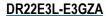
# For Fuji Electric Command 22mm Pilot Lights



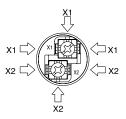




DR22E3L-L3SZA

Command 22mm Pilot Lights									
Part Number	Color	Price	Drawing Link	Lens	Lamp Voltage				
DR22E3L-E3RZA	Red	\$18.50	PDF						
DR22E3L-E3GZA	Green	\$18.50	PDF		24V AC/DC without transformer				
DR22E3L-E3YZA	Yellow	\$18.50	PDF						
DR22E3L-E3SZA	Blue	\$26.50	PDF						
DR22E3L-E3WZA	White	\$18.50	PDF						
DR22E3L-L3RZA	Red	\$23.00	PDF	extended round					
DR22E3L-L3GZA	Green	\$23.00	PDF						
DR22E3L-L3YZA	Yellow	\$23.00	PDF		115-127 VAC with transformer				
DR22E3L-L3SZA	Blue	\$35.00	PDF						
DR22E3L-L3WZA	White	\$23.00	PDF						

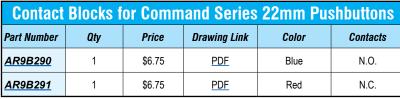
### DR22E3L-E3xxx Terminal Layout



### Fuji Electric Accessories for 22mm **Command Series Pilot Devices**



AR9B290



Minimum current requirement AC/DC is 5mA

### **Terminal Layout**







Terminal No.1, 2



2 AR9B290 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.

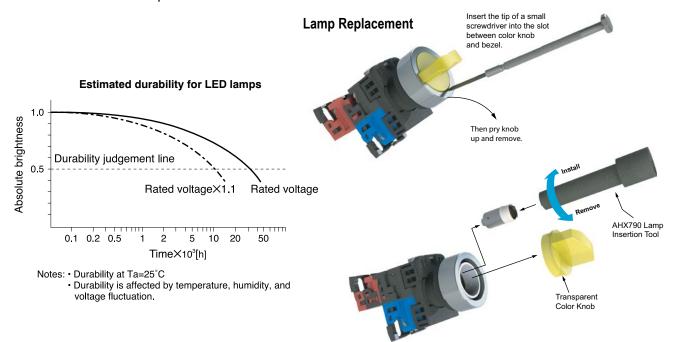


AR9B291

APX510-24R

LED Bulbs for Command Series 22mm Pilot Devices										
Part Number	Color	Qty	Price	Use With	Lamp Voltage	Current Consumption	Power Consumption	Lamp Durability		
APX510-24R	Red	2	\$17.00		24V AC/DC	12mA AC 11mA DC	0.8 W	30,000h		
APX510-24G	Green	2	\$17.00	AR22 /						
APX510-24Y	Yellow	2	\$17.00	DR22						
APX510-24S	Blue	2	\$63.00	Series						
APX510-240	Orange	2	\$17.00							

\*Lamp base: Ba9s/13





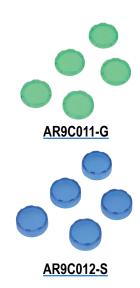
### Fuji Electric Accessories for 22mm **Command Series Pilot Devices**



AR9C016-R



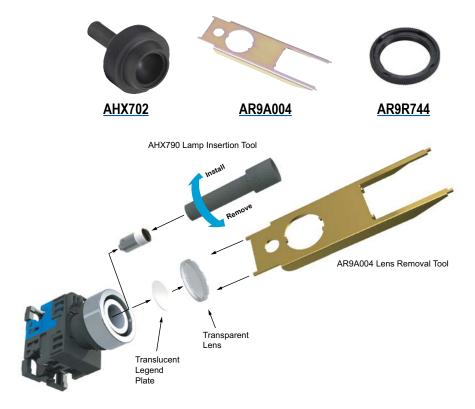
Lenses for Command Series 22mm Illuminated Pushbuttons								
Part Number	Color	Qty	Price	Drawing Link	Use With			
AR9C016-R	Red	5	\$5.25	PDF	AR22MOL, AR22M5L			
AR9C021-R	Red	5	\$16.00	PDF	AR22VOR, AR22VOL			
AR9C011-R	Red	5	\$2.50	PDF				
AR9C011-G	Green	5	\$2.50	PDF				
AR9C011-Y	Yellow	5	\$2.50	PDF	AR22FOL AR22F5L			
AR9C011-S	Blue	5	\$2.50	PDF	7111221 02			
AR9C011-C	Clear	5	\$2.50	PDF				
AR9C012-R	Red	5	\$2.50	PDF				
AR9C012-G	Green	5	\$2.50	PDF				
AR9C012-Y	Yellow	5	\$2.50	PDF	AR22EOL			
AR9C012-S	Blue	5	\$2.50	PDF				
AR9C012-C	Clear	5	\$2.50	PDF				





**AHX790** 

Tools and Lock Nut for Use with Command Series 22mm Pilot Devices								
Part Number Qty Price Drawing Link Description								
AHX790	1	\$3.75	PDF	Bulb removal tool				
<u>AHX702</u>	1	\$6.50	N/A	Wrench/lamp removal tool				
AR9A004	1	\$5.25	N/A	Wrench				
AR9R744	5	\$2.50	<u>PDF</u>	Lock nut				



