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PRODUCT BROCHURE

QCap

Low voltage capacitors for improved power quality

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new.abb.com/high-voltage/capacitors/lv

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Enhanced power quality and energy efficiency

Applications in several areas of the power value chain

ABB is a pioneering technology leader in electrification products, robotics and motion, industrial automation and power grids, serving customers in utilities, industry and transport & infrastructure globally.

ABB today is writing the future of industrial digitalization and driving the Energy and Fourth Industrial Revolutions. ABB operates in more than 100 countries with about 135,000 employees.

ABB offers a wide range of products from 208 V up to 1200 kV that help enhance the reliability, efficiency and quality of power in transmission and distribution grids, power plants and industries while minimizing environmental impact. The wide product range is complemented by a comprehensive service offering.

Power Quality is a major concern for utilities, industries, transport and infrastructure sectors. It affects grid reliability, productivity, leads to higher operating costs and penalties for non-compliance.

ABB is a pioneer in power quality solutions and offers a wide product portfolio that helps enhance the power quality of electrical networks in high, medium and low voltage systems. These products and solutions help improve reliability and availability of power in the supply network, ensure energy efficiency, industrial productivity and lower carbon emissions thereby leading to stronger, smarter and greener power networks.

Capacitors play an important role in power grids and electrical networks. They compensate reactive power in the electrical network and increase the power factor. This results in a more stable grid with increased transmission capacity and reduced losses.

The benefits of enhanced power quality can be seen across the power value chain:

Utilities

- Enhanced asset utilization
- Lower network losses and CO₂ emissions
- Expansion of network capacity
- Voltage stability

Industries

- Reduction of electricity expenses
- Lower network losses and CO₂ emissions
- Grid compliance
- Increase in plant capacity
- Higher productivity (i.e. fewer outages, lower operating costs)



Applications

Power factor correction

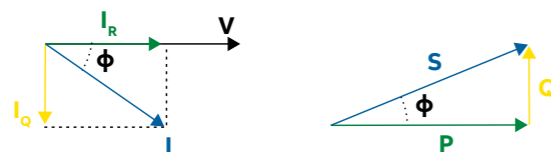
In electrical networks, different load types exist. Many loads are of inductive type (such as motors or transformers). In addition to active power, they draw reactive power from the network. This additional reactive power conventionally is supplied by the supply generators and burdens the upstream supply network (cables, transformers) down to the point where the power is needed, making the system less efficient. Power factor correction using capacitors at the point where the loads are located is a convenient way to render the installation more efficient.

In alternating current circuits, the current absorbed by a load can be represented by two components:

- The active component I_R , in phase with the supply voltage;
- The reactive component I_Q , in phase quadrature to the voltage.

Therefore, in an electrical installation, it is necessary to generate and transmit, in addition to the active power P , a certain reactive power Q . The apparent power S can be calculated by the quadrature summation of the active P and reactive Q powers. Power factor is defined as the ratio between the active component I_R and the apparent value of the current I . ϕ is the phase angle between the voltage and the current.

Figure 1 : Power factor definition



- P is the active power;
- Q_1 , ϕ_1 are the reactive power and the phase displacement angle before power factor correction;
- Q_2 , ϕ_2 are the reactive power and the phase displacement angle after power factor correction;
- Q_c is the reactive power needed for power factor correction.

For a given phase voltage V , this results in (as illustrated in figure 1):

$$\cos \phi = \frac{I_R}{I} = \frac{P}{S}$$

ABB's QCap addresses poor power factor issues and helps improve power quality of the network.

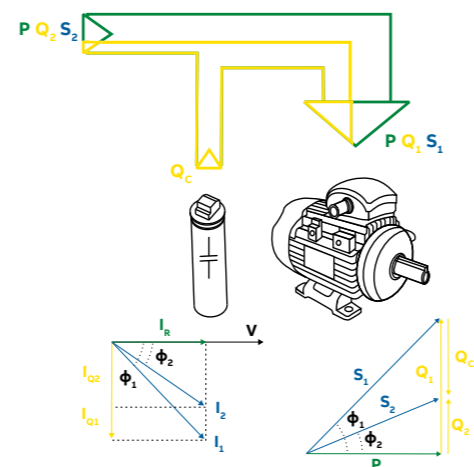
By correcting the power factor of an installation supplying locally the necessary reactive power, it is possible to reduce the current value and consequently the total power absorbed from the supply network; this gives numerous advantages:

- Preventing penalties applied by the electrical utilities;
- Better utilization of electrical network components e.g. generators and transformers;
- Better utilization of electrical lines (transmission and distribution lines).

In the case of sinusoidal waveforms, the reactive power necessary to pass from one power factor $\cos \phi_1$ to another power factor $\cos \phi_2$ is given by the relation (valid for both three-phase as well as single-phase systems): as shown in figure 2.

$$Q_c = Q_1 - Q_2 = P \cdot (\operatorname{tg} \phi_1 - \operatorname{tg} \phi_2)$$

Figure 2 : Reactive power definition



Applications

Detuned capacitor banks

Electrical distribution is nowadays highly polluted due to the usage of non-linear loads such as variable speed drives, UPS systems, inverters, computers, LED and compact fluorescent lamps, welding machines, etc.

Non-linear loads are equipment that absorb a non-sinusoidal current when supplied by a sinusoidal voltage. Such currents induce a non-sinusoidal voltage drop across the network impedances, with the consequence that even the linear loads are supplied by a distorted voltage. By using Fourier analysis it is possible to decompose any repetitive waveform into several sinusoidal waveforms at integer multiples of the fundamental frequency. These waveforms are called harmonics. For power networks, 50 Hz/60 Hz is the fundamental frequency, 150 Hz/180 Hz and 250 Hz/300 Hz, for example, are harmonic orders, in this case the 3rd and 5th harmonic order: (as shown in figure 3).

Power factor correction capacitors are highly sensitive to harmonics since the capacitive impedance is inversely proportional to frequency. This means that, when supplied by a distorted voltage, the capacitors draw an overcurrent due to harmonics that could seriously damage them, especially if there is a series or parallel resonance phenomenon occurring at a harmonic frequency.

