

AC500 with S500

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2CDC125014M0201

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Please read the "Regulations Concerning the Setting up of the Installations" on the following pages

Regulations concerning the appropriate and safe setup of systems and installations

Apart from the basic „Regulations for the Setting up of Power Installations“ DIN VDE* 0100 and for „The Rating of Creepage Distances and Clearances“ DIN VDE 0110 Part 1 and Part 2 the regulations „The Equipment of Power Installations with Electrical Components“ DIN VDE 0160 in conjunction with DIN VDE 0660 Part 500 have to be taken into due consideration.

To insure project success and to insure that all systems are properly and safely installed, the customer must be familiar and proficient with the following standards and must comply with their directives:

- Working & Process Machinery: DIN VDE 0113 Part 1 & Part 200
- Close proximity to dangerous voltages: DIN VDE 0106 Part 100
- Protection against direct contact: DIN VDE 0160, DIN VDE 0110 Part 1

The user has to guarantee that the devices and the components belonging to them are mounted following these regulations. For operating the machines and installations, other national and international relevant regulations, concerning prevention of accidents and using technical working means, also have to be met.

Advant Controller Devices are designed according to: IEC 1131 Part 2 under overvoltage category II per DIN VDE 0110 Part 2.

For direct connection of AC Category III overvoltages provide protection measures for overvoltage category II according to IEC-Report 664/1980 and DIN VDE 0110 Part 1.

Equivalent standards:

DIN VDE 0110 Part 1 ↔ IEC 664

DIN VDE 0113 Part 1 ↔ EN 60204 Part 1

DIN VDE 0660 Part 500 ↔ EN 60439-1 ↔ IEC 439-1

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* VDE stands for „Association of German Electrical Engineers“.

Safety technical instructions

Please read!

General

Completely safe installation and starting up and problemfree functioning of the devices at their work location can be ensured by observing the following instructions.

Qualified personnel

Both the control system AC500 and other components in the vicinity are operated with dangerous contact voltages. Touching parts, which are under such voltages, can cause grave damage to health.

In order to avoid such risks and the occurrence of material damage, everyone involved with the assembly, starting up and servicing must possess pertinent knowledge of the following:

- the automation technology sector,
- dealing with dangerous voltages,
- using standards and regulations, in particular VDE, accident prevention regulations and regulations concerning special ambient conditions (e.g. areas potentially endangered by explosive materials, heavy pollution or corrosive influences).



Use as directed

Properly installed systems that are "used as directed" and properly conform with the applicable codes, regulations and sound engineering principles pose no risks or dangers to health.


"Used as directed" implies that the devices are installed, maintained and operated in accordance with appropriate ABB manuals & documents.

No liability is assumed for the direct or indirect consequences of the improper use, improper application or inadequate maintenance of these devices.

Risk reduction instructions

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|  | Protect the devices from dampness, dirt and damage during transport, storage and operation! |
|  | Do not operate devices outside of the specified, technical data! |

Trouble-free functioning cannot be guaranteed outside of the specified data.

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|  | Operate the control system only in an enclosed housing (switch cabinet)! |
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Due to their construction (degree of protection IP 20 according to EN 60529) and their connection technology, the devices are suitable only for operation in enclosed housings (switch cabinets).



Earth the devices!

The earthing (switch cabinet earthing, PE) is supplied both by the mains connection (or 24 V supply voltage) and via DIN rail.

The DIN rail must be connected to the earth before the device is subjected to any power. The earthing may be removed only if it is certain that no more power is being supplied to the control system.

In the description for the devices (operating manual or AC500 system description), reference is made at several points to earthing, electrical isolation and EMC measures. One of the EMC measures consists of discharging interference voltages into the earthing via Y-type capacitors. Capacitor discharge currents must basically be able to flow off to the earthing (in this respect, see also VBG 4 and the relevant VDE regulations).

In the description, special attention must be paid to designs using electrical isolation, earthing and EMC measures for the reasons stated. For more information see Target System -> AC500/S500-FBP -> Hardware AC500 -> System data -> General considerations for EMC-conforming assembly and construction.

The earthing concept of these busses apply to the connection to external bus systems.



Connection of the supply voltage

The supply voltage (or mains connection) terminal block must only be plugged in or withdrawn with the power off!

The same applies to the terminal blocks of input or output channels (e.g. relay outputs) if they are operated with dangerous contact voltages.



Do not open live devices!

The devices work with voltages with which contact must be avoided under all circumstances. Therefore they must not be opened when live. The same applies to the networking interfaces.


Lifting up the cover of the battery compartment to exchange the battery module is not construed as opening in this context.

 **Do not obstruct the ventilation for cooling!**

The ventilation slots on the upper and lower side of the devices must not be covered by wiring, cable ducts and things like that.

 **Run signal and power wiring separately!**

Signal and supply lines (power cables) must be laid out so that no malfunctions due to capacitive and inductive interference can occur (EMC).

 **Precautions against wiring short-circuits and breakages**

Connection plans and user software must be created so that all technical safety aspects, legal regulations and standards are observed. In practice, possible shortcircuits and breakages must not be able to lead to dangerous situations. The extent of resulting errors must be kept to a minimum.

 **Use only ABB approved lithium battery modules!**

At the end of the battery's lifetime, always replace it only with a genuine battery module.

 **Never short-circuit or operate lithium batteries with the polarities reversed!**

They are likely to overheat and explode. Avoid chance short circuiting and therefore do not store batteries in metal containers and do not place them on metallic surfaces. Escaping lithium is a health hazard.


 **Never charge lithium batteries!**

Lithium batteries are primary cells and cannot be recharged. Attempts to charge lithium batteries lead to overheating and possible explosions.

 **Dispose of lithium batteries environmentally consciously!**

Do not open lithium batteries and never throw them into fires (risk of explosion). Do not dispose of along with the household rubbish but in an environmentally conscious manner, in accordance to local-authority regulations.

Additional notes

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|  ATTENTION | Avoidance of electrostatic charging Electrostatic charging can cause internal defects of the devices and impair the proper function. Observe the following rules when handling the system: <ul style="list-style-type: none">• Touch an earthed object in order to discharge the electrostatic charging.• Wear a suitable earthed strap around your wrist.• Do not touch any connections or pins on the printed circuit boards.• Do not touch any circuits inside the devices.• If available, use a work place which is equipped with suitable electrostatic discharge.• In order to avoid electrostatic charging, the devices must only be stored when packed in suitable packaging material. |
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Minimum clearances: Refer to target system - AC500/S500-FBP -> Introduction -> Getting Started -> Getting Started with AC500 -> Assembling the system

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S500-FBP
Part 1**

System, Hardware,
Installation

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Part 1**

System, Hardware,
Installation

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**AC500 with
S500-FBP
Part 1**

System, Hardware,
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**AC500 with
S500-FBP
Part 2**

Programming,
Special Features

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**AC500 with
S500-FBP
Part 2**

Programming,
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**AC500 with
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Programming,
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**AC500 with
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Part 3**

AC500 Libraries,
System Technology

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**AC500 with
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Part 3**

AC500 Libraries,
System Technology

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**AC500 with
S500-FBP
Part 3**

AC500 Libraries,
System Technology

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**AC500 with
S500-FBP
Part 4**

OPC Server,
Fieldbus configurator

2CDC 125 014 M0201

**AC500 with
S500-FBP
Part 4**

OPC Server,
Fieldbus configurator

2CDC 125 014 M0201

**AC500 with
S500-FBP
Part 4**

OPC Server,
Fieldbus configurator

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