

# SPECIFICATION

*(For Approval)*

|                            |  |
|----------------------------|--|
| <b>Commodity</b>           | <b>Low Voltage Power Capacitor (Oil Filled )</b> |
| <b>Rating</b>              | <b>400V AC 3PH 50Hz</b>                          |
| <b>Ambient Temperature</b> | <b>55°C</b>                                      |
| <b>Part No.</b>            | <b>AW SERIES</b>                                 |

|                 |  |
|-----------------|--|
| <b>Approved</b> |  |
|                 |  |

**Shreem** SHREEM ELECTRIC LTD.

| Prepared | Checked | Approved |
|----------|---------|----------|
|          |         |          |

Address : Gat No. 311, Near R K Market Yard Gate, Mouje Agar,  
Jaysingpur , -416144  
Dist.: Kolhapur State : Maharashtra (IND)  
Telephone : +91 2322 221021/22/24  
Fax No. : +91 2322 221023

|                      |                       |              |
|----------------------|-----------------------|--------------|
| <b>SPECIFICATION</b> | <b>CAPACITOR UNIT</b> | <b>1 / 6</b> |
|----------------------|-----------------------|--------------|

## 1.Scope

This Specification Covers the design ,manufacture and test of low voltage power capacitor unit intended to be used Particular for power factor correction AC Power System

## 2.Type and Ratings

|                        |           |
|------------------------|-----------|
| Type                   | AW Series |
| Rated Voltage          | 400V      |
| Rated Capacity (kVAR)  | 2.5       |
| Rated Current (A)      | 3.61      |
| Rated Capacitance (μF) | 3 X 16.58 |
| Phase (φ )             | 3         |
| Frequency (Hz)         | 50        |
| Installation           | Indoor    |
| Impregnation           | Epoxy     |

## 3.Service Conditions

|                                  |                                 |
|----------------------------------|---------------------------------|
| Residual Voltage at energization | Not exceed 10% of rated voltage |
| Altitude                         | Not exceeding 1,000 m           |
| Location                         | Indoor                          |
| Ambient air temperature          | Please see following table      |

| Symbol | Ambient air temperature (°C ) |         |                              |        |
|--------|-------------------------------|---------|------------------------------|--------|
|        | Maximum                       | Minimum | Highest mean over any period |        |
|        |                               |         | 24 h                         | 1 year |
| D      | +55                           | -25     | +45                          | +35    |

Attention should be paid to the upper operating temperature of the capacitor , because this has a great influence on its life

When the capacitor dielectric reaches a temperature below the lower limit of its category , there may be the danger of initiating partial discharges in the dielectric when the capacitor is initially energized.

**SPECIFICATION**

**CAPACITOR UNIT**

**2 / 6**

#### 4. Test and Electrical Performances

##### 4-1. Test Condition

Unless otherwise specified for a particular test or measurement, the temperature of the capacitor dielectric shall be in the range +5 °C to +35 °C

##### 4-2. Routine tests

###### a) Capacitance Measurement

The capacitance shall be measured at 0.9 to 1.1 times the rated voltage and rated frequency.

The capacitance tolerance: -5% to +10% of rated capacity

###### b) Capacitor loss tangent ( $\tan\delta$ ) shall be measured at 0.9 to 1.1 times the rated voltage And the frequency

|                                  |                       |
|----------------------------------|-----------------------|
| Dielectric loss                  | less than 0.35 W/kVAr |
| Power loss with discharge device | less than 0.85 W/kVAr |

###### c) Voltage test between terminal

Voltage test between terminal shall be carried out with a voltage of

$$U_T = 2.15 U_N$$

$$T_T = 10 \text{ sec.}$$

where

$U_T$  is testing voltage (AC)

$U_N$  is rated voltage of the capacitor

$T_T$  is testing time

During the test, neither puncture nor flashover shall occur.

###### d) AC voltage test between terminal and container

Voltage test between terminal and container shall be carried out with a substantially sinusoidal voltage of

$$U_T = 3 \text{ kV}$$

$$T_T = 10 \text{ sec.}$$

where

$U_T$  is testing voltage (AC)

$T_T$  is testing time

During the test, neither puncture nor flashover shall occur.

**SPECIFICATION**

**CAPACITOR UNIT**

**3 / 6**

e) Test of internal discharge device

The resistance of internal discharge device shall be checked by a resistance measurement .  
The capacitor shall be provided with a means for reducing the residual voltage to 75 volts or less within three(3) minutes after the capacitor is disconnected from the source of supply.

f) Sealing test

Unenergized capacitor units shall be heated throughout so that all part reach a temperature of atleast equal to the maximum operating internal mean temperature ,  
But less than 65°C. This internal temperature shall be maintained 3h.  
No leakage shall occur.

