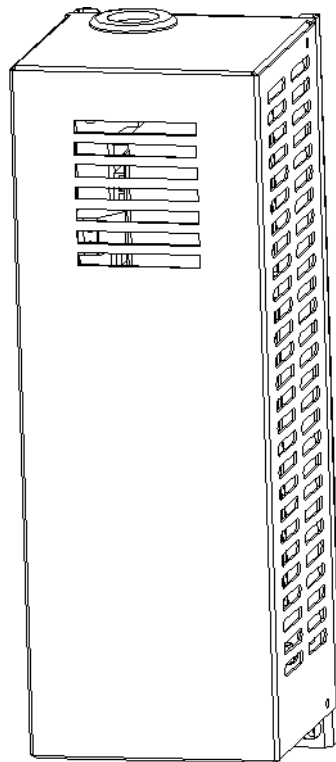



Comp-AC


Installation Guide
for type ACS-CHK- x3
Input/Output Chokes





ABB


Safety

 **Warning!** All electrical installation and maintenance work on the choke units should be carried out by a qualified electrician.

 **Warning!** Do not attempt any work on a powered ACS 100/140. Before installation, switch off the mains and other dangerous voltages to the ACS 100/140. After switching off the mains, always allow the intermediate circuit capacitors 5 minutes to discharge before commencing work on the frequency converter or connected equipment.

 **Warning!** Never attempt to repair a broken unit; always contact the supplier for a replacement.

 **Warning!** Maximum temperature of the wall attachment may reach +90 °C (ambient temperature +40 °C).

 **Note!** For more technical information contact your local supplier. Under no circumstances will ABB be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

A Product Overview

This guide contains information necessary for the selection and use of input/output chokes for the ACS 100/140 frequency converters.

Input chokes reduce line current harmonics and protect diode bridge and intermediate circuit against overvoltage spikes.

Output chokes reduce both rising and falling times of output voltage edges and voltage peaks at the motor terminal. Therefore, chokes protect the motor and decrease current leakages caused by a long motor cable.

Chokes are selected according to the table below. Maximum cable length between chokes and the ACS 100/140 is 3 m. Maximum switching frequency with output chokes is 4 kHz. Maximum output frequency with output chokes has to be limited to 100 Hz.

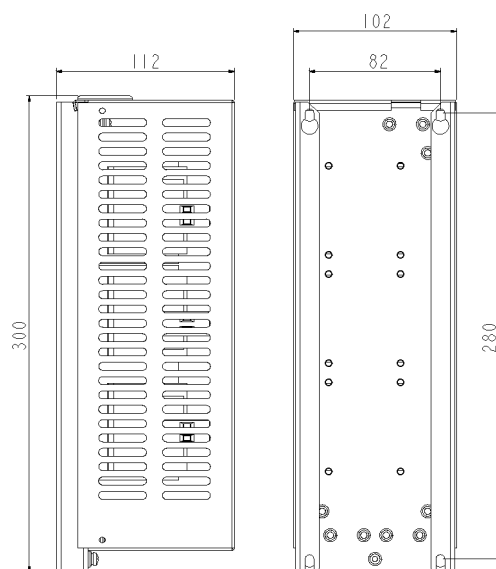
Inverter type	Input choke	Output choke	Max. motor cable length with output chokes(m)
1~ supply, $U_{nom} = 200 - 240$ V, $P_{nom} = 0.12 - 2.2$ kW			
ACS1x1-x18-1	-	ACS-CHK-B3	100
ACS1x1-x25-1	-	ACS-CHK-B3	100
ACS1x1-x37-1	-	ACS-CHK-B3	100
ACS1x1-x75-1	-	ACS-CHK-B3	150
ACS1x1-1x1-1	-	ACS-CHK-B3	150
ACS1x1-1x6-1	-	ACS-CHK-B3	150
ACS1x1-2K1-1	-	ACS-CHK-C3	150
ACS1x1-2K7-1	-	ACS-CHK-C3	150
ACS1x1-4K1-1	-	ACS-CHK-C3	150
3~ supply, $U_{nom} = 200 - 240$ V, $P_{nom} = 0.37 - 2.2$ kW			
ACS1x3-K75-1	ACS-CHK-B3	ACS-CHK-B3	150
ACS1x3-1K1-1	ACS-CHK-B3	ACS-CHK-B3	150
ACS1x3-1K6-1	ACS-CHK-B3	ACS-CHK-B3	150
ACS1x3-2K1-1	ACS-CHK-B3	ACS-CHK-C3	150
ACS1x3-2K7-1	ACS-CHK-C3	ACS-CHK-C3	150
ACS1x3-4K1-1	ACS-CHK-C3	ACS-CHK-C3	150
3~ supply, $U_{nom} = 380 - 480$ V, $P_{nom} = 0.37 - 2.2$ kW			
ACS143-x75-3	ACS-CHK-A3	ACS-CHK-B3	100
ACS143-1x1-3	ACS-CHK-A3	ACS-CHK-B3	100
ACS143-1x6-3	ACS-CHK-A3	ACS-CHK-B3	150*
ACS143-2x1-3	ACS-CHK-B3	ACS-CHK-B3	150*
ACS143-2K7-3	ACS-CHK-B3	ACS-CHK-C3	150*
ACS143-4K1-3	ACS-CHK-C3	ACS-CHK-C3	150*

