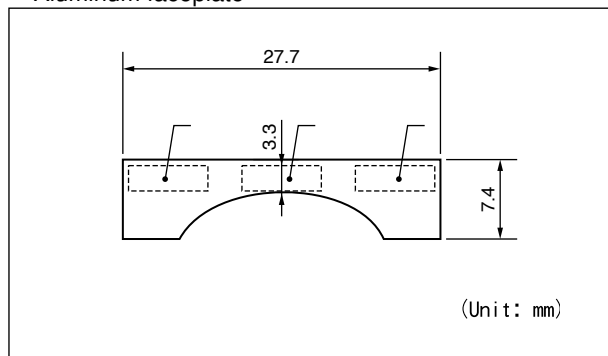
• For Hz



(Unit: mm)

Note : Ones with ON/OFF display and plain ones on which specified characters can be engraved are available.

• Aluminum faceplate



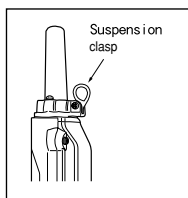
VII Others

Suspension clasp (steel)

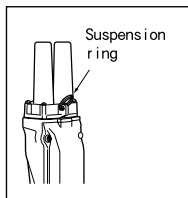
Metal clasps are available for suspension of the main unit. There are suspension clasps for single entry bushing holders and suspension rings for dual entry bushing holders.

It is possible to manufacture a stainless suspension clasp and stainless suspension ring.

As standard, a cable holder that secures the cables by tightening them up against the case, is included. A steel core attachment board for single cases subject to tensile forces applied to the cable by steel wires within the cable, etc. is also available, so please specify.



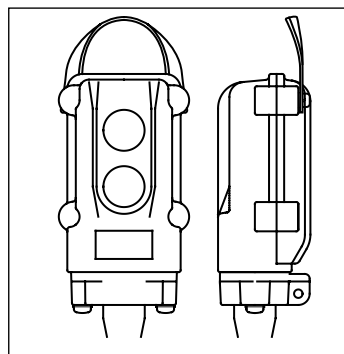
Suspension clasp



Suspension ring

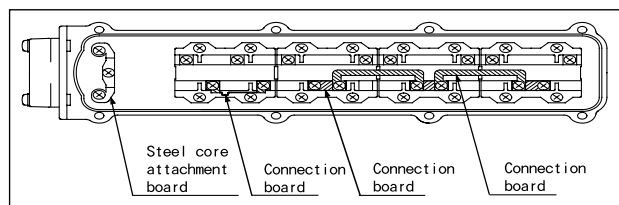
Suspension band

Suspension bands for suspension of the main unit are available. Please attach it below the screw head. Please do not put it between the case and cover of the main unit, as this will adversely affect its waterproofing.

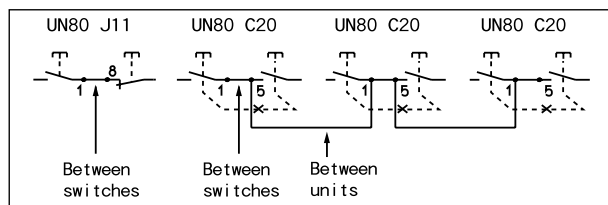


Connection board

Various types of connection boards (short bars) that are convenient for common wiring between switch units and between contacts are available. Please contact us for details. A connection board indicated by the solid line in the drawing is included with UN80J11 and UN80C20 units. In other cases, additional costs may be incurred.



Connection board usage example



Connection board usage example

For Indirect Operation of Electrical Machinery

COB 80 series

Dimensions (Unit: mm)

COB 80 series

Technical drawing of COB 80 series switch showing side and front views with dimensions L1, L2, 17.5, 41, 30, L, W, W1, 12.5, H, and a 4.5mm hole diameter. Three cross-sectional views are shown: Single entry small type, Single entry large type, and Dual entry type.

Dimension list (Unit: mm)

Basic type	L	L1 (Bushing)			L2	W	W1	H
		Single entry small, dual entry		Single entry large				
		CB-A	CB-B					
COB 81	114	80	90	—	56.5	65	78	37
COB 82	180			62.5	82			
COB 83	262			82.5	87			
COB 84	322			90	69	87	37.5	
COB 85	387				74	87		
COB 86	447							

Remark : Alert switch and dedicated lamp cannot be attached to COB 81 and 82. LNR (LER) 082B cannot be attached to dual-entry versions of COB 84 to 86.

COB 803, COB 805, COB 807 series

Technical drawing of COB 803, COB 805, COB 807 series switch showing side and front views with dimensions L1, L2, 17.5, 36, 30, L, 69, 82, 12.5, 37, and a 4.5mm hole diameter. Two cross-sectional views are shown: Single entry small type and Single entry large type.

Dimension list (Unit: mm)

Basic type	L	L1			L2
		Single entry small		Single entry large	
		CB-A	CB-B		
COB 803	157	80	90	—	69.5
COB 805	217	80	90	90	69.5
COB 807	295	80	90	90	87.5

Remark : Switch for alert buzzer (ϕ 19 hole) cannot be attached to COB 803 and COB 805.

Power Switches

Hoist Push-Button Switches

Operating Push Button Switches

Foot Switches

Liquid Level Relays