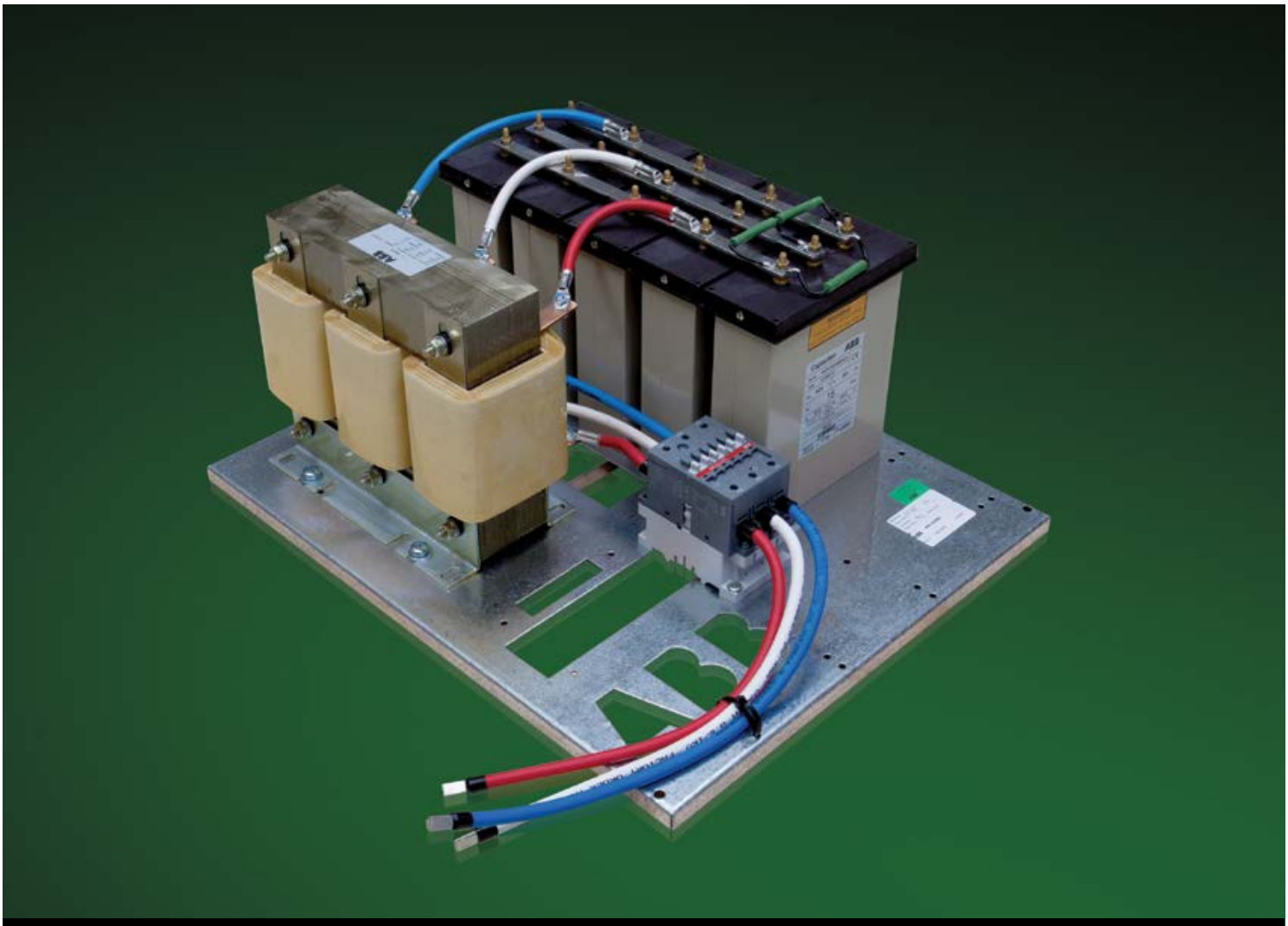
