

# Power factor correction DRY capacitors

Improves power quality and network efficiency



## FEATURES

- Rated voltage  $U_n$ : up to 600 V
- Rated frequency: 50 or 60 Hz
- Protection degree: IP 20
- Self-healing, overpressure disconnector
- Ambient temperature:  $-25\text{ }^{\circ}\text{C}$  to  $+55\text{ }^{\circ}\text{C}$
- IEC 60831 - 1/2

## FOR WHOM

- For power factor correction in electricity distribution and energy production companies, heavy industry, manufacturing, utilities, etc.

# Think energy



## Three-phase capacitors in aluminium cylindrical housing dry type KNK1053 (fn = 50 Hz)

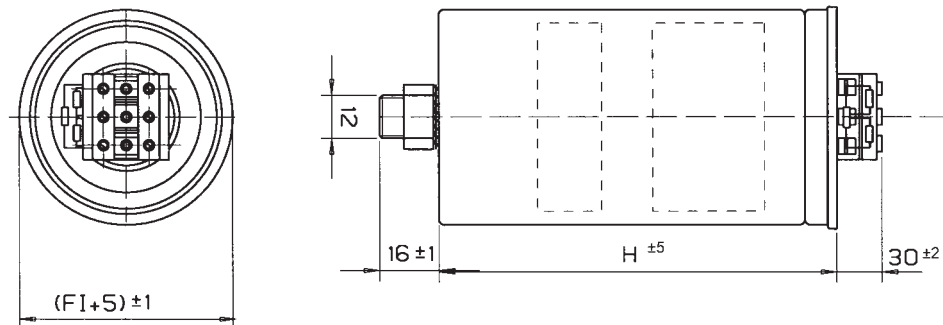
| $C_n$<br>( $\mu F$ ) | $Q_n$<br>(kvar) | $I_n$<br>(A) | $Q_n$<br>(kvar) | $I_n$<br>(A) | $Q_n$<br>(kvar) | $I_n$<br>(A) | H<br>(mm) | FI<br>(mm) | Weight<br>(kg) | Packing<br>unit<br>(pcs) |
|----------------------|-----------------|--------------|-----------------|--------------|-----------------|--------------|-----------|------------|----------------|--------------------------|
| $U_n = 525 V$        | $U_n = 525 V$   |              | $U_n = 460 V$   |              | $U_n = 440 V$   |              |           |            |                |                          |
| 3x38.5               | 10              | 11           | 7.7             | 9.7          | 7.0             | 9.2          | 205       | 90         | 1.20           | 16                       |
| 3x48.2               | 12.5            | 13.8         | 9.6             | 12           | 8.8             | 11.5         | 240       | 90         | 1.40           | 16                       |
| 3x57.8               | 15              | 16.5         | 11.5            | 14.4         | 10.5            | 13.8         | 240       | 90         | 1.40           | 16                       |
| 3x77.0               | 20              | 22           | 15.3            | 19.2         | 14.0            | 18.4         | 205       | 116        | 1.60           | 9                        |
| 3x96.3               | 25              | 27.5         | 19.2            | 24.1         | 17.6            | 23.1         | 240       | 116        | 1.90           | 9                        |
| 3x115.5              | 30              | 33           | 23              | 28.9         | 21.1            | 27.7         | 240       | 116        | 1.90           | 9                        |
| 3x154                | 40              | 44           | 30.6            | 38.4         | 28              | 36.8         | 305       | 136        | 3.1            | 1                        |
| 3x192.5              | 50              | 55           | 38.4            | 48.2         | 35.2            | 46.2         | 370       | 136        | 4.0            | 1                        |
| $U_n = 460 V$        | $U_n = 460 V$   |              | $U_n = 440 V$   |              | $U_n = 420 V$   |              |           |            |                |                          |
| 3x50.2               | 10              | 12.6         | 9.2             | 12.1         | 8.3             | 11.4         | 205       | 90         | 1.20           | 16                       |
| 3x62.7               | 12.5            | 15.7         | 11.4            | 15           | 10.4            | 14.3         | 205       | 90         | 1.20           | 16                       |
| 3x75.2               | 15              | 18.8         | 13.7            | 18           | 12.5            | 17.2         | 240       | 90         | 1.40           | 16                       |
| 3x100.3              | 20              | 25.1         | 18.3            | 24           | 16.7            | 23           | 205       | 116        | 1.60           | 9                        |
| 3x125.4              | 25              | 31.3         | 22.9            | 30           | 20.8            | 28.6         | 240       | 116        | 1.90           | 9                        |
| 3x150.4              | 30              | 37.6         | 27.4            | 36           | 25              | 34.6         | 240       | 116        | 1.90           | 9                        |
| 3x200.6              | 40              | 50.2         | 36.6            | 48           | 33.4            | 46           | 305       | 136        | 3.1            | 1                        |
| 3x250.7              | 50              | 62.5         | 45.8            | 60           | 41.5            | 57.2         | 370       | 136        | 4.0            | 1                        |
| $U_n = 440 V$        | $U_n = 440 V$   |              | $U_n = 420 V$   |              | $U_n = 400 V$   |              |           |            |                |                          |
| 3x54.9               | 10              | 13.1         | 9.1             | 12.5         | 8.3             | 12           | 205       | 90         | 1.20           | 16                       |
