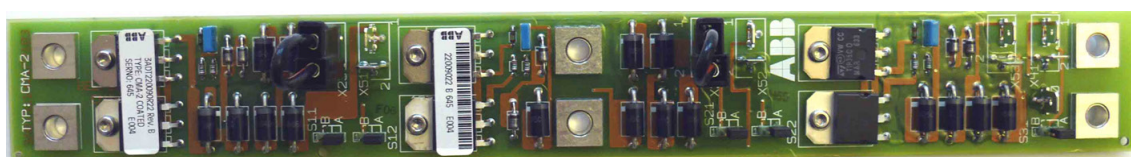
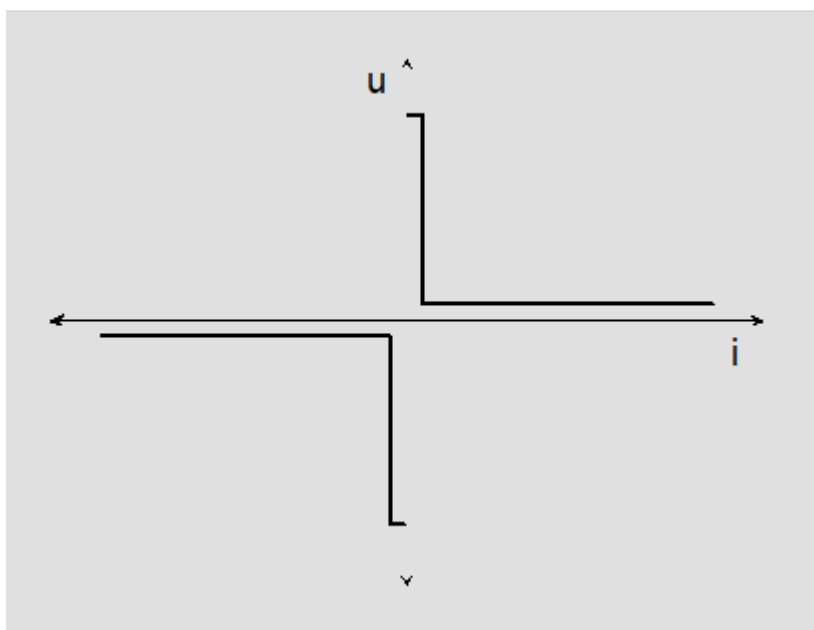


ABB INDUSTRIAL DRIVES

DCS880 drives

Current measurement aid (SDCS-CMA-2) manual



DCS880 Drive Manuals


General	Publication number	EN	DE	IT	ES	FR	PL	ZH	RU
DCS880 Quick guide	3ADW000545	EN	DE	IT	ES	FR			
Safety instructions all languages	3ADW000481	EN	DE	IT	ES	FR	PL	ZH	RU
DCS880 Manual set	 DCS880 Manual set	EN							
DCS880 Units									
DCS880 Flyer	3ADW000475	EN	DE	IT	ES	FR		ZH	RU
DCS880 Technical catalog	3ADW000465	EN	DE	IT	ES	FR	PL	ZH	RU
DCS880 Hardware manual	3ADW000462	EN	DE	IT	ES	FR	PL		RU
DCS880 Firmware manual	3ADW000474	EN	DE	IT	ES	FR	PL		RU
DCS880 Service manual	3ADW000488	EN							
DCS880 Hardparallel manual (on request only)	3ADW000530	EN							
DCS880 12-pulse manual	3ADW000533	EN							
Instructions for mounting the SDCS-CMA-2	3ADW000396	EN							
DCS880 Current measurement aid (SDCS-CMA-2) manual	3ADW000745	EN							
ACS-AP-x assistant control panels user's manual	3AUA0000085685	EN							
DCS Thyristor power converter – Technical guide	3ADW000163	EN							
Functional safety									
Supplement for functional safety	3ADW000452	EN		IT	ES	FR	PL		RU
Functional safety for enclosed converter									
+Q957 Prevention of unexpected Start Up	3ADW000504	EN							
+Q951 Emergency stop, category 0 with MC opening	3ADW000505	EN							
+Q952 Emergency stop, category 1 with MC opening	3ADW000506	EN							
+Q963 Emergency stop, category 0 without MC opening	3ADW000507	EN							
+Q964 Emergency stop, category 1 without MC opening	3ADW000508	EN							
Enclosed converter									
DCS880-A Installation manual	3ADW000627	EN							
DCS800-A +S880 Enclosed converters, flyer	3ADW000523	EN							
Rebuild and upgrade systems									
DCS880-R Rebuild manual	3ADW000599	EN							
DCS880-U Upgrade manual	3ADW000719	EN							
Door mounting kits									
DPMP-01 mounting platform for ACS-AP control panel	3AUA0000100140	EN							
DPMP-02 mounting platform for ACS-AP control panel	3AUA0000136205	EN							
Serial communication									
FCAN-01 CANopen adapter module	3AFE68615500	EN	DE						
FDNA-01 DeviceNet™ adapter module	3AFE68573360	EN							
FECA-01 EtherCAT adapter module	3AUA0000068940	EN	DE		ES				
FENA-11/-21 Ethernet adapter module	3AUA0000093568	EN						ZH	
FEPL-02 Ethernet POWERLINK adapter module	3AUA0000123527	EN	DE						
FPBA-01 PROFIBUS DP adapter module	3AFE68573271	EN	DE				PL	ZH	
FSCA-01 RS-485 adapter module	3AUA0000109533	EN						ZH	
FDCO-01/02 DDCS communication modules	3AUA0000114058	EN							
FSPS-21 PROFIsafe safety functions module	3AXD50000158638	EN							
FSO-21 Safety functions module	3AXD50000015614	EN							
Tool and maintenance manuals and guides									
Drive Composer PC tool	3AUA0000094606	EN							
Drive application programming (IEC61131-3) manual	3AUA0000127808	EN							
Adaptive programming, Application guide	3AXD50000028574	EN							
NETA-21 remote monitoring tool	3AUA0000096939	EN							
NETA-21 remote monitoring tool guide	3AUA0000096881	EN							
DDCS branching unit NDBU-95 user's manual	3BFE64285513	EN							
Extension modules									
FIO-11 Analog extension module	3AFE68784930	EN	DE	IT					
FIO-01 Digital extension module	3AFE68784921	EN	DE	IT					
FAIO-01 Analog extension module	3AUA0000124968	EN	DE						
FDIO-01 Digital extension module	3AUA0000124966	EN							
FEN-01 TTL encoder interface	3AFE68784603	EN	DE	IT				ZH	
FEN-31 HTL encoder interface	3AUA0000031044	EN						ZH	
FEA-03 F series extension adapter	3AUA0000115811	EN							
Ethernet tool network for ACS880 drives appl. guide	3AUA0000125635	EN							
Status 07.2021					DCS880 Manuals list en q.docx				

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Safety instructions

What this chapter contains

This chapter contains the safety instructions you must follow when installing, operating and servicing the drive.

If ignored, physical injury or death may follow, or damage may occur to the drive, the motor or driven equipment. Read the safety instructions before you work on the unit.

To which products this chapter applies

The information is valid for the whole range of the product DCS880, the converter modules DCS880-S0x size H1 ... H8, field exciter units DCF80x, etc. like the Rebuild Kit DCS880-R00.

Usage of warnings and notes

There are two types of safety instructions throughout this manual: warnings and notes. Warnings caution you about conditions which can result in serious injury or death and/or damage to the equipment, and advice on how to avoid the danger. Notes draw attention to a particular condition or fact or give information on a subject.

The warning symbols are used as follows:



Dangerous voltage warning warns of high voltage which can cause physical injury or death and/or damage to the equipment.



General danger warning warns about conditions, other than those caused by electricity, which can result in physical injury or death and/or damage to the equipment.



Electrostatic sensitive devices warning warns of electrostatic discharge which can damage the equipment.

Installation and maintenance work

These warnings are intended for all who work on the drive, motor cable or motor. Ignoring the instructions can cause physical injury or death and/or damage to the equipment.



WARNING

- **Only qualified electricians are allowed to install and maintain the drive!**
- Never work on the drive, motor cable or motor when main power is applied.
- Always ensure by measuring with a multimeter (impedance at least 1 MΩ) that:
 1. Voltage between drive input phases U1, V1 and W1 and the frame is close to 0 V.
 2. Voltage between terminals C+ and D- and the frame is close to 0 V.
- Do not work on the control cables when power is applied to the drive or to the external control circuits. Externally supplied control circuits may cause dangerous voltages inside the drive even when the main power on the drive is switched off.
- Do not make any insulation resistance or voltage withstand tests on the drive or drive modules.
- Isolate the motor cables from the drive when testing the insulation resistance or voltage withstand of the cables or the motor.
- When reconnecting the motor cable, always check that the C+ and D- cables are connected with the proper terminal.

Notes:

- The motor cable terminals on the drive are at a dangerously high voltage when the main power is on, regardless of whether the motor is running or not.
- Depending on the external wiring, dangerous voltages (115 V, 220 V or 230 V) may be present on the relay outputs of the drive system (e.g. XRO1 ... XRO3).

- DCS880 with enclosure extension: Before working on the drive, isolate the whole drive system from the supply.

Grounding

These instructions are intended for all who are responsible for the grounding of the drive. Incorrect grounding can cause physical injury, death and/or equipment malfunction and increase electromagnetic interference.



WARNING

- Ground the drive, motor and adjoining equipment to ensure personnel safety in all circumstances, and to reduce electromagnetic emission and pick-up.
- Make sure that grounding conductors are adequately sized and marked as required by safety regulations.
- In a multiple-drive installation, connect each drive separately to protective earth (PE \oplus).
- Minimize EMC emission and make a 360° high frequency grounding (e.g. conductive sleeves) of screened cable entries at the cabinet lead-through plate.
- Do not install a drive equipped with an EMC filter to an ungrounded power system or a high resistance-grounded ($> 30 \Omega$) power system.

Notes:

- Power cable shields are suitable as equipment grounding conductors only when adequately sized to meet safety regulations.
- As the normal leakage current of the drive is higher than 3.5 mA_{AC} or 10 mA_{DC} a fixed protective earth connection is required.
- This product can cause a DC current in the protective earthing conductor. Where a residual current-operated protective (RCD) or monitoring (RCM) device is used for protection in case of direct or indirect contact, only an RCD or RCM of Type B is allowed on the supply side of this product.

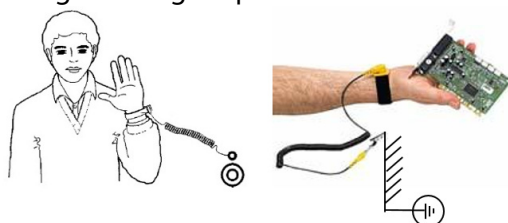
Printed circuit boards and fiber optic cables

These instructions are intended for all who handle the circuit boards and fiber optic cables. Ignoring the following instructions can cause damage to the equipment.



WARNING

- The printed circuit boards contain components sensitive to electrostatic discharge. Wear a grounding wrist band when handling the boards. Do not touch the boards unnecessarily.
- Use grounding strip:



- ABB order no.: 3ADV050035P0001



WARNING

- Handle the fiber optic cables with care.
- When unplugging optic cables, always grab the connector, not the cable itself.
- Do not touch the ends of the fibers with bare hands as the fiber is extremely sensitive to dirt.
- The minimum allowed bend radius is 35 mm (1.38 in.).

Mechanical installation

These notes are intended for all who install the drive. Handle the unit carefully to avoid damage and injury.



WARNING



- DCS880 sizes H4 ... H8:
 - The drive is heavy. Lift the drive by lifting lugs only.
 - The drive's center of gravity is high. Do not tilt the drive. The drive will overturn from a tilt of about 6 degrees. An overturning drive can cause physical injury.
 - Do not lift the drive by the front cover.
 - Place drives H4 ... H6 only on their back.
- Make sure that dust from drilling does not enter the drive when installing. Electrically conductive dust inside the unit may cause damage or lead to malfunction.
- Ensure sufficient cooling.
- Do not fasten the drive by riveting or welding.

Operation

These warnings are intended for all who plan the operation of the drive or operate the drive. Ignoring the instructions can cause physical injury or death and/or damage to the equipment.



WARNING


- Before adjusting the drive and putting it into service, make sure that the motor and all driven equipment are suitable for operation throughout the speed range provided by the drive. The drive can be adjusted to operate the motor at speeds above and below the base speed.
- Do not control the motor with the disconnecting device (disconnecting mains); instead, use the control panel keys  and , or commands via the I/O board of the drive.
- Mains connection:

You can use a disconnect switch (with fuses) to disconnect the electrical components of the drive from the mains for installation and maintenance work. The type of disconnect switch used must be as per EN 60947-3, Class B, so as to comply with EU regulations, or a circuit-breaker type which switches off the load circuit by means of an auxiliary contact causing the breaker's main contacts to open. The mains disconnect must be locked in its "OPEN" position during any installation and maintenance work.
- EMERGENCY STOP buttons must be installed at each control desk and at all other control panels requiring an emergency stop function. Pressing the STOP button on the control panel of the drive will neither cause an emergency stop of the motor, nor will the drive be disconnected from any dangerous potential.
- To avoid unintentional operating states, or to shut the unit down in case of any imminent danger according to the standards in the safety instructions it is not sufficient to merely shut down the drive via signals "RUN", "drive OFF" or "Emergency Stop" respectively "control panel" or "PC tool".
- Intended use:

The operating instructions cannot take into consideration every possible case of configuration, operation or maintenance. Thus, they mainly give such advice only, which is required by qualified personnel for normal operation of the machines and devices in industrial installations.

If in special cases the electrical machines and devices are intended for use in non-industrial installations - which may require stricter safety regulations (e.g. protection against contact by children or similar) - these additional safety measures for the installation must be provided by the customer during assembly.

Note:

- When the control location is not set to Local (Local not shown in the status row of the display), the stop key on the control panel will not stop the drive. To stop the drive using the control panel, press the Loc/Rem key and then the stop key .

Introduction to this manual

What this chapter contains

This chapter describes the purpose, contents and the intended use of this manual.

Before You Start

The purpose of this manual is to provide you with the information necessary to mount an SDCS-CMA-2. Study carefully the [Safety instructions](#) at the beginning of this manual before attempting any work on or with the drive. Read through this manual before starting-up the drive. The installation and commissioning instructions given in the [DCS880 Hardware manual \(3ADW000462\)](#) and [DCS880 Quick guide \(3ADW000480\)](#) must also be read before proceeding.

This manual is based on the **standard** DCS880 firmware.

What this manual contains

The [Safety instructions](#) can be found at the beginning of this manual.

[Introduction to this manual](#), the chapter you are currently reading, introduces you to this manual.

[SDCS-CMA-2](#), this chapter gives a general information about the SDCS-CMA-2.

[Mounting the SDCS-CMA-2 in a H6 unit](#), this chapter provides the description how to mount a SDCS-CMA-2 in units size H6.

[Mounting the SDCS-CMA-2 in a H7 unit](#), this chapter provides the description how to mount a SDCS-CMA-2 in units size H7.

[Mounting the SDCS-CMA-2 in a H8 unit](#), this chapter provides the description how to mount a SDCS-CMA-2 in units size H8.

[Using the SDCS-CMA-2 with a DCS880 Rebuild kit](#), this chapter provides the description how to use a SDCS-CMA-2 with a DCS880 Rebuild kit.

[Commissioning](#), this chapter provides the description how to commission a SDCS-CMA-2.

Related documents

A list of related manuals is shown on the inside of the front cover under [DCS880 Drive Manuals](#).

Terms and abbreviations

Term/Abbreviation	Definition
AC 800M	Type of programmable controller manufactured by ABB.
ACS-AP-I	Types of control panel used with DCS880 drives.
ACS-AP-W	
AI	Analog input; interface for analog input signals.
AO	Analog output; interface for analog output signals.
Automation Builder	Tool to write application programs. See Drive (IEC61131-3) application programming manual (3AUA0000127808) .
Control unit	Contains the electronics and I/O connections of the drive. The control unit is connected to the power unit.
D2D	Drive-to-drive; communication link between drives.
DCS880	A product family of ABB drives.
DCSLink	Communication between the armature converter and the field exciters or 12-pulse communication.

Term/Abbreviation	Definition
DDCS	Distributed drives communication system. A protocol used in communication between ABB drive equipment.
DI	Digital input; interface for digital input signals.
DIO	Digital input/output; interface that can be used as a digital input or output.
DO	Digital output; interface for digital output signals.
Drive	Converter to control DC motors.
DriveBus	A communication link used by, for example, ABB controllers. DCS880 drives can be connected to the DriveBus link of the controller.
DriveAP	Adaptive Programming of the drive. See Adaptive programming, Application guide (3AXD50000028574) .
Drive Composer	PC tool for commissioning and maintenance of ABB drives.
EFB	Embedded fieldbus.
FAIO-01	Optional analog I/O extension module.
FBA	Fieldbus adapter.
FCAN-01	Optional CANopen adapter.
FCNA-01	Optional ControlNet adapter.
FDCO-0x	Optional DDCS communication module.
FDIO-01	Optional digital I/O extension module.
FDNA-01	Optional DeviceNet adapter.
FEA-03	Optional I/O extension module.
FECA-01	Optional EtherCAT® adapter.
FEN-01	Optional TTL encoder interface module.
FEN-11	Optional absolute encoder interface module.
FEN-21	Optional resolver interface module.
FEN-31	Optional HTL encoder interface module.
FENA-11	Optional Ethernet/IP, Modbus/TCP and PROFINET IO adapter.
FENA-21	Optional dual-port Ethernet/IP, Modbus/TCP and PROFINET IO adapter.
FEPL-02	Optional POWERLINK adapter.
FIO-01	Optional digital I/O extension module.
FIO-11	Optional analog I/O extension module.
FPBA-01	Optional PROFIBUS DP adapter.
FPTC-01	Optional thermistor protection module.
FPTC-02	Optional ATEX-certified thermistor protection module for potentially explosive atmospheres.
FSCA-01	Optional Modbus/RTU adapter.
FSO-21	Optional safety functions module.
FSPS-21	Optional PROFIsafe safety functions module.
HTL	High-threshold logic.
I/O	Input/Output.
ModuleBus	A communication link used by, for example, ABB controllers. DCS880 drives can be connected to the optical ModuleBus link of the controller.
Network control	With fieldbus protocols based on the Common Industrial Protocol (CIP™), such as DeviceNet and Ethernet/IP, denotes the control of the drive using the Net Ctrl and