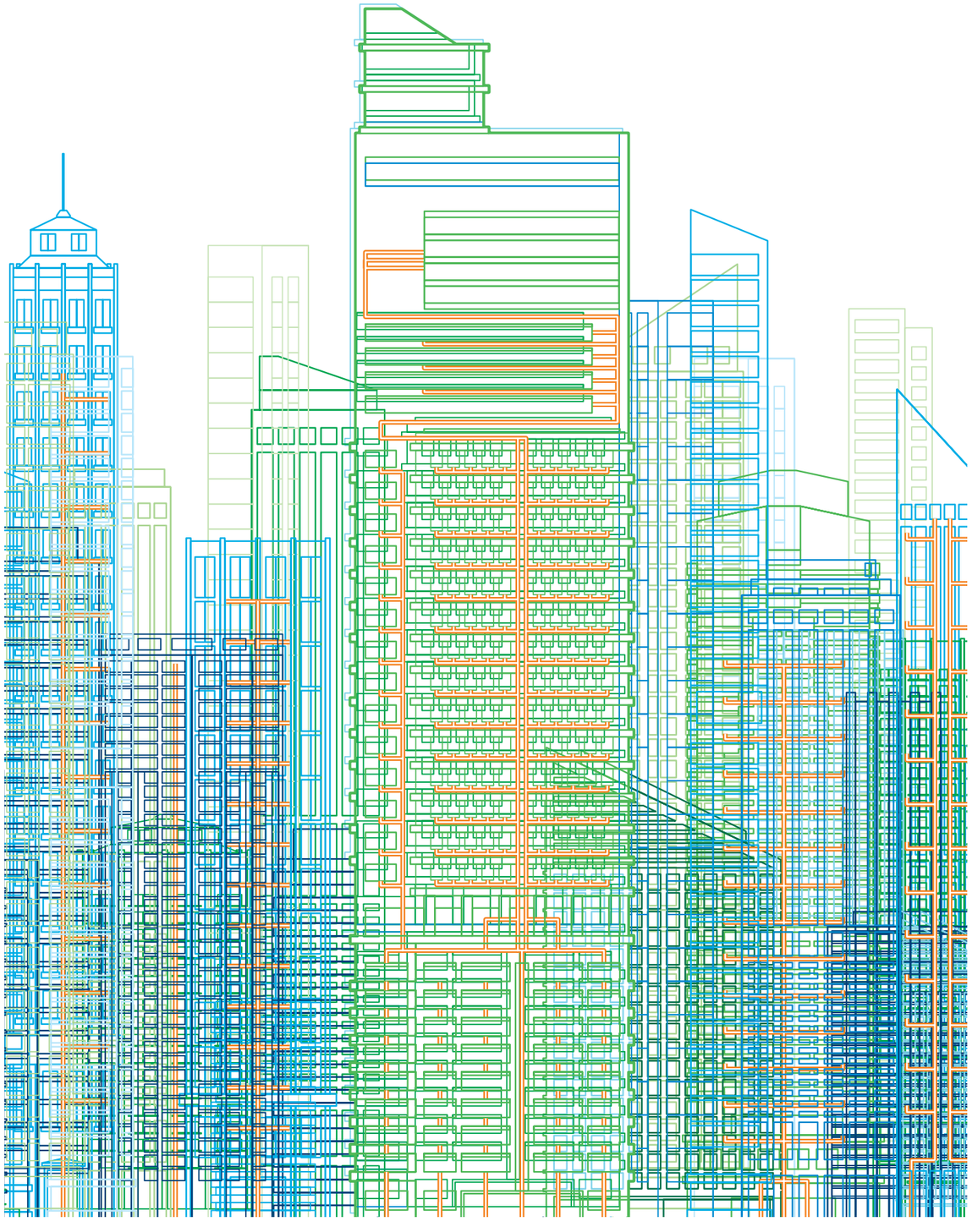