In order to protect capacitors against harmonics, the installation of a detuning reactor in series with the capacitor is strongly recommended. This reactor will increase the impedance for the high frequencies and will limit the current flowing into the capacitor. We usually protect the capacitor from the 3rd harmonic upwards for commercial applications (due to the presence of single phase loads) and 5th harmonic upwards for industrial loads (due to the presence of VSD's generating 5th and 7th harmonic upwards). This type of configuration requires expertise and high quality products.

Figure 3 : Harmonics waveforms

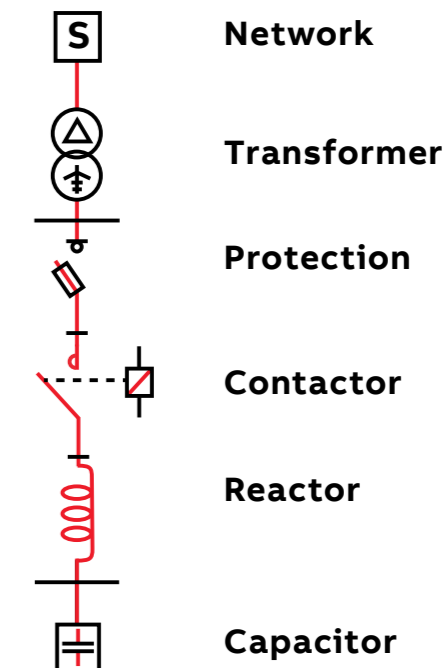
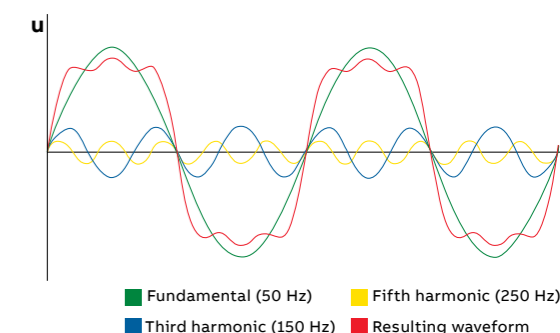


ABB offers the complete solution for detuned capacitor banks and a selection tool containing the apparatus set you will need to assemble each step of your capacitor bank- capacitors, reactors, fuses, switches and contactors.

To view the selection tool, scan the QR code below:



Low voltage capacitor QCap

Unique features and benefits

— 01 Statoil LNG, Melkoya, Norway
— 02 Stora Enso Kvarnsveden, Sweden paper mill
— 03 Commercial buildings

QCap is a cylindrical type capacitor. It is based on ABB's latest technologies and developments in the field of power quality and is a result of over 70 years of expertise in capacitor technologies. These decades of dedication and continuous improvement in each manufacturing process guarantee the customer the best quality capacitor in the market.

Customer benefits

Quality

The unique low losses design of QCap decreases the temperature of the capacitor and increases its lifetime. The optimized thermal dissipation prevents premature failure which is not uncommon with many low quality capacitors.

Installation

QCap size is the same for all ratings and can also be installed in any position. These two characteristics will allow to standardize the design of capacitor banks.

Safety

At the end of its lifetime the capacitor must disconnect itself safely. The specially designed overpressure disconnection device by ABB guarantees a safe disconnection.

Reliability

ABB is strictly selecting its raw materials to ensure the use of first class components and of a very pure polypropylene, with a high degree of crystalline phase. This is reducing the losses and increasing the lifetime of the capacitor which guarantees QCap's high reliability and exceptional performance.

Consistency

Consistent quality over a period of time is most often a challenge for manufacturers. ABB tests 100% of its products with criteria surpassing even international standards ensuring high quality products.

Overpressure disconnection

A unique feature of QCap is the safety mechanism of the capacitor. Under faulty conditions,

the safety mechanism guarantees a prompt and reliable breaking of all three wires and overpressure disconnection. This mechanism consists of three parts explained below.

Airtight cylinder

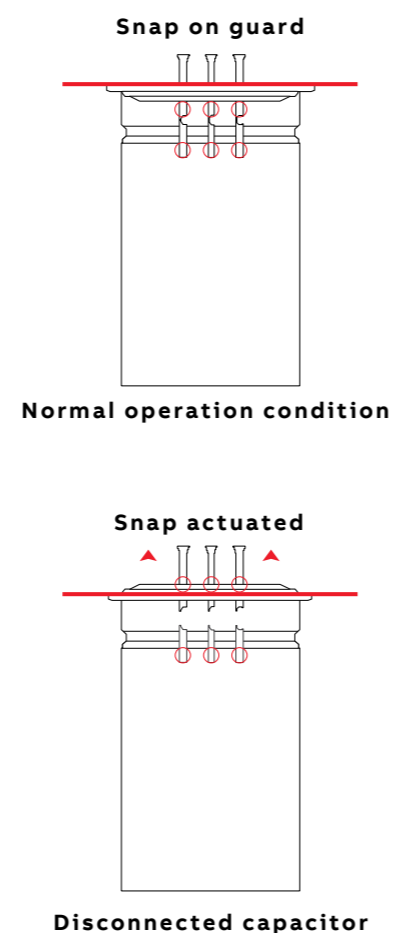
The state-of-the-art seaming and sealing technology ensures a perfectly hermetic cylinder.

Locking device

ABB's unique design for the locking device holds the inside elements tight under both normal and disconnected conditions.

Snap

The snap is the only moving part of the capacitor. At the end of capacitor's lifetime it will break the wires to ensure a prompt and safe disconnection of the three phases.



01



02



03

Technical specifications

Range 50Hz

U network - 220 V

Qnet (kvar) ⁽¹⁾	Detuning reactor (%) ⁽²⁾	Article number
2,5	-	2GCA296600A0031
2,5	5,67 %	2GCA296601A0031
2,5	7,00 %	2GCA296602A0031
2,5	12,50 %	2GCA296603A0031
2,5	14,00 %	2GCA296604A0031
3,75	-	2GCA296605A0031
3,75	5,67 %	2GCA296606A0031
3,75	7,00 %	2GCA296607A0031
3,75	12,50 %	2GCA296608A0031
3,75	14,00 %	2GCA296609A0031
5	-	2GCA296610A0031
5	5,67 %	2GCA296611A0031
5	7,00 %	2GCA296612A0031
5	12,50 %	2GCA296613A0031
5	14,00 %	2GCA296614A0031
6,25	-	2GCA296615A0031
6,25	5,67 %	2GCA296616A0031
6,25	7,00 %	2GCA296617A0031
6,25	12,50 %	2GCA296618A0031
6,25	14,00 %	2GCA296619A0031
7,5	-	2GCA296620A0031
7,5	5,67 %	2GCA296621A0031
7,5	7,00 %	2GCA296622A0031
7,5	12,50 %	2GCA296623A0031
7,5	14,00 %	2GCA296624A0031
10	12,50 %	2GCA296625A0031
10	14,00 %	2GCA296626A0031
12,5	-	2GCA296627A0031
15	12,50 %	2GCA296628A0031
15	14,00 %	2GCA296629A0031

(1) Qnet (kvar) is the net reactive power output in combination with the associated reactor (if existing).

(2) Detuning reactor (%) is the value of the reactor (if existing) connected in series with the capacitor. Reactors are not provided.

(3) Not CSA/UL recognized.

Other ratings available on request.

U network - 380 V

Qnet (kvar) ⁽¹⁾	Detuning reactor (%) ⁽²⁾	Article number
3,75	-	2GCA296630A0031
3,75	5,67 %	2GCA296631A0031
3,75	7,00 %	2GCA296632A0031
3,75	12,50 %	2GCA296633A0031
3,75	14,00 %	2GCA296634A0031
5	-	2GCA296635A0031
5	5,67 %	2GCA296636A0031
5	7,00 %	2GCA296637A0031
5	12,50 %	2GCA296638A0031
5	14,00 %	2GCA296639A0031
6,25	-	2GCA296640A0031
6,25	5,67 %	2GCA296641A0031
6,25	7,00 %	2GCA296642A0031
6,25	12,50 %	2GCA296643A0031
6,25	14,00 %	2GCA296644A0031
7,5	-	2GCA296645A0031
7,5	5,67 %	2GCA296646A0031
7,5	7,00 %	2GCA296647A0031
7,5	12,50 %	2GCA296648A0031
7,5	14,00 %	2GCA296649A0031
10	-	2GCA296650A0031
10	5,67 %	2GCA296651A0031
10	7,00 %	2GCA296652A0031
10	12,50 %	2GCA296653A0031
10	14,00 %	2GCA296654A0031
12,5	-	2GCA296655A0031
12,5	5,67 %	2GCA296656A0031
12,5	7,00 %	2GCA296657A0031
12,5	12,50 %	2GCA296658A0031
12,5	14,00 %	2GCA296659A0031
15	-	2GCA296660A0031
15	5,67 %	2GCA296661A0031
15	7,00 %	2GCA296662A0031
15	12,50 %	2GCA296663A0031
15	14,00 %	2GCA296664A0031
20	-	2GCA296665A0031
20	5,67 %	2GCA296666A0031
20	7,00 %	2GCA296667A0031
20	12,50 %	2GCA296668A0031
20	14,00 %	2GCA296669A0031
25	5,67 %	2GCA296670A0031
25	7,00 %	2GCA296671A0031
25	12,50 %	2GCA296672A0031
25	14,00 %	2GCA296673A0031

U network - 400 V

Qnet (kvar) ⁽¹⁾	Detuning reactor (%) ⁽²⁾	Article number
3,75	-	2GCA296674A0031
3,75	5,67 %	2GCA296675A0031
3,75	7,00 %	2GCA296676A0031
3,75	12,50 %	2GCA296677A0031
3,75	14,00 %	2GCA296678A0031
5	-	2GCA296679A0031
5	5,67 %	2GCA296680A0031
5	7,00 %	2GCA296681A0031
5	12,50 %	2GCA296682A0031
5	14,00 %	2GCA296683A0031
6,25	-	2GCA296684A0031
6,25	5,67 %	2GCA296685A0031
6,25	7,00 %	2GCA296686A0031
6,25	12,50 %	2GCA296687A0031
6,25	14,00 %	2GCA296688A0031
7,5	-	2GCA296689A0031
7,5	5,67 %	2GCA296690A0031
7,5	7,00 %	2GCA296691A0031
7,5	12,50 %	2GCA296692A0031
7,5	14,00 %	2GCA296693A0031
10	-	2GCA296694A0031
10	5,67 %	2GCA296695A0031
10	7,00 %	2GCA296696A0031
10	12,50 %	2GCA296697A0031
10	14,00 %	2GCA296698A0031
12,5	-	2GCA296699A0031
12,5	5,67 %	2GCA296700A0031
12,5	7,00 %	2GCA296701A0031
12,5	12,50 %	2GCA296702A0031
12,5	14,00 %	2GCA296703A0031
15	-	2GCA296704A0031
15	5,67 %	2GCA296705A0031
15	7,00 %	2GCA296706A0031
15	12,50 %	2GCA296707A0031
15	14,00 %	2GCA296708A0031
20	-	2GCA296709A0031
20	5,67 %	2GCA296710A0031
20	7,00 %	2GCA296711A0031
20	12,50 %	2GCA296712A0031
20	14,00 %	2GCA296713A0031
25	-	2GCA296714A0031
25	5,67 %	2GCA296715A0031
25	7,00 %	2GCA296716A0031
25	12,50 %	2GCA296717A0031
25	14,00 %	2GCA296718A0031

U network - 415 V

Qnet (kvar) ⁽¹⁾	Detuning reactor (%) ⁽²⁾	Article number
3,75	-	2GCA296719A0031
3,75	5,67 %	2GCA296720A0031
3,75	7,00 %	2GCA296721A0031
5	-	2GCA296722A0031
5	5,67 %	2GCA296723A0031
5	7,00 %	2GCA296724A0031
5	12,50 %	2GCA296725A0031
5	14,00 %	2GCA296726A0031
6,25	-	2GCA296727A0031
6,25	5,67 %	2GCA296728A0031
6,25	7,00 %	2GCA296729A0031
6,25	12,50 %	2GCA296730A0031
6,25	14,00 %	2GCA296731A0031
7,5	-	2GCA296732A0031
7,5	5,67 %	2GCA296733A0031
7,5	7,00 %	2GCA296734A0031
7,5	12,50 %	2GCA296735A0031
7,5	14,00 %	2GCA296736A0031
10	-	2GCA296737A0031
10	5,67 %	2GCA296738A0031
10	7,00 %	2GCA296739A0031
10	12,50 %	2GCA296740A0031
10	14,00 %	2GCA296741A0031
12,5	-	2GCA296742A0031
12,5	5,67 %	2GCA296743A0031
12,5	7,00 %	2GCA296744A0031
12,5	12,50 %	2GCA296745A0031
12,5	14,00 %	2GCA296746A0031
15	-	2GCA296747A0031
15	5,67 %	2GCA296748A0031
15	7,00 %	2GCA296749A0031
15	12,50 %	2GCA296750A0031
15	14,00 %	2GCA296751A0031
20	-	2GCA296752A0031
20	5,67 %	2GCA296753A0031
20	7,00 %	2GCA296754A0031
20	12,50 %	2GCA296755A0031
25	-	2GCA296756A0031
25	5,67 %	2GCA296757A0031
25	7,00 %	2GCA296758A0031
25	12,50 %	2GCA296759A0031
25	14,00 %	2GCA296760A0031
30 ⁽³⁾	7,00 %	2GCA296761A0031
30 ⁽³⁾	12,50 %	2GCA296762A0031

Technical specifications

Range 50Hz

U network - 440 V

Qnet (kvar) ⁽¹⁾	Detuning reactor (%) ⁽²⁾	Article number
5	-	2GCA296763A0031
5	5,67 %	2GCA296764A0031
5	7,00 %	2GCA296765A0031
5	12,50 %	2GCA296766A0031
5	14,00 %	2GCA296767A0031
6,25	-	2GCA296768A0031
6,25	5,67 %	2GCA296769A0031
6,25	7,00 %	2GCA296770A0031
6,25	12,50 %	2GCA296771A0031
6,25	14,00 %	2GCA296772A0031
7,5	-	2GCA296773A0031
7,5	5,67 %	2GCA296774A0031
7,5	7,00 %	2GCA296775A0031
7,5	12,50 %	2GCA296776A0031
7,5	14,00 %	2GCA296777A0031
10	-	2GCA296778A0031
10	5,67 %	2GCA296779A0031
10	7,00 %	2GCA296780A0031
10	12,50 %	2GCA296781A0031
10	14,00 %	2GCA296782A0031
12,5	-	2GCA296783A0031
12,5	5,67 %	2GCA296784A0031
12,5	7,00 %	2GCA296785A0031
12,5	12,50 %	2GCA296786A0031
12,5	14,00 %	2GCA296787A0031
15	-	2GCA296788A0031
15	5,67 %	2GCA296789A0031
15	7,00 %	2GCA296790A0031
15	12,50 %	2GCA296791A0031
15	14,00 %	2GCA296792A0031
20	-	2GCA296793A0031
20	12,50 %	2GCA296794A0031
20	14,00 %	2GCA296795A0031
25	-	2GCA296796A0031
25	5,67 %	2GCA296797A0031
25	7,00 %	2GCA296798A0031
30	-	2GCA296799A0031
30 ⁽³⁾	5,67 %	2GCA296800A0031
30 ⁽³⁾	7,00 %	2GCA296801A0031

(1) Qnet (kvar) is the net reactive power output in combination with the associated reactor (if existing).

(2) Detuning reactor (%) is the value of the reactor (if existing) connected in series with the capacitor. Reactors are not provided.

U network - 480 V

Qnet (kvar) ⁽¹⁾	Detuning reactor (%) ⁽²⁾	Article number
5	-	2GCA296802A0031
5	5,67 %	2GCA296803A0031
5	7,00 %	2GCA296804A0031
6,25	-	2GCA296805A0031
6,25	5,67 %	2GCA296806A0031
6,25	7,00 %	2GCA296807A0031
6,25	12,50 %	2GCA296808A0031
6,25	14,00 %	2GCA296809A0031
7,5	-	2GCA296810A0031
7,5	5,67 %	2GCA296811A0031
7,5	7,00 %	2GCA296812A0031
7,5	12,50 %	2GCA296813A0031
7,5	14,00 %	2GCA296814A0031
10	-	2GCA296815A0031
10	5,67 %	2GCA296816A0031
10	7,00 %	2GCA296817A0031
10	12,50 %	2GCA296818A0031
10	14,00 %	2GCA296819A0031
12,5	-	2GCA296820A0031
12,5	5,67 %	2GCA296821A0031
12,5	7,00 %	2GCA296822A0031
12,5	12,50 %	2GCA296823A0031
12,5	14,00 %	2GCA296824A0031
15	-	2GCA296825A0031
15	5,67 %	2GCA296826A0031
15	7,00 %	2GCA296827A0031
15	12,50 %	2GCA296828A0031
15	14,00 %	2GCA296829A0031
16,7	-	2GCA297376A0031
20	-	2GCA296830A0031
20	5,67 %	2GCA296831A0031
20	7,00 %	2GCA296832A0031
25	-	2GCA296833A0031
30	-	2GCA296834A0031
30 ⁽³⁾	5,67 %	2GCA296835A0031
30 ⁽³⁾	7,00 %	2GCA296836A0031
31,5 ⁽³⁾	-	2GCA297218A0031
32,5 ⁽³⁾	-	2GCA297390A0031
33,6 ⁽³⁾	-	2GCA297217A0031

(3) Not CSA/UL recognized.

(4) Not UL recognized.

Other ratings available on request.

U network - 525 V

Qnet (kvar) ⁽¹⁾	Detuning reactor (%) ⁽²⁾	Article number
6,25	-	2GCA296837A0031
6,25	5,67 %	2GCA296838A0031
6,25	7,00 %	2GCA296839A0031
6,25	12,50 %	2GCA296840A0031
6,25	14,00 %	2GCA296841A0031
7,5	-	2GCA296842A0031
7,5	5,67 %	2GCA296843A0031
7,5	7,00 %	2GCA296844A0031
7,5	12,50 %	2GCA296845A0031
7,5	14,00 %	2GCA296846A0031
10	-	2GCA296847A0031
10	5,67 %	2GCA296848A0031
10	7,00 %	2GCA296849A0031
10	12,50 %	2GCA296850A0031
10	14,00 %	2GCA296851A0031
12,5	-	2GCA296852A0031
12,5	5,67 %	2GCA296853A0031
12,5	7,00 %	2GCA296854A0031
12,5	12,50 %	2GCA296855A0031
12,5	14,00 %	2GCA296856A0031
15	-	2GCA296857A0031
15	5,67 %	2GCA296858A0031
15	7,00 %	2GCA296859A0031
15	12,50 %	2GCA296860A0031
15	14,00 %	2GCA296861A0031
20	-	2GCA296862A0031
20	5,67 %	2GCA296863A0031
20	7,00 %	2GCA296864A0031
20	12,50 %	2GCA296865A0031
20	14,00 %	2GCA296866A0031
23,2	-	2GCA297430A0031
25	-	2GCA296867A0031

U network - 600 V

Qnet (kvar) ⁽¹⁾	Detuning reactor (%) ⁽²⁾	Article number
7,5	-	2GCA296868A0031
7,5	5,67 %	2GCA296869A0031
10	-	2GCA296870A0031
10	5,67 %	2GCA296871A0031
10	7,00 %	2GCA296872A0031
10	12,50 %	2GCA296873A0031
10	14,00 %	2GCA296874A0031
12,5	-	2GCA296875A0031
12,5	5,67 %	2GCA296876A0031
12,5	7,00 %	2GCA296877A0031
12,5	12,50 %	2GCA296878A0031
12,5	14,00 %	2GCA296879A0031
15	-	2GCA296880A0031
15	5,67 %	2GCA296881A0031
15	7,00 %	2GCA296882A0031
15	12,50 %	2GCA296883A0031
15	14,00 %	2GCA296884A0031
20	-	2GCA296885A0031
20	5,67 %	2GCA296886A0031
20	7,00 %	2GCA296887A0031
20	12,50 %	2GCA296888A0031
20	14,00 %	2GCA296889A0031
25	-	2GCA296890A0031
25	5,67 %	2GCA296891A0031
25	7,00 %	2GCA296892A0031

U network - 690 V⁽⁴⁾

Qnet (kvar) ⁽¹⁾	Detuning reactor (%) ⁽²⁾	Article number
10	-	2GCA296893A0031
10	5,67 %	2GCA296894A0031
10	7,00 %	2GCA296895A0031
12,5	-	2GCA296896A0031
12,5	5,67 %	2GCA296897A0031
12,5	7,00 %	2GCA296898A0031
15	-	2GCA296899A0031
15	5,67 %	2GCA296900A0031
15	7,00 %	2GCA296901A0031
20	-	2GCA296902A0031
20	5,67 %	2GCA296903A0031
20	7,00 %	2GCA296904A0031
25	-	2GCA296905A0031
25	5,67 %	2GCA296906A0031
25	7,00 %	2GCA296907A0031
30	-	2GCA296908A0031

Technical specifications

Range 60Hz

U network - 220 V

Qnet (kvar) ⁽¹⁾	Detuning reactor (%) ⁽²⁾	Article number
2,5	-	2GCA296909A0031
2,5	5,67 %	2GCA296910A0031
2,5	7,00 %	2GCA296911A0031
2,5	12,50 %	2GCA296912A0031
2,5	14,00 %	2GCA296913A0031
3,75	-	2GCA296914A0031
3,75	5,67 %	2GCA296915A0031
3,75	7,00 %	2GCA296916A0031
3,75	12,50 %	2GCA296917A0031
3,75	14,00 %	2GCA296918A0031
5	-	2GCA296919A0031
5	5,67 %	2GCA296920A0031
5	7,00 %	2GCA296921A0031
5	12,50 %	2GCA296922A0031
5	14,00 %	2GCA296923A0031
6,25	-	2GCA296924A0031
6,25	5,67 %	2GCA296925A0031
6,25	7,00 %	2GCA296926A0031
6,25	12,50 %	2GCA296927A0031
6,25	14,00 %	2GCA296928A0031
7,5	-	2GCA296929A0031
7,5	5,67 %	2GCA296930A0031
7,5	7,00 %	2GCA296931A0031
7,5	12,50 %	2GCA296932A0031
7,5	14,00 %	2GCA296933A0031
10	-	2GCA296934A0031
10	5,67 %	2GCA296935A0031
10	7,00 %	2GCA296936A0031
10	12,50 %	2GCA296937A0031
10	14,00 %	2GCA296938A0031
15	-	2GCA296939A0031

(1) Qnet (kvar) is the net reactive power output in combination with the associated reactor (if existing).

(2) Detuning reactor (%) is the value of the reactor (if existing) connected in series with the capacitor. Reactors are not provided.

(3) Not CSA/UL recognized.

Other ratings available on request.