* If supply voltage is higher than or equal to 440 V, maximum motor cable length is 100 m.

B Specifications

Type Series and Technical Data

Chokes	Inductance (mH)	Current (A)	Voltage (V)	Weight (kg)
ACS-CHK-A3	4.0	4.0	480	3.2
ACS-CHK-B3	1.5	8.0	480	4.0
ACS-CHK-C3	0.8	14.0	480	4.0



- Enclosure rating IP20
- Maximum cable size 4 mm²
- Insulation class B (maximum temperature 130 °C.)

Environmental Limits

- Storage and transportation temperature: -40 to +70 °C.
- Ambient operating temperature: 0 to +40 °C.
- Relative humidity: less than 95 %, no condensation allowed.
- Installation altitude: 0 to 2000 m.

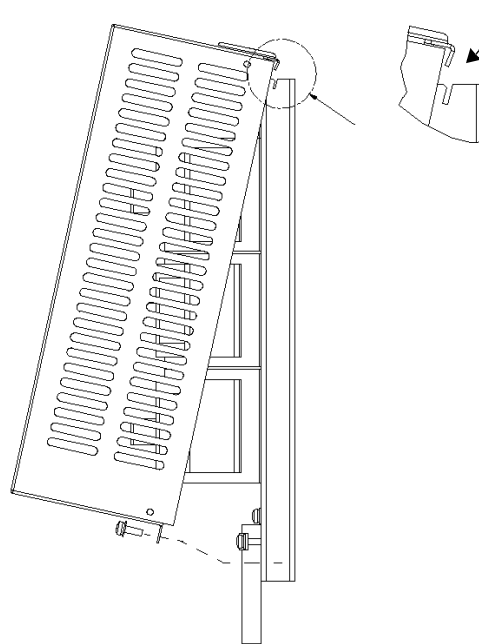
C Removing and replacing the cover

Opening the cover:

1. Open the screw.
2. Lift the cover off.

Closing the cover:

1. Hook the cover edge to the slot on the top of the frame. (See detailed view below.)
2. Press the cover down firmly.
3. Fasten the screw.



D Installing the ACS-CHK-x3

Install the ACS-CHK-x3 vertically on a solid non-inflammable surface. Chokes have been designed to cool by natural convection. Because of this leave 50 mm free space around the enclosure. If output chokes are installed below the frequency converter, leave 300 mm free space between chokes and the frequency converter. The wall mounting attachments may reach a temperature of 90 °C. Wall mounting with M4 screws.

Installing the ACS-CHK-x3 as an input choke

The line cable can be drawn either from the bottom (see figure A) or the top (see figure B).

The circuit diagram below illustrates how chokes are used as input chokes.

