



## CLZ-FP-60/21-60Hz-HD

CLZ-FP-60/21-60Hz-HD, Three-phase tubular power capacitor 60 Hz

Code: R2H68K.

- > Terminal: A
- > Frequency (Hz): 60
- > kvar (600 V): 21
- > Cover (opc.): 7
- > Use voltage (V): 600

### Description

CLZ-HD (Heavy duty) capacitor range is composed of capacitors with a tubular casing, of the dry-type, covering a wide range of power and voltage ratings, at 50 and 60 Hz. The CLZ-HD capacitors are designed to be installed in installations with extreme working conditions. The design, manufacturing and testing processes guarantee the production of top quality and long lasting capacitors. Those CLZ-HD capacitors offer a new refrigeration technology by means of nitrogen gas\*, being a refrigerating system of high benefits, inert and non flammable.

### Application

Its application is based on compensation in installations with static or variable loads (capacitor banks). Especially designed to be installed in roughly environments with the most extreme conditions due to its longer life and high temperature resistance.



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## Specifications

### AC power supply

|           |       |
|-----------|-------|
| Frequency | 60 Hz |
|-----------|-------|

### Electrical characteristics

|                             |                                                                                                         |
|-----------------------------|---------------------------------------------------------------------------------------------------------|
| Losses (W)                  | Dielectric: < 0,2 W / kvar Total: < 0,4 W / kvar                                                        |
| Discharge resistance        | 50 V / 1 min (0,5 - 30 kvar) 75 V / 3 min (33 - 50 kvar)                                                |
| Surge                       | 10 % 8h in 24 h 15 % up to 30 min in 24 hours 20 % up to 5 min in 24 hours 30 % up to 1 min in 24 hours |
| Tolerance C                 | -5 ... +10 %                                                                                            |
| Maximum phase current       | 400 x In                                                                                                |
| Maximum transient current   | 1,8 In                                                                                                  |
| Voltage                     | 600 V                                                                                                   |
| Insulation voltage, circuit | 3 / 8 kV                                                                                                |

### Mechanical characteristics

|                                  |                                            |
|----------------------------------|--------------------------------------------|
| Size (mm) width x height x depth | 100 x 276 x 100 (mm)                       |
| Envelope                         | Aluminum                                   |
| Fastening                        | M12 fastening screws earth conductor       |
| Ventilation                      | Natural or forced depending on the cabinet |
| Weight (kg)                      | 1,6                                        |

### Environmental characteristics

|                                          |                                                                                          |
|------------------------------------------|------------------------------------------------------------------------------------------|
| Protection class                         | IP 20 / IP 54 with terminal cover (optional) (for models Ø 85, 100, 116 mm)              |
| Relative humidity (without condensation) | 95%                                                                                      |
| Installation, location, position.        | Vertical / Horizontal. Minimum distance between condensers 2 cm.                         |
| Working temperature                      | T° class D: Daily average: 45 °C, annual average: 35 °C, maximum: 65 °C, minimum: -50 °C |

### Standards

|                                       |                 |
|---------------------------------------|-----------------|
| Certifications                        | VDE 560         |
| Electrical safety, Maximum height (m) | 4000            |
| Standards                             | IEC 60831-1-1/2 |

### Protection

|                      |                                          |
|----------------------|------------------------------------------|
| Circuit breaker type | Dielectric regeneration Expansion system |
|----------------------|------------------------------------------|

### CLZ-FP HD 60Hz

Three-phase tubular power capacitor (Heavy Duty range)



# CLZ-FP-60/21-60Hz-HD

Code: R2H68K.