| 3x68.6               | 12.5            | 16.4         | 11.5            | 15.8         | 10.4            | 15           | 205       | 90         | 1.20           | 16                       |
| 3x82.3               | 15              | 19.7         | 13.7            | 18.8         | 12.4            | 17.9         | 240       | 90         | 1.40           | 16                       |
| 3x110.0              | 20              | 26.2         | 18.3            | 25.2         | 16.6            | 24           | 205       | 116        | 1.60           | 9                        |
| 3x137.1              | 25              | 32.8         | 22.8            | 31.3         | 20.7            | 29.9         | 240       | 116        | 1.90           | 9                        |
| 3x164.4              | 30              | 39.4         | 27.3            | 37.5         | 24.8            | 35.8         | 280       | 116        | 2.30           | 9                        |
| 3x219                | 40              | 52.4         | 36.6            | 50.4         | 33.2            | 48           | 305       | 136        | 3.1            | 1                        |
| 3x274                | 50              | 65.6         | 45.6            | 62.6         | 41.4            | 60           | 305       | 136        | 3.1            | 1                        |
| $U_n = 420 V$        | $U_n = 420 V$   |              | $U_n = 400 V$   |              | $U_n = 380 V$   |              |           |            |                |                          |
| 3x60.2               | 10              | 13.7         | 9.1             | 13.1         | 8.2             | 12.5         | 205       | 90         | 1.20           | 16                       |
| 3x75.2               | 12.5            | 17.2         | 11.3            | 16.3         | 10.2            | 15.5         | 240       | 90         | 1.40           | 16                       |
| 3x90.3               | 15              | 20.6         | 13.6            | 19.6         | 12.3            | 18.7         | 240       | 90         | 1.40           | 16                       |
| 3x120.3              | 20              | 27.5         | 18.1            | 26.1         | 16.4            | 24.9         | 205       | 116        | 1.60           | 9                        |
| 3x150.4              | 25              | 34.4         | 22.7            | 31.2         | 20.5            | 28.2         | 240       | 116        | 1.90           | 9                        |
| 3x180.5              | 30              | 41.2         | 27.2            | 39.3         | 24.6            | 35.5         | 280       | 116        | 2.30           | 9                        |
| 3x240.6              | 40              | 55           | 36.2            | 52.2         | 32.8            | 49.8         | 305       | 136        | 3.1            | 1                        |
| 3x300.8              | 50              | 68.8         | 45.4            | 62.4         | 41              | 56.4         | 370       | 136        | 4.0            | 1                        |
| $U_n = 400 V$        | $U_n = 400 V$   |              | $U_n = 380 V$   |              |                 |              |           |            |                |                          |
| 3x66.3               | 10              | 14.4         | 9.0             | 13.7         |                 |              | 205       | 90         | 1.20           | 16                       |
| 3x83.3               | 12.5            | 18           | 11.3            | 17.2         |                 |              | 205       | 90         | 1.20           | 16                       |
| 3x100                | 15              | 21.7         | 13.6            | 20.7         |                 |              | 240       | 90         | 1.40           | 16                       |
| 3x133                | 20              | 28.9         | 18.1            | 27.5         |                 |              | 205       | 116        | 1.60           | 9                        |
| 3x165.8              | 25              | 36.1         | 22.6            | 34.3         |                 |              | 240       | 116        | 1.90           | 9                        |
| 3x198.9              | 30              | 43.3         | 27.1            | 41.2         |                 |              | 240       | 116        | 1.90           | 9                        |
| 3x265                | 40              | 57.8         | 36.2            | 55           |                 |              | 305       | 136        | 3.1            | 1                        |
| 3x331.6              | 50              | 72.2         | 45.2            | 68.6         |                 |              | 370       | 136        | 4.0            | 1                        |

