



TYPE APPROVAL CERTIFICATE

Certificate no.:
TAA00002CB
Revision No:
1

This is to certify:

that the **Control system for fire extinguishing**

with type designation(s)
E-CO2 Electrical Release Control System

issued to
safetec Brandes und Niehoff GmbH
Scharnebeck, Germany

is found to comply with
SOLAS Consolidated Edition (2014)
DNV rules for classification – Ships

Application:

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Location classes:

Temperature	B
Humidity	B
Vibration	A
EMC	B
Enclosure	Required protection according to the Rules shall be provided upon installation on board.

Issued at **Hamburg** on **2025-01-27**

This Certificate is valid until **2030-01-26**.

DNV local unit: **Hamburg – CMC North/East**

Approval Engineer: **Heinz Scheffler**



for **DNV**

Digitally signed by: **Dariusz Lesniewski**
Location: **DNV SE, Germany**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

The E-CO2 system provides components required for the electrical release of fixed CO2 extinguishing systems.

CO2 extinguishing systems with electrical release control are available in two versions:

- with the CP-30 release panel
- with the CP-240 electropneumatic release panel.

All versions of E-CO2 are regulated by Chapter 5 of the FSS-Code.

CO2 System with Release Panel CP-30 (electrical release)

The variant with the CP-30 release panel uses electric motor drives for the section valves and electromagnetic valves for the cylinder groups. This version can protect up to 32 sections with up to 32-cylinder groups.

System Components for CO2 System with Release Panel CP-30 (electrical release)	
Please refer to the manual DOK02.071 for system layouts and general descriptions	
Main System Components:	Firmware
CP-30 Release Panel for max. 6 Sections	SW-CP30-STD-1.05.003
Module Cabinet with different size and electronic build in devices:	
MC-308 Module Cabinet	NA
MC-312 Module Cabinet	NA
MC-316 Module Cabinet	NA
Modules for different project requirements:	
IO-6303 I/O-Module	A303 V2.03
IO-6340 I/O-Module	A340 V2.03
ACS-OUT48 Output Module	A361 V2.03
ACS-OPTO48-A Opto Coupler Module	NA
ACS-OPTO48-R Opto Coupler Module	NA
ACS-OPTO16-A Opto Coupler Module	NA
ACS-OPTO16-R Opto Coupler Module	NA
ACS-REL16 Relay Module	NA
CAN-REDU-1 CAN Bus Interface Module	SW-CAN-REDU-1-FLAT-VAR V1.00
MEPS-01 Main/Emergency Power Supply Switch	NA
SAFE-01 Safety Module	NA
VBX Interface Module	NA
Power Supply Modules STEP-PS / QUINT4-PS / TRIO3-PS / TRIO-UPS / QUINT4-UPS / UPSBAT/PB	DNV Type Approved Modules

Function:

- Remote electrical release of Gas Fire-Extinguishing Systems
- Automatic triggering for the audible alarm device through the opening of the section valve
- Permanent self-supervision of the control system
- Manual override function for the section valves and the cylinder group valves
- Outputs to the Machinery Alarm System and Auxiliary Systems

CO2 System with Release Panel CP-240 (electro-pneumatic release)

A single-section release panel CP-240 provides greater flexibility for planning release location. System release using pilot cylinder is possible. The CP-110 control panel provides improved access to settings and enables the planning of larger systems.

System Components for CO2 System with Release Panel CP-240 (electro-pneumatic)	
Please refer to the manual DOK02.230 for system layouts and general descriptions.	
Main System Components:	Firmware
CP-240 Remote Release Panel with Adapter Module ADP-162	A240 V2.02 / A240 V2.01-e
CP-110 Control Panel	SW-CP110-STD V1.04
Module Cabinet with different size and electronic build in devices:	
MC-308 Module Cabinet	NA
MC-312 Module Cabinet	NA
MC-316 Module Cabinet	NA
Modules for different project requirements:	
IO-6303 I/O-Module	A303 V1.27-i
IO-6340 I/O-Module	A340 V1.27-f
ACS-OUT48 Output Module	A361 V1.27-b
ACS-OPTO48-A Opto Coupler Module	NA
ACS-OPTO48-R Opto Coupler Module	NA
ACS-OPTO16-A Opto Coupler Module	NA
ACS-OPTO16-R Opto Coupler Module	NA
ACS-REL16 Relay Module	NA
CAN-REDU-1 CAN Bus Interface Module	SW-CAN-REDU-1-FLAT-VAR V1.00
MEPS-01 Main/Emergency Power Supply Switch	NA
VBX Interface Module	NA
Power Supply Modules STEP-PS / QUINT4-PS / TRIO3-PS / TRIO-UPS / QUINT4-UPS / UPSBAT/PB	DNV Type Approved Modules

Function:

- Automatic triggering for the audible alarm device through the opening of the door of the Release Panel
- Emergency Shut Down Button (1) of the Release Panel trigger output signals to other Ship safety equipment
- Button (2) open CO2 VALVE of the Release Panel trigger output signals for remote electrical release of "CO2 directional Valve" or "Section Valve".
- Button (3) open CO2 CYLINDERS trigger output signals for remote electrical release of CO2/GAS CYLINDERS.
- Blocking and Time Relay function of CO2 Discharge process.
- Permanent self-supervision of the control system
- Manual override function for the section valves and the cylinder group valves
- Outputs to the Machinery Alarm System and Auxiliary Systems

Application/Limitation

The E-CO2 release system is designed for control of fixed gas fire-extinguishing systems as defined in the FSS Code Chapter 5 by the Convention for the Safety of Life at Sea (SOLAS) and DNV Statutory Interpretations, as amended.

This Type Approval certificate provides a general acceptance for design and, manufacture of an electrical release system for fixed high-pressure CO2 systems on the basis of the documentation specified under the item "Type Approval Documentation".

Only the electrical release system concept is approved by this certificate. Actuators, Cylinders, pipes, couplings and other systems components are not cover by this certificate.

The important notices of the Manual (DOK02.071 or DOK02.230) is to be observed for Project design, Set to work, Maintenance and Testing.

The system should be periodical tested and inspected acc. to IMO MSC.1/Circ.1318 and Manual (DOK02.071 or DOK02.230). More stringent flag state requirements, if any, prevail.

When the type approved hardware and software is revised (affecting all future deliveries) DNV is to be informed by forwarding updated version documentation. If the changes are judged to affect the environmental requirements and the EMC requirements and the functionality for which rule requirements and international requirements apply a new type test may be required and the certificate may have to be renewed to identify the new versions.

Approval conditions

The Type Approval covers hardware and software listed under Product description.

The current SOLAS interpretation DNV-SI-0364 is to be observed.

The following documentation of the actual application is to be submitted for approval in each case:

- Reference to this Type approval certificate
- Reference to other Type Approval Certificates where applicable
- Functional description incl. description of functions covered by software (DNV I020)
- Application software configuration and Software release (DNV I320)
- System Block diagram (DNV I030)
- User interface description (DNV I040)
- Electrical diagram with interfaces incl. List of control and monitored points (DNV I050 & I110)
- Power Supply arrangement, may be part of the System block diagram (DNV I050)
- Arrangement drawings showing location of devices (may be a part of DNV I030)
- Test program for application software at manufacturer (Z252)

Type Approval documentation

Test Reports and Documents: List of Documents-DL20 Rev.7

Tests carried out

Applicable tests according to class guideline DNV-CG-0339, August 2021

Marking of product

The products to be marked with:

- Model name
- Manufacturer name
- Serial number

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval Certificate

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE