

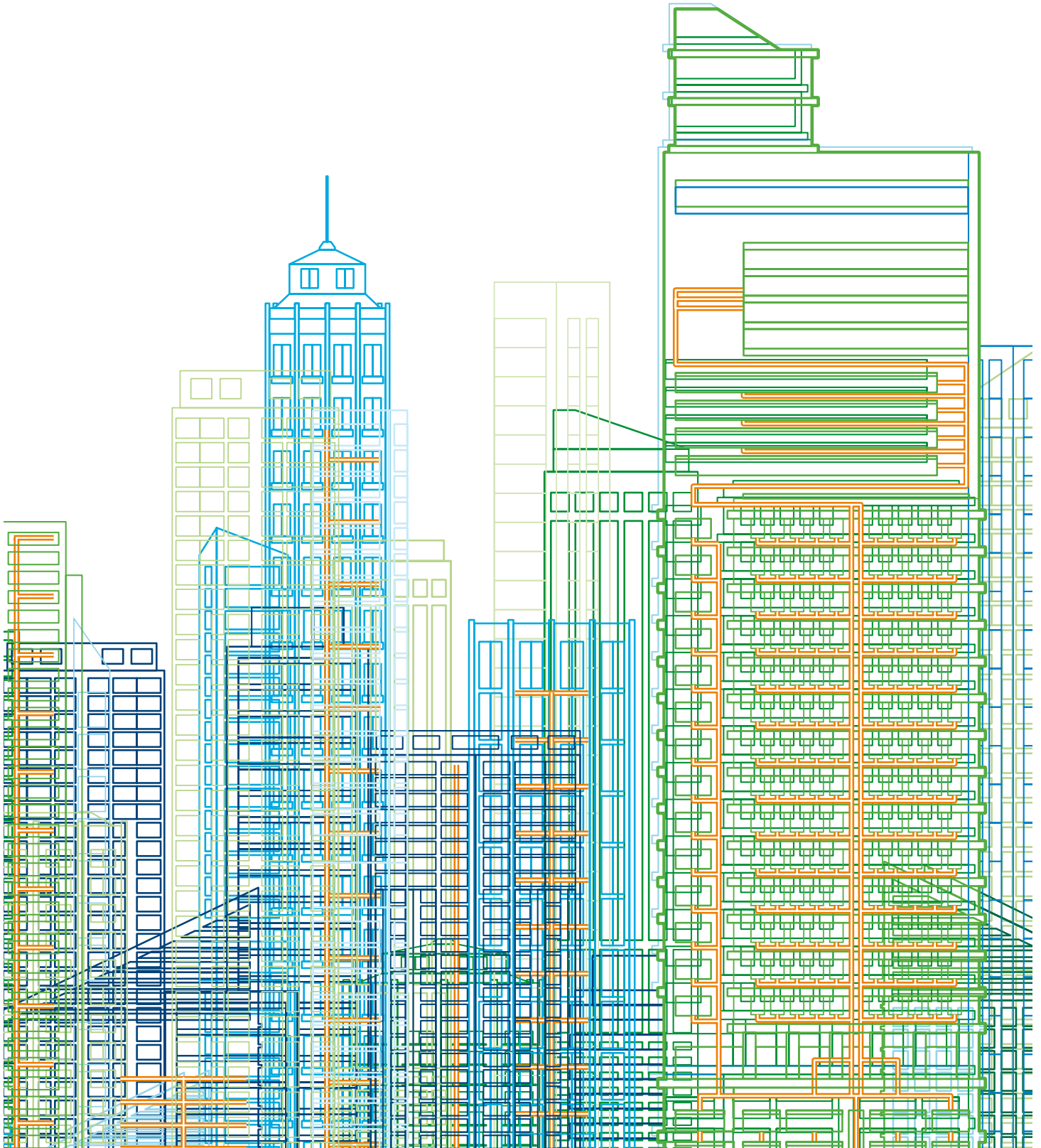


Low Voltage Products

Low Voltage Capacitor Banks Power Factor Correction Solutions

ABB LV Capacitor Banks

The Most Comprehensive Solution for Automatic Power Factor Correction



Smart Solutions for Automatic Power Factor Correction

Powerful and compact

ABB 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

- Capacitor banks available in 5 versions : Series 100, series 300, series 500, series 700 and CLM3, as automatic, auxiliary and fixed units.
- Capacitor bank with reactors available in 3 versions: Series 300R, series 500R and CLMR, as automatic, auxiliary and fixed units.
- CLM3 and CLMR high range of capacitor banks available in 4 sizes depending on step quantity, as automatic, auxiliary and fixed units.

Reliable and safe

The reliability of ABB capacitor banks is based on a set of ABB components exclusively designed for reactive power compensation applications.

ABB capacitor banks come with a Type 1 protection level (closed door) and optional Type 12 and 3R version available on request.

Easy to install

- Complete unit, factory tested and ready for connection
Commissioning may be completely automatic
- Ample space for wiring for control wires and power cables
- The series 700, series 500R, CLM3 and CLMR cubicles are equipped with lifting eye-bolts for easy handling.
- Auxiliary units are equipped with interconnection wires on terminals for fast connection to the master unit controller.

Easy to use

The multiple automatic functions of the Power Factor Correction (RVT) and its user-friendly interface make the ABB capacitor bank very easy to operate.

Key features & benefits

Modular design

Allows installation of additional power and switch modules as well as various options. Additional units may be connected in parallel.

