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Power Factor Correction Capacitor and HRC Fuse System

Thailand

Edition
2021

www.siemens.co.th

Introduction :

The rational use of electrical energy calls for economical generation, transmission and distribution with little losses. Static capacitive compensation devices reduce the lagging reactive power component transmitted over the network. If grid conditions change, the required power can be matched in steps by adding or taking out single power capacitors (automatic PFC) for compensation.

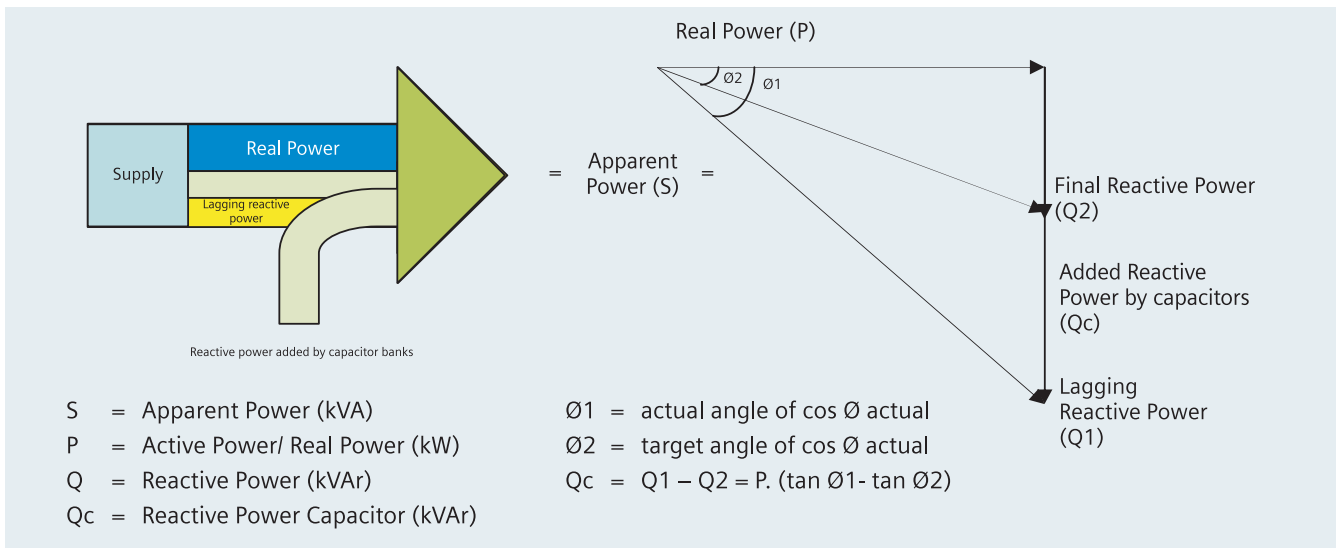
Benefit of power factor correction

- Enhancing power quality
- Improvement of power factor
- Saves costs and ensures a fast return on investment
- Reduction of reactive power in system
- Reduced voltage drops
- Reduced transmission losses
- Optimum cable design

Power quality products

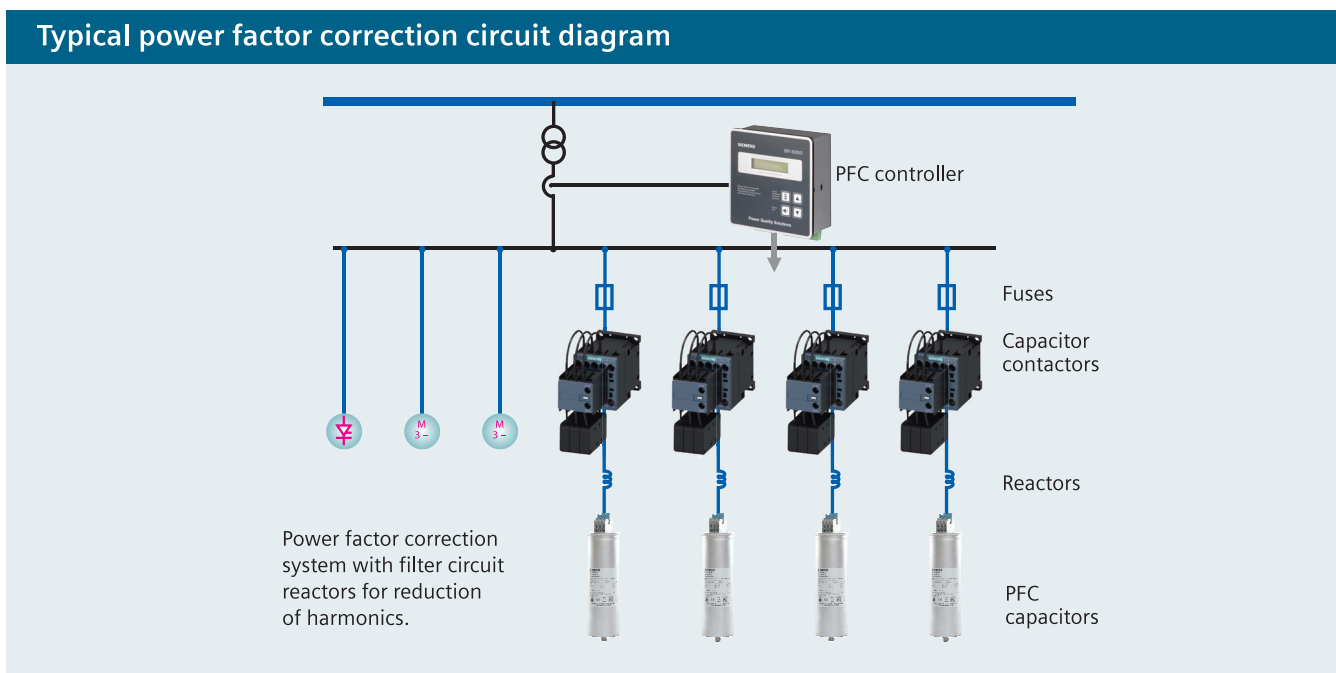
- Offer all key components from a single source
- Includes power factor controllers
- Multi measuring interfaces
- Capacitor contractors
- Discharge reactors