Term/Abbreviation	Definition
	<p>Net Ref objects of the ODVA AC/DC Drive Profile. For more information, see www.odva.org, and the following manuals:</p> <ul style="list-style-type: none"> – FDNA-01 DeviceNet adapter module User's manual (3AFE68573360). – FENA-11/-21 Ethernet adapter module User's manual (3AUA0000093568).
Off3 (emergency stop)	Function in Drive: Off3 (emergency stop) with configurable deceleration time according to cat. 1.
OPL	Optical power link. Protocol used in communication between the control unit and the power unit.
Parameter	User-adjustable operation instruction to the drive.
PID controller	Proportional-integral-derivative controller. The speed control is based on a PID algorithm.
PLC	Programmable logic controller.
Power unit	Contains the power electronics and power connections of the drive. The control unit is connected to the power unit.
PTC	Positive temperature coefficient.
PU	See power unit.
RFG	Ramp function generator.
RO	Relay output; interface for a digital output signal. Implemented with a relay.
Signal	Value measured or calculated by the drive. It can also contain status information. Most signals are read-only, but some (especially counter-type signals) can be reset.
SS1	Safe stop 1.
SSI	Synchronous serial interface.
STO	Safe torque off.
TTL	Transistor-transistor logic.
UPS	Uninterruptible power supply. Power supply equipment with battery to maintain output voltage during power failure.

Cybersecurity disclaimer

This product is designed to be connected to and to communicate information and data via a network interface. It is the customer's sole responsibility to provide and continuously ensure a secure connection between the product and the customer network or any other network (as the case may be). The customer shall establish and maintain any appropriate measures (such as but not limited to the installation of firewalls, application of authentication measures, encryption of data, installation of anti-virus programs, etc.) to protect the product, the network, its system and the interface against any kind of security breaches, unauthorized access, interference, intrusion, leakage and/or theft of data or information. ABB and its affiliates are not liable for damages and/or losses related to such security breaches, any unauthorized access, interference, intrusion, leakage and/or theft of data or information.

SDCS-CMA-2

General

Real networks contain abnormalities like different actual values of the phase voltages and not symmetrical phase shifts. The chance, that these occur becomes more likely, when high power consumers (single phase or 3-phase) are connected. Additionally weak networks are more sensitive against load changes of any kind.

If drives are connected to and used at weak networks it may happen that an interaction happens between networks and drives. Sometimes this interaction manifests itself as a current instability or an increased bridge reversal time.

To reduce such interactions to a minimum the **Current Measurement Aid** board (SDCS-CMA-2) is available. To add the SDCS-CMA-2 to units size H6 ... H8 use plus code +S175. Additionally a SDCS-CMA-2 kit can be ordered by means of ordering code DCR000-9701-88 (3ADT220194R0880), e.g. for DCS880 Rebuild kits.

Units concerned

All units of size H6 ... H8 and the DCS880 Rebuild kit can be equipped with the SDCS-CMA-2.

Purpose

The SDCS-CMA-2 should be used for:

- Units size H6 ... H8 and DCS880 Rebuild kits used in 6-pulse configurations connected to weak networks. The board serves for improved current measurement. Only 2 channels of the board are used.
- Units size H6 ... H8 and DCS880 Rebuild kits used in 12-pulse configurations. The board serves for improved current measurement. Only 2 channels of the board are used.
- Units of size H8 used in hardparallel configurations. The board serves for improved current measurement and to connect all three CTs. Thus, all 3 channels of the board are used. See [DCS880 Hardparallel manual \(3ADW000530\)](#).

Note: This manual is only available on request.

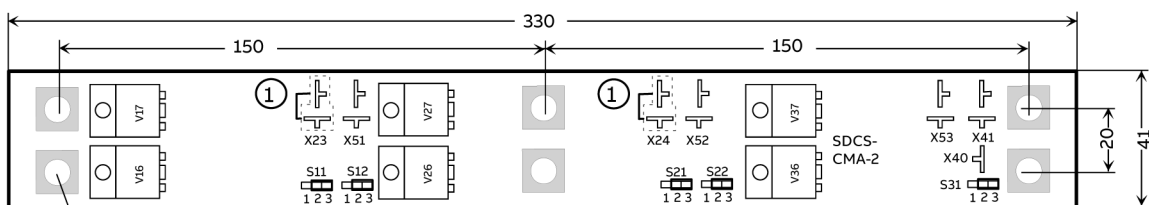
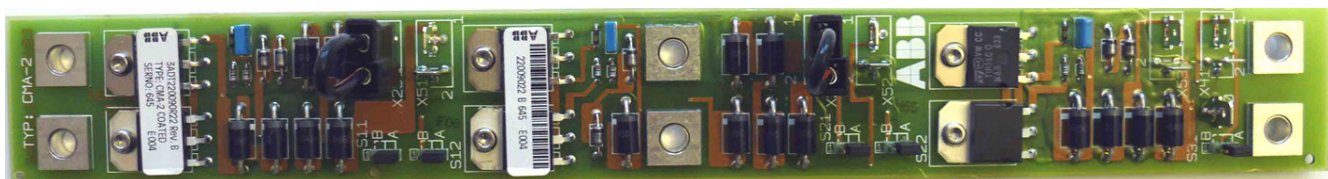
Features

The SDCS-CMA-2 contains following features:

- Connection of 2 CTs for anti-saturation current measurement.
- Connection of 3 CTs for hard parallel configuration. See [DCS880 Hardparallel manual \(3ADW000530\)](#).