| CODE                                    | TYPE                    | kvar (230 V) | kvar (240 V) | Use voltage (V) | kvar (400 V) | kvar (440 V) | kvar (460 V) | kvar (480 V) | kvar (525 V) | kvar (600 V) | kvar (660 V) | kvar (690 V) |
|-----------------------------------------|-------------------------|--------------|--------------|-----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Faston terminal, Un = 3 x 240 V / 60 Hz |                         |              |              |                 |              |              |              |              |              |              |              |              |
| R2H622.                                 | CLZ-FPT-24/2,5-60Hz-HD  | 2,3          | 2,5          | 240             |              |              |              |              |              |              |              |              |
| Terminal block, Un = 3 x 240 V / 60 Hz  |                         |              |              |                 |              |              |              |              |              |              |              |              |
| R2H626.                                 | CLZ-FP-24/5-60Hz-HD     | 4,6          | 5            | 240             |              |              |              |              |              |              |              |              |
| R2H627.                                 | CLZ-FP-24/6,25-60Hz-HD  | 5,75         | 6,25         | 240             |              |              |              |              |              |              |              |              |
| R2H628.                                 | CLZ-FP-24/7,5-60Hz-HD   | 6,9          | 7,5          | 240             |              |              |              |              |              |              |              |              |
| R2H62B.                                 | CLZ-FP-24/10-60Hz-HD    | 9,2          | 10           | 240             |              |              |              |              |              |              |              |              |
| R2H62D.                                 | CLZ-FP-24/12,5-60Hz-HD  | 11,5         | 12,5         | 240             |              |              |              |              |              |              |              |              |
| R2H62E.                                 | CLZ-FP-24/15-60Hz-HD    | 13,8         | 15           | 240             |              |              |              |              |              |              |              |              |
| Faston terminal, Un = 3 x 440 V / 60 Hz |                         |              |              |                 |              |              |              |              |              |              |              |              |
| R2H641.                                 | CLZ-FPT-44/1,25-60Hz-HD |              |              | 400   440       | 1            | 1,25         |              |              |              |              |              |              |
| R2H642.                                 | CLZ-FPT-44/2,5-60Hz-HD  |              |              | 400   440       | 2,1          | 2,5          |              |              |              |              |              |              |
| R2H646.                                 | CLZ-FPT-44/5-60Hz-HD    |              |              | 400   440       | 4,15         | 5            |              |              |              |              |              |              |
| Terminal block, Un = 3 x 440 V / 60 Hz  |                         |              |              |                 |              |              |              |              |              |              |              |              |
| R2H647.                                 | CLZ-FP-44/6,25-60Hz-HD  |              |              | 400   440       | 5,2          | 6,25         |              |              |              |              |              |              |
| R2H648.                                 | CLZ-FP-44/7,5-60Hz-HD   |              |              | 400   440       | 6,2          | 7,5          |              |              |              |              |              |              |
| R2H64B.                                 | CLZ-FP-44/10-60Hz-HD    |              |              | 400   440       | 8,3          | 10           |              |              |              |              |              |              |
| R2H64D.                                 | CLZ-FP-44/12,5-60Hz-HD  |              |              | 400   440       | 10,3         | 12,5         |              |              |              |              |              |              |
| R2H64E.                                 | CLZ-FP-44/15-60Hz-HD    |              |              | 400   440       | 12,4         | 15           |              |              |              |              |              |              |
| R2H64J.                                 | CLZ-FP-44/20-60Hz-HD    |              |              | 400   440       | 16,5         | 20           |              |              |              |              |              |              |
| R2H64L.                                 | CLZ-FP-44/25-60Hz-HD    |              |              | 400   440       | 20,7         | 25           |              |              |              |              |              |              |