# Fruji Electric Command Series 22mm Pilot Devices Specifications

	Specifications (	(Indoor Use)					
	Pushbuttons Emergency stop pushbuttons Selector switches	Joysticks	Pilot Lights				
Rated thermal current (contact block)	A600 / P600	-	_				
Mechanical durability	See durability table below	250,000 operations	-				
Electrical durability	500,000 operations at 220V AC 6A 1 million operations at 220V AC 3A	100,000 operations at 220V AC 1A (Res. load)	-				
Operating frequency	1200 operations/hour	(On-load factor: 40%)	_				
Operating force (Avg)	9N – Pushbuttons 30-45 N – Emergency stop pushbuttons 0.15 - 0.1 N⋅m – Selector switches	Less than	100N				
Positive opening operation	All functions in	corporating a N.C. contact are positive-opening	ng operation.				
Dielectric strength	2,500VAC, 1 minute (w/o transformer 2000VAC)	2000VAC, 1 minute (Pilot light with t	ransformer: 2500 VAC, 1minute)				
Insulation resistance		100M $\Omega$ or more (500VDC megger)					
Rated impulse dielectric strength	6kV	_	6kV				
Conditional short-circuit current	1000A –						
Short-circuit protective device	Fuse 15A (recommended, not supplied)	Fuse 1A (recommended, not supplied)	_				
Pollution degree	3						
Vibration	Resonance: 10 to 55Hz, dou	ble amplitude 0.1 mm* / Constant: 16.7 h	dz, double amplitude 3mm				
Shock	Malfunction durability: 100 m/s² **	Mechanical durability: 500 m/s <sup>2</sup>	Mechanical durability: 500 m/s <sup>2</sup>				
Ambient temperature (no condensation or no icing)	-20 to +70°C [-4 to +158°F] Illuminated type: -20 to -50°C [-4 to -58°F]	-5 to +60°C [+23 to +140°F]	-2 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		IP65					
Initial contact resistance	≤ 50mΩ	_	_				
Terminal markings	IEC 60445	_	_				
Connections		th: 8mm to 11mm / Tightening torque: 0.8					
Contacts operation	Self	f-cleaning types. Slow action. Positive opening	j.				
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	600V AC/DC***	250V AC/DC	250V AC/DC (w/transformer 600VAC)				
Materials		losure: Polyamide / Contacts: silver, nick	el				
Standards	UL	. 508, CSA C22.2, No.14, TUV - EN60947-5-1					
* Emergancy stop type; 40 to 500 Hz, double		UL file E44592, CSA file LR20479					

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

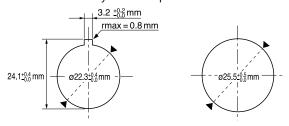
<sup>\*\*</sup> Emergency stop type: 150 m/s<sup>2</sup> \*\*\*Illuminated type without transformer

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

Note: Key insertion/removal durability for selector switch key types

### 22mm Pilot Devices Cutouts

AR22 pilot devices can be mounted in either 22.3 or 25.5 mm diameter holes as shown in the figure below without any extra adapter.



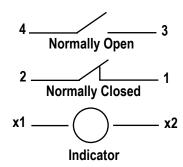
Note: If key washer or legend plate is not used, 3.2 mm-wide location holes do not need to be cut out.

<sup>•</sup> Key type 10,000



## **Control Circuit Contact Electrical Ratings and Wiring**

### Typical Wiring



NEMA Mechanical Switching Ratings and Test Values for DC Control Circuit Contacts									
October Barrier	Thermal Maximum Make or Break DC Current (A)								
Contact Rating Designation	Continuous Test Current (A)	125 Volts	250 Volts	301 to 600 Volts	Volt amperes				
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												
	Thermal		Maximum AC Current, 50/60Hz (A)								1/0/4 00000000	
Contact Rating Designation	Continuous Test Current (A)	120 Volts 240 Volts		480 Volts		600 Volts		Volt amperes				
		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.

www.automationdirect.com

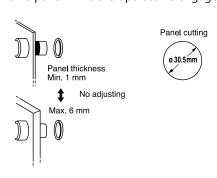
### Fuji Electric 22mm Pilot Devices Overview

### Pushbuttons, Selectors, Pilot Lights, Joysticks, Buzzers

Fuji Electric AR22 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 AR22 pilot devices can be mounted on panels between 1 and 6mm thick and are mountable in panel cutouts of 22.3 or 25.5 mm. The button and lens can be mounted on a panel while the operator is engaged.



#### **Pushbuttons**



AR22F0R-01RZA

E-Stop Pushbuttons



**Illuminated Pushbuttons** 

AR22F0L-10E3YZA



**Pilot Lights** 

DR22E3L-E3SZA

**Buzzers** 

Selector Switches

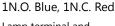


AR22PR-210BZA

DR22B8-EB

### 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.





Lamp terminal and transformer unit: black

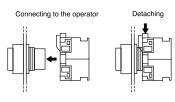
### Short depth

Fuji AR22 pilot devices are designed to occupy less space than traditional 22mm devices.

#### Quick contact block and transformer replacement

**AR22V0R-01R** 

Fuji AR22 pilot devices have a snap-on mounting that makes replacing or adding a contact block and transformer unit easier.



Snap-fitting of contact blocks



#### Safety

AR22 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**

AR22 pilot devices feature oil and dust-tight operator construction (IP65), except for buzzers DR22B5 (IP00), DR22B8 (IP54).