U network - 380 V

Qnet (kvar) ⁽¹⁾	Detuning reactor (%) ⁽²⁾	Article number
3,75	-	2GCA296940A0031
3,75	5,67 %	2GCA296941A0031
3,75	7,00 %	2GCA296942A0031
5	-	2GCA296943A0031
5	5,67 %	2GCA296944A0031
5	7,00 %	2GCA296945A0031
5	12,50 %	2GCA296946A0031
5	14,00 %	2GCA296947A0031
6,25	-	2GCA296948A0031
6,25	5,67 %	2GCA296949A0031
6,25	7,00 %	2GCA296950A0031
6,25	12,50 %	2GCA296951A0031
6,25	14,00 %	2GCA296952A0031
7,5	-	2GCA296953A0031
7,5	5,67 %	2GCA296954A0031
7,5	7,00 %	2GCA296955A0031
7,5	12,50 %	2GCA296956A0031
7,5	14,00 %	2GCA296957A0031
10	-	2GCA296958A0031
10	5,67 %	2GCA296959A0031
10	7,00 %	2GCA296960A0031
10	12,50 %	2GCA296961A0031
10	14,00 %	2GCA296962A0031
12,5	-	2GCA296963A0031
12,5	5,67 %	2GCA296964A0031
12,5	7,00 %	2GCA296965A0031
12,5	12,50 %	2GCA296966A0031
12,5	14,00 %	2GCA296967A0031
15	-	2GCA296968A0031
15	5,67 %	2GCA296969A0031
15	7,00 %	2GCA296970A0031
15	12,50 %	2GCA296971A0031
15	14,00 %	2GCA296972A0031
20	-	2GCA296973A0031
20	5,67 %	2GCA296974A0031
20	7,00 %	2GCA296975A0031
20	12,50 %	2GCA296976A0031
20	14,00 %	2GCA296977A0031
25	-	2GCA296978A0031
25	5,67 %	2GCA296979A0031
25	7,00 %	2GCA296980A0031
25	12,50 %	2GCA296981A0031
25	14,00 %	2GCA296982A0031
30 ⁽³⁾	5,67 %	2GCA296983A0031

U network - 400 V

Qnet (kvar) ⁽¹⁾	Detuning reactor (%) ⁽²⁾	Article number
3,75	-	2GCA296984A0031
5	-	2GCA296985A0031
5	5,67%	2GCA296986A0031
5	7,00%	2GCA296987A0031
5	12,50%	2GCA296988A0031
5	14,00%	2GCA296989A0031
6,25	-	2GCA296990A0031
6,25	5,67%	2GCA296991A0031
6,25	7,00%	2GCA296992A0031
6,25	12,50%	2GCA296993A0031
6,25	14,00%	2GCA296994A0031
7,5	-	2GCA296995A0031
7,5	5,67%	2GCA296996A0031
7,5	7,00%	2GCA296997A0031
7,5	12,50%	2GCA296998A0031
7,5	14,00%	2GCA296999A0031
10	-	2GCA297000A0031
10	5,67%	2GCA297001A0031
10	7,00%	2GCA297002A0031
10	12,50%	2GCA297003A0031
10	14,00%	2GCA297004A0031
12,5	-	2GCA297005A0031
12,5	5,67%	2GCA297006A0031
12,5	7,00%	2GCA297007A0031
12,5	12,50%	2GCA297008A0031
12,5	14,00%	2GCA297009A0031
15	-	2GCA297010A0031
15	5,67%	2GCA297011A0031
15	7,00%	2GCA297012A0031
15	12,50%	2GCA297013A0031
15	14,00%	2GCA297014A0031
20	-	2GCA297015A0031
20	12,50%	2GCA297016A0031
20	14,00%	2GCA297017A0031
25	-	2GCA297018A0031
25	5,67%	2GCA297019A0031
25	7,00%	2GCA297020A0031
25	12,50%	2GCA297021A0031
25	14,00%	2GCA297022A0031
30	-	2GCA297023A0031
30 ⁽³⁾	5,67%	2GCA297024A0031
30 ⁽³⁾	12,50%	2GCA297025A0031

U network - 415 V

Qnet (kvar) ⁽¹⁾	Detuning reactor (%) ⁽²⁾	Article number
5	-	2GCA297026A0031
5	5,67 %	2GCA297027A0031
5	7,00 %	2GCA297028A0031
5	12,50 %	2GCA297029A0031
5	14,00 %	2GCA297030A0031
6,25	-	2GCA297031A0031
6,25	5,67 %	2GCA297032A0031
6,25	7,00 %	2GCA297033A0031
6,25	12,50 %	2GCA297034A0031
6,25	14,00 %	2GCA297035A0031
7,5	-	2GCA297036A0031
7,5	5,67 %	2GCA297037A0031
7,5	7,00 %	2GCA297038A0031
7,5	12,50 %	2GCA297039A0031
7,5	14,00 %	2GCA297040A0031
10	-	2GCA297041A0031
10	5,67 %	2GCA297042A0031
10	7,00 %	2GCA297043A0031
10	12,50 %	2GCA297044A0031
10	14,00 %	2GCA297045A0031
12,5	-	2GCA297046A0031
12,5	5,67 %	2GCA297047A0031
12,5	7,00 %	2GCA297048A0031
12,5	12,50 %	2GCA297049A0031
12,5	14,00 %	2GCA297050A0031
15	-	2GCA297051A0031
15	5,67 %	2GCA297052A0031
15	7,00 %	2GCA297053A0031
15	12,50 %	2GCA297054A0031
15	14,00 %	2GCA297055A0031
20	-	2GCA297056A0031
20	5,67 %	2GCA297057A0031
20	7,00 %	2GCA297058A0031
20	12,50 %	2GCA297059A0031
20	14,00 %	2GCA297060A0031
25	-	2GCA297061A0031
25	5,67 %	2GCA297062A0031
25	7,00 %	2GCA297063A0031
25	12,50 %	2GCA297064A0031
30	-	2GCA297065A0031
30 ⁽³⁾	5,67 %	2GCA297066A0031
30 ⁽³⁾	7,00 %	2GCA297067A0031
30 ⁽³⁾	14,00 %	2GCA297068A0031

