



# Command Series Pilot Devices

Fuji Electric Command Series pilot devices are used in machine tools, industrial machines, control panels, distribution panels, and instrumentation panels. Pushbuttons improve interfacing by allowing better layout and wiring, easier installation and increased safety. Reliability is also built in to handle complex multi-functional controls.

The AR16, AR22 and AR30 series are configurable with a wide range of choices. Our selection of 16mm, 19mm, 22mm and 30mm pushbuttons include non-illuminated as well as

illuminated models with flush round heads, extended round heads, and mushroom style heads. Other 16mm, 22mm and 30mm pilot devices available include emergency stop pushbuttons, selector switches, pilot lights, joystick selector switches, and buzzers.

We also offer a wide array of accessories to complement our selection of Fuji 16mm, 19mm, 22mm and 30mm Command Series pilot devices.

## AR16 Series Features

- 16.2 or 19.2 mm diameter hole
- Fits 1 to 6mm max panel thickness
- Integrated structure with built-in contacts that reduce control panel depth
- Offered in Thin-type profile with only 2mm of panel protrusion for high-density mounting and attractive panel designs
- Bright LED-illuminated surface with less power consumption
- Gold-plated contacts and snap-action mechanism with low 1mA at 5V switching
- Oil- and dust-proof operator modules (IP65)

## AR22 Series Features

- 22.3 mm diameter hole
- Fits 1 to 6mm max panel thickness
- Mountable in either a 22.3 or 25.5 mm diameter cutout (except for joysticks and buzzers)
- Provided with release arm
- Terminal cover included for added safety
- Wiring possible in vertical and horizontal directions
- Oil- and dust-proof operator modules (IP65), except for buzzers DR22B5 (IP00), DR22B8 (IP54)

## AR30 Series Features

- 30.5 mm diameter hole
- Fits 1mm to 6mm max panel thickness
- Quick snap-on replacement of contact blocks
- Double-break self-cleaning contacts
- Terminal cover included for added safety
- Wiring possible in vertical and horizontal directions
- Oil- and dust-proof operator modules (IP65) except for buzzer DR30B5 (IP00)



Pushbuttons



E-Stop Pushbuttons



Selector Switches



Pilot Lights

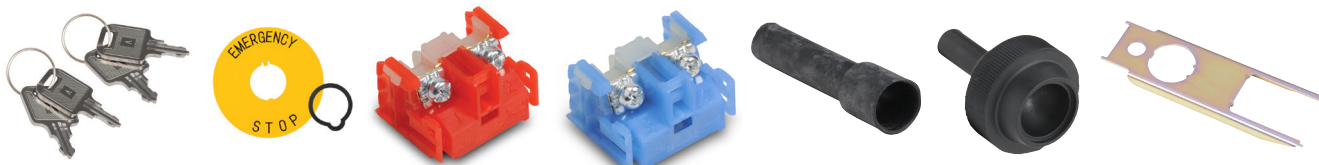


Electronic Buzzers



Joysticks

## Command Series Accessories



TO OBTAIN THE MOST CURRENT AGENCY APPROVAL INFORMATION, SEE THE AGENCY COMPLIANCE & CERTIFICATIONS CHECKLIST SECTION ON THE SPECIFIC PART NUMBER'S WEB PAGE.

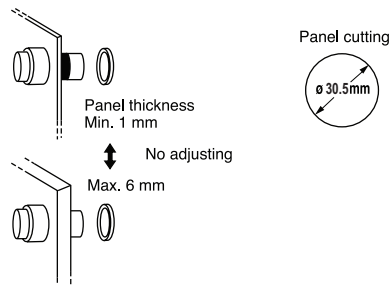
# Fuji Electric 30mm Pilot Devices Overview

## Pushbuttons, Selectors, Pilot Lights, Joysticks, Buzzer

Fuji Electric AR30 pilot devices can be mounted on panels up to 6mm thick by securing the operator with a locking nut from behind the panel without needing any adjustment.

### Easy mounting

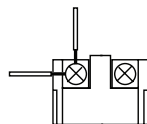
Fuji Electric AR30 pilot devices can be mounted on panels between 1 and 6mm thick and are mountable in panel cutouts of 30.5 mm.



### Wiring

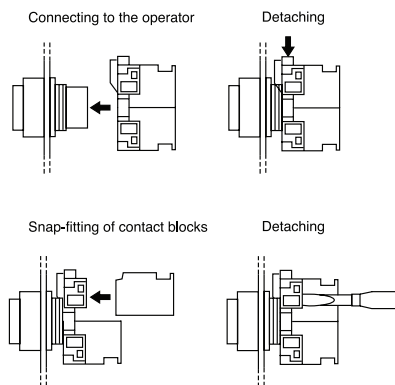
These pilot devices can be wired in both vertical and lateral directions making wiring in narrow spaces easier. Contact block color coding makes wiring even easier.

1N.O. Blue, 1N.C. Red  
Lamp terminal and  
transformer unit: black



### Quick contact block and transformer replacement

Fuji AR30 pilot devices have a snap-on mounting that makes replacing or adding a contact block and transformer unit easier.



