Fuji Electric

Command 30mm Emergency Stop Pushbuttons

AR30VPR-01R

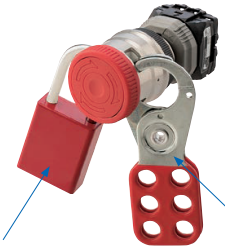
AR30VPL-01E3R

AR30VPL-12EAR

UL EMERGENCY STOP DEVICE LISTED

■ Support for Padlock

● To avoid a restart due to careless reset of a pushbutton switch in case of emergency stop, make use of Padlock or HASP.



Padlock
Equivalent of 6835KARFRED manufactured by Master Lock
Up to two mountable

HASP
Equivalent of 420 manufactured by Master Lock
Up to two mountable

HASP
When one is mounted at the center

The total mass should be 1500 g or less.

Command 30mm Emergency Stop Pushbuttons

Part Number	Price	Drawing Link	Contacts	Operator	Voltage	Bulb Type	Action	Legend	Protection	Material
AR30VPR-01R	$83.00	PDF	(1) N.C.	44mm, mushroom, Red padlock support	—	—	Push to lock, turn to reset	Arrow	IP65	Base: Plastic Bezel: Metal
AR30VPR-12R	$90.00	PDF	(1) N.O./(2) N.C.							
AR30VPL-01E3R	$94.00	PDF	(1) N.C.		24 VAC/VDC full voltage	LED illuminated				
AR30VPL-12E3R	$102.00	PDF	(1) N.O./(2) N.C.							
AR30VPL-01EAR	$102.00	PDF	(1) N.C.			Interlocked LED illuminated				
AR30VPL-12EAR	$111.00	PDF	(1) N.O./(2) N.C.							

AR30Q2R-01RZC

AR30Q2R-11RZC

AR30V0L-01E3RZC

AR30V0L-01L3RZC

AR30V0R-01RZC

Command 30mm Emergency Stop Pushbuttons

Part Number	Price	Drawing Link	Contacts	Operator	Voltage	Bulb Type	Action	Legend	Protection	Material
AR30Q2R-01RZC	$44.00	PDF	(1) N.C.	35mm, Mushroom, Red	—	—	Push to lock, pull to reset	—	IP65	Base: Plastic Bezel: Metal
AR30Q2R-11RZC	$50.00	PDF	(1) N.O./(1) N.C.							
AR30V0L-01E3RZC	$47.50	PDF	(1) N.C.	40mm, Mushroom, Red	24 VAC/VDC	LED illuminated	Twist-to-release	Arrow		
AR30V0L-01L3RZC	$53.00	PDF	(1) N.C.		115–127 VAC					
AR30V0R-01RZC	$44.00	PDF	(1) N.C.		—	—				

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
AHX177-00	$3.00	PDF	Blank	Brass	Silver field, silver background
AHX177-0B	$3.00	PDF	OFF		Silver field, silver background, black text
AHX177-0A	$3.00	PDF	ON		
AHX177-0C	$3.00	PDF	START		
AHX177-0D	$3.00	PDF	STOP		
AHX177-2A	$3.00	PDF	OFF-ON		
AHX720-5A	$11.00	PDF	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
AR9A006	$39.00	Fuji Electric mounting wrench. For use with AR22, AR30, DR22 and DR30 series pushbuttons, switches, indicators and buzzers.
AR9R055	$20.50	Fuji Electric guard ring, replacement, 30mm, metal. Package of 5. For use with AR30G2L series pushbuttons.
AHX082	$1.25	Fuji Electric key washer, replacement, 30mm, metal. Package of 5. For use with AR30 and DR30 series pushbuttons, switches, indicators and buzzers.
AHX088	$6.50	Fuji Electric lock nut, replacement, 30mm, metal. Package of 5. For use with AR30F0R, DR30D0L, E0L, E0R and Q7L series pushbuttons, switches and indicators.
AHX093	$6.50	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.
AHX282	$1.25	Fuji Electric sealing/spacer washer, replacement, 30mm. Package of 5. For use with AR30 and DR30 series pushbuttons, switches, indicators and buzzers.

