FGECO ELECTRIC

# Power Factor Correction Capacitors (CPF)

## Data sheet

fgeco.co

2025

# Power Factor Correction Capacitors (PFC)

power factor correction panel is used to bring the power factor of an AC power circuit closer to 1 by supplying reactive power of the opposite sign, adding capacitors that cancel the inductive effects of the load, which reduces transmission losses and improves voltage regulation at the load.

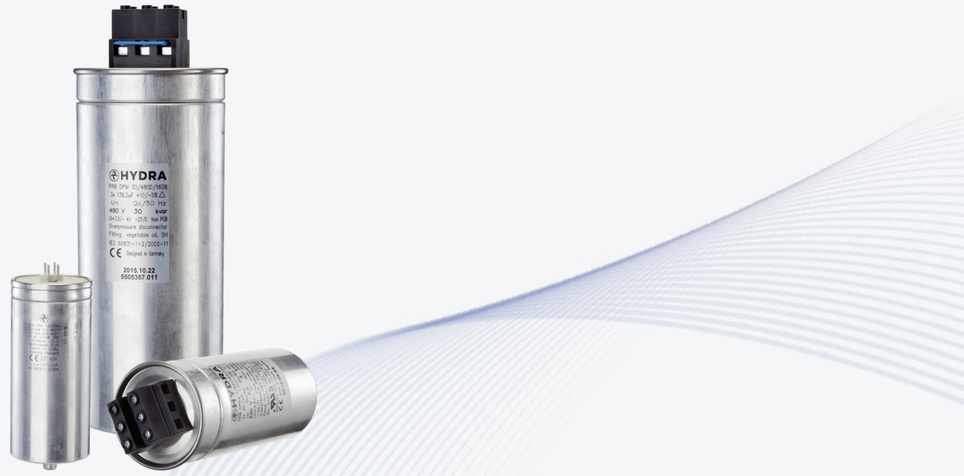
Correction may be applied by a utility to improve the stability and efficiency of the transmission network. Individual electrical customers who are charged by their utility for low power factor may install correction equipment to reduce those costs.

## Technical Data

| Enclosure Name | | | FGECO |
|---|---|---|---|
| Standards | | | IEC 61921 Power Capacitors Low-Voltage Power Factor Correction Banks- Edition 2 2017-06 |
| Electrical Data | Apparatus | Reactive power Qn | 600 KVAr |
| | Rated voltage | Rated voltage Ue | 415 V |
| | | Rated insulation voltage Ui | 500 V |
| | | Rated impulse withstand voltage Uimp | Up to 4 kV |
| | | Degree of pollution | Up to IV |
| | | Rated frequency | IIIa |
| | Rated current | Capacitance tolerance | *-5%, +10% |
| | | Connection type | Three-phase |
| | | Rated current for main distribution busbar In | Up to 1600 A |
| | | Rated diversity factor (RFD) | 1 |
| | | Conditional short circuit current Icc | 50 kA |
| | | Rated short-time withstand current Icw | 50 kA @ 1 Sec |
| | | Rated peak withstand current Ipk | Up to 105 kA |
| | | Overload protection | 1.5 In |
| | | Maximum permissible over voltage | 1.1 x Un |
| | PFC type | Fixed | Yes |
| | | Automatic | Yes |

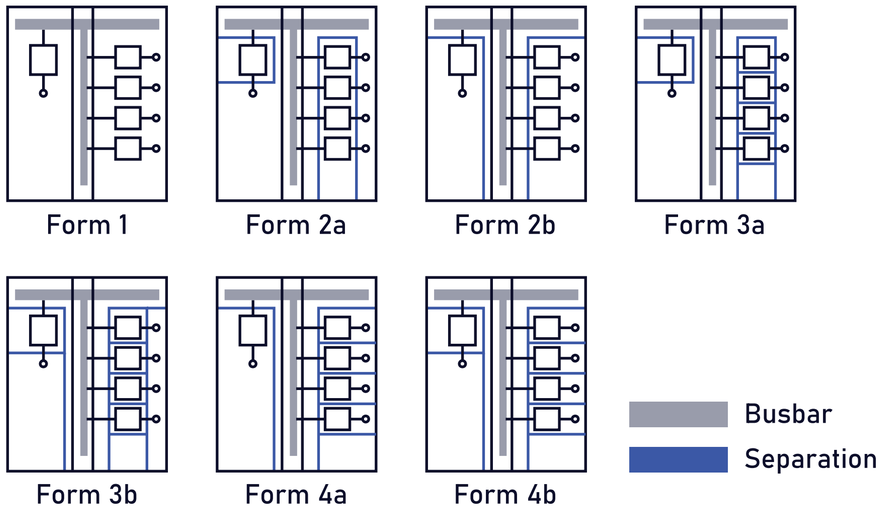
## Technical Data

| Enclosure Name | | | FGECO |
|---|---|---|---|
| Electrical Data | Head circuit breaker protection | Without circuit breaker | Yes |
| | | With circuit breaker | Yes |
| | Steps | Numbers | Up to 12 |
| | | Capacitors type | Dry type capacitors |
| | | Contactors | Switching |
| | Reactors | Detuned | 5.67% |
| | | Detuned | 7% |
| | Direct contact protection | Form of separation | 1 Up to 2a |
| | | Protection against electric shock | Yes |
| | - | Temperature control | Automatic power factor |
| | - | Ventilation | controller |
| Mechanical Characteristics | Degree of protection | External mechanical impacts strength IK | Up to IK10 |
| | | External degree of protection IP | Up to IP54 |
| | Steel components | Frame material | AluZinc steel / EGS |
| | | Frame thickness | Up to 3 mm |
| | | Sheet metal material | AluZinc steel / EGS |
| | - | Surface protection | Electrostatic powder coating |
| | - | Standard colors | RAL7035* |
| | - | Panel mounting | Free standing |
| General | Installation environment | Ambient temperature (°C) | 40* |
| | | Relative humidity | max 50% at 40°C |
| | | Maximum altitude | ≤ 2000 m* |
| | Busbar | Busbar system | 3*PH, Neutral and PE |
| | | Busbar insulating material | Bare / tin / silver / sleeving |