### Pushbuttons



AR30F0R-01RZC

### Illuminated Pushbuttons



AR30E0L-10L3GZC

### Pilot Lights



DR30D0L-L9SZC

### E-Stop Pushbuttons



AR30Q2R-01RZC

### Selector Switches



AR30PR-210BZC

### Buzzers



DR30B5-EBZC

### Short depth

Fuji AR30 pilot devices are designed to occupy less space than traditional 30mm devices.

### Safety

AR30 pilot devices include terminal covers for added safety and security. Emergency stop pushbuttons include a trigger action mechanism that prevents the contacts from moving until the button is pushed and locked

### Protection

AR30 pilot devices feature oil- and dust-tight operator construction (IP65), except for buzzers DR30B5 (IP00).

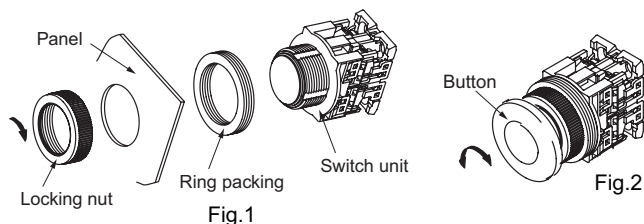


TO OBTAIN THE MOST CURRENT AGENCY APPROVAL INFORMATION, SEE THE AGENCY COMPLIANCE & CERTIFICATIONS CHECKLIST SECTION ON THE SPECIFIC PART NUMBER'S WEB PAGE.

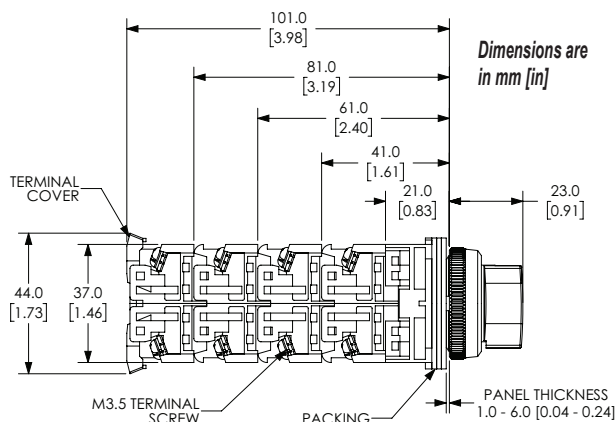
# Command Series 30mm Pilot Devices Specifications

## Assembly Information

These pushbuttons are supplied with the appropriate contact blocks, unless otherwise indicated. Use these drawings as a guide to make sure there is adequate clearance behind 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.



Example mounting diagram for AR30M0R

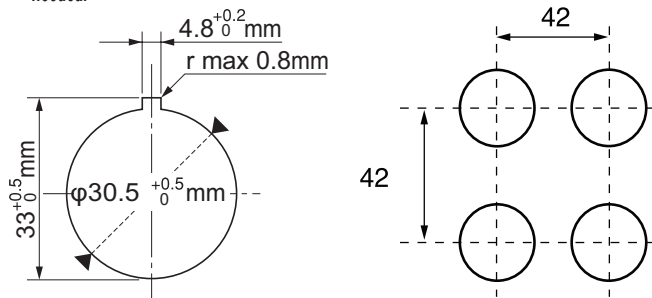


NOTE: Contact blocks can be arranged up to four deep by two wide.

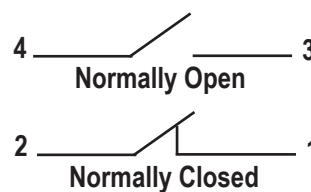
## Panel Holes

For safe operation, use these mounting hole drawings to ensure that there is adequate space between switches.

Note: Location hole 4.8mm x 33mm is for use with a key washer or legend plate. If key-washer or legend plate are not used, this location hole is not needed. ADC does not currently carry an appropriate 4.8mm punch if the hole is needed.



## Typical Wiring



| Mechanical Durability                                                                                                                       |                                                                                                                                                     |                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
|                                                                                                                                             |                                                                                                                                                     | Operations                                              |
| <b>Pushbutton switch</b><br><b>Illuminated pushbutton switch</b><br><b>E-stop pushbutton switch</b><br><b>E-stop illuminated pushbutton</b> | Momentary action<br>Alternate action<br>Push-lock, turn-reset<br>Push-lock, pull-reset                                                              | 5 million<br>1 million<br>100,000<br>30,000             |
| <b>Selector switch</b>                                                                                                                      | Maintained 1, 2, 3, 4-contact<br>Maintained 5, 6-contact<br>Spring return, spring/manual return                                                     | 1 million<br>500,000<br>200,000                         |
| <b>Illuminated selector switch</b>                                                                                                          | Maintained<br>Without transformer 1, 2, 3-contact<br>4-contact<br>With transformer 1, 2-contact<br>3-contact<br>Spring return, spring/manual return | 1 million<br>500,000<br>1 million<br>500,000<br>200,000 |

Note: Key insertion/removal durability for selector switch key types  
Key type 10,000