Options

Can be factory installed; anti-resonance reactors, filters, fans, blown fuse indication, non-fused, fused disconnect switches and circuit breakers.

Low losses

Capacitor total losses are less than 0.5 watts per kvar. Auto-bank 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 long operating life.

Safety

ABB capacitors are manufactured with vermiculite, a non-flammable and nontoxic material. The dry vermiculite safely absorbs any energy produced within the capacitor enclosure and prevents any fire hazard in case of failure. Unique cooling fans are fitted to surround each capacitor element providing effective heat dissipation

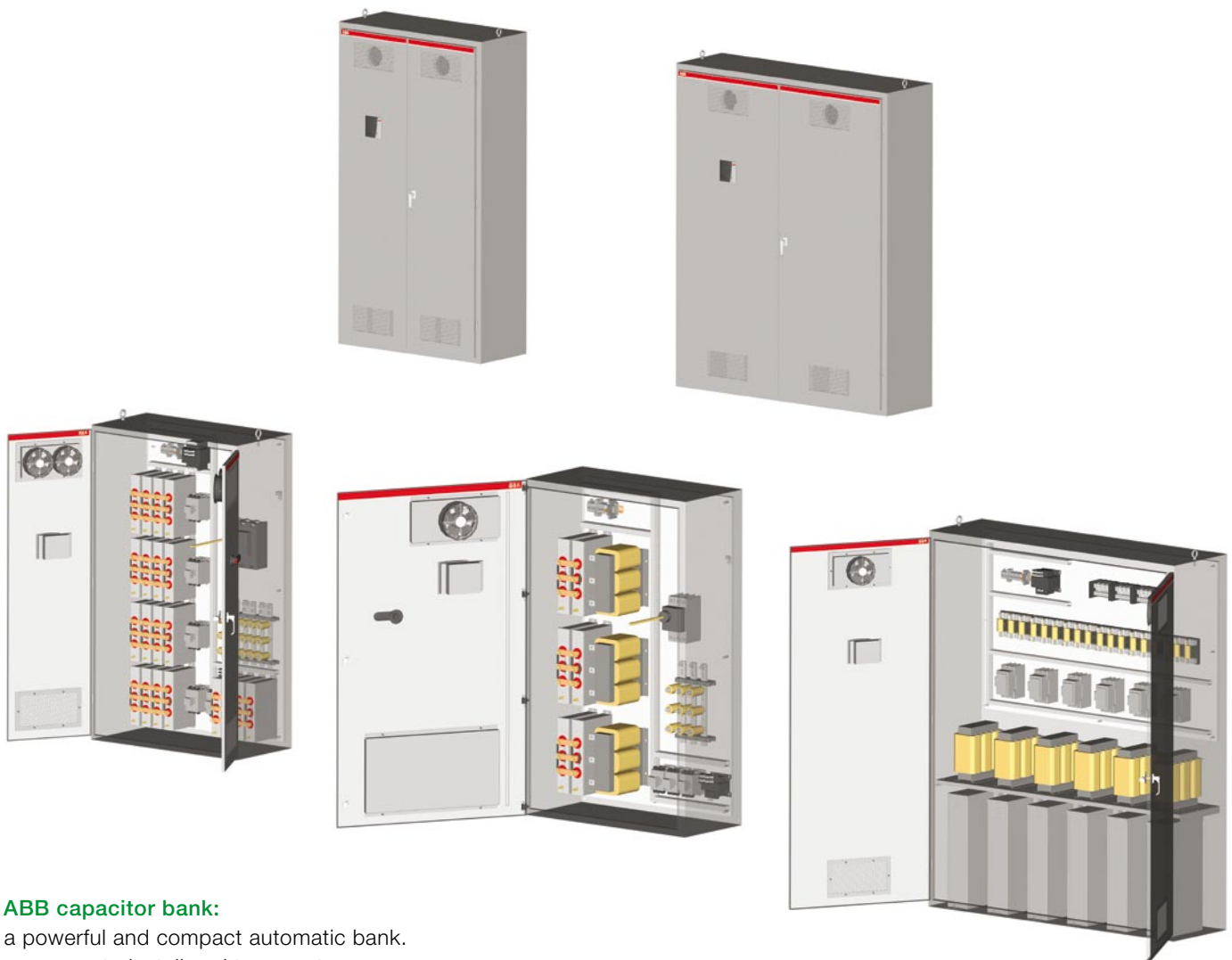
Compliance

CSA/UL

ABB Capacitor Banks Series 100, 300, 500, 700, 300R and 500R

The New ABB Efficient Ranges of Capacitor Banks

Series	Max. Stages	Max. kvar/Step	Max. kvar	Voltage	Dimension (inches)	Type	Aprox. Weight	Cable entry
100	3	15	45	480 / 600	24 x 20 x 10	1, 12, 3R	90 lb	Top
300	3	50	150	480 / 600	36 x 30 x 16	1, 12, 3R	200 lb	Top / Side
500	5	50	250	480 / 600	60 x 36 x 16	1, 12, 3R	300 lb	Top / Side
700	5	100	500	480 / 600	72 x 42 x 20	1, 12, 3R	500 lb	Top / Side
300R	3	50	150	480 / 600	60 x 36 x 16	1, 12, 3R	400 lb	Top / Side
500R	5	50	250	480 / 600	72 x 42 x 20	1, 12, 3R	650 lb	Top / Side



The ABB capacitor bank:

- is a powerful and compact automatic bank.
- is very easy to install and to operate.
- provide a high level of reliability and security.

ABB CLM3 and CLMR Capacitor Banks Series

More Modularity and Ease of Configuration

CLM3 – Automatic capacitor bank

Possible configurations

- 4-5-6-7-8 steps of single units.
- Main protection can be added to the bank on request.
- Maximum step size is 100 kvar @ 480V / 600V.

Technical specification

- Maximum kvar size 1200 kvar @ 480V / 600V
- Dimensions: depends on the size
 - 4 steps (90"H x 38"W x 20"D)
 - 5 steps (90"H x 50"W x 20"D)
 - 6 steps (90"H x 62"W x 20"D)
 - 7/8 steps (90"H x 74"W x 20"D)
- Weight: depend on bank configuration
- Cable entry: top, bottom or side
- Up 12 steps configuration with slave unit



CLMR – Detuned capacitor bank (with reactors)

Possible configurations

- 3-4-5-6 steps.
- Main protection can be added to the bank on request.
- Maximum step size is 100 kvar @ 480V / 600V.

Technical specification

- Maximum kvar size 1200 kvar @ 480V / 600V
- Dimensions: depends on the size
 - 3 steps (90"H x 38"W x 20"D)
 - 4 steps (90"H x 50"W x 20"D)
 - 5 steps (90"H x 62"W x 20"D)
 - 6 steps (90"H x 74"W x 20"D)
- Weight: depend on bank configuration
- Cable entry: top, bottom or side
- Up 12 steps configuration with slave unit



Technical Data

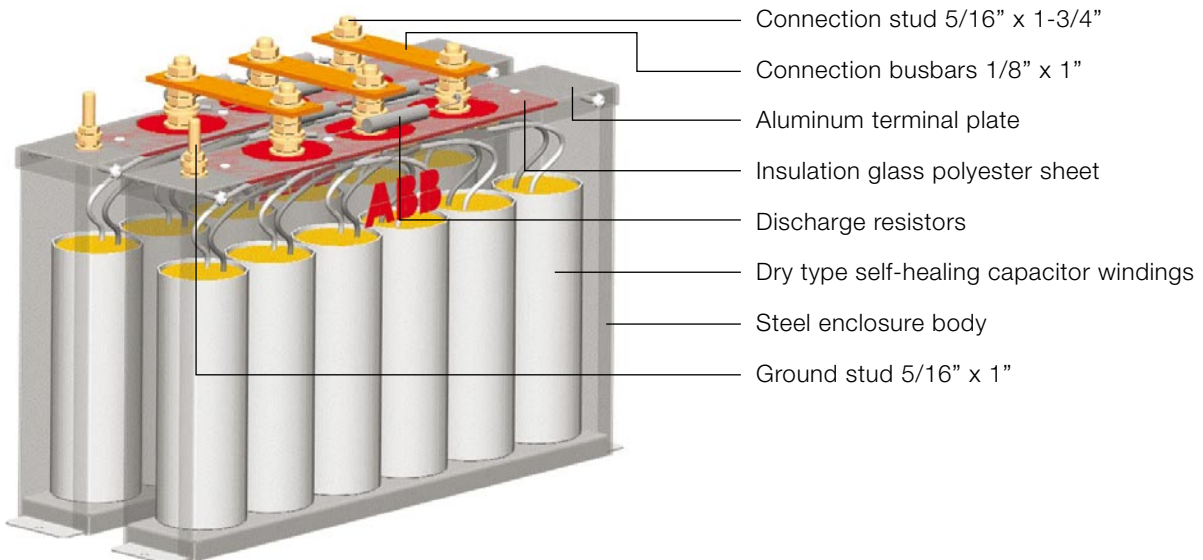
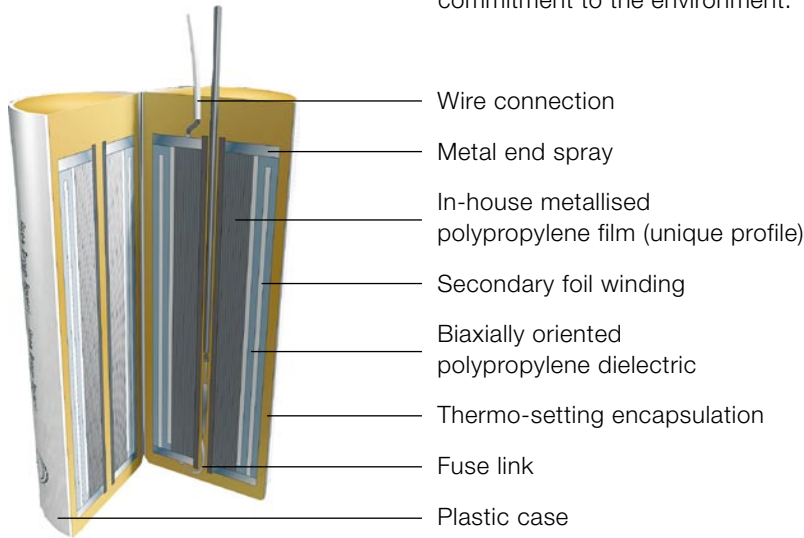
ABB capacitors

The dielectric of the capacitor windings is made of in-house metallized 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.