Note: This manual is only available on request.

- Connection of the SDCS-PIN-H51 for improved current measurement.
- Jumpers to select the application.
- Actual current signal processing.



Conductive supports

① = Short circuit plugs X23 and X24

Jumpers S11 ... S31 and short circuit plugs X23, X24 are shown at factory settings

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Ordering

As mentioned above, the SDCS-CMA-2 can be used for DCS880 units size H6 ... H8 for new orders or to upgrade installed units. In addition it can be used together with the DCS880 Rebuild kit for new orders or to upgrade installed units. Thus, it can be ordered in different ways:

- For new orders use plus code +S175 in case DCS880 units size H6 ... H8 are ordered for 6-pulse or 12-pulse configurations. In this case the units will be equipped with the SDCS-CMA-2 during production. The jumpers will have the correct position and all components will be tested as a system.
- For new orders use plus code +S176 in case DCS880 units size H8 are ordered for hardparallel configurations. In this case the units will be equipped with the SDCS-CMA-2 during production. The jumpers will have the correct position and all components will be tested as a system.
- Use ordering code DCR000-9701-88 (3ADT220194R0880) when the functionality is needed for a DCS880 Rebuild kit (new orders or to upgrade installed units) or if the performance of installed DCS880 units size H6 ... H8 needs be improved.

The SDCS-CMA-2 kit consists among others of:

- The SDCS-CMA-2 including 2 jumpers on X23 and X24.
- 2 cables with a length of appr. 200 mm.
- 3 cables with a length of appr. 650 mm.
- 2 cables with a length of appr. 1400 mm.
- Some mechanical parts.

Note: Not all the parts/cables are necessarily needed with any of the 3 types of units/Rebuild kits.

Mounting the SDCS-CMA-2 in a H6 unit

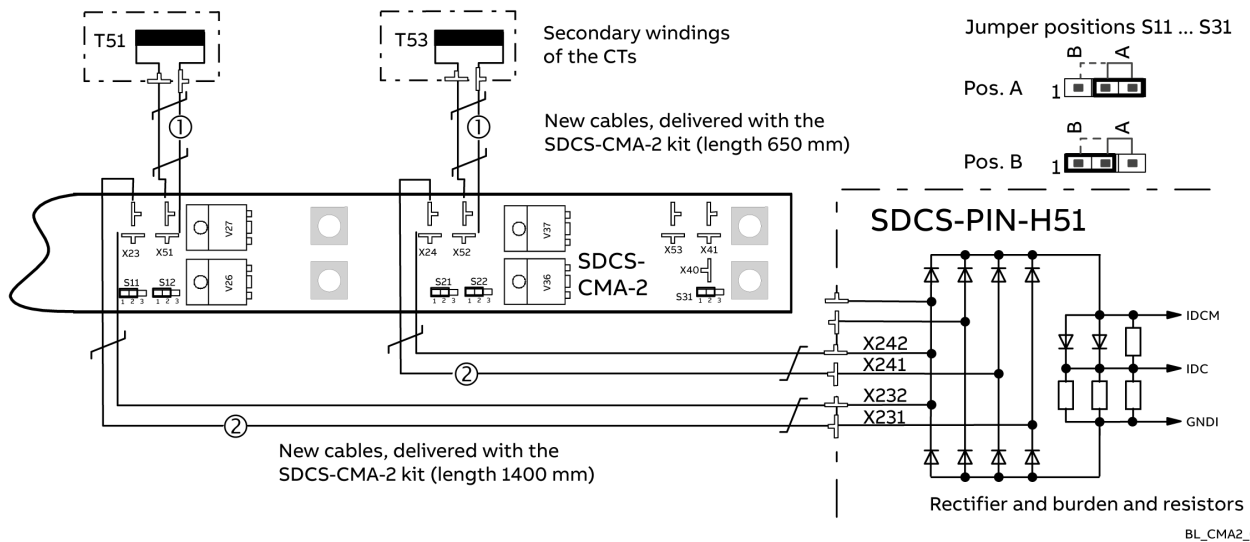
Overview

This chapter provides the description how to mount a SDCS-CMA-2 in units size H6.

Mounting procedure

On the SDCS.CMA-2:

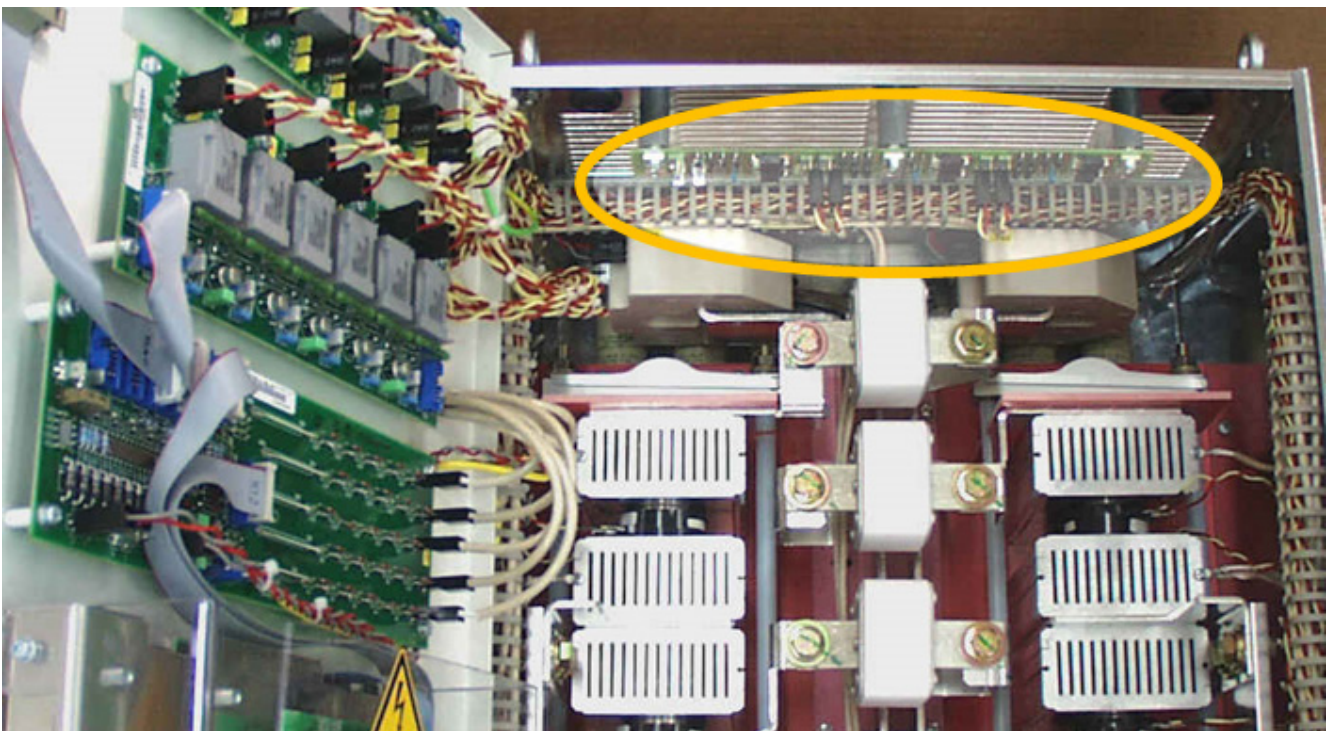
- Remove jumpers from the connectors X23 and X24.
- Set jumpers S11, S12, S21, S22 and S31 to position 1-2/B.



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In the H6 unit:

- Open the door. There are 3 holes located at the roof panel. Use these holes to mount the SDCS-CMA-2.



- Mount the stand-offs to the inner side of the roof panel using M5 nuts and washers delivered with the SDCS-CMA-2 kit.
- Mount the board onto the stand-offs as shown in the picture above. It doesn't matter, if the first or the second row of holes of the SDCS-CMA-2 is used.
- Remove the cables which connect the CTs with the SDCS-PIN-H51, see connectors X231/2 and X241/2. Connect T51 with connector X51 and T53 with connector X52 on the SDCS-CMA-2 using two of the cables with a length of appr. 650 mm ① delivered with the SDCS-CMA-2 kit.
- Use both cables with a length of appr. 1400 mm ② delivered with the SDCS-CMA-2 kit and connect connector X23 of the SDCS-CMA-2 with connector X231/2 on the SDCS-PIN-H51. Do the same with connector X24 of the SDCS-CMA-2 with connector X241/2 on the SDCS-PIN-H51 as shown in the figure above.
- Fold the exceptional length of the cables and, fasten them with the ty-wraps delivered with the SDCS-CMA-2 kit or stow them within the cable trays.

Mounting the SDCS-CMA-2 in a H7 unit

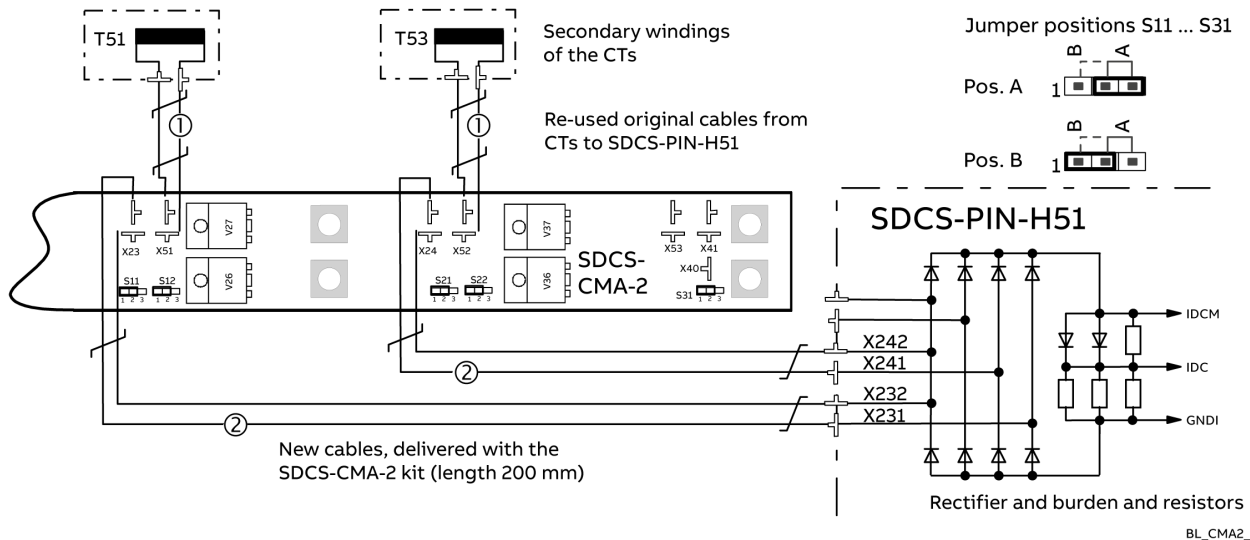
Overview

This chapter provides the description how to mount a SDCS-CMA-2 in units size H7.

Mounting procedure

On the SDCS.CMA-2:

- Remove jumpers from the connectors X23 and X24.
- Set jumpers S11, S12, S21, S22 and S31 to position 1-2/B.



In the H7 unit:

- Open the door. There are 3 holes located at the left side panel (near the top) close to the SDCS-PIN-H51. Use these holes to mount the SDCS-CMA-2.