## Three-phase capacitors in aluminium cylindrical housing dry type KNK1053 (fn = 60Hz)

| C <sub>n</sub><br>(μF) | Q <sub>n</sub><br>(kvar) | I <sub>n</sub><br>(A) | Q <sub>n</sub><br>(kvar) | I <sub>n</sub><br>(A) | Q <sub>n</sub><br>(kvar) | I <sub>n</sub><br>(A) | H<br>(mm) | FI<br>(mm) | Weight<br>(kg) | Packing<br>unit<br>(pcs) |
|------------------------|--------------------------|-----------------------|--------------------------|-----------------------|--------------------------|-----------------------|-----------|------------|----------------|--------------------------|
| U <sub>n</sub> = 525 V | U <sub>n</sub> = 525 V   |                       | U <sub>n</sub> = 460 V   |                       | U <sub>n</sub> = 440 V   |                       |           |            |                |                          |
| 3x32,1                 | 10                       | 11                    | 7,7                      | 9,7                   | 7,0                      | 9,2                   | 205       | 90         | 1,20           | 16                       |
| 3x40,1                 | 12,5                     | 13,8                  | 9,6                      | 12                    | 8,8                      | 11,5                  | 205       | 90         | 1,20           | 16                       |
| 3x48,1                 | 15                       | 16,5                  | 11,5                     | 14,4                  | 10,5                     | 13,8                  | 240       | 90         | 1,40           | 16                       |
| 3x64,2                 | 20                       | 22                    | 15,3                     | 19,2                  | 14,0                     | 18,4                  | 205       | 116        | 1,60           | 9                        |
| 3x80,2                 | 25                       | 27,5                  | 19,2                     | 24,1                  | 17,6                     | 23,1                  | 240       | 116        | 1,90           | 9                        |
| 3x96,2                 | 30                       | 33                    | 23                       | 28,9                  | 21,1                     | 27,7                  | 240       | 116        | 1,90           | 9                        |
| 3x128,3                | 40                       | 44                    | 30,6                     | 38,4                  | 28                       | 36,8                  | 305       | 136        | 3,1            | 1                        |
| 3x160,4                | 50                       | 55                    | 38,4                     | 48,2                  | 35,2                     | 36,2                  | 370       | 136        | 4,0            | 1                        |
| U <sub>n</sub> = 460 V | U <sub>n</sub> = 460 V   |                       | U <sub>n</sub> = 440 V   |                       | U <sub>n</sub> = 420 V   |                       |           |            |                |                          |
| 3x41,8                 | 10                       | 12,6                  | 9,2                      | 12,1                  | 8,3                      | 11,4                  | 160       | 90         | 0,90           | 16                       |
| 3x52,2                 | 12,5                     | 15,7                  | 11,4                     | 15                    | 10,4                     | 14,3                  | 205       | 90         | 1,20           | 16                       |
| 3x62,7                 | 15                       | 18,8                  | 13,7                     | 18                    | 12,5                     | 17,2                  | 205       | 90         | 1,20           | 16                       |
| 3x83,6                 | 20                       | 25,1                  | 18,3                     | 24                    | 16,7                     | 23                    | 240       | 90         | 1,40           | 16                       |
| 3x104,5                | 25                       | 31,3                  | 22,9                     | 30                    | 20,8                     | 28,6                  | 205       | 116        | 1,60           | 9                        |
| 3x125,4                | 30                       | 37,6                  | 27,4                     | 36                    | 25                       | 34,4                  | 240       | 116        | 1,90           | 9                        |
| 3x167,2                | 40                       | 50,2                  | 36,6                     | 48                    | 33,4                     | 46                    | 305       | 136        | 3,1            | 1                        |
| 3x209                  | 50                       | 62,6                  | 45,8                     | 60                    | 41,6                     | 57,2                  | 305       | 136        | 4,0            | 1                        |
| U <sub>n</sub> = 440 V | U <sub>n</sub> = 440 V   |                       | U <sub>n</sub> = 420 V   |                       | U <sub>n</sub> = 400 V   |                       |           |            |                |                          |
| 3x45,7                 | 10                       | 13,1                  | 9,1                      | 12,5                  | 8,3                      | 12                    | 160       | 90         | 0,90           | 16                       |
| 3x57,1                 | 12,5                     | 16,4                  | 11,5                     | 15,8                  | 10,4                     | 15                    | 205       | 90         | 1,20           | 16                       |
| 3x68,5                 | 15                       | 19,7                  | 13,7                     | 18,8                  | 12,4                     | 17,9                  | 205       | 90         | 1,20           | 16                       |
| 3x91,3                 | 20                       | 26,2                  | 18,3                     | 25,2                  | 16,6                     | 24                    | 240       | 90         | 1,40           | 16                       |
| 3x114,2                | 25                       | 32,8                  | 22,8                     | 31,3                  | 20,7                     | 29,9                  | 205       | 116        | 1,60           | 9                        |
| 3x137                  | 30                       | 39,4                  | 27,3                     | 37,5                  | 24,8                     | 35,8                  | 240       | 116        | 1,90           | 9                        |
| 3x182,7                | 40                       | 52,4                  | 36,6                     | 50,4                  | 33,2                     | 48                    | 305       | 136        | 3,1            | 1                        |
| 3x228,4                | 50                       | 65,6                  | 45,6                     | 62,6                  | 41,4                     | 59,8                  | 305       | 136        | 4,0            | 1                        |
| U <sub>n</sub> = 420 V | U <sub>n</sub> = 420 V   |                       | U <sub>n</sub> = 400 V   |                       | U <sub>n</sub> = 380 V   |                       |           |            |                |                          |
| 3x50,1                 | 10                       | 13,7                  | 9,1                      | 13,1                  | 8,2                      | 12,5                  | 205       | 90         | 1,20           | 16                       |
| 3x62,6                 | 12,5                     | 17,2                  | 11,3                     | 16,3                  | 10,2                     | 15,5                  | 205       | 90         | 1,20           | 16                       |
| 3x75,2                 | 15                       | 20,6                  | 13,6                     | 19,6                  | 12,3                     | 18,7                  | 240       | 90         | 1,40           | 16                       |
| 3x100,2                | 20                       | 27,5                  | 18,1                     | 26,1                  | 16,4                     | 24,9                  | 205       | 116        | 1,60           | 9                        |
| 3x125,3                | 25                       | 34,4                  | 22,6                     | 32,6                  | 20,4                     | 31,0                  | 240       | 116        | 1,90           | 9                        |
| 3x150,4                | 30                       | 41,2                  | 27,2                     | 39,3                  | 24,6                     | 35,5                  | 240       | 116        | 1,90           | 9                        |
| 3x200,5                | 40                       | 55                    | 36,2                     | 52,2                  | 32,8                     | 49,8                  | 305       | 136        | 3,1            | 1                        |
| 3x250,6                | 50                       | 68,8                  | 45,2                     | 65,2                  | 40,8                     | 32                    | 305       | 136        | 4,0            | 1                        |
| U <sub>n</sub> = 400 V | U <sub>n</sub> = 400 V   |                       | U <sub>n</sub> = 380 V   |                       |                          |                       |           |            |                |                          |
| 3x55,3                 | 10                       | 14,4                  | 9,0                      | 13,7                  |                          |                       | 160       | 90         | 0,90           | 16                       |
| 3x69,7                 | 12,5                     | 18                    | 11,3                     | 17,2                  |                          |                       | 205       | 90         | 1,20           | 16                       |
| 3x82,9                 | 15                       | 21,7                  | 13,6                     | 20,7                  |                          |                       | 205       | 90         | 1,20           | 16                       |
| 3x110,5                | 20                       | 28,9                  | 18,1                     | 27,5                  |                          |                       | 240       | 90         | 1,40           | 16                       |
| 3x138,2                | 25                       | 36,1                  | 22,6                     | 34,3                  |                          |                       | 205       | 116        | 1,60           | 9                        |
| 3x165,8                | 30                       | 43,3                  | 27,1                     | 41,2                  |                          |                       | 240       | 116        | 1,90           | 9                        |
| 3x121                  | 40                       | 57,8                  | 36,2                     | 55                    |                          |                       | 305       | 136        | 3,1            | 1                        |
| 3x276                  | 50                       | 72,2                  | 45,2                     | 68,8                  |                          |                       | 370       | 136        | 4,0            | 1                        |