CLMD33C capacitors, utilized in series 300 to 700 bank comes with a unique voltage rating suitable for all voltage networks

- The CLMD33C protection system offers reliable and safe protection. It is based on:
 - The instant reaction of state of the art overpressure detection and disconnection devices.
 - Double casing insulation protects the windings from the environment and assures high capacitance stability over the whole capacitor service life.
- The CLMD33C is suitable for a maximum ambient temperature of +55°C (class D) and a minimum of -25°C.
- The ISO 9001 and 14001 certification guarantees our commitment to the environment.



RVT – Power Factor Controller

For Maximum Protection of Your Capacitor Bank Against Temporary Deterioration of Your Network Quality



LCD display with indication of:

- Full graphics display
- Inductive/Capacitive Power Factor
- Active outputs
- Demand for switching on/off of a capacitor step
- Alarm conditions
- Overtemperature condition
- Phase shift
- C/k
- Number of outputs
- Type of switching sequence
- Alarm conditions

Keypad

Easy commissioning with automatic recognition of:

- Special connections (Single-phase, CT leads)
- Number of outputs
- Number of outputs
- Type of switching sequence

Automatic/manual mode

Modbus adapter



Additional features for the RVT power factor controller:

- Programmable protection thresholds (under voltage, over temperature, excessive harmonic distortion, etc...). The RVT protects your capacitor bank. It is recommended for installation where over voltage, resonance or over temperature occurs.
- Guided navigation and programming.
- Network information and bank monitoring (voltage, current, harmonic spectrum, etc...).
- Optional RS-485 Modbus adapter allowing communication with a monitoring system. All RVT parameters are remotely accessible (including harmonic spectra and tables).
- Multi-language support.
- Help button giving instant access to a description of all RVT features and functionality.
- Optional printer connection.
- Input contacts for day/night power factor correction ($\cos \varphi$) and external alarm.
- Output contacts for alarm and fan relays (For further information on the RVT controller, please refer to the technical spec of the RVT controller).
- Backlit

Components

ABB contactors

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

UA... contactors equipped with damping resistors

The UA... contactors are fitted with a special front-mounted block ensuring the serial insertion into the circuit of damping resistors limiting current peak on energizing of the capacitor bank. This connection also ensures capacitor pre-charging in order to limit the second current peak occurring on closing of the main poles a few milliseconds later.



ABB reactors (for series...R execution)

The dry type resin embedded reactors are specially designed to suit the reactive power compensation application. Their exceptional linearity and thermal stress resistance characteristics ensure a high reliability degree even in case of temporary overvoltage.



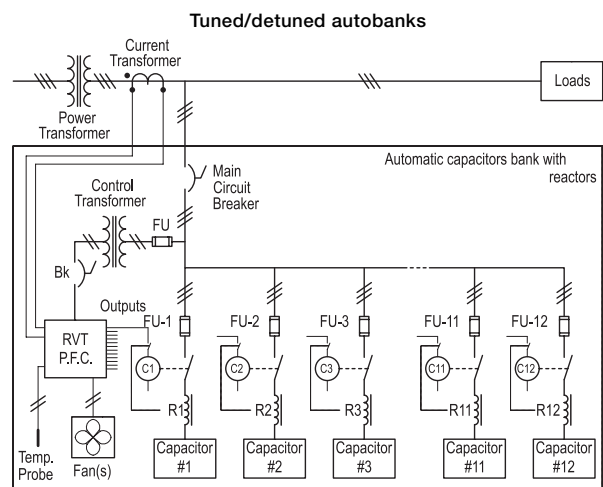
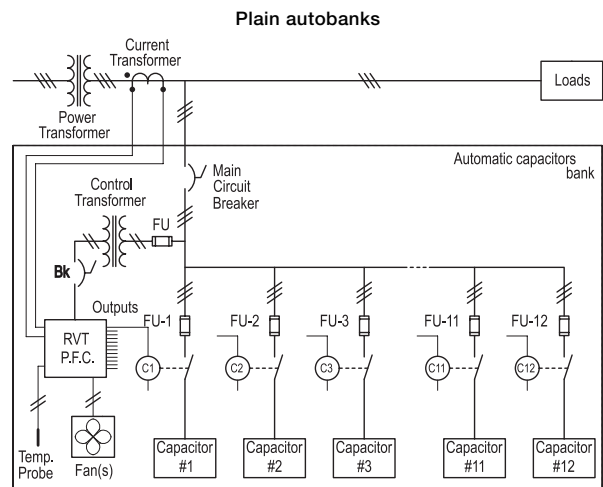
Ventilation

Except for series 100 systems, all capacitor bank are equipped with a ventilation system specially selected for their duration longevity. The capacitor bank ventilation system consists of fans with temperature-dependent probes which provide the fans with the necessary thermal data. In case of temporary overheating, the capacitor bank is automatically deactivated.

Other options

- Main circuit-breaker.
- Main disconnect switch.
- Main fusible disconnect switch.
- Main fusible disconnect switch with blown fuse indicators.
- Indicating lights; blown fuse indicators, state indicators, etc...
- Metering devices; ammeter, voltmeter, etc...
- Protection types; type 12, type 3R, dripshield, etc...
- Enclosure mounting brackets and legs.