Product brochure

# MODVAR
# Power Factor Correction Modules
# The ABB comprehensive solution for low voltage automatic power factor correction

Power and productivity
for a better world™

# ABB MODVAR Power Factor Correction Modules
## The most comprehensive solution for power factor correction



# Applications

ABB's MODVAR power factor correction module is a powerful and compact range of power factor correction modules that provide the ideal solution for industrial and commercial applications.

MODVAR power modules are easy to install, operate and service while ensuring exceptional reliability, efficiency and safety.

The key feature of MODVAR is the modular design and versatility for various applications and environments.

MODVAR is suitable for reactive power compensation in a wide variety of applications including:

- Buildings
- Mining industry
- Steel industry
- Chemical industry
- Pulp and paper industry
- Cement industry
- Plastics industry
- Printing industry
- Food industry

# Modular solutions for LV automatic power factor correction
## Key features & benefits

**Powerful and compact**
ABB's world renowned CLMD capacitors with a specially designed ventilation system allow ABB capacitor banks to reach a maximum reactive power within a minimum volume.

**Easy to select**
Various sizes are available depending on network kvar demand.

**Reliable and safe**
The reliability of ABB CLMD13 power modules is based on a set of ABB components exclusively designed for reactive power compensation applications.

**Easy to install**
Fully assembled, factory tested and ready for connection

**Easy to use**
Using ABB RVT and RVC range of Power Factor Controllers with multiple automatic functions and its user-friendly interface make the MODVAR bank very simple to operate.

**Modular design**
Allows installation of additional power and switch modules as well as various configurations. Additional units may be connected in parallel.

**Options**
Circuit breakers, thermal limit switches, rapid discharge resistors, blown fuse indication, alarms and sirens can be ordered and factory fitted.

**Low losses**
Capacitor total losses are less than 0.5 watts per kvar. Total losses (without reactors), including accessories such as power factor controller and contactors are less than 1.5 watts per kvar.

**Unique sequential protection system**
Ensures that each individual capacitor element is selectively and reliably disconnected from the circuit at the end of its life.

**Life cycle**
Low losses and the self-healing properties of ABB capacitor elements help to ensure a long operating life.

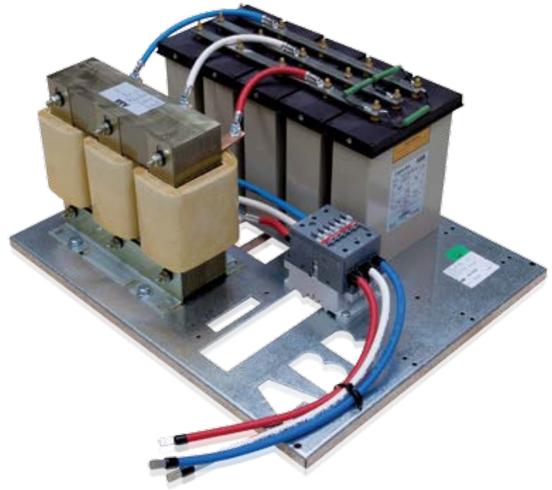
**Safety**
ABB capacitors are manufactured with vermiculite, a non-flammable and non-toxic material. The dry vermiculite safely absorbs any energy produced within the capacitor enclosure and prevents any fire hazard in case of failure.

**Compliance**
IEC 60831-1 & 2.



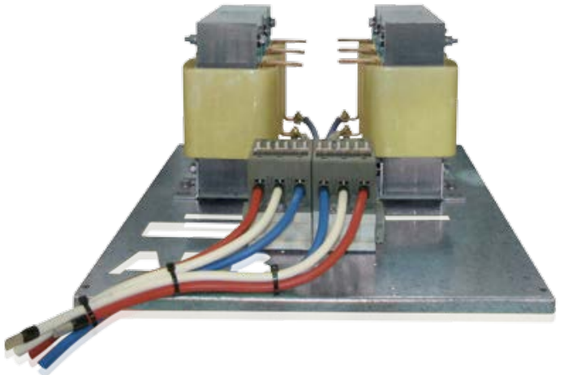
# MODVAR
## Standard range

| Voltage (50Hz) | Kvar | Part No. | Reactor |
|---|---|---|---|
| 415V | 12.5 kvar | PM.122DS | 7% |
| 415V | 25 kvar | PM.123DS | 7% |
| 415V | 50 kvar | PM.120DS | 7% |



