



FUJI COMMAND SWITCH

Type AR30B0R

Thank you for purchasing Fuji Electric Command Switches. To obtain the best performance from your purchase, be sure to read this manual carefully before use.

Safety Precautions

To ensure proper use of the product, be sure to read this manual carefully before starting installation, operation, maintenance, and inspection. This manual should be given to the person who actually uses the products and is responsible for their maintenance.

• Within this instruction manual, safety precautions are ranked, in order of importance, as either "WARNING" or "CAUTION".

WARNING : Indicates a potentially hazardous, situation, which, if not avoided, could result in death or serious injury.

CAUTION : Indicates a potentially hazardous, situation, which, if not avoided, may result in minor or moderate injury and/or damage to the equipment.

Under certain conditions, improper operation may result in serious injury and/or damage even if it is labeled only as "CAUTION". Every item indicated by either "WARNING" or "CAUTION" should be considered significant. Be sure to give particular care to those items.

WARNING

- Do not touch near the product parts like terminals while the power is live. Electrical shock or burn may result.
- Turn off the power before starting mounting, detaching, wiring, maintenance or inspection. Failure to turn off power may result in electrical shock or burn.

CAUTION

- For wiring, select wire sizes suitable for the applied voltage and current. Tighten wires with the specified tightening torque described in this manual. Failure to do so may result in fire.
- Treat the product as industrial waste when discarding.

1. Unpacking

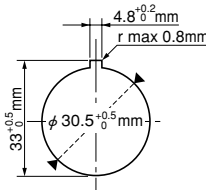
Make sure that the switch type, contact arrangement, and pushbutton color are exactly what you ordered, and that the plastic components, such as pushbuttons and contact blocks, are not damaged.

2. Mounting

2.1 Mounting hole

Refer to the right figure.

※Unless a key washer or legend plate is used, location hole 4.8mm×33mm is unnecessary.



2.2 Panel thickness and adjusting packing

The applicable panel thickness must be 1 to 6mm.

Normally, four sheets of 1.6mm packing are attached (forming a unit). However, add or remove excess packing according to the panel thickness by referring to the table. When using the key washer and/or legend plate, add packing for their thickness.

Panel thickness (+key washer, legend plate) (mm)	No. of packings (reference)
1.0 to 2.0	4 pieces
2.0 to 3.6	3 pieces
3.6 to 5.0	2 pieces
5.0 to 6.0	1 piece

2.3 Procedure of mounting the switch on the panel

2.3.1 Mounting the switch on the panel

Insert the switch unit in the panel hole at the back of the panel and secure it with a locking nut at the panel front.

Remark 1 : Tightening torque is 1.5 to 2.5 N·m

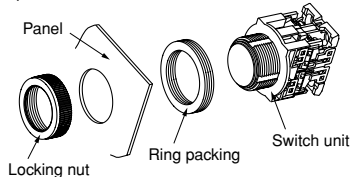


Fig.1

2.3.2 Mounting the B0R type switch

- (1) Loosen the button manually to remove it.
- (2) Mount the switch unit to secure it in the same way as described in section 2.3.1 above.
- (3) Mount the button by screwing it firmly with your fingers. The tightening torque should be within a range of 0.3 to 0.5 N·m.

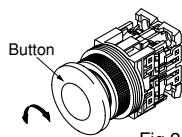
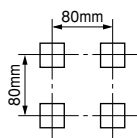


Fig.2

3. Close mounting

Allow at least 80mm spacing center to center when mounting.

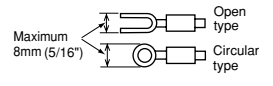


4. Wiring

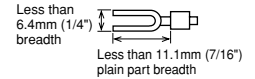
- (1) M3.5 terminal screws are used. Solid wire, Stranded wire, and crimp terminals can be used for wiring.