Wiring diagram



Part Number Configuration

B 03 G - 60 0100 B 2 1 - 1 0 0

Bank type:

- B = Automatic bank
- A = Auxiliary bank (Optional)
- F = Fixed bank (Optional)
- S = Semi-Automatic bank (Optional)

Enclosure model:

- 01 = Series 100 (24"H x 20"W x 12"D), up to 3 steps
- 03 = Series 300 (36"H x 30"W x 16"D), up to 3-5 steps
- 05 = Series 500 (60"H x 36"W x 16"D), up to 5 steps
- 07 = Series 700 (72"H x 42"W x 20"D), up to 5 steps
- R3 = Series 300R (60"H x 36"W x 16"D), up to 3 steps
- R5 = Series 500R (72"H x 42"W x 20"D), up to 5 steps
- MA = CLM3 (90"H x 38"W x 20"D), up to 4 steps
- MB = CLM3 (90"H x 50"W x 20"D), up to 5 steps
- MC = CLM3 (90"H x 62"W x 20"D), up to 6 steps
- MD = CLM3 (90"H x 74"W x 20"D), up to 8 steps
- RA = CLMR (90"H x 38"W x 20"D), up to 3 steps
- RB = CLMR (90"H x 50"W x 20"D), up to 4 steps
- RC = CLMR (90"H x 62"W x 20"D), up to 5 steps
- RD = CLMR (90"H x 74"W x 20"D), up to 6 steps
- RE = CLMR (42"H x 24"W x 20"D), 1 step only
- RF = CLMR (54"H x 36"W x 20"D), up to 2 step
- XX = Multiple enclosures individual incoming (Optional)
- YY = Multiple enclosures single incoming (Optional)

Enclosure type:

- G = Type 1
- D = Type 12
- R = Type 3R (Optional)

Network voltage:

- 20 = 208 Volts (Optional)
- 22 = 220 Volts (Optional)
- 24 = 240 Volts (Optional)
- 48 = 480 Volts
- 60 = 600 Volts

Kvar rating:

- 0010 = 10 kvar
- 0100 = 100 kvar
- 0200 = 200 kvar
- 0300 = 300 kvar
- 0400 = 400 kvar
- 0500 = 500 kvar
- 0700 = 700 kvar
- 0800 = 800 kvar
- 0900 = 900 kvar (Optional)
- 1000 = 1000 kvar (Optional)
- 1200 = 1200 kvar (Optional)

Main incoming:

- B = Busbars or splitter
- N = Non-fusible disc. switch
- F = Fusible disconnect switch (Fuse not included)
- C = Circuit breaker

Option: (CSA / UL)

- 0 / A = No options
- 1 / B = BFIs (Optional)
- 2 / C = State indicators (Optional)
- 3 / D = BFI's & State indicators (Optional)
- 4 / E = Reactor "Overheat" indicators (Optional)
- 5 / F = Pilot light "Power On" (Optional)
- 6 / G = Options 1, 4 & 5 (Optional)
- 7 / H = Push to test "BFI" (Optional)
- 8 / I = Over Voltage relay "OVR" (Optional)
- 9 / J = To be determined (Optional)

Frequency:

- 0 = No Reactor at 60Hz
- 1 = 170 Hz (Optional)
- 2 = 227 Hz
- 3 = 245 Hz (Optional)
- 4 = 252 Hz (Optional)
- 5 = 282 Hz (Optional)
- 6 = 190 Hz at 50Hz (Optional)
- A = No Reactor at 50Hz (Optional)

Switching sequences:

- 0 = No switching, for Fixed Banks
- 1 = 1:1:1:1:1:1:1:1:1
- 2 = 1:2:2:2:2:2:2:2:2
- 3 = 1:2:4:4:4:4:4:4:4 (Optional)
- 4 = 1:2:4:8:8:8:8:8:8 (Optional)
- 5 = 1:1:2:2:2:2:2:2:2 (Optional)
- 6 = 1:1:2:4:4:4:4:4:4 (Optional)
- 7 = 1:1:2:4:8:8:8:8:8 (Optional)
- 8 = 1:2:3:3:3:3:3:3:3 (Optional)
- 9 = 1:2:3:6:6:6:6:6:6 (Optional)
- A = 1:1:2:3:3:3:3:3:3 (Optional)
- B = 1:1:2:3:6:6:6:6:6 (Optional)

Future steps:

- 0 = 0 Step
- 1 = 1 Step
- 2 = 2 Steps
- 3 = 3 Steps
- 4 = 4 Steps
- 5 = 5 Steps
- 6 = 6 Steps
- 7 = 7 Steps
- 8 = 8 Steps
- 9 = 9 Steps
- A = 10 Steps

Number of steps:

- 2 = 2 Steps
- 3 = 3 Steps
- 4 = 4 Steps
- 5 = 5 Steps
- 6 = 6 Steps
- 7 = 7 Steps
- 8 = 8 Steps
- 9 = 9 Steps
- A = 10 Steps
- B = 11 Steps
- C = 12 Steps