AR9R055

AHX082

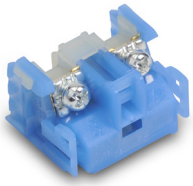
AHX088

AHX282

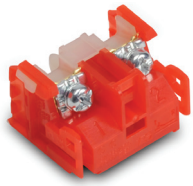
Fuji Electric

Accessories for 30mm Command Series Pilot Devices

Contact Blocks



AR9B290

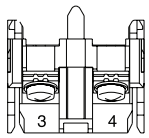


AR9B291

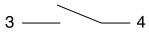
Contact Blocks for Command Series 30mm Pushbuttons					
Part Number	*Qty*	*Price*	*Drawing Link*	*Color*	*Contacts*
AR9B290	1	$7.75	PDF	Blue	N.O.
AR9B291	1	$7.75	PDF	Red	N.C.

Minimum current requirement AC/DC is 5 mA

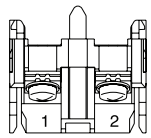
Terminal Layout



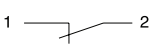
Terminal No.3, 4



AR9B290



Terminal No.1, 2



AR9B291

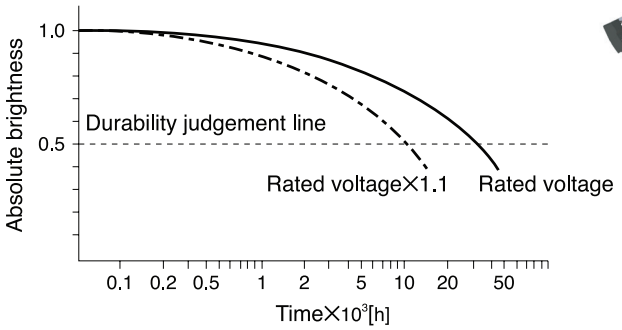
Max 6 contacts for non-illuminated momentary devices. Max 4 for alternate action non-illuminated devices.
Max 5 contacts for illuminated momentary devices. Max 3 for alternate action illuminated devices.
**Exceeding the maximum number of contacts could affect the mechanical durability of the operators.*

APX510-24R

LED Bulbs for Command Series 22/30mm Pilot Devices								
Part Number	*Color*	*Qty*	*Price*	*Use With*	*Lamp Voltage*	*Current Consumption*	*Power Consumption*	*Lamp Durability*
APX510-24R	Red	2	$19.50	AR22 / DR22 AR30/DR30 Series	24 VAC/ VDC	12 mA AC 11 mA DC	0.8 W	30,000h
APX510-24G	Green	2	$19.50					
APX510-24Y	Yellow	2	$19.50					
APX510-24S	Blue	2	$72.00					
APX510-24O	Orange	2	$19.50					

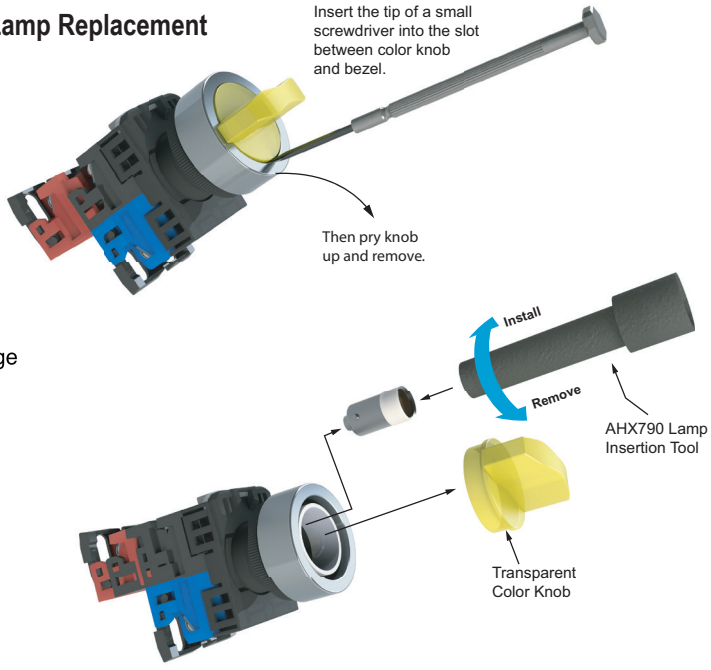
***Lamp base: Ba9s/13**

Estimated durability for LED lamps



Notes: • Durability at Ta=25°C
• Durability is affected by temperature, humidity, and voltage fluctuation.