Technical specifications

Range 60Hz

U network - 440 V

Qnet (kvar) ⁽¹⁾	Detuning reactor (%) ⁽²⁾	Article number
5	-	2GCA297069A0031
5	5,67 %	2GCA297070A0031
5	7,00 %	2GCA297071A0031
6,25	-	2GCA297072A0031
6,25	5,67 %	2GCA297073A0031
6,25	7,00 %	2GCA297074A0031
6,25	12,50 %	2GCA297075A0031
7,5	-	2GCA297076A0031
7,5	5,67 %	2GCA297077A0031
7,5	7,00 %	2GCA297078A0031
7,5	12,50 %	2GCA297079A0031
7,5	14,00 %	2GCA297080A0031
10	-	2GCA297081A0031
10	5,67 %	2GCA297082A0031
10	7,00 %	2GCA297083A0031
10	12,50 %	2GCA297084A0031
10	14,00 %	2GCA297085A0031
12,5	-	2GCA297086A0031
12,5	5,67 %	2GCA297087A0031
12,5	7,00 %	2GCA297088A0031
12,5	12,50 %	2GCA297089A0031
12,5	14,00 %	2GCA297090A0031
15	-	2GCA297091A0031
15	5,67 %	2GCA297092A0031
15	7,00 %	2GCA297093A0031
15	12,50 %	2GCA297094A0031
15	14,00 %	2GCA297095A0031
20	-	2GCA297096A0031
20	5,67 %	2GCA297097A0031
20	7,00 %	2GCA297098A0031
20	12,50 %	2GCA297099A0031
20	14,00 %	2GCA297100A0031
25	-	2GCA297101A0031
25	5,67 %	2GCA297102A0031
25	7,00 %	2GCA297103A0031
25	12,50 %	2GCA297104A0031
25	14,00 %	2GCA297105A0031
30	-	2GCA297106A0031
30 ⁽³⁾	5,67 %	2GCA297107A0031
30 ⁽³⁾	7,00 %	2GCA297108A0031

U network - 480 V

Qnet (kvar) ⁽¹⁾	Detuning reactor (%) ⁽²⁾	Article number
6,25	-	2GCA297109A0031
6,25	5,67 %	2GCA297110A0031
6,25	7,00 %	2GCA297111A0031
6,25	12,50 %	2GCA297112A0031
6,25	14,00 %	2GCA297113A0031
7,5	-	2GCA297114A0031
7,5	5,67 %	2GCA297115A0031
7,5	7,00 %	2GCA297116A0031
7,5	12,50 %	2GCA297117A0031
7,5	14,00 %	2GCA297118A0031
10	-	2GCA297119A0031
10	5,67 %	2GCA297120A0031
10	7,00 %	2GCA297121A0031
10	12,50 %	2GCA297122A0031
10	14,00 %	2GCA297123A0031
12,5	-	2GCA297124A0031
12,5	5,67 %	2GCA297125A0031
12,5	7,00 %	2GCA297126A0031
12,5	12,50 %	2GCA297127A0031
12,5	14,00 %	2GCA297128A0031
15	-	2GCA297129A0031
15	5,67 %	2GCA297130A0031
15	7,00 %	2GCA297131A0031
15	12,50 %	2GCA297132A0031
15	14,00 %	2GCA297133A0031
20	-	2GCA297134A0031
20	5,67 %	2GCA297135A0031
20	7,00 %	2GCA297136A0031
20	12,50 %	2GCA297137A0031
20	14,00 %	2GCA297138A0031
25	-	2GCA297139A0031
25	5,67 %	2GCA297140A0031
25	7,00 %	2GCA297141A0031
30	-	2GCA297142A0031

(1) Qnet (kvar) is the net reactive power output in combination with the associated reactor (if existing).

(2) Detuning reactor (%) is the value of the reactor (if existing) connected in series with the capacitor. Reactors are not provided.

(3) Not CSA/UL recognized.

(4) Not UL recognized.

Other ratings available on request.

U network - 525 V

Qnet (kvar) ⁽¹⁾	Detuning reactor (%) ⁽²⁾	Article number
7,5	-	2GCA297143A0031
7,5	5,67 %	2GCA297144A0031
7,5	7,00 %	2GCA297145A0031
7,5	12,50 %	2GCA297146A0031
7,5	14,00 %	2GCA297147A0031
10	-	2GCA297148A0031
10	5,67 %	2GCA297149A0031
10	7,00 %	2GCA297150A0031
10	12,50 %	2GCA297151A0031
10	14,00 %	2GCA297152A0031
12,5	-	2GCA297153A0031
12,5	5,67 %	2GCA297154A0031
12,5	7,00 %	2GCA297155A0031
12,5	12,50 %	2GCA297156A0031
12,5	14,00 %	2GCA297157A0031
15	-	2GCA297158A0031
15	5,67 %	2GCA297159A0031
15	7,00 %	2GCA297160A0031
15	12,50 %	2GCA297161A0031
15	14,00 %	2GCA297162A0031
20	-	2GCA297163A0031
20	5,67 %	2GCA297164A0031
20	7,00 %	2GCA297165A0031
20	12,50 %	2GCA297166A0031
20	14,00 %	2GCA297167A0031
25	-	2GCA297168A0031
25	5,67 %	2GCA297169A0031
25	7,00 %	2GCA297170A0031
25	12,50 %	2GCA297171A0031
25	14,00 %	2GCA297172A0031
30	-	2GCA297173A0031

U network - 600 V

Qnet (kvar) ⁽¹⁾	Detuning reactor (%) ⁽²⁾	Article number
10	5,67 %	2GCA297174A0031
10	7,00 %	2GCA297175A0031
10	12,50 %	2GCA297176A0031
10	14,00 %	2GCA297177A0031
12,5	-	2GCA297178A0031
12,5	5,67 %	2GCA297179A0031
12,5	7,00 %	2GCA297180A0031
12,5	12,50 %	2GCA297181A0031
12,5	14,00 %	2GCA297182A0031
15	-	2GCA297183A0031
15	5,67 %	2GCA297184A0031
15	7,00 %	2GCA297185A0031
15	12,50 %	2GCA297186A0031
15	14,00 %	2GCA297187A0031
20	-	2GCA297188A0031
20	5,67 %	2GCA297189A0031
20	7,00 %	2GCA297190A0031
20	12,50 %	2GCA297191A0031
20	14,00 %	2GCA297192A0031
25	-	2GCA297193A0031
25	5,67 %	2GCA297194A0031
25	7,00 %	2GCA297195A0031
25	12,50 %	2GCA297196A0031
25	14,00 %	2GCA297197A0031
30	-	2GCA297198A0031
30 ⁽³⁾	5,67 %	2GCA297199A0031