Component Selection

Standard selection for contactors and branch fuses

480V				600V			
Contactor, fuse and cable size selections				Contactor, fuse and cable size selections			
Kvar per step	Contactors	Fuse ratings	Cable size (AWG)	Kvar per step	Contactors	Fuse ratings	Cable size (AWG)
10	UA16-30-10-RA-84	A60C20-121	12	10	UA16-30-10-RA-84	A60C20-121	12
20	UA26-30-10-RA-84	A60C50-121	8	20	UA16-30-10-RA-84	A60C35-121	10
25	UA30-30-10-RA-84	A60C50-121	8	25	UA26-30-10-RA-84	A60C50-121	8
30	UA50-30-00-RA-84	A60C60-121	6	30	UA30-30-10-RA-84	A60C50-121	8
35	UA50-30-00-RA-84	A60C80-121	6	35	UA30-30-10-RA-84	A60C60-121	6
40	UA50-30-00-RA-84	A60C80-121	6	40	UA50-30-00-RA-84	A60C80-121	6
45	UA50-30-00-RA-84	A60C90-121	4	45	UA50-30-00-RA-84	A60C90-121	4
50	UA50-30-00-RA-84	A60C100-121	4	50	UA50-30-00-RA-84	A60C100-121	4
60	UA75-30-00-RA-84	A60C125-121	3	60	UA63-30-00-RA-84	A60C100-121	4
70	UA95-30-00-RA-84	A60C150-121	2	70	UA63-30-00-RA-84	A60C150-121	2
75	UA95-30-00-RA-84	A60C150-121	2	75	UA75-30-00-RA-84	A60C150-121	2
80	UA95-30-00-RA-84	A60C150-121	2	80	UA75-30-00-RA-84	A60C150-121	2
90	UA110-30-00-RA-84	A60C200-121	1/0	90	UA95-30-00-RA-84	A60C150-121	2
100	A145-30-11-84 (*)	A60C200-121	1/0 (*)	100	UA110-30-00-RA-84	A60C175-121	1

*ABB Inc. suggests when installing the 3 cables between the capacitor-contactor and the capacitor itself to follow these recommendations. The cables should be rolled at least 4 times with an inside diameter of 4 inches. Phase "A" should be wound in one direction, phase "B" in the opposite direction and phase "C" in the same direction as phase A. The basic reason of having this "Air Coil reactance" is to lower the inrush current when the capacitor is energized.

Standard selection for main incoming splitter blocks

480V			600V		
Max. kvar	Capacitor bank type	Incoming lugs	Max. kvar	Capacitor bank type	Incoming lugs
45	Series 100	1 x (#6AWG - #350MCM)	45	Series 100	1 x (#6AWG - #350MCM)
150	Series 300	2 x (#4AWG - #500MCM)	150	Series 300	2 x (#4AWG - #500MCM)
250	Series 500	2 x (4AWG - #500MCM)	250	Series 500	2 x (4AWG - #500MCM)
500	Series 700	2 x (#4AWG - #500MCM)	500	Series 700	2 x (#4AWG - #500MCM)
600	CLM3 / CLMR	4 x (#4AWG - #500MCM)	600	CLM3 / CLMR	4 x (#4AWG - #500MCM)
600 +	CLM3 / CLMR	4 x (#4AWG - #500MCM)	600 +	CLM3 / CLMR	4 x (#4AWG - #500MCM)

Standard selection for main disconnect switches

480V				600V			
Total max. kvar	Disconnect switches	Current rating (Amp.)	Incoming lugs	Total max. kvar	Disconnect switches	Current rating (Amp.)	Incoming lugs
50	OT100E3	100	1 x (#8AWG - #1/0AWG)	60	OT100E3	100	1 x (#8AWG - #1/0AWG)
110	OT200U12	200	1 x (#4AWG - #300MCM)	135	OT200U12	200	1 x (#4AWG - #300MCM)
220	OT400U12	400	1 x (#2AWG - #600MCM)	275	OT400U12	400	1 x (#2AWG - #600MCM)
330	OT600U12	600	2 x (#2AWG - #600MCM)	415	OT600U12	600	2 x (#2AWG - #600MCM)
440	OT800U12	800	4 x (#2AWG - #600MCM)	550	OT800U12	800	4 x (#2AWG - #600MCM)
660	OT1200U12	1200	4 x (#2AWG - #600MCM)	830	OT1200U12	1200	4 x (#2AWG - #600MCM)
880	OT1600U12	1600	6 x (#1/0AWG - #750MCM)	N/A	OT1600U12	1600	6 x (#1/0AWG - #750MCM)
1100	OT2000U12	2000	6 x (#1/0AWG - #750MCM)	N/A	OT2000U12	2000	6 x (#1/0AWG - #750MCM)

Standard selection for main fusible disconnect switches

480V				600V			
Total max. kvar	Fusible Disconnect switches	Current rating (Amp.)	Incoming lugs	Total max. kvar	Fusible Disconnect switches	Current rating (Amp.)	Incoming lugs
50	OS100J12	100	1 x (#14AWG - #2/0AWG)	100	OS200J12	100	1 x (#14AWG - #2/0AWG)
100	OS200J12	200	1 x (#4AWG - #300MCM)	125	OS200J12	200	1 x (#4AWG - #300MCM)
200	OS400J12	400	1 x (#2AWG - #600MCM)	250	OS400J12	400	1 x (#2AWG - #600MCM)
300	OS600J12	600	2 x (#2AWG - #600MCM)	375	OS600J12	600	2 x (#2AWG - #600MCM)
400	OS800L12	800	2 x (#2AWG - #600MCM)	500	OS800L12	800	2 x (#2AWG - #600MCM)
600	OS1200L12	1200	4 x (#2AWG - #600MCM)	750	OS1200L12	1200	4 x (#2AWG - #600MCM)