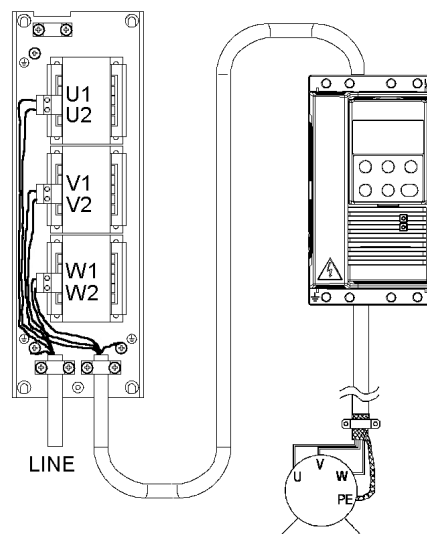
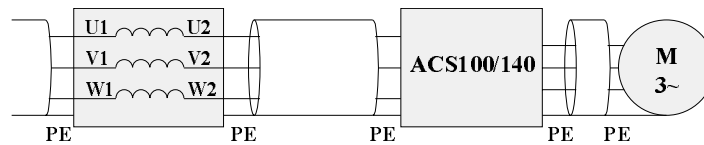


Figure A

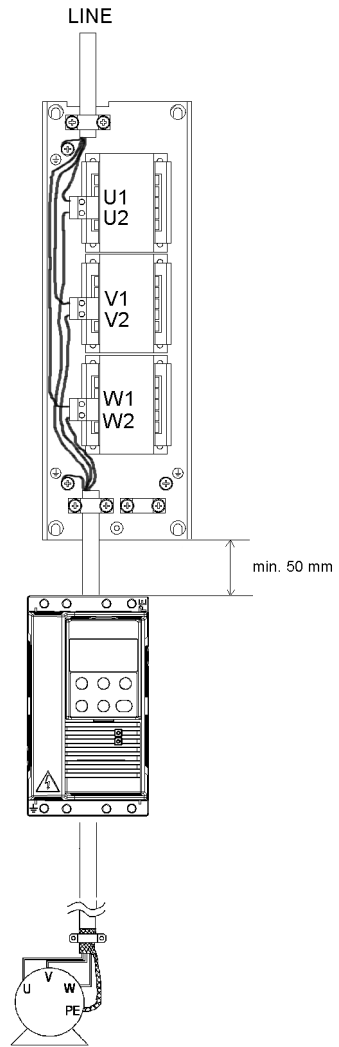
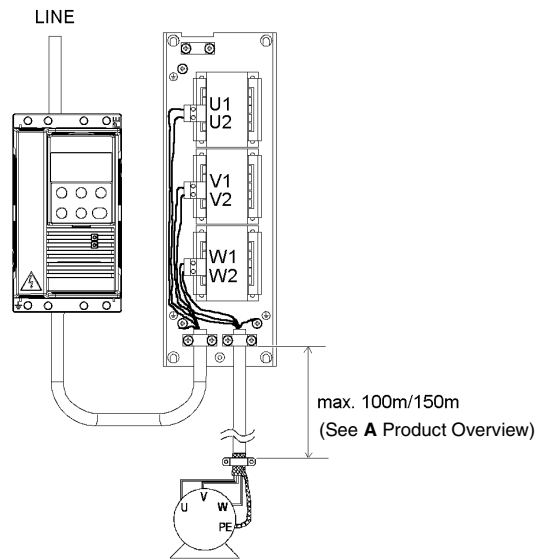
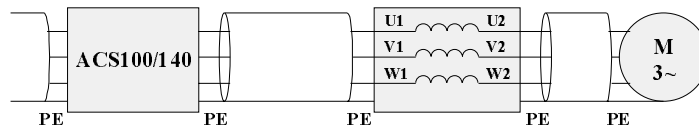


Figure B

Installing the ACS-CHK-x3 as an output choke

The following circuit diagram illustrates how chokes are used as output chokes.



Note! Do not use the upper cable clamp when a choke is used as an output choke.

E Product Conformity

The ACS-CHK -x3 complies with the requirements of the European Low Voltage Directive 73/23/EEC with amendments. A list of main standards are available on request.

Standard IEC 61000-3-2 requirements for line current harmonics are met by using ACS-CHK-A3 (400 V three phase equipment, input power \leq 1 kW).



ABB Industry Oy
P.O.BOX 184
00381 Helsinki
FINLAND
Telephone +358-10-22 2000
Telefax +358-10-22 22681

3BFE 64326171 R0125
EN

Effective: 17.4.2000

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