# Dimensional Drawing & Technical Data

## DIMENSIONAL DRAWING:



## TECHNICAL DATA:

|                                |                                                                            |
|--------------------------------|----------------------------------------------------------------------------|
| Rated voltage $U_n$ :          | see table                                                                  |
| Rated frequency:               | 50 Hz or 60 Hz                                                             |
| Capacitance tolerance:         | - 5 % to + 15 %                                                            |
| Losses: - dielectric           | < 0,2 W/kvar                                                               |
| - total                        | < 0,5 W/kvar                                                               |
| Protection degree:             | IP 20                                                                      |
| Discharge time :               | $\leq 3$ min. to 75 V<br>or less by discharge resistors                    |
| Standards:                     | IEC Publ. 60831 - 1/2                                                      |
| Safety:                        | self-healing,<br>overpressure disconnecter                                 |
| Dielectric:                    | metallized polypropylene film; dry type (PCB-free)                         |
| Permitted ambient temperature: | - 25 °C to + 55 °C,<br>other on request                                    |
| Permitted storage temperature: | - 40 °C to + 70 °C                                                         |
| Permitted overload:            | $1,1 \times U_n$ (8 h per day)<br>$1,3 \times I_n$ (rated current)         |
| In-rush current:               | $130 \times I_n$ max.                                                      |
| Test conditions:               | between layers $2,15 \times U_n$ , AC, 2 s; layers-housing 3,6 kV, AC, 2 s |
| Max. weight per kvar:          | cylindrical housing: 0,1 kg                                                |



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