- Mount the stand-offs to the inner side of the left side panel using M5 nuts and washers delivered with the SDCS-CMA-2 kit.
- Mount the board onto the stand-offs as shown in the picture above. It doesn't matter, if the first or the second row of holes of the SDCS-CMA-2 is used.
- Remove the plug from connector X231/2 on the SDCS-PIN-H51 and connect it to connector X51 on the SDCS-CMA-2 ①. Remove the plug from connector X241/2 on the SDCS-PIN-H51 and connect it on connector X52 on the SDCS-CMA-2 ①.
- Use both cables with a length of appr. 200 mm ② delivered with the SDCS-CMA-2 kit and connect connector X23 of the SDCS-CMA-2 with connector X231/2 on the SDCS-PIN-H51. Do the same with connector X24 of the SDCS-CMA-2 with connector X241/2 on the SDCS-PIN-H51 as shown in the figure above.
- Fold the exceptional length of the cables and, fasten them with the ty-wraps delivered with the SDCS-CMA-2 kit or stow them within the cable trays.

Mounting the SDCS-CMA-2 in a H8 unit

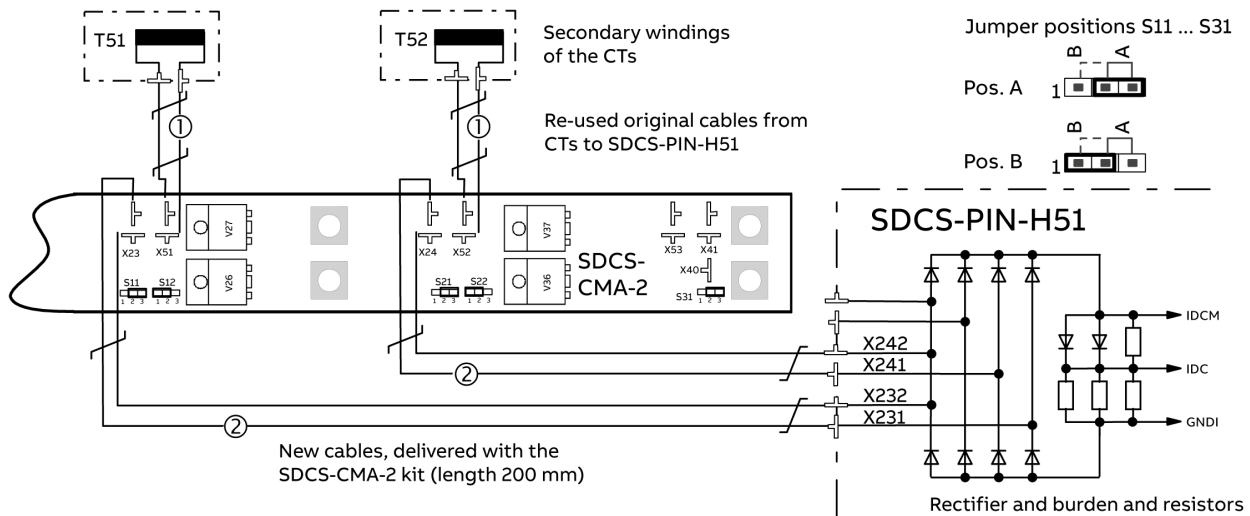
Overview

This chapter provides the description how to mount a SDCS-CMA-2 in units size H8.

Mounting procedure

On the SDCS.CMA-2:

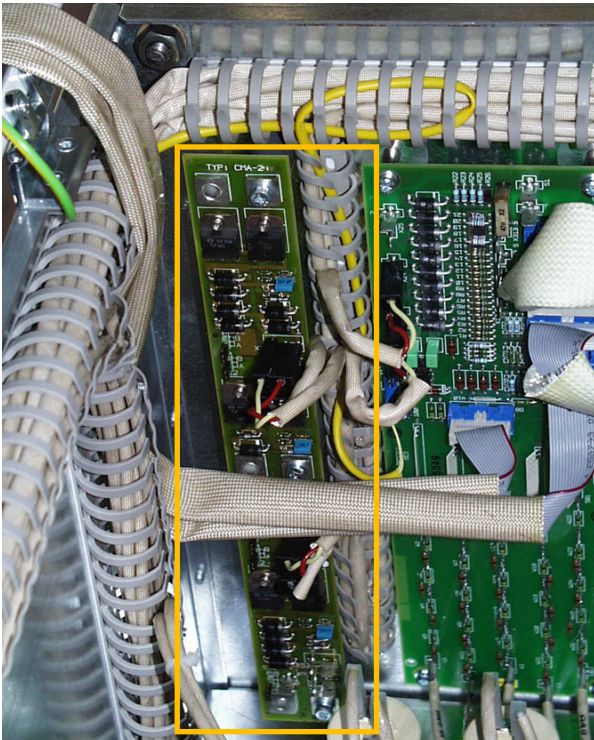
- Remove jumpers from the connectors X23 and X24.
- Set jumpers S11, S21 and S31 to position 2-3/A.
- Set jumpers S12 and S22 to position 1-2/B.



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In the H8 unit:

- Open the door. There are 3 holes located at the roof pane close to the SDCS-PIN-H51. Use these holes to mount the SDCS-CMA-2.



- Mount the stand-offs to the inner side of the roof panel using M5 nuts and washers delivered with the SDCS-CMA-2 kit.
- Mount the board onto the stand-offs as shown in the picture above. It will nicely fit into the free space when oriented as shown.
- Remove the plug from connector X231/2 on the SDCS-PIN-H51 and connect it to connector X51 on the SDCS-CMA-2 ①. Remove the plug from connector X241/2 on the SDCS-PIN-H51 and connect it on connector X52 on the SDCS-CMA-2 ①.
If necessary re-do the cable routing to archive a shorter path.
- Use both cables with a length of appr. 200 mm ② delivered with the SDCS-CMA-2 kit and connect connector X23 of the SDCS-CMA-2 with connector X231/2 on the SDCS-PIN-H51. Do the same with connector X24 of the SDCS-CMA-2 with connector X241/2 on the SDCS-PIN-H51 as shown in the figure above.
- Fold the exceptional length of the cables and, fasten them with the ty-wraps delivered with the SDCS-CMA-2 kit or stow them within the cable trays.

