

## DD60 Series Capacitor

for Power Factor Correction and Harmonic Filters

**Type** LKT 4.0-480-DD60  
**Article No.** 31-10923

### Applicable Standards

UL 810  
 CSA 22.2 (No. 190-M1985)  
 IEC / EN 60831-1 and -2

### Agency Approvals



### Conformity



### Construction

Dry Type capacitor with impregnated windings and flame inhibiting mineral filler.  
 No PCBs, no inert gas, no SF6 gas.

### Safety Features

Self-healing polypropylene film  
 Segmented metallized film  
 3-phase overpressure disconnecter

### Electrical Data

|  |                  |                           |
|--|------------------|---------------------------|
| Rated Voltage                                | $V_{Nom}$        | 480 V                     |
| Maximum Voltage (continuous)                 | $V_{Max\ cont.}$ | 528 V                     |
| Rated Frequency                              | $f_N$            | 60 Hz                     |
| Rated Power                                  | $Q_C$            | 4.0 kvar                  |
| Rated Capacitance                            | $C_N$            | 3 x 15.4 $\mu F$          |
| Tolerance ( $\mu F$ and kvar)                |                  | -0 to +5 %                |
| Internal Connection                          |                  | delta                     |
| Nominal Current                              | $I_{Nom}$        | 4.8 A                     |
| Maximum Current (continuous)                 | $I_{Max}$        | 7.9 A (1.65 x $I_{Nom}$ ) |
| Equivalent Series Resistance (1 kHz)         | ESR              | 3 x 3.4 m $\Omega$        |
| Power Losses (dielectric)                    | $\tan \delta_0$  | $\leq 0.2$ W / kvar       |
| Power Losses (total)                         | $\tan \delta_1$  | $\leq 0.5$ W / kvar       |
| Residual Voltage within 60 seconds discharge |                  | $\leq 50$ V               |

### Maximum Ratings

|                                      |           |                            |
|--------------------------------------|-----------|----------------------------|
| Maximum Voltage (8 hours per day)    | $V_{8h}$  | 581 V                      |
| Maximum Voltage (30 minutes per day) | $V_{30m}$ | 607 V                      |
| Maximum Voltage (5 minutes)          | $V_{5m}$  | 634 V                      |
| Maximum Voltage (1 minute)           | $V_{1m}$  | 686 V                      |
| Maximum Inrush Current               | $I_S$     | 1,094 A (228 x $I_{Nom}$ ) |
| Insulation Voltage                   | $V_i$     | 3.9 / 12 kV                |

### Routine Test (each capacitor)

|                                    |          |   |
|------------------------------------|----------|---|
| Test Voltage (Terminal / Terminal) | $V_{TT}$ | 1135 V for 2 seconds + 977 V for 18 seconds                       |
| Test Voltage (Terminal / Case)     | $V_{TC}$ | 3,900 V for 2 seconds [UL requires $V_{TC}$ 2,352 V for 1 second] |

FRAKO also performs a case seal test plus measurements of capacitance, loss factor and resistance

### Environmental Data

|  |       |              |               |
|--|-------|--------------|---------------|
| Temperature Class                          |       | -40/60       |               |
| Ambient Temperature min / max (continuous) |       | -40 / +60 °C | -40 / +140 °F |
| Case Temperature max                       | $T_C$ | +75 °C       | +167 °F       |
| Storage Temperature min / max              |       | -40 / +85 °C | -40 / +185 °F |
| Humidity max (non-condensating)            |       | 95 %         |               |
| Altitude max                               |       | 4,000 meter  | 13,123 feet   |

### Life expectancy

Life Expectancy when operated within spec. 130,000 hours\*

\*maximum 40,000 switching operations per year

## DD60 Series Capacitor

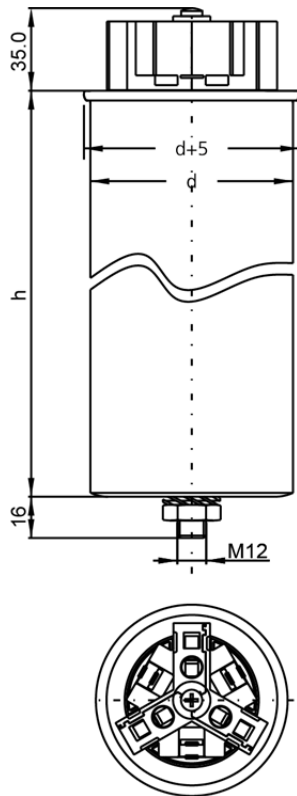
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### Design Data

|                             |  |                     |
|-----------------------------|--|---------------------|
| Dimensions (d x h)          | 85 x 163 mm                                  | 3.35 x 6.42 inch    |
| Height including terminal   | 198 mm                                       | 7.80 inch           |
| Weight (including terminal) | 1.15 kg (1.20 kg)                            | 2.54 lbs (2.65 lbs) |
| Mounting                    | Threaded bolt M12 (1.75 pitch), length 16 mm |                     |
| Tightening torque           | 15 Nm  |                     |
| Mounting position           | Vertical and horizontal                      |                     |

### Drawing



### Connection Terminal

|   |                               |             |
|---|-------------------------------|-------------|
| Type  | Screwless pressure connection |             |
| Conductor size (range accepted by terminal) | 1.5 to 16 mm <sup>2</sup>     | AWG 15 to 6 |
| Conductor types (accepted by terminal)      | solid, stranded and flexible  |             |
| Degree of protection                        | IP 20 (fingersafe)            |             |

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