Fuji Electric

# Command Series 30mm Pilot Devices Specifications

| Specifications (Indoor Use)                                  |                                                                                                  |                                                                     |                                       |
|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------|
|                                                              | <i>Pushbuttons<br/>Selector switches</i>                                                         | <i>Joysticks</i>                                                    | <i>Pilot Lights</i>                   |
| <b>Rated thermal current<br/>(contact block)</b>             | A600<br>P600                                                                                     | —                                                                   | —                                     |
| <b>Mechanical durability</b>                                 | See mechanical durability table                                                                  | 250,000 operations                                                  | —                                     |
| <b>Electrical durability</b>                                 | 500,000 operations at 220VAC 6A<br>1,000,000 operations at 220VAC 3A                             | 100,000 operations at 220VAC 1A<br>(res. load)                      | —                                     |
| <b>Operating frequency</b>                                   | 1200 operations/hour (on-load factor: 40%)                                                       |                                                                     | —                                     |
| <b>Operating force (Avg)</b>                                 | 9N – Pushbuttons<br>0.15 - 0.1 N·m – Selector switches                                           | Less than 100N                                                      |                                       |
| <b>Positive opening operation</b>                            | All functions incorporating an N.C. contact are positive-opening operation.                      |                                                                     |                                       |
| <b>Dielectric strength</b>                                   | 2,000VAC, 1 minute***<br>2,500VAC, 1 minute****                                                  | 2,000VAC, 1 minute                                                  |                                       |
| <b>Insulation resistance</b>                                 | 100MΩ or more (500VDC megger)                                                                    |                                                                     |                                       |
| <b>Rated impulse dielectric strength</b>                     | 6kV                                                                                              | -                                                                   | 6kV                                   |
| <b>Conditional short-circuit current</b>                     | 1000A                                                                                            |                                                                     | —                                     |
| <b>Short-circuit protective device</b>                       | Fuse 15A                                                                                         | Fuse 1A                                                             | —                                     |
| <b>Pollution degree</b>                                      | 3                                                                                                |                                                                     |                                       |
| <b>Vibration</b>                                             | Resonance: 10 to 55 Hz, double amplitude 0.1mm*, Constant: 16.7 Hz, double amplitude 3mm         |                                                                     |                                       |
| <b>Shock</b>                                                 | Malfunction: 100m/s <sup>2</sup> **<br>Mechanical: 500m/s <sup>2</sup>                           |                                                                     | Mechanical: 500m/s <sup>2</sup>       |
| <b>Ambient temperature<br/>(no condensation or no icing)</b> | -20 to 70°C [-4 to 158°F]                                                                        | -5 to 60°C [23 to 140°F]                                            | -20 to 50°C [-4 to 122°F]             |
| <b>Temperature ratings</b>                                   | Storage: -40 to 80°C [-40 to 176°F]                                                              |                                                                     |                                       |
| <b>Humidity</b>                                              | 45 to 85% RH [within -5°C to 40°C]                                                               |                                                                     |                                       |
| <b>Degree of protection</b>                                  | IEC IP65                                                                                         |                                                                     |                                       |
| <b>Initial contact resistance</b>                            | ≥ 50mΩ                                                                                           | —                                                                   | —                                     |
| <b>Terminal markings</b>                                     | IEC 60445                                                                                        | —                                                                   | —                                     |
| <b>Connections</b>                                           | 14 to 18 AWG; Stripping length: 5 to 11mm<br>Tightening torque: 0.8 to 1.0 N·m, 7.1 to 8.8 in·lb |                                                                     |                                       |
| <b>Contacts operation</b>                                    | Self-cleaning types. Slow action. Positive opening.                                              |                                                                     |                                       |
| <b>Operation frequency</b>                                   | 1,200 cycle/hour<br>(Application ratio 40%)                                                      | —                                                                   | —                                     |
| <b>Utilization category/<br/>contact ratings</b>             | AC-15: 24VAC at 6A, 110VAC at 6A<br>DC-13: 24VDC at 4A, 110VDC at 1.3 A                          | AC-1: 110VAC at 0.3 A<br>DC-13: 24VDC at 0.7 A,<br>110VDC at 0.15 A | —                                     |
| <b>Rated insulation voltage</b>                              | 250V AC/DC***<br>600V AC/DC                                                                      | 250V AC/DC                                                          | 250V AC/DC***<br>600VAC w/transformer |
| <b>Materials</b>                                             | Enclosure: Polyamide, Contacts: Silver, nickel                                                   |                                                                     |                                       |
| <b>Standards</b>                                             | UL 508, CSA C22.2, No.14, TUV - EN60947-5-1                                                      |                                                                     |                                       |
| <b>Approvals</b>                                             | UL file E44592, CSA file LR20479                                                                 |                                                                     |                                       |

\* Emergency stop type: 10 to 500 Hz, double amplitude 0.7mm (acceleration 50m/s²), according to test condition of EN60947-5-5 (1998)

\*\* Emergency stop type: 150 m/s²

\*\*\* Illuminated type without transformer

\*\*\*\* Illuminated type with transformer

To obtain the most current agency approval information, see the Agency Compliance &amp; Certifications Checklist section on the specific part number's web page.