# Separation Forms

## Technical Data




| Form | IEC Standard Definition | Specific Recommendations |
|---|---|---|
| 1 | No Internal separation | Protection over busbar for customer safety |
| 2a | Separation of busbars from the functional units | Terminals not separated from busbars |
| 2b | Separation of busbars from the functional units | Terminals separated from busbars |
| 3a | Separation of busbars from the functional units and of all functional units from each other | Terminals not separated from busbars |
| 3b | Separation of busbars from the functional units and of all functional units from each other | Terminals separated from busbars |
| 4a | Separation of busbars from the functional units and of all functional units from each other, also separation of terminals from any functional unit | Terminals in the same compartment as associated functional units |
| 4b | Separation of busbars from the functional units and of all functional units from each other, also separation of terminals from any functional unit | Terminals are not in the same compartment as the associated functional units |

# Ingress Protection (IP)

Standard IEC 60529 (February 2001) indicates the degree of protection provided by electrical equipment enclosures against accidental direct contact with live parts and against the ingress of solid foreign objects or water.

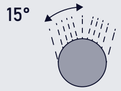
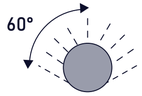
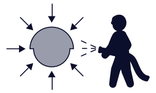
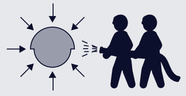
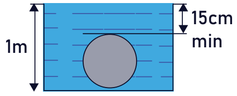
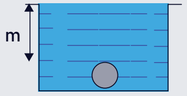
The IP code comprises 2 characteristic numerals and may include an additional letter when the actual protection of persons against direct contact with live parts is better than that indicated by the first numeral.

The first numeral characterizes the protection of the equipment against penetration of solid objects and the protection of people. The second numeral characterizes the protection of the equipment against penetration of water with harmful effects.

## Protection Against Solid Bodies Data Table

| Protection of Equipment | | | Protection of Persons |
|---|---|---|---|
| No. | Tests | Non-protected | Non-protected |
| 1 | Φ50mm  | Protected against the penetration of solid objects having a diameter greater than or equal to 50 mm | Protected against direct contact with the back of the hand (accidental contacts). |
| 2 | Φ12.5mm  | Protected against the penetration of solid objects having a diameter greater than or equal to 12.5 mm. | Protected against direct finger con- tact. |
| 3 | Φ2.5mm  | Protected against the penetration of solid objects having a diameter greater than or equal to 2.5 mm. | Protected against direct contact with a Ø 2.5 mm tool. |
| 4 | Φ1mm  | Protected against the penetration of solid objects having a diameter greater than or equal to 1 mm. | Protected against direct contact with a Ø 1 mm wire. |
| 5 |  | Dust protected (no harmful deposits). | Protected against direct contact with a Ø 1 mm wire. |
| 6 |  | Dust tight. | Protected against direct contact with a Ø 1 mm wire. |

## Protection Against Liquids Data Table

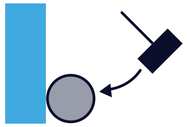
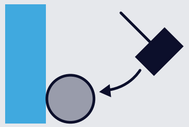
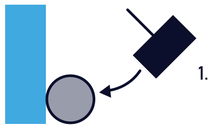
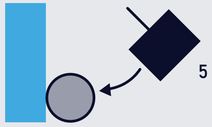
| No. | Tests | Non-protected |
|---|---|---|
| 1 |  | Protected against vertical dripping water, (condensa- tion). |
| 2 |  | Protected against dripping water at an angle of up to 15°. |
| 3 |  | Protected against rain at an angle of up to 60°. |
| 4 |  | Protected against splashing water in all directions. |
| 5 |  | Protected against water jets in all directions. |
| 6 |  | Protected against powerful jets of water and waves. |
| 7 |  | Protected against the effects of temporary immersion. |
| 8 |  | Protected against the effects of prolonged immersion under specifi ed conditions. |

## Protected Against Access To Hazardous Parts With

| Level | Tests |
|---|---|
| A | With the back of the hand. |
| B | With the finger. |
| B | With a ø 2.5 mm tool. |
| C | With a ø 1 mm tool. |

# IK Code
# “Mechanical Impact Test”

The European standard EN 50102/IEC 62262 defines a coding system (IK code) for indicating the degree of protection provided by electrical equipment enclosures against external mechanical impact.

| | | Non-protected | |
|---|---|---|---|
| No. | | H (cm) | Energy (J) |
| 01 |  | 7.5 | 0.15 |
| 02 | | 10 | 0.2 |
| 03 | | 17.5 | 0.35 |
| 04 | | 25 | 0.5 |
| 05 | | 35 | 0.7 |
| 06 |  | 20 | 1 |
| 07 | | 40 | 2 |
| 08 |  | 30 | 5 |
| 09 |  | 20 | 10 |
| 10 | | 40 | 20 |

Standard NF C 15-100 (May 1991 edition), section 512, table 51 A, provides a cross-reference between the various degrees of protection and the environmental conditions classification, relating to the selection of equipment according to external factors.

Practical guide UTE C 15-103 contains tables showing the specifications required for electrical equipment (including minimum degrees of protection), according to the locations in which they are installed.