

Supplement to the ACS 160 User's Manual

This supplement applies to all language versions of ACS 160 User's Manual (3BFE 64364120) revision C or prior. The change is in effect as of 1.1.2003.

The change in the design of ACS 160 type A affects the supply voltage range stated in the manual and changes the stated compliance with EMC instructions.

In order to verify the unit design, the MRP code or the serial number code can be used as a guide. Please refer to the table 1 below for type codes, new design revision and MRP numbers.

Table 1

Type Code	New design revision	New Design supply voltage 380-480 V ±10 %	Old Design supply voltage 380-500 V ±10 %
ACS163-1K1-3-A	F	64678035	64312839
ACS163-1K6-3-A	F	64678043	64315307
ACS163-2K1-3-A	F	64678051	64315331
ACS163-2K7-3-A	F	64678060	64315340
ACS163-4K1-3-A	G	64678078	64315358

For verifying the unit design from the type designation label, please see the product revision number (letter) attached to the unit.

Example for product ACS 163-1K1-3-A S/N 201E3456 is of old design

S/N 201F3456 or later is of new design

The supply voltage of the types ACS163-xKx-A (new design), -B, -S, -E, -V is 380 - 480 V ±10 %. For types ACS163-xKx-A (old design), -R, -D, -U the supply voltage is 380 - 500 V ±10 %.

Additional instructions to Comply with EN61800-3 Second Environment

Restricted Distribution

There are two different ways to fulfil Restricted Distribution requirements.

- Alternative: use ACS163-xKx-A (new design) units for motor mounting, -E or -V units for wall mounting**

Refer to table 2 for maximum motor cable lengths.

Table 2 Maximum motor cable lengths in EN61800-3 Second Environment, Restricted Distribution.

Converter type	380-480 V ±10 %	
	4 kHz	8 kHz
ACS163-1K1-3-E, -V	30	20
ACS163-1K6-3-E, -V	30	20
ACS163-2K1-3-E, -V	30	20
ACS163-2K7-3-E, -V	30	20
ACS163-4K1-3-E, -V	55	40

- Alternative: create an EMC plan, or for installations where EMC requirements do not need to be fulfilled**

Use ACS163-xKx-A (old design) units for motor mounting-D, or -U units for wall mounting. To create an EMC plan, please contact your local ABB sales office. Refer to table 3 for maximum motor cable lengths to ensure accurate drive operation.

Table 3 Maximum motor cable lengths from functional point of view.

Converter type	400 V		500 V	
	4 kHz	8 kHz	4 kHz	8 kHz
ACS163-1K1-3-D, -U	40	20	20	10
ACS163-1K6-3-D, -U	60	20	20	10
ACS163-2K1-3-D, -U	80	20	20	10
ACS163-2K7-3-D, -U	90	50	40	30
ACS163-4K1-3-D, -U	100	100	80	80

With ACS163-xKx-3-D and -J you can use output chokes to increase maximum motor cable length. In this case the 4 kHz switching frequency must be used. See table 4.

Table 4 *Maximum motor cable lengths with output chokes.*

3-phase Supply Voltage 380-480 V, 0.55-2.2 kW			
Converter type	Output choke type	Max. Motor cable length (m)	
		with choke	without choke
ACS163-1K1-3-D, -J	ACS-CHK-B3	60	40
ACS163-1K6-3-D, -J	ACS-CHK-B3	80	60
ACS163-2K1-3-D, -J	ACS-CHK-B3	100	80
ACS163-2K7-3-D, -J	ACS-CHK-C3	120 ¹⁾	100
ACS163-4K1-3-D, -J	ACS-CHK-C3	140 ¹⁾	100

¹⁾ If the supply voltage is higher than or equal to 440 V the maximum cable length is 100 m.

Additional Instructions to Comply with EN61800-3 First Environment

Restricted and Unrestricted Distribution

Always use ACS163-xKx-B or -S units for motor mounting, -E or -V units for wall mounting. These units have a built-in EMC filter. Refer to table 5 for maximum cable lengths.

Table 5 *Maximum motor cable lengths in EN61800-3 First Environment.*

Converter type	380-480 V $\pm 10\%$	
	4 kHz restricted / unrestricted distribution	8 kHz restricted / unrestricted distribution
ACS163-1K1-3-E, -V	10 / 5	10 / 5
ACS163-1K6-3-E, -V	10 / 5	10 / 5
ACS163-2K1-3-E, -V	10 / 5	10 / 5
ACS163-2K7-3-E, -V	10 / 5	10 / 5
ACS163-4K1-3-E, -V	10 / 5	10 / 5

Line Current Harmonics

The product standard EN 61800-3 refers to EN 61000-3-2 which specifies limits for harmonic current emissions for equipment intended to be connected to public low-voltage distribution systems.

Low-Voltage Public Supply Network

The limits and requirements of the EN 61000-3-2 apply for equipment with rated current ≤ 16 A. The ACS 160 is a professional equipment to be used in trades, professions, or industries and is not intended for sale to the general public.

The ACS 160 with a total rated power greater than 1 kW conforms with EN 61000-3-2. Below 1 kW, use the following units to comply with class A limits of EN 61000-3-2: ACS163-1K1-3 and ACS163-1K6-3.

Industrial Networks

If ACS 160 is used in an industrial installation for which the EN 61000-3-2 is not relevant, a reasonable economical approach which considers the total installation shall be used.

Typically a single low power equipment like ACS 160 does not cause a significant voltage distortion to network. However, the user shall be aware of the values of the harmonics currents and voltages occurring within the power supply system before connecting the ACS 160, as well as the internal impedance of the supply system. The current harmonic levels of the ACS 160 under rated load conditions are available on request and the assessment procedure given in Appendix B of the EN 61800-3 may be used as guide.

Distribution Networks Isolated from Earth

ACS 160 types 163-xKx-3-A (new design), -B, -S, -E, -V cannot be used in an isolated, or high impedance earthed industrial distribution networks.