Incorporating power factor correction devices in the network help in generating leading reactive power to compensate lagging reactive power. This techniques help consumer to achieved power factor ($\cos \theta$) close to unity. Picture 1



Picture 1

The capacitors connect can be fixed type for given fixed lagging pf of the system at a point in power system or variable in steps for a changing connected load. Picture 2



Picture 2

LV Capacitors

Capacitor

SIEMENS capacitor can withstand high inrush current caused while individual switching operation ($>100IR$) as well while connected in parallel, i.e. as banks when the inrush current is increased to $\geq 150 \cdot IR$. The high inrush is because of the charging current comes from the power line as well as from other capacitor connected in parallel in the bank.

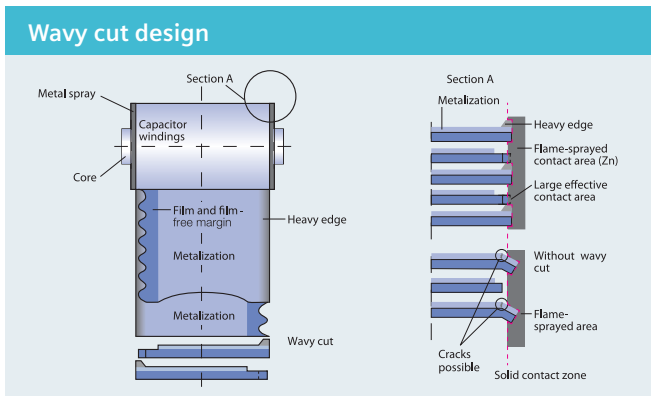
SIEMENS capacitor range broadly classified in two variants:



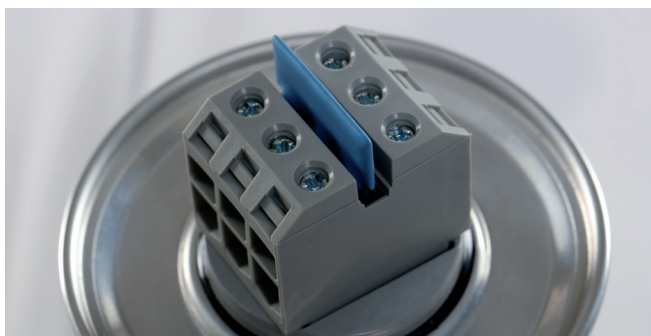
Siemens capacitor is based MPP technology [Metalized of Zinc Al alloy over Polypropylene dielectric] of film making with an impregnation of semi-dry biodegradable soft resin.

Special film-cutting technique (optimized combination of wavy and smooth cuts) & heavy edge and produces a maximum effective surface for the metal spraying or contacting process, Picture 3

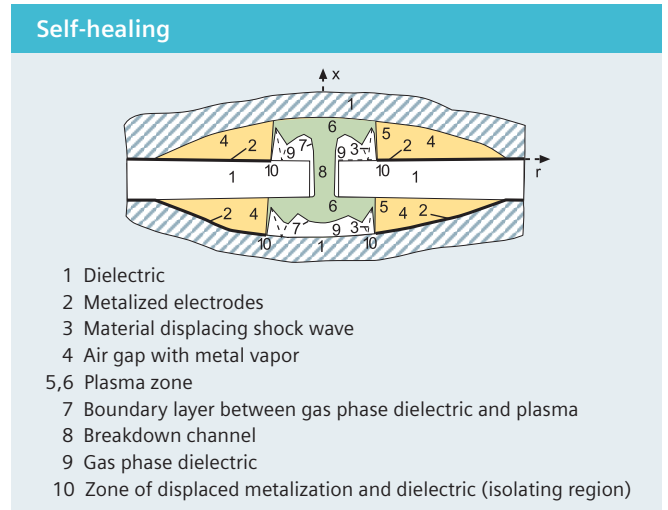
Siemens capacitors are most compact and light in weight



