



Documentation

EtherCAT Terminals in the Marine Sector

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

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1 Foreword

1.1 Notes on the documentation

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.

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.

Trademarks

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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.

The logo for EtherCAT, featuring the word "EtherCAT" in a bold, black, sans-serif font. A red arrow points from the top of the "A" towards the right, ending above the "T". A registered trademark symbol (®) is located to the right of the "T".

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1.2 Safety instructions

Safety regulations

Please note the following safety instructions and explanations!
Product-specific safety instructions can be found on following pages or in the areas mounting, wiring, commissioning etc.

Exclusion of liability

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.

Personnel qualification

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

Description of instructions

In this documentation the following instructions are used.
These instructions must be read carefully and followed without fail!

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 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.

1.3 Documentation issue status

Version	Comment
1.0.0	<ul style="list-style-type: none">• First release
0.2	<ul style="list-style-type: none">• Chapter <i>Selecting the surge filter terminal</i> updated
0.1	<ul style="list-style-type: none">• First draft

2 Notes for operation in the marine sector

2.1 Use of surge filter terminals

⚠ CAUTION

Surge filter terminals

The use of surge filter clamps in the Beckhoff EtherCAT terminal system is required in order to maintain the dielectric strength required by the DNV GL for operation in the marine sector!

2.1.1 Selecting the Surge Filter Terminal

EL9550-0010:

For system supply and supply of digital EtherCAT terminals

Use the EL9550-0010 surge filter terminal if only the system supply (Us, E-Bus) is fed in or the system supply (Us, E-Bus) and the field supply (Up, power contacts 24 V) for digital EtherCAT terminals are fed in.

Example:

- Supply via an CX5130/CX5140 Embedded PC, an EK110x EtherCAT coupler or an EL9210 for subsequent **digital** EtherCAT terminals with supply via power contacts.

EL9540-0010:

For system supply and supply of digital and analog EtherCAT terminals

Use the EL9540-0010 surge filter terminal if **analog EtherCAT terminals** are fed in via the system supply (Us, E-Bus) or via the field supply (Up, power contacts 24 V).

Examples:

- For analog terminals, fed in via the system supply (Us, E-Bus).
- For analog terminals, fed in via the field supply (Up, power contacts 24 V).

Digital EtherCAT terminals can of course also be supplied via the EL9540-0010.

2.2 Marking

The Beckhoff field bus components certified by the DNV GL for marine applications carry the DNV GL mark (in preparation).

2.3 Technical documentation

NOTE



Note the product-specific documentation

Further information on the installation and commissioning of the individual components of the Beckhoff EtherCAT terminal system can be found in the corresponding documentation, which can be downloaded from <https://www.beckhoff.de/english/download/ethercat.htm!>

3 Appendix

3.1 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.

Beckhoff's branch offices and representatives

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

The addresses of Beckhoff's branch offices and representatives round the world can be found on her internet pages:

<http://www.beckhoff.com>

You will also find further [documentation](#) for Beckhoff components there.

Beckhoff Headquarters

Beckhoff Automation GmbH & Co. KG

Huelshorstweg 20
33415 Verl
Germany

Phone: +49 5246 963 0
Fax: +49 5246 963 198
e-mail: info@beckhoff.com

Beckhoff Support

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

Hotline: +49 5246 963 157
Fax: +49 5246 963 9157
e-mail: support@beckhoff.com

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Hotline: +49 5246 963 460
Fax: +49 5246 963 479
e-mail: service@beckhoff.com