# MODVAR
## Segregated range

| Voltage (50Hz) | Kvar | Part No. | Reactor |
|---|---|---|---|
| 415V | 1 x 12.5 kvar | PM.206DS | 7% |
| 415V | 1 x 25 kvar | PM.207DS | 7% |
| 415V | 1 x 50 kvar | PM.205DS | 7% |
| 415V | 2 x 12.5 kvar | PM.202DS | 7% |
| 415V | 2 x 25 kvar | PM.201DS | 7% |
| 415V | 2 x 50 kvar | PM.200DS | 7% |
| 415V | 12.5 kvar 25 kvar | PM.204DS | 7% |
| 415V | 25 kvar 50 kvar | PM.203DS | 7% |



# ABB’s proven design

### ABB capacitors

The dielectric of the capacitor windings is made of in-house metallised polypropylene film resulting in exceptional properties:

- High voltage withstands capability
- Excellent peak current handling capacity
- High capacitance stability
- Long life even under high electrical stress
- Very low losses
- Exceptional self-healing properties
- Fire protection

### Detuned installation

The presence of harmonics might seriously overstress the capacitors, resulting in technical issues or premature ageing.

In such cases, a proven answer is to protect the capacitor with series reactors. These reactors detune the circuit to a frequency below the 5th harmonic which is typically the most significant harmonic present in power networks.

### ABB UA contactors

Contactors have been specifically selected for their excellent handling capability during endurance tests.

### Ventilation

ABB MODVAR modules are designed and arranged specifically to allow efficient heat dissipation.

### Other options

- MCCB (replaces fuse)
- Thermal limit switch installed on contactors
- Fuse blown indicators
- Rapid discharge resistors

# Technical specifications

| | |
|---|---|
| Voltage range | 415V, 50Hz<br>For other voltages please consult ABB |
| Connection | Three phase |
| Net output power Q at 415V | 12.5kvar, 25kvar, 50kvar |
| Discharge resistors | Included<br>Discharge time: less than 50V in 1 minute |
| System connection | Fuse base mounted on busbar (max 30x10mm) |
| Earth | Earth the mounting plate |
| Fixing | Two M6 screws to the supporting rail. (M8 holes on mounting plate) |
| Protection degree(according to IEC 60529) | IP00 |
| Installation | Indoor |
| Weight | 12.5kvar 25kg<br>25kvar 35kg<br>50kvar 50kg |
| Dimensions( H x W x D) | 300mm x 472mm x 575mm |
| Maximum ambient temperature | Class D according to IEC60831:<br>Maximum average over 1 year: 35°C<br>Maximum average over 24h: 45°C |
| Minimum ambient temperature | -25°C |
| Fuse | ABB gG or gL 50, 63, 100 and 125 A |
| Contactor | ABB UA75<br>Control voltage: 230/240V at 50Hz |
| Required clearance | 25 mm minimum to walls |
| Capacitor losses | Less than 0.5 W/kvar (discharge resistor losses included) |
| Contactor and fuses losses | With UA75 contactor: 0.82 W/kvar |
| Tolerance on capacitance | 0% to 10 % |
| Capacitor voltage test | Between terminals: 2.15xUn for 10 seconds<br>Between terminals and earth: 3kV for 10 sec: Un ≤ 450V<br>Lightning impulse voltage: 8 kV: Un ≤ 690V |
| Overload capability<br>(according to IEC 60831) | Overvoltage tolerance: 10% for maximum 8h in every 24h and 30% for maximum 1min<br>Maximum permissible current: 1.3x In. |
| Altitude | Up to 1000m |

# Contact us

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ABB is working continuously to improve our products. We therefore reserve the right to change designs, dimensions and data without prior notice.

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