Picture 3



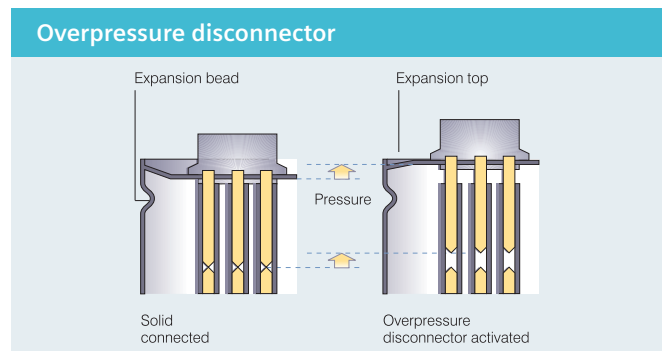
Self-healing properties



Picture 4

In case of electrical overload the dielectric in the breakdown channel is broken down into highly compressed plasma that explodes out of the breakdown channel and pushes the dielectric layers apart. The discharge continues within the spreading plasma via the metal layers so that the metal surrounding the faulty area is completely burnt out. This produces perfect isolation of the faulty area within microseconds. The self-healing process results in negligible capacitance loss less than 100 pF per event. The capacitor remains fully functional during the entire process, Picture 4

Overpressure disconnecter



Picture 5

At the end of the capacitor's service life or when a high pressure forms inside the can, the overpressure disconnecter is activated. The specially designed cover with an expansion bead moves upwards. Expansion beyond a certain degree will separate the wires and disconnect the capacitor safely from the line. The disconnecter is separated at its breakpoint (small notch) and the flow of current to the capacitor windings is interrupted. Picture 5

Sigut terminals

Siemens capacitor comes with SIGUT terminal strip with electric shock protection (IP2X),

These terminal provides figure touch protection for users

These as well ensures reliable connection

Premium Cap and Heavy Duty Cap

Power Capacitors 3-phase, IP 20

Overview

PremiumCap capacitors in cylindrical aluminum cases have been designed for power factor correction in low-voltage applications.

Loads like motors and transformers consume active power as well as reactive power.

Generators, supply cables and other electrical distribution equipment, in turn, should be relieved of reactive power.

The MKK (metalized plastic compact) AC series is intended to increase packing density per bank and cut component costs.

Improved thermal response and simplified installation are advantages of the cylindrical aluminum case.

Benefits



- Compact design in cylindrical aluminum can with stud
- Concentric winding
- MKK-technology with wavy cut and heavy edge
- Voltage range 230 V ... 800 V
- Output range 5.0 kvar ... 36 kvar

Applications

- Automatic PFC equipment, capacitor banks
- Individual fixed PFC (e.g. motors, transformers, lighting)
- Group fixed PFC
- Tuned and detuned capacitor banks
- Filter applications
- Dynamic PFC

Electrical

- Longlife expectancy
- High pulse current withstand capability

Mechanical and maintenance

- Reduced mounting costs
- Maintenance-free
- Highest packing density thanks to compact dimensions

Safety

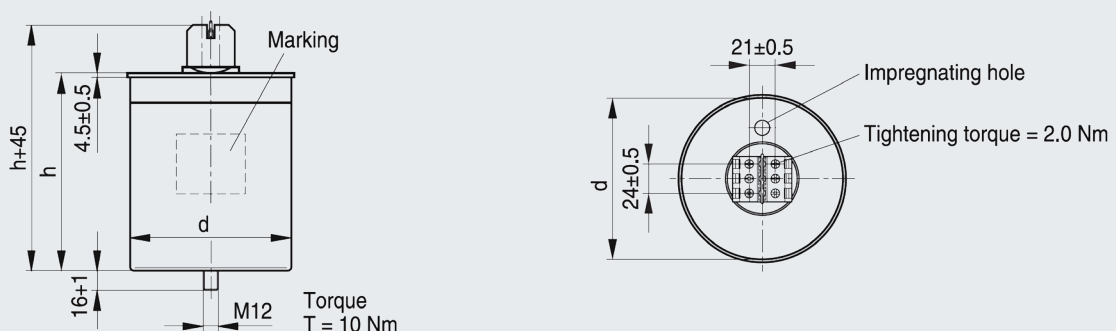
- Self-healing
- Overpressure disconnecter
- Shock hazard protected terminals
- Longterm approved
- cUL approval for B25667; for B25668 up to 690 V
- Ceramic discharge resistor pre-mounted

Environmental

- Dry design, inert gas
- No oil leakage

Dimensional drawings Note : h , d see dimension capacitors (DxH) in table (Page No.7)

Capacitor



Standard Cap

Power Capacitors 3-phase, IP20

Overview

Standard Capacitors is based on the well-proven MKP technology with stacked windings, Standard capacitors are especially developed for Power Factor Correction applications in industrial installations.