Using the SDCS-CMA-2 with a DCS880 Rebuild kit

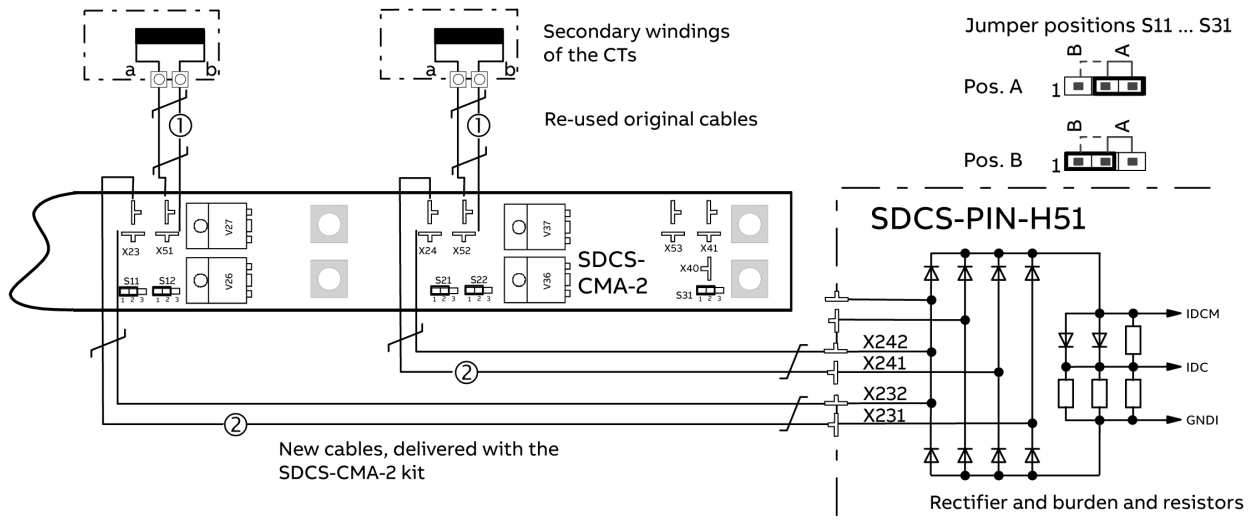
Overview

This chapter provides the description how to use a SDCS-CMA-2 with a DCS880 Rebuild kit.

Mounting procedure

On the SDCS.CMA-2:

- Remove jumpers from the connectors X23 and X24.
- Set jumpers S11, S12, S21, S22 and S31 to position 1-2/B.



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At the old installation:

- Make sure the clearance of the mounting area is sufficient.
- Mount the SDCS-CMA-2 using stand-offs, M5 nuts and washers delivered with the SDCS-CMA-2 kit.
- Re-use the original cable from the first CT and connect it to connector X51 on the SDCS-CMA-2 ①. Re-use the original cable from the second CT and connect it on connector X52 on the SDCS-CMA-2 ①.
- Use two cables ② delivered with the SDCS-CMA-2 kit and connect connector X23 of the SDCS-CMA-2 with connector X231/2 on the SDCS-PIN-H51. Do the same with connector X24 of the SDCS-CMA-2 with connector X241/2 on the SDCS-PIN-H51 as shown in the figure above.

See also chapter Hardware in the [DCS880 Selection, Installation and Start-Up Manual for Rebuild kits \(3ADW000599R0201\)](#).

Commissioning

Overview

This chapter provides the description how to commission a SDCS-CMA-2.

Commissioning a SDCS-CMA-2

No special settings for hardware or firmware are necessary. Nevertheless some precautions should be done to avoid damage to components of the drive system in case of failures:

- Before the drive is released the very first time, set 30.44 Minimum firing angle to values higher than 90.00°. Allow the system some moments to adapt to the new value. This limits the output voltage of the drive and gives a safe operation, even with a problem in the current feedback circuit. This is only possible with no EMF at the DC circuit. Precautions like disabling the field exciter or motor blocking should be taken into account, before the drive is released and will generate current.
- Set small current references within zero and the discontinuous current limit. Everything is fine, if the current can be varied and does not hit any limits set by parameters in the drive.
- In case of problems check the wiring for open loops, wrong connections as well as the positions of the jumpers.
- Do not forget to set the changed parameters back to their original settings.

DCS Family



DCS550-S modules The compact drive for machinery application

20 ... 1,000 A_{DC}
0 ... 610 V_{DC}
230 ... 525 V_{AC}
IP00

- Compact
- Robust design
- Adaptive and winder program
- High field exciter current



DCS880 modules For safe productivity

20 ... 5,200 A_{DC}
0 ... 1,600 V_{DC}
230 ... 1,000 V_{AC}
IP00

- Safe torque off (STO) built in as standard
- Compact and robust
- Single drives, 20 A to 5,200 A, up to 1,600 V_{DC}
- IEC 61131 programmable
- Intuitive control panel and PC tool with USB connection and start up assistant
- Wide range of options to serve any DC motor application



DCS880-A enclosed converters Complete drive solutions

20 ... 20,000 A_{DC}
0 ... 1,500 V_{DC}
230 ... 1,200 V_{AC}
IP21 – IP54

- Individually adaptable to customer requirements
- User-defined accessories like external PLC or automation systems can be included
- High power solutions in 6- and 12-pulse up to 20,000 A, 1,500 V
- In accordance to usual standards
- Individually factory load tested
- Detailed documentation



DCT880 modules Thyristor controller

20 ... 4,200 A_{AC}
110 ... 990 V_{AC}
IP00

- Precise power control in industrial heating applications
- Two or three phase devices
- Power optimizer for peak load reduction
- Built on ABB's all-compatible drives architecture
- Intuitive control panel and PC tool with USB connection and start up assistant
- Application control programs and drive application programming with IEC 61131 programming



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