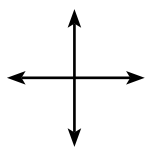


Command 30mm Joysticks

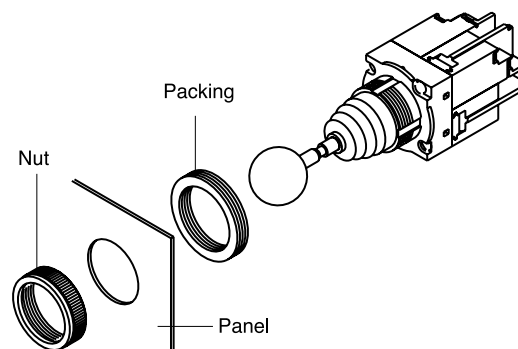
**AR30A0N-A0A0BZC****AR30A0N-AAAABZC**

Command 30mm Joysticks - Screw Terminal					
Part Number	Price	Drawing Link	Handle	Contact Arrangement	Operating Directions
<u>AR30A5N-A0A0BZC</u>	\$77.00	<u>PDF</u>	Ball type, momentary	2-position N.O.	
<u>AR30A0N-A0A0BZC</u>	\$77.00	<u>PDF</u>	Ball type, maintained		
<u>AR30A5N-AAAABZC</u>	\$85.00	<u>PDF</u>	Ball type, momentary	4-position N.O.	
<u>AR30A0N-AAAABZC</u>	\$85.00	<u>PDF</u>	Ball type, maintained		

Joystick selector switch mounting on panel

- Twist and remove the ball from the operator.
- If no locking nut is provided, loosen the nut and remove the switch after the packing part (A) shown in the illustration is stretched to the lever groove.
- Mount the switch in the order opposite of removal. Set the packing to the notch on the lever as a reference. Do not separate the nut from the packing.
- Tighten the nut from the front of the panel.

Note: Recommended tightening torque is 1 to 1.5 N·m.





Fuji Electric

Accessories for 30mm Command Series Pilot Devices

**AHX177-00****AHX177-0B**

Legend Plates for Command Series 30mm Devices					
Part Number	Price	Drawing Link	Legend	Material	Color
<u>AHX177-00</u>	\$2.50	<u>PDF</u>	Blank	Brass	Silver field, silver background
<u>AHX177-0B</u>	\$2.50	<u>PDF</u>	OFF		Silver field, silver background, black text
<u>AHX177-0A</u>	\$2.50	<u>PDF</u>	ON		
<u>AHX177-0C</u>	\$2.50	<u>PDF</u>	START		
<u>AHX177-0D</u>	\$2.50	<u>PDF</u>	STOP		
<u>AHX177-2A</u>	\$2.50	<u>PDF</u>	OFF-ON		
<u>AHX720-5A</u>	\$9.50	<u>PDF</u>	EMERGENCY STOP	Aluminum	Yellow field, yellow background, black text

**AHX720-5A**

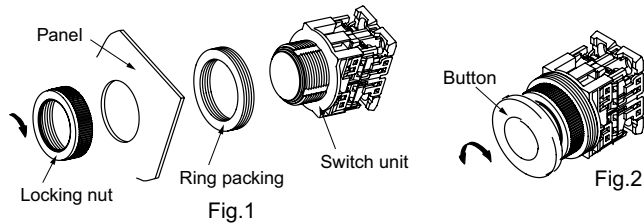
Tools and Lock Nut for Use with Command Series 30mm Pilot Devices		
Part Number	Price	Description
<u>AR9A006</u>	\$34.00	Fuji Electric mounting wrench. For use with AR22, AR30, DR22 and DR30 series pushbuttons, switches, indicators and buzzers.
<u>AR9R055</u>	\$18.00	Fuji Electric guard ring, replacement, 30mm, metal. Package of 5. For use with AR30G2L series pushbuttons.
<u>AHX082</u>	\$1.00	Fuji Electric key washer, replacement, 30mm, metal. Package of 5. For use with AR30 and DR30 series pushbuttons, switches, indicators and buzzers.
<u>AHX088</u>	\$5.75	Fuji Electric lock nut, replacement, 30mm, metal. Package of 5. For use with AR30F0R, DR30D0L, E0L, E0R and Q7L series pushbuttons, switches and indicators.
<u>AHX093</u>	\$5.75	Fuji Electric lock nut, replacement, 30mm, metal. Package of 5. For use with AR30M0R, A_N, JR, PL, PR, Q2R and WR series pushbuttons, switches and indicators.
<u>AHX282</u>	\$1.00	Fuji Electric sealing/spacer washer, replacement, 30mm. Package of 5. For use with AR30 and DR30 series pushbuttons, switches, indicators and buzzers.