Maximum 1.6mm dia (16 AWG)

8mm (5/16")



- (2) Double crimp terminals can be connected. If you use open type crimp terminals, as wiring from side direction, which are allowed only small type. (for 6.4mm breadth and 11.1mm plain part breadth or less)



For example : Type : F2-3.5S (TOEI TERMINAL Co.,LTD made)

- (3) The self-lifting terminal washer is used.
- (4) Tighten the terminal screw with the tightening torque 0.8 to 1.0 N·m.
- (5) Exercise care so that no mechanical force is applied to the contact block wiring or after it has been completed. Operation problems may result later.

5. Replacing the contact

5.1 Removing

Open the mounting foot slightly with a flat-head screwdriver as shown in the figure right.

Each unit can be easily removed from the foot.

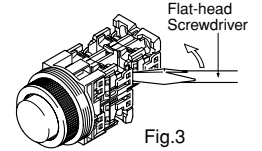


Fig.3

5.2 Mounting

● Push each unit straight to the foot as shown in the figure to the right. Make sure that each unit is attached to the foot securely. When attaching the two units in parallel, make their grooves fit each other so that the unit does not open. If each unit is used with the switch unit fitting incompletely, the unit may come off or an operation error may occur. Take care not to apply excess force to the mounting side.

● About an addendum of contact

If you install contacts exceeding the allowable number of stages, your device may not operate properly. Insert info. About contact multiplication.

● Contact Multiplication

Contacts can be arranged up to 4 deep by 2 wide for a total of 8.

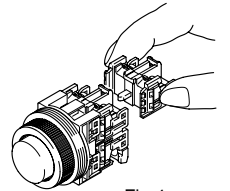


Fig.4

6. Notes on use

6.1 Storage and place to use

- (1) Store or keep the switch in the appropriate ambient temperature and humidity described in the catalogue. Don't use the switch in a condition which exceeds its rated value. It may cause a malfunction or make its life time short.
- (2) Keep the unit away from direct sunlight.
- (3) Avoid using outdoors.
- (4) Use the switch in the atmosphere in which no SO₂ or H₂S gas exists. The gas may cause a contact failure of the switch.
- (5) Note that when used in places where dust, chips or other particles may pile up in the clearance between the button and the frame, or if used where the products may be pulled or impacted, the products may not operate normally. When using the device in an unfavorable environment, protect it by using a dust cap, water-tight cap or any other appropriate measures.
- (6) For the AR30B0R, the operator is provided with oil-tight construction (IP65). All the switches have been evaluated for cutting oil and cooling oil that are generally used. It may not be able to use special oil for some switches. For details, contact Fuji Electric FA.

6.2 Operating

- (1) If you hit the pushbutton, it may be destroyed.

Do not hit the pushbutton. Be sure to use your finger when operating the switches.

Do not pull on the pushbutton.

6.3 Wiring a Switch with protective cover of contact

While you tighten the terminal screws with a screwdriver, the screwdriver shaft may contact the protective cover. After completing the wiring work, check that the cover is correctly matched to the switch unit. To minimize the contact between the driver shaft and the cover a #1 screwdriver (shaft diameter : 5mm) is recommended.

7. Degree of protection

The switch conforms to IP65 protection degree, when dust, water or oil splash against the front panel on which the switch is installed.

IEC 60529

IP 6 5

Protection against immersion of water

● 5 (jet-proof type) : Protects the switch against harmful effects due to direct water jet from any direction.

Protection against entry of solid matters

● 6 (dust-proof type) : Prevents entry of dusts.

JIS C 0920

IP 6 5 F

Protection against immersion of oil

● Oil-tight type : Protects the switch against harmful effects due to oil drop or splash from any direction.

8. Short-circuit protection (conforming to IEC 60947-5-1)

If coordinative protection is required for the contacts, use Fuji plug-in type fuse of 15 ampere rating (type BLA015) or smaller.

Remarks : These instruction manuals cover only the major topics on the operating methods of the modules.

The contents of these instruction manuals are subject to change without notice.

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