The cost-effective design offers abroad output range from 0.5 to 33.0 kvar. The voltage range covers 230 to 525 VAC.

Benefits

- Compact design in cylindrical aluminum can with stud
- MKD technology with stacked windings
- Output range 0.5 - 33 kvar
- Voltage range 230 - 525 VAC



Applications

- Power Factor Correction
- Automatic capacitor banks
- Fixed PFC applications, e.g. motor compensation
- AC power electronics
- Tuned and detuned Power Factor Correction systems

Electrical

- Up to 33 kvar per capacitor for three-phase applications
- Long life expectancy up to 150,000 hours (at temperature class -40/C)
- High inrush current withstand ability (up to $200 I_R$)

Mechanical and maintenance

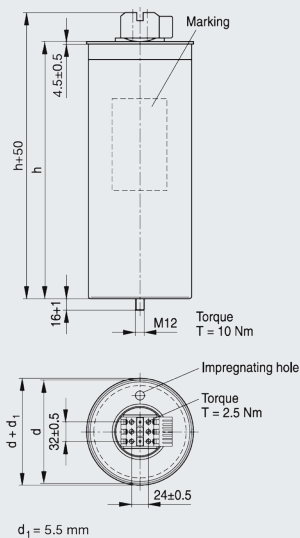
- Reduced mounting cost, easy installation and connection
- Low weight and compact volume
- Maintenance-free

Safety

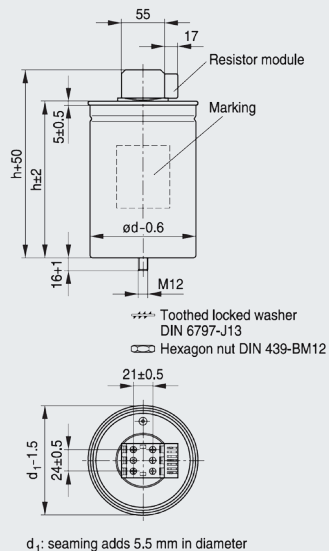
- Self-healing technology
- Overpressure disconnecter
- Isolated terminal (IP20)

Dimensional drawings Note : h , d see dimension capacitors (DxH) in table (Page No.7)

Capacitor up to 660 V AC



Capacitor > 660 V AC



Technical specifications

| Technical data and limit values | Premium Cap | Heavy Duty Cap | Standard Cap |
|---|--|--|---|
| Standards IEC 60831-1+2, EN 60831-1+2, UL 810 5th edition | | | |
| Overvoltage | V_{max} | VR + 10% (up to 8 h daily) / VR + 15% (up to 30 min daily) /VR + 20% (up to 5 min daily) / VR + 30% (up to 1 min daily) | |
| Overcurrent | I_{max} | Up to 1.6 · IR | Up to 1.5 · IR up to 1.3 · IR (up to 1.5 · IR) including combined effects of harmonics, overvoltages and capacitance tolerance |
| Inrush current | I_s | up to 300 · IR | |
| Losses • Dielectric • Total | | < 0.2 W/kvar < 0.45 W/kvar | |
| Rated frequency | f | 50/60 Hz | |
| Capacitance tolerance | | - 5% / +10% | |
| Test voltages, terminal / terminal | V_{TT} | 2.15 · VR1, AC, 10 s | |
| Test voltage, terminal / case | V_{TC} | up to VR ≤ 660 V: 3000 V AC, 10 s; above VR = 660 V: 6000 V AC, 10 s | up to VR ≤ 660 V: 3000 V AC, 10 s 3000 V AC, 10 s |
| Mean life expectancy | $t_{LD(CO)}$ up to 180 000 h up to 130 000 h | up to 180 000 h up to 130 000 h | up to 150 000 h up to 115 000 h |
| Ambient temperature | | -40/D; max. temp. 55 °C; max. mean 24 h = +45 °C; max. mean 1 year = 35 °C; lowest temperature = -40 °C | |
| Cooling | | natural or forced | |
| Humidity | H_{rel} | max. 95% | |
| Altitude | | max. 4000 m above sea level | |
| Mounting position | | upright / horizontal | upright |
| Mounting and grounding | | threaded M12 stud on bottom of case | |
| Safety | | dry technology Self-healing technology, overpressure disconnecter maximum allowed fault current 10,000 A in accordance with UL810 standard | - |
| Discharge module | | ceramic discharge resistor pre-mounted up to 660 V; external discharge module for > 600v | Pre-mounted discharge module discharge module, integrated in terminal |
| | | external discharge module for > 660 V | |
| Case | | extruded aluminum can | |
| Enclosure | | IP20, indoor mounting (optionally with terminal cap for IP54) | IP20, indoor mounting |
| Dielectric | | polypropylene film | |
| Impregnation | | inert gas, Nitrogen (N2) | biodegradable soft resin, semi-dry |
| Terminals | 25 mm ² cable cross-section | safety terminal with(IP20),max. | screw terminal, max. |
| Certification | | cUL file # E238746, GOST | - |
| Number of switching operations switchings per year according to IEC 60831-1+2 | | max. 7500 | max. 5000 |