**AR9R055****AHX082****AHX088****AHX282**

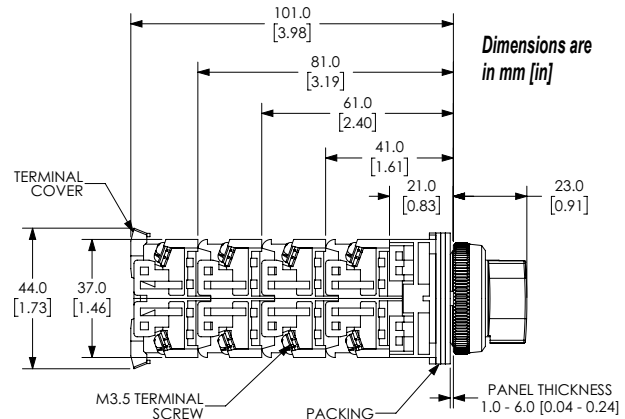
Command Series 30mm Pilot Devices Specifications

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

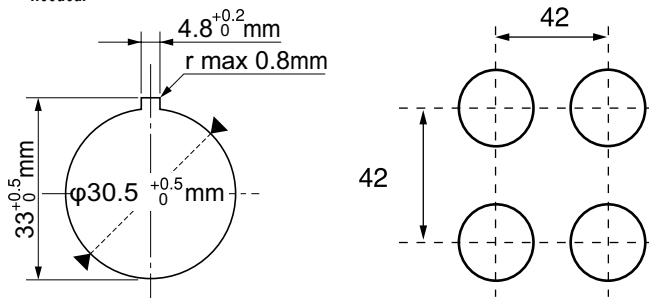


NOTE: Contact blocks can be arranged up to four deep by two wide.

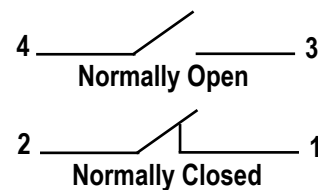
Panel Holes

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
Pushbutton switch Illuminated pushbutton switch E-stop pushbutton switch E-stop illuminated pushbutton	Momentary action	5 million
	Alternate action	1 million
	Push-lock, turn-reset	100,000
	Push-lock, pull-reset	30,000
Selector switch	Maintained 1, 2, 3, 4-contact	1 million
	Maintained 5, 6-contact	500,000
	Spring return, spring/manual return	200,000
Illuminated selector switch	Maintained	
	Without transformer 1, 2, 3-contact	1 million
	4-contact	500,000
	With transformer 1, 2-contact	1 million
	3-contact	500,000
	Spring return, spring/manual return	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 Selector switches</i>	<i>Joysticks</i>	<i>Pilot Lights</i>
Rated thermal current (contact block)	A600 P600	—	—
Mechanical durability	See mechanical durability table	250,000 operations	—
Electrical durability	500,000 operations at 220VAC 6A 1,000,000 operations at 220VAC 3A	100,000 operations at 220VAC 1A (res. load)	—
Operating frequency	1200 operations/hour (on-load factor: 40%)		—
Operating force (Avg)	9N – Pushbuttons 0.15 - 0.1 N·m – Selector switches	Less than 100N	
Positive opening operation	All functions incorporating an N.C. contact are positive-opening operation.		
Dielectric strength	2,000VAC, 1 minute*** 2,500VAC, 1 minute****	2,000VAC, 1 minute	
Insulation resistance	100MΩ or more (500VDC megger)		
Rated impulse dielectric strength	6kV	-	6kV
Conditional short-circuit current	1000A		—
Short-circuit protective device	Fuse 15A	Fuse 1A	—
Pollution degree	3		
Vibration	Resonance: 10 to 55 Hz, double amplitude 0.1mm*, Constant: 16.7 Hz, double amplitude 3mm		
Shock	Malfunction: 100m/s ² ** Mechanical: 500m/s ²		Mechanical: 500m/s ²
Ambient temperature (no condensation or no icing)	-20 to 70°C [-4 to 158°F]	-5 to 60°C [23 to 140°F]	-20 to 50°C [-4 to 122°F]
Temperature ratings	Storage: -40 to 80°C [-40 to 176°F]		
Humidity	45 to 85% RH [within -5°C to 40°C]		
Degree of protection	IEC IP65		
Initial contact resistance	≥ 50mΩ	—	—
Terminal markings	IEC 60445	—	—
Connections	14 to 18 AWG; Stripping length: 5 to 11mm Tightening torque: 0.8 to 1.0 N·m, 7.1 to 8.8 in·lb		
Contacts operation	Self-cleaning types. Slow action. Positive opening.		
Operation frequency	1,200 cycle/hour (Application ratio 40%)	—	—
Utilization category/ contact ratings	AC-15: 24VAC at 6A, 110VAC at 6A DC-13: 24VDC at 4A, 110VDC at 1.3 A	AC-1: 110VAC at 0.3 A DC-13: 24VDC at 0.7 A, 110VDC at 0.15 A	—
Rated insulation voltage	250V AC/DC*** 600V AC/DC	250V AC/DC	250V AC/DC*** 600VAC w/transformer
Materials	Enclosure: Polyamide, Contacts: Silver, nickel		
Standards	UL 508, CSA C22.2, No.14, TUV - EN60947-5-1		
Approvals	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 & Certifications Checklist section on the specific part number's web page.