U network - 690 V

Qnet (kvar) ⁽¹⁾	Detuning reactor (%) ⁽²⁾	Article number
12,5 ⁽⁴⁾	-	2GCA297200A0031
12,5 ⁽⁴⁾	5,67 %	2GCA297201A0031
12,5 ⁽⁴⁾	7,00 %	2GCA297202A0031
15 ⁽⁴⁾	-	2GCA297203A0031
15 ⁽⁴⁾	5,67 %	2GCA297204A0031
15 ⁽⁴⁾	7,00 %	2GCA297205A0031
20 ⁽⁴⁾	-	2GCA297206A0031
20 ⁽⁴⁾	5,67 %	2GCA297207A0031
20 ⁽⁴⁾	7,00 %	2GCA297208A0031
20 ⁽⁴⁾	12,50 %	2GCA297209A0031
25 ⁽⁴⁾	-	2GCA297210A0031
25 ⁽⁴⁾	5,67 %	2GCA297211A0031
25 ⁽⁴⁾	7,00 %	2GCA297212A0031
25 ⁽⁴⁾	12,50 %	2GCA297213A0031
30 ⁽⁴⁾	-	2GCA297214A0031
30 ⁽³⁾	5,67 %	2GCA297215A0031
30 ⁽³⁾	7,00 %	2GCA297216A0031

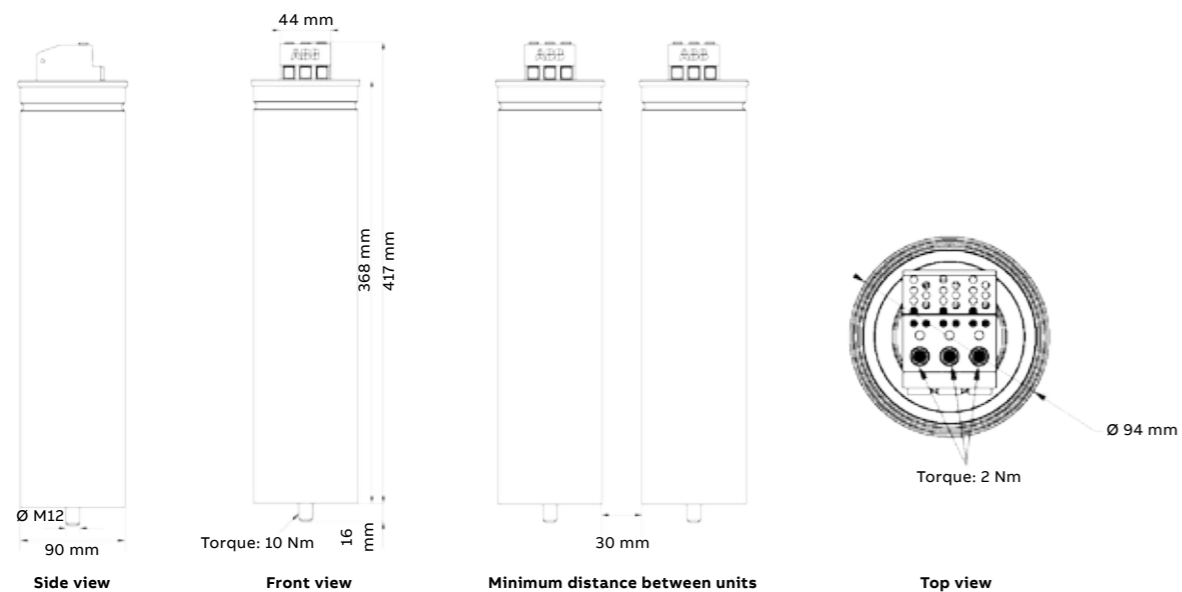
Technical specifications

QCap

Network voltage range	From 220 to 690 V
Frequency	50 and 60 Hz
Connection	Three-phase
Net output power	From 2.5 to 30 kvar
Tolerance on capacitance	2.5-12.5 kvar: -5 % / +10 % 15-30 kvar: 0 % / +10 %
Losses	< 0.2 Watt/kvar (dielectric only) < 0.35 Watt/kvar (typical without discharge resistor). < 0.5 Watt/kvar (including discharge resistor)
Discharge resistor	Included. Discharge to 50 V in 1 minute
Maximum permissible current	1.3 x In for continuous operation
Tolerance on voltage	1.1 x Un for maximum 8 hours in every 24 hours (according to IEC 60831)
Case material	Recyclable aluminum
Color	Raw aluminum
Fixing	1 stud (M12). Recommended torque: 10 Nm
Dimensions (DxH)	90x417 mm
Weight	3 kg
Terminals	Cage screws. Recommended torque: 2 Nm
Minimum distance above unit	20 mm
Minimum distance between capacitors	30 mm
Earth	Earth connection on the enclosure fixation
Execution	Indoor use only
Installation	Horizontal or vertical
Temperature range	-25°C / +55°C (class D according to IEC 60831)
Altitude	Up to 2000 m without derating. For higher altitudes consult ABB.
Protection degree	IP20
Standards	IEC 60831-1 (2014), IEC 60831-2 (2014), UL 810, CSA C22.2 No 190

Dimensions

Total H	Can H	D	D fixation screw	H fixation screw
401 mm	368 mm	90 mm	M12	16 mm



ABB's commitment

Quality assurance

At ABB, we are committed to providing the best products and services. Our products comply with or exceed the latest international standards. In addition to type tests in independent laboratories, our certified design and manufacturing processes guarantee the highest quality. We are certified according to the latest relevant ISO quality standards.

Sustainability

For ABB, sustainability is about balancing economic success, environmental stewardship and social progress to benefit all our stakeholders.

Sustainability considerations cover how we design and manufacture products, what we offer customers, how we engage suppliers, how we assess risks and opportunities, and how we behave in communities where we operate and towards one another, while striving to ensure the health, security and safety of our employees, contractors and others affected by our activities. We are certified according to the latest relevant ISO quality standards.