Power Capacitors Pricelist

Standard Cap 3-phase

| Rate Voltage | Output in KVAR | Capacity | StandardCap | | | |
|--------------|----------------|-------------------|------------------------|------------|----------------|-----------|
| | | | Dimensions D x H (mm.) | weight kg. | Ordercode MLFB | Price THB |
| | 50Hz | in μ F 3 x | | | | |
| 400 V AC | 15 | 99.5 | 75 x 275 | 1.4 | 4RB7150-3EA50 | 4,600 |
| | 20 | 132.5 | 85 x 275 | 1.8 | 4RB7200-3EA50 | 5,900 |
| | 25 | 166 | 85 x 350 | 2.2 | 4RB7250-3EA50 | 6,500 |
| 415 V AC | 15 | 92 | 75 x 275 | 1.5 | 4RB7150-3EB50 | 4,600 |
| | 20 | 123 | 85 x 275 | 1.7 | 4RB7200-3EB50 | 5,900 |
| | 25 | 166 | 85 x 350 | 2.2 | 4RB7250-3EB50 | 6,500 |
| | 30 | 154 | 96 x 350 | 2.7 | 4RB7300-3EB50 | 7,300 |
| 440 V AC | 15 | 82 | 75 x 275 | 1.4 | 4RB7150-3EE50 | 4,600 |
| | 20.8 | 114 | 85 x 275 | 1.7 | 4RB7200-3EE50 | 5,900 |
| | 25 | 137 | 85 x 350 | 2.2 | 4RB7250-3EE50 | 6,500 |
| | 30 | 164 | 96 x 350 | 2.7 | 4RB7300-3EE50 | 7,700 |
| 525 V AC | 20.8 | 80 | 85 x 350 | 2.2 | 4RB7208-3FC50 | 5,900 |
| | 25 | 96 | 85 x 350 | 2.2 | 4RB7250-3FC50 | 6,500 |
| | 30 | 115 | 96 x 350 | 2.7 | 4RB7300-3FC50 | 7,300 |

Premium Cap and Heavy Duty Cap 3-phase

| Rate Voltage | Output in KVAR | Capacity | PremiumCap | | | |
|--------------|------------------------------|-------------------|------------------------|---------------|-----------------|-----------|
| | | | Dimensions D x H (mm.) | weight kg. | Ordercode MLFB | Price THB |
| | 50Hz | in μ F 3 x | | | | |
| 400 V AC | 15 | 100 | 116 x 164 | 1.3 | 4RB5150-3EA50 | 5,900 |
| | 20 | 133 | 116 x 164 | 1.5 | 4RB5200-3EA50 | 7,700 |
| | 25 | 165 | 116 x 200 | 1.8 | 4RB5250-3EA50 | 7,900 |
| | PremiumCap Heavy Duty | | | | | |
| | 40 | 265 | 136 x 317 | 4.4 | 4RB6400-3EA50 | 14,000 |
| | 50 | 332 | 136 x 355 | 4.7 | 4RB6500-3EA50 | 15,300 |
| 415 V AC | 15 | 93 | 116 x 164 | 1.4 | 4RB5150-3EB50 | 6,400 |
| | 20.8 | 128 | 116 x 164 | 1.5 | 4RB5208-3EB50 | 7,800 |
| | 25 | 165 | 116 x 200 | 1.7 | 4RB5250-3EB50 | 8,300 |
| 440 V AC | 15 | 83 | 116 x 164 | 1.4 | 4RB5150-3EE50 | 6,400 |
| | 20 | 111 | 116 x 200 | 1.7 | 4RB5200-3EE50 | 7,700 |
| | 25 | 137 | 136 x 200 | 2.0 | 4RB5250-3EE50 | 8,000 |
| | 30 | 164 | 136 x 200 | 2.4 | 4RB5300-3EE50* | 9,000 |
| | PremiumCap Heavy Duty | | | | | |
| | 40 | 219 | 136 x 317 | 4.4 | 4RB6400-3EE50 | 14,000 |
| 50 | 274 | 136 x 355 | 4.7 | 4RB6500-3EE50 | 15,300 | |
| 525 V AC | 15 | 58 | 116 x 164 | 1.4 | 4RB5150-3FC50 | 5,300 |
| | 20 | 77 | 116 x 200 | 1.7 | 4RB5200-3FC50 | 7,200 |
| | 25 | 96 | 136 x 200 | 2.0 | 4RB5250-3FC50 | 8,000 |
| | 30 | 115 | 136 x 200 | 2.4 | 4RB5300-3FC50** | 9,000 |
| | PremiumCap Heavy Duty | | | | | |
| | 40 | 154 | 136 x 355 | 4.7 | 4RB6400-3FC50 | 15,300 |
| 800 V AC | 15 | 25 | 116 x 164 | 1.5 | 4RB5150-3FC50 | 9,600 |
| | 20 | 33 | 136 x 200 | 2.0 | 4RB5200-3FC50 | 10,800 |
| | 25 | 41 | 136 x 200 | 2.3 | 4RB5250-3FC50 | 11,700 |