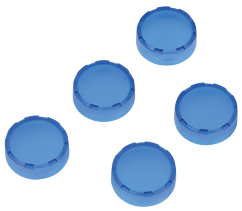
Lamp Replacement



Fuji Electric Accessories for 30mm Command Series Pilot Devices

AR9C012-R

Lenses for Command Series 30mm Illuminated Pushbuttons					
Part Number	*Color*	*Qty*	*Price*	*Drawing Link*	*Use With*
AR9C012-R	Red	5	$3.00	PDF	AR30EOL
AR9C012-G	Green	5	$3.00	PDF	
AR9C012-Y	Yellow	5	$3.00	PDF	
AR9C012-S	Blue	5	$3.00	PDF	
AR9C012-C	Clear	5	$3.00	PDF	



AR9C012-S

Fuji Electric 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.

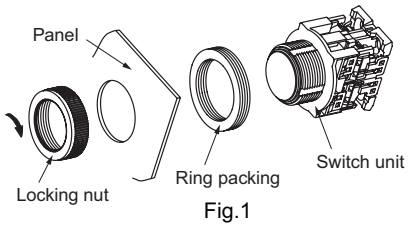


Fig.1

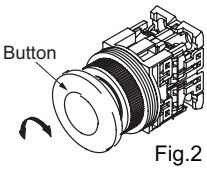
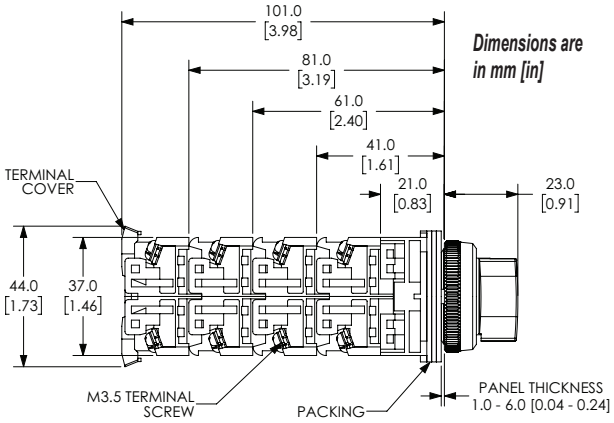


Fig.2

Example mounting diagram for AR30M0R

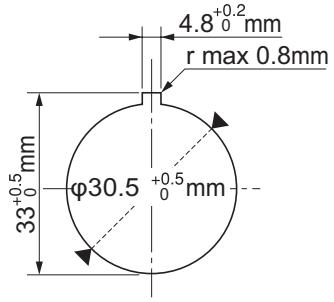


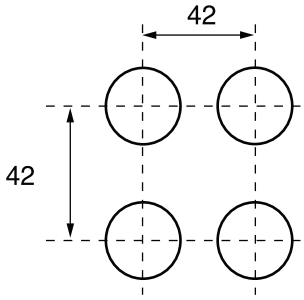
NOTE: Contact blocks can be arranged up to four deep by two wide.

Panel Holes

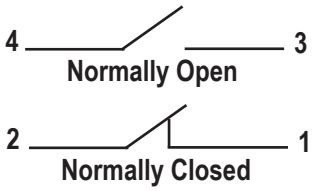
For safe operation, use these mounting hole drawings to ensure that there is adequate space between switches.

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	Momentary action	5 million
Illuminated pushbutton switch	Alternate action	1 million
E-stop pushbutton switch	Push-lock, turn-reset	100,000
E-stop illuminated pushbutton	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 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 220 VAC 6A 1,000,000 operations at 220 VAC 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	2,000 VAC, 1 minute*** 2,500 VAC, 1 minute****	2,000 VAC, 1 minute
Insulation resistance	100 MΩ or more (500 VDC megger)	
Rated impulse dielectric strength	6 kV	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: 0.7mm (max: 50 m/s2), frequency: 10 to 500 Hz Durability: max double amplitude: 0.7mm (max: 50 m/s2), frequency: 10 to 500 Hz*
Shock	Malfunction: 100 m/s^2 Mechanical: 500 m/s^2	Malfunction:150 m/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 to +40 °C]	
Degree of protection	IEC IP65	
Initial contact resistance	≥ 50 mΩ	1000 mΩ
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: 24 VAC at 6A, 110 VAC at 6A DC-13: 24 VDC at 4A, 110 VDC at 1.3 A	DC-13: 24 VDC at 1A DC-12 24 VDC 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

