



Documentation

Bus Terminals in the Marine Sector

Notes for operation of the Beckhoff Bus Terminal System in the Marine Sector (DNV GL)

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BECKHOFF

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1 Foreword

1.1 Notes on the manual

Intended audience

This description is only intended for the use of trained specialists in control and automation engineering who are familiar with the applicable national standards.

It is essential that the documentation and the following notes and explanations are followed when installing and commissioning these components.

It is the duty of the technical personnel to use the documentation published at the respective time of each installation and commissioning. The responsible staff must ensure that the application or use of the products described satisfy all the requirements for safety, including all the relevant laws, regulations, guidelines and standards.

1.1.1 Disclaimer

The documentation has been prepared with care. The products described are, however, constantly under development. We reserve the right to revise and change the documentation at any time and without prior announcement. No claims for the modification of products that have already been supplied may be made on the basis of the data, diagrams and descriptions in this documentation.

1.1.2 Trademarks

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1.1.3 Patent Pending

The EtherCAT Technology is covered, including but not limited to the following patent applications and patents: EP1590927, EP1789857, EP1456722, EP2137893, DE102015105702 with corresponding applications or registrations in various other countries.

1.1.4 Copyright

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1.1.5 Delivery conditions

In addition, the general delivery conditions of the company Beckhoff Automation GmbH & Co. KG apply.

1.2 Safety instructions

1.2.1 Delivery state

All the components are supplied in particular hardware and software configurations appropriate for the application. Modifications to hardware or software configurations other than those described in the documentation are not permitted, and nullify the liability of Beckhoff Automation GmbH & Co. KG.

1.2.2 Operator's obligation to exercise diligence

The operator must ensure that

- the Beckhoff Bus Terminals are only used as intended (see chapter Special conditions in the Navy).
- the Beckhoff Bus Terminals are only operated in sound condition and in working order.
- the Beckhoff Bus Terminals are maintained repaired only by suitably qualified and authorized personnel.
- the personnel is instructed regularly about relevant occupational safety and environmental protection aspects, and is familiar with the operating manual and in particular the safety notes contained herein.
- the instruction manual is in good condition and complete, and always available for reference at the location where the Beckhoff Bus Terminals are used.
- none of the safety and warning notes attached to the Beckhoff Bus Terminals are removed, and all notes remain legible.

1.2.3 Description of instructions

The following safety symbols are used in this operating manual. They are intended to alert the reader to the associated safety instructions.

DANGER

Serious risk of injury!

Failure to follow this safety instruction directly endangers the life and health of persons.

WARNING

Risk of injury!

Failure to follow this safety instruction endangers the life and health of persons.

CAUTION

Personal injuries!

Failure to follow this safety instruction can lead to injuries to persons.

NOTE

Damage to the environment/equipment or data loss

Failure to follow this instruction can lead to environmental damage, equipment damage or data loss.



Tip or pointer

This symbol indicates information that contributes to better understanding.

2 Notes about operation in the Marine Sector

2.1 Use of surge filter terminals

⚠ CAUTION

Surge filter terminals (over voltage filter)

To comply with the dielectric strength required by DNV GL for operation in the Marine Sector, the use of surge filter terminals in the Beckhoff Bus Terminal system is necessary!

2.1.1 Selecting the surge filter terminal

KL9550-0000: for system supply and field supply of digital Bus Terminals

Use the KL9550-0000 surge filter terminal if

- only the system supply (Us, K-Bus) is fed in or
- the system supply (Us, K-bus) and the field supply (Up, power contacts 24 V) for digital Bus Terminals is fed in.

Example:

Supply via a Bus Coupler or a KL9400 for subsequent digital terminals with supply via power contacts.

KL9540-0000: for field supply of digital Bus Terminals

Use the KL9540-0000 surge filter terminal if only the field supply (Up, power contacts, 24 V). is fed in for digital Bus Terminals.

KL9540-0010: for system supply and supply of analog and digital Bus Terminals

Use the KL9540-0010 surge filter terminal if analog Bus Terminals are supplied via the system voltage (Us, K-Bus) or the field supply (Up, power contacts 24 V).

Examples:

- for analog terminals that are supplied via the system voltage (Us, K-Bus) (e.g. KL34xx)
- for analog terminals that are supplied via the field supply (Up, power contacts 24 V) (e.g. KL44xx)

Digital Bus Terminals can of course also be supplied via the KL9540-0010.

2.2 Accuracy

An adapted accuracy range applies to the analog output terminals KL44xx:
< ±0.4 % (referred to the measuring range end value).

2.3 Technical documentation

Further information on the installation and commissioning of the individual components of the Beckhoff Bus Terminal system can be found in the corresponding documentation!!

3 Appendix

3.1 Beckhoff Support and Service

Beckhoff and their partners around the world offer comprehensive support and service, making available fast and competent assistance with all questions related to Beckhoff products and system solutions.

3.1.1 Beckhoff branches and partner companies Beckhoff Support

Please contact your Beckhoff branch office or partner company for [local support and service](#) on Beckhoff products!

The contact addresses for your country can be found in the list of Beckhoff branches and partner companies: www.beckhoff.com. You will also find further [documentation](#) for Beckhoff components there.

3.1.2 Beckhoff company headquarters

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Beckhoff Support

Support offers you comprehensive technical assistance, helping you not only with the application of individual Beckhoff products, but also with other, wide-ranging services:

- world-wide support
- design, programming and commissioning of complex automation systems
- and extensive training program for Beckhoff system components

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The Beckhoff Service Center supports you in all matters of after-sales service:

- on-site service
- repair service
- spare parts service
- hotline service

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