* Discharge time \leq 75 V in 90 s ,Temperature class deviation -40/C max. 50 °C

** Temperature class deviation -40/B max. 45 °C

Power Factor Controller and Accessories

Benefits



- **Display**
 - Large and multifunctional LCD (2 x 16 characters)
 - Graphic and alphanumeric
 - LCD illumination
- **Intelligent control**
- **Menu-driven handling (plain language)**
- **Self-optimizing control capability**
- **Recall function of recorded values**
- **Four-quadrant operation (e.g. stand-by generator)**
- **Large measuring voltage range**
- **Powerful alarm output**

- **Display of numerous of system parameters**
 - System voltage (V AC)
 - Reactive power (kvar)
 - Active power (kW)
 - Frequency
 - THD-V, THD-I
 - Individual harmonics up to 19th
 - Monitoring of individual capacitor currents
 - Apparent power (kVA)
 - Apparent current (A)
 - Temperature (°C)
 - Real-time $\cos \varphi$
 - Target $\cos \varphi$
 - kvar value to target $\cos \varphi$
- **Alarm output**
 - Insufficient compensation
 - Overcompensation
 - Undercurrent
 - Overcurrent
 - Overtemperature
 - Harmonics exceeded
 - Threshold value programmable
 - Internal error storage
 - Programming of 2nd signal relay random
- **Recall recorded values**
 - Number of contactor switching operations
 - Maximum voltage V (Vmax)
 - Maximum reactive power, Q (kvar)
 - Maximum value of harmonic
 - Maximum active power, P (kW)
 - Maximum apparent power, S (kVA)
 - Maximum temperature (°C)
 - Operation time of all capacitors
- **Complete 2nd parameter set available**
- **Automatic initialization**

| Model | BR6000-R6 | BR6000-R12 | BR6000-R12+RS485 | BR7000-R15+RS485 |
|--------------------------------------|--|---------------|------------------|-------------------|
| Ordercode | 4RB9506-1CD50 | 4RB9512-1CD50 | 4RB9512-4CD50 | 4RB9515-4CD50 |
| Price (THB) | 24,800 | 29,900 | 36,800 | 69,400 |
| Number of relay outputs | 6 | 12 | | 15 |
| Supply voltage | 230 V AC | | | |
| Measurement voltage range | 30 - 300 V AC (i.e. 50-525 V phase to phase) | | | 30-440 V AC |
| Alarm output | | | | Yes |
| • Insufficient and Over compensation | | | | Yes |
| • Under and Over current | | | | Yes |
| Switchover target $\cos \varphi 1/2$ | No | No | Yes | Yes |
| Automatic initialization | | | | Yes |
| Complete 2nd parameter Program | | | | Yes |
| set programmable / switchable | | | | Yes |
| Test-run of complete PFC system | | | | Yes |
| Dimensions | 144 x 144 x 55 mm | | | 144 x 144 x 60 mm |
| Weight | | | | 1 kg |
| Interface | No | No | RS485 | RS485 |

Power Factor Controller and Accessories

3RT26 Capacitor Contactors

Overview

Standards

IEC/EN 60947-1, IEC/EN 60947-4-1, IEC/EN 60947-5-1, IEC/EN 60831-1, IEC/EN 61921

The 3RT26 contactors are suitable for use in any climate. They are finger-safe according to IEC 60529.

Function

The 3RT26 contactors for capacitive loads (AC-6b) are special versions of the 3RT20 contactors that are configured for switching banks of capacitors.

They are designed to convey the inrush current in such applications, and are weld-resistant in compliance with the technical specifications.

The 3RT26 contactors are suitable for choked and unchoked capacitors. Besides switching power capacitors in reactive current compensation systems, they are also used to switch converters.

Auxiliary switches

The variance of unassigned auxiliary switches has been increased; for available versions, Details of deviating versions are available on request.

In sizes S00 and S0, the auxiliary switch block which is snapped onto the capacitor contactor contains the three leading NO contacts and one unassigned auxiliary contact. In addition, another one (S00) or two (S0) unassigned auxiliary contacts are provided in the basic unit.

The fitting of auxiliary switches for 3RT26 contactors in sizes S00 and S0 of the respective version is not expandable. For sizes S2, freely available auxiliary switches are implemented by means of lateral auxiliary switch blocks. More auxiliary switch blocks can be mounted laterally corresponding to the 3RT20 contactors.

Device with 2 NC contactors are now consistently available in all power quantities.

