

**TYPE APPROVAL CERTIFICATE****This is to certify:****That the Control system for fire extinguishing**with type designation(s)  
**E-GAS**

Issued to

**safetec Brandes und Niehoff GmbH  
Lüneburg, Germany**is found to comply with  
**DNV GL rules for classification – Ships****Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**

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

Issued at **Hamburg** on **2017-12-19**for **DNV GL**This Certificate is valid until **2022-12-18**.DNV GL local station: **Hamburg**Approval Engineer: **Heinz Scheffler**

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**Joannis Papanuskas  
Head of Section**

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.



## Product description

Electrical Release Control System for Fixed Gas Fire-Extinguishing Systems using Gases other than CO<sub>2</sub>.

### Hardware:

- CP-35 Release Panel for max. 5 sections
- MCOx.yyy Module Cabinet  
x: 8 = Module Cabinet MC-308; 9 = Module Cabinet MC312/MC-316  
yyy: different combinations of modules according the project requirements
  - I/O-Module IO-6303
  - I/O-Module IO-6340
  - Output Module ACS-OUT48
  - Opto Coupler Module ACS-OPTO48-A
  - Opto Coupler Module ACS-OPTO48-R
  - Opto Coupler Module ACS-OPTO16-A
  - Relay Module ACS-REL16
  - Battery Charger Module POW-6510
  - Main/Emergency Switcher MEPS-01
  - Power Supply Module STEP-PS/1AC/24DC/4.2
  - Power Supply Module TRIO-PS/UPS/1AC/24DC/5
  - Battery Powerfit A512/2.OS
  - Junction Box JB-50
  - Junction Box JB-5011
  - Remote Release Box RP-2001

### Software:

- SW-CP35-STD Version 1.01
- A303 V2.03
- A340 V2.03
- A361 V2.03

### Function:

- Electrical remote release (24 VDC, max 2A) of the cylinder solenoid valves
- Permanent self-supervision of the control system
- Outputs to the Machinery Alarm System and Auxiliary Systems

## Application/Limitation

With reference to DNV GL Rules for Classification of Ships Pt.4 Ch.9, the documentation listed below is required submitted for approval to DNV GL.

Reference to this type approval certificate

- System block diagram/topology drawing of the whole extinguishing system
- Power supply arrangement (may be part of the system block diagram)
- Equipment list
- Electrical Diagrams
- Functional description/Manual
- A functional failure analysis documenting compliance with requirements for redundancy, segregation and effect of single failures in the system.
- Test program for product certification

### Product certificate

Each delivery of the application system is to be certified according to DNV GL Pt.4 Ch.9 Sec.1. The certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. After the certification the following clause for application software control will be in force.

Job Id: **262.1-026374-1**  
Certificate No: **TAA00001AZ**

Clause for application software control

All changes in software are to be recorded. The records of all changes are to be forwarded to DNV GL for evaluation and approval. Major changes in the software are to be approved and possibly tested before being installed in the computer onboard.

### **Type Approval documentation**

Test report : No. 01-07/2008; No. 02-07/2008; No. 03-07/2008; No. 04-07/2008; No. 05-07/2008; No. 08-8085-2; E-GAS-PT Rev.1 (Performance Test);

Documents: According to List of Documents-DL9, 27-11-2017.

### **Tests carried out**

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.

### **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