| R2H64N.                                 | CLZ-FP-44/30-60Hz-HD    |              |              | 400   440       | 24,8         | 30           |              |              |              |              |              |              |
| R2H64R.                                 | CLZ-FP-44/40-60Hz-HD    |              |              | 400   440       | 33,1         | 40           |              |              |              |              |              |              |
| R2H64S.                                 | CLZ-FP-44/50-60Hz-HD    |              |              | 400   440       | 41,3         | 50           |              |              |              |              |              |              |
| Faston terminal, Un = 3 x 480 V / 60 Hz |                         |              |              |                 |              |              |              |              |              |              |              |              |
| R2H762.                                 | CLZ-FPT-48/2,5-60Hz-HD  |              |              | 480             |              |              | 2,3          | 2,5          |              |              |              |              |
| R2H766.                                 | CLZ-FPT-48/5-60Hz-HD    |              |              | 480             |              |              | 4,6          | 5            |              |              |              |              |
| R2H767.                                 | CLZ-FPT-48/6,25-60Hz-HD |              |              | 480             |              |              | 5,75         | 6,25         |              |              |              |              |
| R2H768.                                 | CLZ-FPT-48/7,5-60Hz-HD  |              |              | 480             |              |              | 6,9          | 7,5          |              |              |              |              |
| Terminal block, Un = 3 x 480 V / 60 Hz  |                         |              |              |                 |              |              |              |              |              |              |              |              |
| R2H66B.                                 | CLZ-FP-48/10-60Hz-HD    |              |              | 480             |              |              | 9,2          | 10           |              |              |              |              |
| R2H66D.                                 | CLZ-FP-48/12,5-60Hz-HD  |              |              | 480             |              |              | 11,5         | 12,5         |              |              |              |              |
| R2H66E.                                 | CLZ-FP-48/15-60Hz-HD    |              |              | 480             |              |              | 13,8         | 15           |              |              |              |              |
| R2H66J.                                 | CLZ-FP-48/20-60Hz-HD    |              |              | 480             |              |              | 18,4         | 20           |              |              |              |              |
| R2H66L.                                 | CLZ-FP-48/25-60Hz-HD    |              |              | 480             |              |              | 23           | 25           |              |              |              |              |
| R2H66N.                                 | CLZ-FP-48/30-60Hz-HD    |              |              | 480             |              |              | 27,6         | 30           |              |              |              |              |
| R2H66R.                                 | CLZ-FP-48/40-60Hz-HD    |              |              | 480             |              |              | 36,75        | 40           |              |              |              |              |
| R2H66S.                                 | CLZ-FP-48/50-60Hz-HD    |              |              | 480             |              |              | 46           | 50           |              |              |              |              |
| Faston terminal, Un = 3 x 525 V / 60 Hz |                         |              |              |                 |              |              |              |              |              |              |              |              |
| R2H772.                                 | CLZ-FPT-52/2,5-60Hz-HD  |              |              | 525             |              |              |              | 2,1          | 2,5          |              |              |              |
| R2H776.                                 | CLZ-FPT-52/5-60Hz-HD    |              |              | 525             |              |              |              | 4,2          | 5            |              |              |              |
| R2H778.                                 | CLZ-FPT-52/7,5-60Hz-HD  |              |              | 525             |              |              |              | 6,25         | 7,5          |              |              |              |
| Terminal block, Un = 3 x 525 V / 60 Hz  |                         |              |              |                 |              |              |              |              |              |              |              |              |