Benefits



3RT2628-1A.05
with infeed terminal

- Excellent damping of inrush current
- Improved power quality (e.g. avoidance of voltage sags)
- Longer useful service life of main contacts of capacitor contactor
- Soft switching of capacitor and thus longer useful service life
- Enhanced mean life expectancy of PFC system
- Reduced ohmic losses
- Leading contacts with wiper function
- Tamper-proof and protected resistors
- Easy access for cable connection
- Voltage range: 400 - 690 V
- Output range: 12.5 - 100 kvar

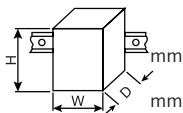
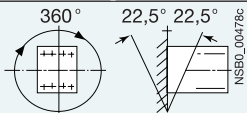
Technical specification

| Type | 3RT2625-1A, -1B; | 3RT2626-1A, -1B; 3RT2627-1A, -1B; 3RT2628-1A, -1B; | 3RT2636-1A, 3RT2637-1A |
|--|------------------|--|---------------------------|
| Size | S0 | | S2 |
| Control | | | |
| Solenoid coil operating range | | | |
| • AC operation | 50 Hz 60 Hz | 0.8 - 1.1 x U _s | -- |
| Power consumption of the solenoid coils (for cold coil and 1.0 x U _s) | | | |
| • AC operation, 50 Hz, standard version | | | |
| - Closing | VA | 77 | 190 |
| - P.f. | | 0.82 | 0.72 |
| - Closed | VA | 9.8 | 16 |
| - P.f. | | 0.25 | 0.37 |
| • AC operation, 50/60 Hz, standard version | | | |
| - Closing | VA | 81/79 | 210/188 |
| - P.f. | | 0.72/0.74 | 0.69/0.65 |
| - Closed | VA | 10.5/8.5 | 17.2/16.5 |
| - P.f. | | 0.25/0.28 | 0.36/0.39 |
| • DC operation | | | |
| - Closing | W | 5.9 | -- |
| - Closed | W | 5.9 | -- |
| Maximum permissible residual current of the electronics (with 0 signal) ¹⁾ | | | |
| • AC operation (230 V/U _s) | mA | 7 | -- |
| • DC operation (24 V/U _s) | mA | 16 | -- |
| Operating times for 0.8 ... 1.1 x U_s ²⁾ | | | |
| Total break time = Opening delay + Arcing time | | | |
| • AC operation | | | |
| - Closing delay | ms | 9 - 38 | 8 - 40 |
| - Opening delay | ms | 4 - 16 | -- |
| • DC operation | | | |
| - Closing delay | ms | 55 - 80 | -- |
| - Opening delay | ms | 16 - 17 | -- |
| • Arcing time | ms | | |

¹⁾ Size S00: The 3RT2916-1GA00 additional load module is recommended for higher residual currents,

²⁾ With size S00, DC operation: Operating times at 0.85 to 1.1 x U_s

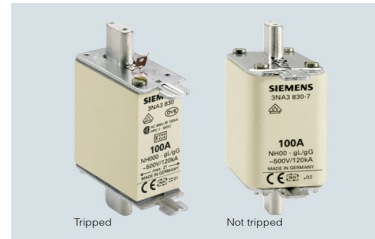
3RT26 Capacitor Contactors

| Type | 3RT2625 | 3RT2626 | 3RT2627 | 3RT2628 | 3RT2636 | 3RT2637 |
|--|---|-----------------------|--|-------------|----------------|--|
| Size | S0 | | | | S2 | |
| General data | | | | | | |
| Dimensions (W x H x D) including auxiliary switches and connection cables | | | | | | |
| • AC operation |  | | 45 x 135 x 155 | | 65 x 114 x 130 | |
| • DC operation. AC/DC operation | | | 45 x 135 x 165 | | 65 x 114 x 130 | |
| Permissible mounting position The contactors are designed for operation on a vertical mounting surface | | |  | | | |
| Mechanical endurance Basic units with mounted auxiliary switch operating cycles | | | | | | |
| 3 million | | | | | | |
| Electrical endurance | | kvar operating cycles | | 16.7 | 20 | 25 |
| For apparent power at 400 V | | | | 200,000 | | 150,000 |
| Rated insulation voltage U_i (pollution degree 3) | | V | | 690 | | |
| Rated impulse withstand voltage U_{imp} | | kV | | 6 | | |
| Protective separation between the coil and the main contacts acc. to IEC 60947-1. Appendix N | | V | | 400 | | |
| Permissible ambient temperature | | °C | | -25 to +60 | | |
| • During operation | | °C | | -55 to +80 | | |
| Degree of protection acc. to IEC 60529 | | • On front | | IP20 | | IP00 (higher degree protection, additional terminal cover) |
| • Connecting terminal | | | | IP20 | | |
| Touch protection acc. to IEC 60529 | | | | Finger-safe | | Finger-safe for vertical touching from the front |