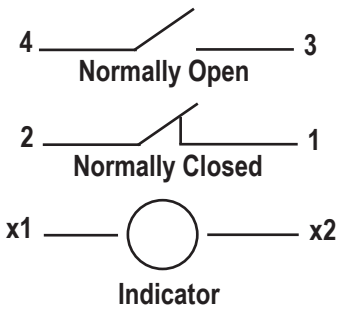
*** Emergency stop type: 10 to 500 Hz, double amplitude 0.7mm (acceleration 50 m/s^2), according to test condition of EN60947-5-5 (1998)**
**** Except when the switch is mounted upside down**
***** Illuminated type without transformer**
****** Illuminated type with transformer**
To obtain the most current agency approval information, see the Agency Compliance & Certifications section on the specific part number's web page.

Fuji Electric

NEMA Aux Contact Ratings

Control Circuit Contact Electrical Ratings and Wiring

Typical Wiring



NEMA Mechanical Switching Ratings and Test Values for DC Control Circuit Contacts

Contact Rating Designation	Thermal Continuous Test Current (A)	Maximum Make or Break DC Current (A)			Volt amperes
		125 Volts	250 Volts	301 to 600 Volts	
P300	5.0	1.1	0.55	---	138
P600	5.0	1.1	0.55	0.20	138
Q300	2.5	0.55	0.27	---	69
Q600	2.5	0.55	0.27	0.10	69
R300	1.0	0.22	0.11	---	28

This chart is provided as a guideline only, and the ratings and values are not guaranteed to be accurate. It is the users' responsibility to properly size their control circuit devices. The chart values are from NEMA Standard ICS 5-2000, Table 1-4-2.

NEMA Mechanical Switching Ratings and Test Values for AC Control Circuit Contacts

Contact Rating Designation	Thermal Continuous Test Current (A)	Maximum AC Current, 50/60 Hz (A)								Volt amperes	
		120 Volts		240 Volts		480 Volts		600 Volts			
		Make	Break	Make	Break	Make	Break	Make	Break	Make	Break
A300	10	60	6.00	30	3.00	---	---	---	---	7200	720
A600	10	60	6.00	30	3.00	15	1.50	12	1.20	7200	720
B300	5	30	3.00	15	1.50	---	---	---	---	3600	360
B600	5	30	3.00	15	1.50	7.5	0.75	6	0.60	3600	360
C600	2.5	15	1.5	7.5	0.75	3.75	0.375	3.00	0.30	1800	180

This chart is provided as a guideline only, and the ratings and values are not guaranteed to be accurate. It is the users' responsibility to properly size their control circuit devices. The chart values are from NEMA Standard ICS 5-2000, Table 1-4-1.

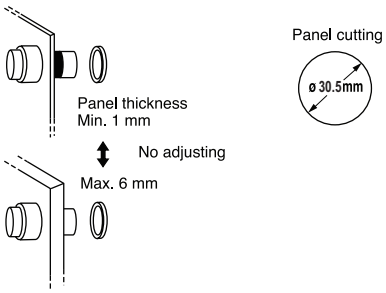
Fuji Electric 30mm Pilot Devices Overview

Pushbuttons, Selectors, Pilot Lights, Joysticks, Buzzers

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 30.5mm.

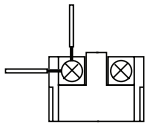


Wiring

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.

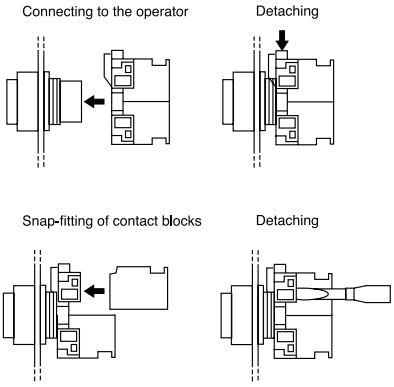
1N.O. Blue, 1N.C. Red

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.