Standard selection for main circuit breakers

480V				600V			
Total max. kvar	Circuit breaker	Current rating (Amp.)	Incoming lugs	Total max. kvar	Circuit breaker	Current rating (Amp.)	Incoming lugs
55	TS3N100TW	100	1 x (#14AWG - #1/0AWG)	60	TS3N100TW	100	1 x (#14AWG - #1/0AWG)
110	T4N250BW	200	1 x (#6WG - #350MCM)	135	T4N250BW	200	1 x (#6WG - #350MCM)
220	T5N400BW	400	2 x (#3/0AWG - #250MCM)	275	T5N400BW	400	2 x (#3/0AWG - #250MCM)
330	T6N600BW	600	2 x (#250MCM - #500MCM)	415	T6N600BW	600	2 x (#250MCM - #500MCM)
440	T6N800BW	800	3 x (#2/0AWG - #400MCM)	550	T6N800BW	800	3 x (#2/0AWG - #400MCM)
660	T7H1000BW	1000	4 x (#4/0AWG - #500MCM)	690	T7H1000BW	1000	4 x (#4/0AWG - #500MCM)
880	T7H1200BW	1200	4 x (#4/0AWG - #500MCM)	830	T7H1200BW	1200	4 x (#4/0AWG - #500MCM)

Standard Assemblies

(Series 100, 300, 500, 700, 300R and 500R)

480V			
Series 100			
Total kvar	Part number	Steps x kvar	Main protection (A)
15	B01G-480015B30-100	3 x 5	100
20	B01G-480020B30-500	1 x 10 + 2 x 5	100
25	B01G-480025B30-200	2 x 10 + 1 x 5	100
30	B01G-480030B30-100	3 x 10	100
45	B01G-480045B30-100	3 x 15	100

480V			
Series 300			
Total kvar	Part number	Steps x kvar	Main protection (A)
60	B03G-480060B30-100	3 x 20	150
75	B03G-480075B30-100	3 x 25	150
90	B03G-480090B30-100	3 x 30	200
100	B03G-480100B30-500	1 x 50 + 2 x 25	200
120	B03G-480120B30-100	3 x 40	225
135	B03G-480135B30-100	3 x 45	250
150	B03G-480150B30-100	3 x 50	400

480V			
Series 500			
Total kvar	Part number	Steps x kvar	Main protection (A)
175	B05G-480175B30-300	1x100+1x50+1x25	400
200	B05G-480200B40-100	4 x 50	400
200	B05G-480200B30-500	1 x 100 + 2 x 50	400
225	B05G-480225B50-200	4 x 50 + 1 x 25	600
250	B05G-480250B30-200	2 x 100 + 1 x 50	600
250	B05G-480250B50-100	5 x 50	600

480V			
Series 700			
Total kvar	Part number	Steps x kvar	Main protection (A)
275	B07G-480275B60-300	5 x 50 + 1 x 25	600
300	B07G-480300B60-100	6 x 50	600
350	B07G-480350B40-500	3 x 100 + 1 x 50	800
400	B07G-480400B40-200	4 x 100	800
450	B07G-480450B50-200	4 x 100 + 1 x 50	800
500	B07G-480500B50-100	5 x 100	1000

600V			
Series 100			
Total kvar	Part number	Steps x kvar	Main protection (A)
15	B01G-600015B30-100	3 x 5	100
20	B01G-600020B30-150	1 x 10 + 2 x 5	100
25	B01G-600025B30-120	2 x 10 + 1 x 5	100
30	B01G-600030B30-100	3 x 10	100
45	B01G-600045B30-100	3 x 15	100

600V			
Series 300			
Total kvar	Part number	Steps x kvar	Main protection (A)
60	B03G-600060B30-100	3 x 20	100
75	B03G-600075B30-100	3 x 25	150
90	B03G-600090B30-100	3 x 30	150
100	B03G-600100B30-500	1 x 50 + 2 x 25	150
120	B03G-600120B30-100	3 x 40	200
135	B03G-600135B30-100	3 x 45	200
150	B03G-600150B30-100	3 x 50	225

600V			
Series 500			
Total kvar	Part number	Steps x kvar	Main protection (A)
175	B05G-600175B30-300	1x100+1x50+1x25	250
200	B05G-600200B40-100	4 x 50	400
200	B05G-600200B30-500	1 x 100 + 2 x 50	400
225	B05G-600225B50-200	4 x 50 + 1 x 25	400
250	B05G-600250B30-200	2 x 100 + 1 x 50	400
250	B05G-600250B50-100	5 x 50	400
300	BR5G-600300B60-100	6 x 50	600

600V			
Series 700			
Total kvar	Part number	Steps x kvar	Main protection (A)
275	B07G-600275B60-300	5 x 50 + 1 x 25	400
300	B07G-600300B60-100	6 x 50	600
350	B07G-600350B40-500	3 x 100 + 1 x 50	600
400	B07G-600400B40-200	4 x 100	600
450	B07G-600450B50-200	4 x 100 + 1 x 50	800
500	B07G-600500B50-100	5 x 100	800

480V			
Series 300R			
Total kvar	Part number	Steps x kvar	Main protection (A)
60	BR3G-480060B30-120	3 x 20	150
75	BR3G-480075B30-120	3 x 25	150
100	BR3G-480100B30-520	1 x 50 + 2 x 25	200
125	BR3G-480125B30-220	2 x 50 + 1 x 25	250
150	BR3G-480150B30-120	3 x 50	400