Fuji Electric

Command 30mm Emergency Stop Pushbuttons Specifications

30mm Emergency Stop Pushbuttons Specifications (Indoor Use)		
	AR30 Q2R, V0L, V0R	AR30 VPR, VPL
Rated thermal current (contact block)	A600 P600	B300 R300
Mechanical durability	See mechanical durability table	250,000 operations
Electrical durability	500,000 operations at 220VAC 6A 1,000,000 operations at 220VAC 3A	100,000 operations AC12, DC13, DC12
Operating frequency	1200 operations/hour (on-load factor: 40%)	900 operations/hour (on-load factor: 40%)
Operating force (Avg)	30-45 N	Push to Lock: 40N Turn to reset: 0.5 N·m
Positive opening operation	All functions incorporating an N.C. contact are positive-opening operation.	
Dielectric strength	2,000VAC, 1 minute*** 2,500VAC, 1 minute****	2,000 VAC, 1 minute
Insulation resistance	100MΩ or more (500VDC megger)	
Rated impulse dielectric strength	6kV	2.5 kV
Conditional short-circuit current	1000A	
Short-circuit protective device	Fuse 15A	Fuse 10A
Pollution degree	3	
Vibration	Resonance: 10 to 55 Hz, double amplitude 0.1mm*, Constant: 16.7 Hz, double amplitude 3mm	Malfunction: max double amplitude: 0.7 mm (max: 50 m/s ²), frequency: 10 to 500 Hz Durability: max double amplitude: 0.7 mm (max: 50 m/s ²), frequency: 10 to 500 Hz*
Shock	Malfunction: 100m/s ² Mechanical: 500m/s ²	Malfunction: 150m/s ² Durability: 1000 m/s ² **
Ambient temperature (no condensation or no icing)	-20 to 70°C [-4 to 158°F]	Non-illuminated -20 to +60°C [-4 to 140°F] Illuminated -20 to +50°C [-4 to 122°F]
Temperature ratings	Storage: -40 to 80°C [-40 to 176°F]	
Humidity	45 to 85% RH [within -5°C to 40°C]	
Degree of protection	IEC IP65	
Initial contact resistance	≥ 50mΩ	1000mΩ
Terminal markings	IEC 60445	
Connections	14 to 18 AWG; Stripping length: 5 to 11mm Tightening torque: 0.8 to 1.0 N·m, 7.1 to 8.8 in·lb	Stranded wire: up to 1.25 mm ² , 24 to 16 AWG-CU Solid wire: up to ø1.2 mm ² , 24 to 16 AWG-CU Tightening torque: 1.5 to 2.5 N·m, 13.27 to 22.1 in·lb
Contacts operation	Self-cleaning types. Slow action. Positive opening.	
Operation frequency	1,200 cycle/hour (Application ratio 40%)	900 operations/hour (On-load factor: 40%)
Utilization category/ contact ratings	AC-15: 24VAC at 6A, 110VAC at 6A DC-13: 24VDC at 4A, 110VDC at 1.3 A	DC-13: 24VDC at 1A DC-12 24VDC at 2A
Rated insulation voltage	250 VAC/VDC*** 600 VAC/VDC	250 VAC/VDC
Materials	Enclosure: Polyamide, Contacts: Silver, nickel	
Standards	UL 508, CSA C22.2, No.14, TUV - EN60947-5-1	
Approvals	UL file E44592, CSA file LR20479	cUL Listed, CE, UL Category Emergency Stop Device

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

** Except when the switch is mounted upside down

*** Illuminated type without transformer

**** Illuminated type with transformer

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

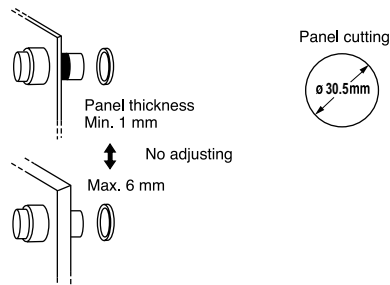
Fuji Electric 30mm Pilot Devices Overview

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

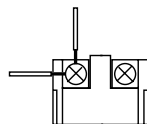
Fuji Electric AR30 pilot devices can be mounted on panels between 1 and 6mm thick and are mountable in panel cutouts of 30.5 mm.



Wiring

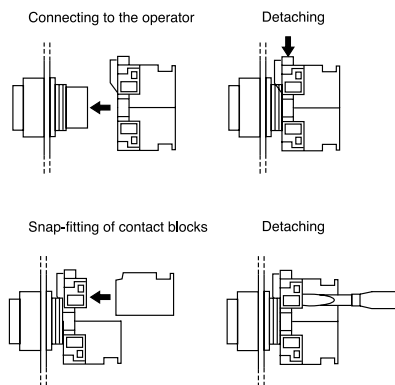
These pilot devices can be wired in both vertical and lateral directions making wiring in narrow spaces easier. Contact block color coding makes wiring even easier.

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.