HITACHI
Inspire the Next

Metal Enclosed Capacitor Bank

ABBACUS C-Series
Enhancing power quality and energy efficiency of your electrical network

ABBACUS C-Series MECB



An affordable and compact reactive power solution.

Power quality is a major concern for transmission and distribution utilities, industries, and transport and infrastructure sectors. Poor power quality affects grid reliability, productivity, leads to higher operating costs and penalties for non-compliance with grid codes.

Hitachi Energy is a technology leader with a wide range of products, systems and services that improve power quality across the power value chain for low, medium and high-voltage applications, helping to shape a stronger, smarter and greener grid.

Hitachi Energy's ABBACUS range of metal enclosed capacitor banks (MECB) are a 'one stop shop' solution for maintaining power quality in medium voltage networks by compensating reactive power, improving power factor of the network or by passively mitigating harmonics.

ABB's ABBACUS C-Series MECB combines primary components with secondary control and protection in a compact modular enclosure. The system can be configured as a fixed or switched solution, with the switched bank consisting of single or multiple steps which can be automatically controlled to improve power factor. To provide maximum system benefit, the bank can be configured with detuned or simple inrush reactors. For more advanced applications a tailored filter solution can be designed.

The ABBACUS C-Series MECB is available in a range of configurations suitable for voltage applications up to 12 kV. It is fully assembled and factory tested. The ABBACUS C-Series MECB offers increased flexibility in an economical package to meet the varying requirements of utility and industrial customers.

ABBACUS C-Series MECB
Single or three phase capacitors
Inrush reactors/ detuning reactors
1 kV to 12 kV
up to 1.5 Mvar/ module
Up to IP54 indoor/ outdoor mild steel enclosure
Fixed or switched capacitor steps

Optional Items include
Fuse failure indication
Full cable entry incomer or side entry box
Isolator switch
Earth switch
Surge arresters
Unbalance protection
Interlocking
'Hitachi Energy Q-ACT' arc protection

Hitachi Energy

Technical data

General	
Voltage	Up to 12 kV
Maximum output	1.5 Mvar/ module[1], 9 Mvar total (6 steps)
Frequency	50 or 60 Hz
Location	Indoor/ outdoor
Ambient temperature	–10/ +50°C[1, 2]
Altitude	<1000 m above sea level[1]
Humidity	Maximum 90% RH non-condensing
Insulation level	Up to 125 kV BIL
Short circuit current	Up to 50 kA for 1 second[1]
Bank configuration	Fixed, switched, single or multi-step
Interlocking (optional)	Mechanical or solenoid
Arc fault mitigation	Hitachi Energy Q-ACT (optional) with full incomer
Busbar	Hard drawn copper (tinned)
Standards	IEC, IEEE/ ANSI , CSA or equivalent

Enclosure	
Material	Mild steel
Base frame	Hot dipped galvanized steel
Protection	Up to IP54 indoor/ outdoor
Door locking	Three point padlock handle with interlock option
Installation	Base fixing
Handling	Fork and crane lifting via base
Cable entry	Bottom only

Capacitors	
Type	Single, three phase
Fusing	Internal or unfused
Discharge resistor	Built-in
Losses	<0.15 W/ kvar including resistors
Dielectric	Polypropylene film
Container	Stainless steel
Bushings	Grey porcelain, one, two or three

Inrush reactors	
Type	Single phase, air core

Detuning/ filter reactors	
Type	Three phase, iron core

Contactors	
Type	Vacuum contactor
Phase	Three
Current rating	250 Amps capacitive[1]

Isolator and earth switch	
Type	Air-insulated
Phase	Three
Current rating	1250 A[1]

Fuses	
Rated current	Up to 315 A
Short time current	63 kA (max)

Power factor controller	
Microprocessor-based system for single or three phase system	Insensitive to harmonics
Control voltage	100 VAC to 240 VAC
Power factor setting	0.7 inductive to 0.7 capacitive

1. Higher ratings available on request
2. Lower ratings available on request

For more information please contact your local Hitachi Energy representative or visit
hitachienergy.com/offering/solutions/power-quality

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