600V			
Series 300R			
Total kvar	Part number	Steps x kvar	Main protection (A)
60	BR3G-600060B30-120	3 x 20	100
75	BR3G-600075B30-120	3 x 25	150
100	BR3G-600100B30-520	1 x 50 + 2 x 25	150
125	BR3G-600125B30-220	2 x 50 + 1 x 25	200
150	BR3G-600150B30-120	3 x 50	225

480V			
Series 500R			
Total kvar	Part number	Steps x kvar	Main protection (A)
175	BR5G-480175B30-320	1x100+1x50+1x25	400
200	BR5G-480200B40-120	4 x 50	400
225	BR5G-480225B50-220	4 x 50 + 1 x 25	600
250	BR5G-480250B50-120	5 x 50	600
300	BR5G-480300B60-120	6 x 50	600

600V			
Series 500R			
Total kvar	Part number	Steps x kvar	Main protection (A)
175	BR5G-600175B30-320	1x100+1x50+1x25	250
200	BR5G-600200B40-120	4 x 50	400
225	BR5G-600225B50-220	4 x 50 + 1 x 25	400
250	BR5G-600250B50-120	5 x 50	600
300	BR5G-600300B60-120	6 x 50	600

For 208 / 240 Vac applications, please contact ABB sales office (see back cover of this brochure).

Main Lugs are provided with each assemblies and main protection may be added as an option.

Disconnect switches, fusible disconnect switches or molded case circuit breakers may be added as a main protection.

Type 12 and 3R are available options upon request, please contact ABB sales office.

Additional sizes, ratings, or options are available upon request.

Technical Specifications

Nominal voltage and frequency:

208 up to 600V – 60Hz (standard range)

Connection:

Three phase.

Configuration:

Series 100, 300, 500, 700, 300R, 500R, CLM3 and CLMR: master unit only.

Series 100, 300, 500, 700, 300R, 500R, CLM3 and CLMR: auxiliary unit only.

Auxiliary units are not equipped with PF controller but are fitted with interconnection wires to the master unit.

Power factor setting:

From 0.7 inductive to 0.7 capacitive.

Starting current setting (C/k):

From 0.01 A to 5 A for the RVT

Operation:

Automatic or manual setting of the controller with indication of:

- The number of active outputs.
- The inductive or capacitive power factor.
- Alarm conditions.
- Overtemperature.
- Demand for switching on/off of a capacitor step.
- Overvoltage and undervoltage protection.

Losses:

Dielectric losses: less than 0.2 Watt/kvar.

Capacitor total losses: less than 0.5 Watt/kvar (discharge resistors included).

Automatic bank total losses:

- without reactors: less than 1.5 Watt/kvar (including losses from all accessories),
- with reactors: less than 5.5 Watt/kvar (including accessories losses).

Capacitors:

Dry type, self-healing, according to EN 60831-1&2.

Voltage test: 2.15 times U_n (U_n = Line to line) between terminals for a duration of 10 s. at the rated frequency (above EN 60831-1&2).

Acceptable overloads:

- Overvoltage tolerance: 10% max. Intermittently.
- Overcurrent tolerance: 30% permanently.

Temperature range: -25°C / class D according to IEC 60831-1&2.

The automatic capacitor bank complies with:

- CSA C22.2.C190.
- UL/cUL 508A.

Automatic capacitor bank tests:

- Insulation test.
- Functional test.

Protection:

- Type 1
- Type 12 (optional)
- Type 3R (optional)

Color:

Gray ASA61

Ambient temperature:

-10°C/+40°C

Ventilation:

Forced for the series 300, 500, 700, 300R, 500R, CLM3 and CLMR

Dimensions:

- Series 100
24"H x 20"W x 12"D (609mm x 508mm x 304mm)
- Series 300
36"H x 30"W x 16"D (915mm x 762mm x 406mm)
- Series 500 and 300R
60"H x 36"W x 16"D (1524mm x 915mm x 406mm)
- Series 700 and 500R
72"H x 42"W x 20"D (1828mm x 1066mm x 508mm)
- Series CLM3
4 Steps, 90"H x 38"W x 20"D (2286mm x 965mm x 508mm)
5 Steps, 90"H x 50"W x 20"D (2286mm x 1270mm x 508mm)
6 Steps, 90"H x 62"W x 20"D (2286mm x 1575mm x 508mm)
8 Steps, 90"H x 74"W x 20"D (2286mm x 1880mm x 508mm)
- Series CLMR
3 Steps, 90"H x 38"W x 20"D (2286mm x 965mm x 508mm)
4 Steps, 90"H x 50"W x 20"D (2286mm x 1270mm x 508mm)
5 Steps, 90"H x 62"W x 20"D (2286mm x 1575mm x 508mm)
6 Steps, 90"H x 74"W x 20"D (2286mm x 1880mm x 508mm)

Approximate weights:

- Series 100, 90lbs (45kg)
- Series 300, 200lbs (90kg), series 300R, 380lbs (172kg)
- Series 500, 300lbs (137kg), series 500R, 600lbs (272kg)
- Series 700, 500lbs (227kg)
- Series CLM3, depend on bank configuration.
- Series CLMR, depend on bank configuration.

Installation:

Enclosure:

Series 100, 300, 500 and 300R;

- Wall mounting (fixation brackets optional).
- Top or side cable entry.

Series 700, 500R, CLM3 and CLMR;

- Modular free-standing cubicle.
- Floor fixation.
- Lifting eye-bolts provided.
- Top or side cable entry.

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