Contactors Pricelist

| Utilization category AC-6b Switching AC capacitors at an ambient temperature of 60 °C | | | | Auxiliary contacts, unassigned Version | | Rated control supply voltage U_s 50 Hz AC | Screw terminals | |
|--|---|----------|----------|--|----|--|---|--------------|
| Size | Capacitor rating at operational voltage 50/60 Hz | | | | L | V | Order code MLFB | Price THB |
| | At 400 V | At 500 V | At 690 V | | | | | |
| | kvar | kvar | kvar | NO | NC | | | |
| For screw fixing and snap-on mounting onto TH 35 standard mounting rail | | | | | | | | |
| Size S0 | 6 - 16.7 | 7 - 21 | 10 - 29 | 1 | 2 | 24 110 230 | 3RT2625-1AB05 3RT2625-1AF05 3RT2625-1AP05 | 3,400 |
| | 7 - 20 | 8 - 25 | 11 - 34 | 1 | 2 | 24 110 230 | 3RT2626-1AB05 3RT2626-1AF05 3RT2626-1AP05 | 3,800 |
| | 8 - 25 | 10 - 31 | 14 - 43 | 1 | 2 | 24 110 230 | 3RT2627-1AB05 3RT2627-1AF05 3RT2627-1AP05 | 4,600 |
| | 11 - 33 | 14 - 41 | 19 - 57 | 1 | 2 | 24 110 230 | 3RT2628-1AB05 3RT2628-1AF05 3RT2628-1AP05 | 6,000 |
| For screw fixing and snap-on mounting onto TH 35 standard mounting rail | | | | | | | | |
| Size S2 | 17 - 50 | 21 - 63 | 29 - 86 | 1 | 1 | 24 110 230 | 3RT2636-1AB03 3RT2636-1AF03 3RT2636-1AP03 | 9,500 |
| | 25 - 75 | 31 - 94 | 43 - 129 | 1 | 1 | 24 110 230 | 3RT2637-1AB03 3RT2637-1AF03 3RT2637-1AP03 | 13,000 |
| For screw fixing and snap-on mounting onto TH 35-15 and TH 75-15 standard mounting rail | | | | | | | | |
| Size S2 | 33 - 100 | 41 - 125 | 57 - 172 | 1 | 1 | 24 110 230 | 3RT2646-1AB03 3RT2646-1AF03 3RT2646-1AP03 | 19,300 |

HRC fuse Systems



Overview

LV HRC fuse systems are used for installation systems in non-residential, commercial and industrial buildings as well as in switchboard assemblies of power utilities. They therefore protect essential building parts and systems.

The components and auxiliary equipment are designed in such a way as to ensure the safe replacement of LV HRC fuse systems or isolation of systems.

LV HRC fuse links are available in the sizes 000, 00, 0, 1, 2, 3, 4 and 4a.



| HRC FUSE | | | |
|----------|--------------|----------------|-------------|
| SIZE | Rating @500V | Ordercode MLFB | Price (THB) |
| 000 | 50A | 3NA3820 | 320 |
| | 63A | 3NA3822 | |
| | 80A | 3NA3824 | |
| | 100A | 3NA3830 | |
| 00 | 125A | 3NA3832 | 390 |
| | 160A | 3NA3836 | 420 |
| 1 | 200A | 3NA3140 | 910 |
| | 250A | 3NA3144 | |



| Fuse pullers for LV HRC fuse links | | | |
|------------------------------------|--------------|----------------|-------------|
| SIZE | Type | Ordercode MLFB | Price (THB) |
| 000 to 3 | Fuse pullers | 3NX1013 | 2,050 |

Benefits

LV HRC fuse links with combination front indicator the tripping of a fuse. This enables identification and replacement of the tripped fuse links. This increases system availability

LV HRC fuse links are always equipped with silver-plated contact pins. This means that they are non-corroding and have less contact resistance. This ensures the long-term operational safety of the plant



| LV HRC fuse bases | | | |
|-------------------|-----------------------|----------------|-------------|
| SIZE | Type | Ordercode MLFB | Price (THB) |
| 000/00 | 1 pole terminal screw | 3NH30300RC | 380 |
| | 3 poles+ 2 partitions | 3NH4030 | 3,100 |
| 1 | 1 pole terminal screw | 3NH32300RC | 750 |
| | 3 poles+ 2 partitions | 3NH4230 | 8,500 |



| Isolating blades for LV HRC fuse bases | | | |
|--|---------------------------|----------------|-------------|
| SIZE | Type | Ordercode MLFB | Price (THB) |
| 000 | fuse switch disconnectors | 3NG1002 | 670 |
| 00 | | 3NG1102 | 1,410 |
| 1 | | 3NG1202 | 1,530 |

 Technical overview - Fuse systems



The fast way to get you to our online services

This page provides you with comprehensive information and links on fuse systems
www.siemens.com/lowvoltage/product-support (109769085)



บริษัท ซีเมนส์ จำกัด

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