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| CODE                                    | TYPE                   | kvar (230 V) | kvar (240 V) | Use voltage (V) | kvar (400 V) | kvar (440 V) | kvar (460 V) | kvar (480 V) | kvar (525 V) | kvar (600 V) | kvar (660 V) | kvar (690 V) |
|-----------------------------------------|------------------------|--------------|--------------|-----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| R2H67A.                                 | CLZ-FP-52/8,5-60Hz-HD  |              |              | 525             |              |              |              | 7,1          | 8,5          |              |              |              |
| R2H67B.                                 | CLZ-FP-52/10-60Hz-HD   |              |              | 525             |              |              |              | 8,4          | 10           |              |              |              |
| R2H67C.                                 | CLZ-FP-52/11,5-60Hz-HD |              |              | 525             |              |              |              | 9,6          | 11,5         |              |              |              |
| R2H67D.                                 | CLZ-FP-52/12,5-60Hz-HD |              |              | 525             |              |              |              | 10,5         | 12,5         |              |              |              |
| R2H67E.                                 | CLZ-FP-52/15-60Hz-HD   |              |              | 525             |              |              |              | 12,5         | 15           |              |              |              |
| R2H67I.                                 | CLZ-FP-52/17-60Hz-HD   |              |              | 525             |              |              |              | 14,2         | 17           |              |              |              |
| R2H67J.                                 | CLZ-FP-52/20-60Hz-HD   |              |              | 525             |              |              |              | 16,7         | 20           |              |              |              |
| R2H67K.                                 | CLZ-FP-52/22,5-60Hz-HD |              |              | 525             |              |              |              | 18,8         | 22,5         |              |              |              |
| R2H67L.                                 | CLZ-FP-52/25-60Hz-HD   |              |              | 525             |              |              |              | 20,9         | 25           |              |              |              |
| R2H67N.                                 | CLZ-FP-52/30-60Hz-HD   |              |              | 525             |              |              |              | 25           | 30           |              |              |              |
| R2H67P.                                 | CLZ-FP-52/34-60Hz-HD   |              |              | 525             |              |              |              | 28,4         | 34           |              |              |              |
| R2H67R.                                 | CLZ-FP-52/40-60Hz-HD   |              |              | 525             |              |              |              | 33,4         | 40           |              |              |              |
| Faston terminal, Un = 3 x 600 V / 60 Hz |                        |              |              |                 |              |              |              |              |              |              |              |              |
| R2H786.                                 | CLZ-FPT-60/5-60Hz-HD   |              |              | 600             |              |              |              |              |              | 5            |              |              |
| R2H788.                                 | CLZ-FPT-60/7,5-60Hz-HD |              |              | 600             |              |              |              |              |              | 7,5          |              |              |
| Terminal block, Un = 3 x 600 V / 60 Hz  |                        |              |              |                 |              |              |              |              |              |              |              |              |
| R2H68A.                                 | CLZ-FP-60/10-60Hz-HD   |              |              | 600             |              |              |              |              |              | 10           |              |              |
| R2H68B.                                 | CLZ-FP-60/12,5-60Hz-HD |              |              | 600             |              |              |              |              |              | 12,5         |              |              |
| R2H68E.                                 | CLZ-FP-60/15-60Hz-HD   |              |              | 600             |              |              |              |              |              | 15           |              |              |
| R2H68I.                                 | CLZ-FP-60/17,5-60Hz-HD |              |              | 600             |              |              |              |              |              | 17,5         |              |              |
| R2H68J.                                 | CLZ-FP-60/20-60Hz-HD   |              |              | 600             |              |              |              |              |              | 20           |              |              |
| R2H68K.                                 | CLZ-FP-60/21-60Hz-HD   |              |              | 600             |              |              |              |              |              | 21           |              |              |
| R2H68L.                                 | CLZ-FP-60/25-60Hz-HD   |              |              | 600             |              |              |              |              |              | 25           |              |              |
| R2H68N.                                 | CLZ-FP-60/30-60Hz-HD   |              |              | 600             |              |              |              |              |              | 30           |              |              |
| R2H68P.                                 | CLZ-FP-60/34,5-60Hz-HD |              |              | 600             |              |              |              |              |              | 34,5         |              |              |
| Faston terminal, Un = 3 x 690 V / 60 Hz |                        |              |              |                 |              |              |              |              |              |              |              |              |
| R2H796.                                 | CLZ-FPT-69/5-60Hz-HD   |              |              | 690             |              |              |              |              |              |              | 4,6          | 5            |
| Terminal block, Un = 3 x 690 V / 60 Hz  |                        |              |              |                 |              |              |              |              |              |              |              |              |
| R2H69B.                                 | CLZ-FP-69/10-60Hz-HD   |              |              | 690             |              |              |              |              |              |              | 9,15         | 10           |
| R2H69D.                                 | CLZ-FP-69/12,5-60Hz-HD |              |              | 690             |              |              |              |              |              |              | 11,4         | 12,5         |
| R2H69E.                                 | CLZ-FP-69/15-60Hz-HD   |              |              | 690             |              |              |              |              |              |              | 13,7         | 15           |
| R2H69J.                                 | CLZ-FP-69/20-60Hz-HD   |              |              | 690             |              |              |              |              |              |              | 18,3         | 20           |
| R2H69L.                                 | CLZ-FP-69/25-60Hz-HD   |              |              | 690             |              |              |              |              |              |              | 22,9         | 25           |
| R2H69N.                                 | CLZ-FP-69/30-60Hz-HD   |              |              | 690             |              |              |              |              |              |              | 27,5         | 30           |
| R2H69R.                                 | CLZ-FP-69/40-60Hz-HD   |              |              | 690             |              |              |              |              |              |              | 36,6         | 40           |
| R2H69S.                                 | CLZ-FP-69/50-60Hz-HD   |              |              | 690             |              |              |              |              |              |              | 45,75        | 50           |

All models are of the inert gas type, except for those with a 63.5 mm diameter and 136x355 mm size The dimensions (dxh) are shown for the tube only. Please consult the dimensions drawing at the end of this section for more information about the actual dimensions Terminal: maximum cross-section of type A cables: 16 mm2, type B: 25 mm2, type C: 35 mm2, F: Faston 6.3x0.8 mm and 12 A maximum current



## CLZ-FP-60/21-60Hz-HD

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## Dimensions