## 5. Overloads

### 5-1. Maximum permissible voltage

Capacitor units shall be suitable for operation at voltage level according to table

| Type               | Volt. Factor<br>$XU_N(\text{r.m.s.})$ | Maximum Duration     |
|--------------------|---------------------------------------|----------------------|
| Power<br>Frequency | 1.00                                  | Continuous           |
|                    | 1.10                                  | 8 h in every 24h     |
|                    | 1.15                                  | 30 min. in every 24h |
|                    | 1.20                                  | 5 min. in every 24h  |
|                    | 1.30                                  | 1 min. in every 24h  |

### 5-2. Maximum Permissible current

A capacitor unit shall be suitable for continuous operation at r.m.s. current of 1.3 time the rated current that occurs at  
rated sinusoidal voltage and rate frequency, excluding transients.

### 5-2. Maximum Permissible reactive power

A capacitor unit shall be suitable for continuous operation at 1.3 Qn.

## 6. Markings

- a) Name of manufacturer
- b) Identification number and manufacturing year
- c) Rated output  $Q_N$  in Kilovars
- d) Rated voltage  $U_N$  in Volts
- e) Rated frequency  $f_N$  in hertz
- f) Application standard
- g) Discharge device
- h) Insulation level
- i) Chemical or trade name of impregnation

## 7. Application Standard

All capacitor furnished under this specification shall meet the design and testing requirement of IEC 6083-1

## 8. Warranty

We, the manufacturers , guarantee the quality and satisfactory operating when operated and maintained properly of the

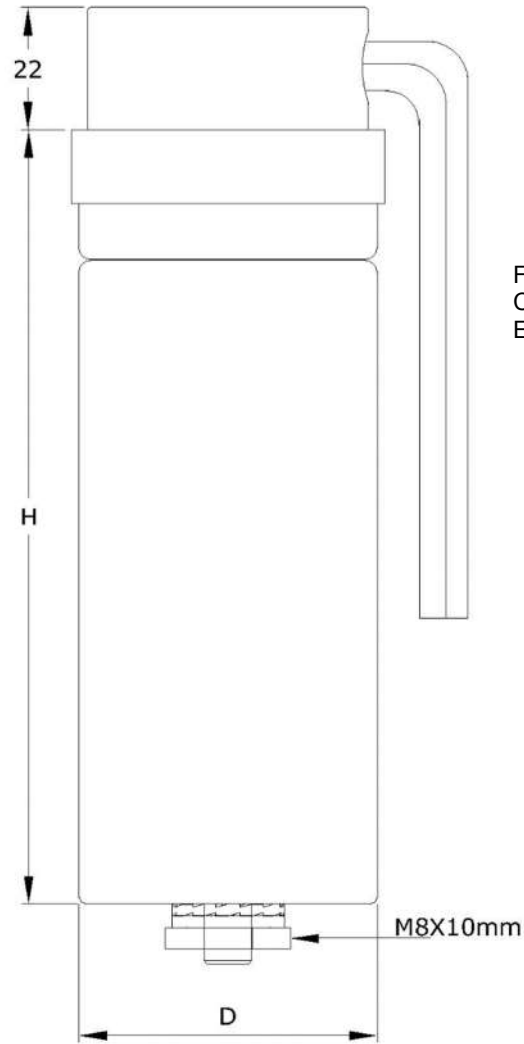
equipment supplied by us under this specification for the period of one year following the delivery date

The guarantee shall be restricted to any damage of the equipment arising out of faulty materials or bad design or poor workmanship under proper use of equipment but not otherwise

**SPECIFICATION**

**CAPACITOR UNIT**

**5 / 6**



FLEXIBLE COPPER  
CABLE 300MM IN  
EACH PAHSE

|   | CAPACITOR CODE     | MODEL                   | D<br>(mm) | H<br>(mm) | REMARK |
|---|--------------------|-------------------------|-----------|-----------|--------|
| 1 | AW-P025-R0400-S1R3 | 400VAC 3PH 50Hz 2.5kVAr | 50        | 150       |        |
|   |                    |                         |           |           |        |

Note: All Dimension Tolerance is  $\pm 5\%$

|                      |                       |            |
|----------------------|-----------------------|------------|
| <b>SPECIFICATION</b> | <b>CAPACITOR UNIT</b> | <b>6/6</b> |
|----------------------|-----------------------|------------|