

**ACTUATOR:**

Push Button Actuator is suitable for mounting on panel and is completely dust and vermin proof. Flexible washers are provided on the actuator to make it water tight. Outer cover of the actuator is made of Mazak material chrome plated for better appearance. We also make all plastic body.

**SHROUDED ACTUATOR:**

Front of the knob is flush with outer cover. Generally used as 'start' button and any other operation such as 'Test','Accept','Reset' etc.

**UNSHROUDED ACTUATOR:**

The knob protrudes out to facilitate quick and impulsive operation. Normally used for 'Stop' operations.

**MUSHROOM ACTUATOR:**

Mushroom shaped knob makes the push button distinct and easily approachable. The knob can also be supplied with stayput arrangement so that it remains in pressed position on operation. The resetting is done by pulling the knob out. Normally required for emergency operation.

Key operated actuator can also be supplied on request.

**COLOUR OF KNOB:**

Knobs can be supplied in RED, GREEN, YELLOW, BLUE and BLACK colours.

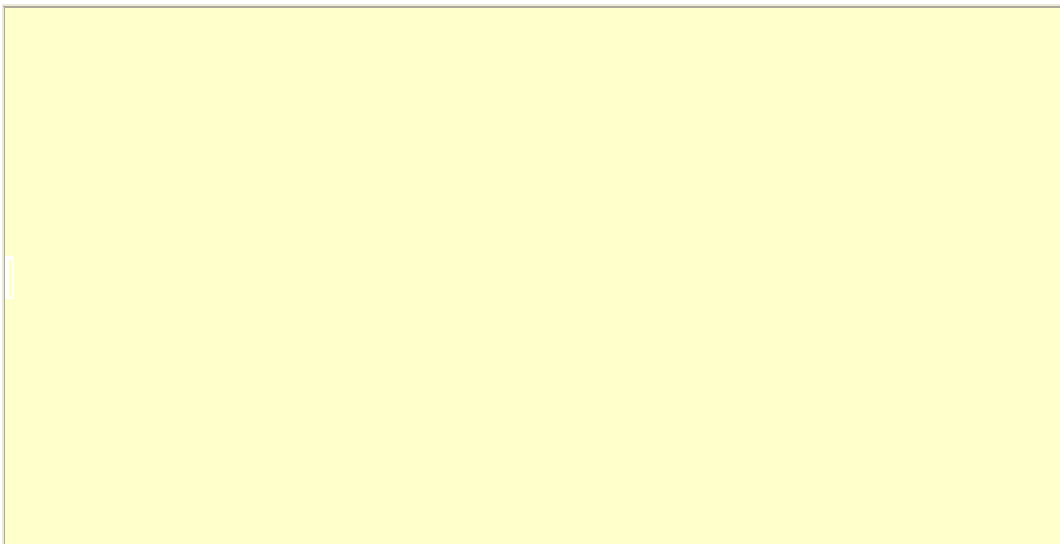
**CONTACT ELEMENT:**

For 22.5 mm dia push button knob with 1 NO or 1 NC contact element is provided.

Maximum 4 contacts in any combination of NO or NC can be provided.

For 30.5 mm dia push buttons contact elements having 1 NO + 1 NC is provided and maximum 4 elements can be provided on one actuator.

Contacts are of make before break type. Rating of each contact is 6A @415V AC and 1A @250V DC (Breaking)





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INSTITUTE FOR DEIGN OF ELECTRICAL MEAURING INSTRUMENTS, MUMBAI 400 022.

## ELECTRICAL TESTING LABORATORY

### Certificate of Testing

Date of Test : 16-07 to 28-07-2000

Certificate No. : CT/ETL/0086/00-01

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DAV make Push Buttons along with NO & NC contacts ( 2 nos. each ) were tested as per manufacturers requirements and as per IS 6875 ( Part 1 ) – 1973. The Test Results are given below :

#### 1. General Mechanical Inspection ( Clause 8.1.1 )

In the General Mechanical Inspection it was found that all parts and links appear in good condition with satisfactory mechanical operation.

#### 2. Temperature Rise Test ( Clause 8.1.2 )

The Test was carried out with the rated thermal current ( i.e. 10 Amps AC ) through out the contact elements for a time sufficient to reach the thermal equilibrium for the conducting parts.


The temperature rise of the different parts were measured by Temperature Indicator.


#### OBSERVATIONS :

A. Ambient Temperature 31°C

B. Rise in Temperature

- |                      |     |
|----------------------|-----|
| i. Contact Parts     | 4°C |
| ii. Metallic Parts   | 1°C |
| iii. Insulated Parts | 1°C |

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3. High Voltage Test ( Clause 8.1.4 )

The Test Voltage of 2500 V, AC was applied to all the samples for a period of one minute between

- Live parts of the contact elements and parts of the switch intended to earth.
- Live parts of the contact element and parts of the switch likely to be touched in service
- Live parts belonging to electrically separated contact elements


OBSERVATIONS : withstood the Test.


4. Mechanical Endurance Test ( Clause 8.3.2 )

- |                                  |                 |
|----------------------------------|-----------------|
| a. Class of Mechanical Endurance | 1               |
| b. No Load operating Cycles      | $1 \times 10^6$ |

Push Buttons along with the NO, NC Contacts were operated one by one at No-Load condition for 100000 times. After completion of the above test the push buttons along with NO, NC contacts were tested and found OK.

OBSERVATIONS : No visual damage observed and contacts were found OK.

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### 5. Test for rated making and breaking capacities ( Clause 8.1.3 )

The switches were mounted as in the service condition and connected to the test circuit as described below :

#### a. For A. C. Test

The test circuit of 0.7 pf was connected on the load side of the contact element.  
The impedance of the source was less than 10% of the total impedance.

#### b. For D. C. Test

NO & NC contacts were connected on the load side of the contact element.

Category	Make		Break		
	Current 11 Ie	Voltage 1.1 ve	Current 11 Ie	Voltage U ve	P F
Ac 50 Operations	11.0 Amps	456.5 V	11.0 Amps	456 V	0.7
D.C. Operations	1.1 Amps	242 V	1.1 Amps	242 V	-

The time interval between two successive switching cycles was adjusted to 9 seconds ( 5 seconds 'ON' and 4 seconds 'OFF' )

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Rated Operational Current

AC 10 Amps and DC = 1 Amps

AC 415 V

DC = 220 V

Ue = Rated Operational Voltage

AC 415 V

DC = 220 V

**OBSERVATION**

After the above test the contact dements satisfactorily carried the rated current at rated Voltage.

Additional Tests as per customer's requirements

**Electrical Endurance Test**

Load = 10 Amp

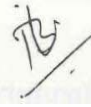
Total operation = 1000

The Push Buttons along with the NO/NC contacts were operated at 10 A for 1000 operations

**OBSERVATIONS :**

Test	Mech. Endurance		Electrical Endurance	
	Before	After	Before	After
mV drop across contact	22-23	25-27	27-28	28-29 mV
Finding	-	Good after 100000 Operations	-	Good after 1000 Operations

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