



## Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

<b>Manufacturer</b>	<b>safetec Brandes und Niehoff GmbH</b>
<b>Address</b>	Kringelsburg 2a, Scharnebeck, 21379, Germany
<b>Place of Production</b>	safetec Brandes und Niehoff GmbH Kringelsburg 2a, Scharnebeck, 21379, Germany
<b>Type</b>	Control Systems
<b>Description</b>	<p>The Alarm and Control System ACS-1 is a flexible control system that can be used for:</p> <ul style="list-style-type: none"><li>- Fire Detection Systems</li><li>- Local Protection Systems (FWBLAFFS)</li><li>- Room Protection Systems</li><li>- Sprinkler Alarm Systems</li><li>- Fire Extinguishing in Service Spaces</li><li>- CO2 Fire Extinguishing System (EP-CO2)</li><li>- Gas Fire-Extinguishing System (E-GAS, non-CO2)</li></ul> <p>The system has a modular design with various control panels, fire detectors, manual release buttons, I/O-modules with different input and output configurations.</p> <p>Each system type allows to monitor specific sensors (flow switches, fire detectors), external actors (such as valves, alarm devices), control pumps and display/transmit system information.</p> <p>For detailed product description, pls. refer to appendix.</p>

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<b>Trade Name</b>	ACS-1
<b>Application</b>	Marine, Offshore and Industrial applications for use in environmental categories ENV2 as defined in Lloyd's Register Type Approval System, Test Specification Number 1 – December 2021.
<b>Specified Standard</b>	IACS UR E10 Rev. 8: 2021 EN 54-2: 1997 +A1: 2006 EN 54-4: 1997 incl. AC: 1999, A1: 2002 and A2: 2006 IEC 60092-504: 2016 IEC 60533: 2015 MSC.98(73) - (FSS-Code, Chapter 5, 6, 7, 8, 9, 17) SOLAS Part 1, Chapter II-2 Regulation 10
<b>Ratings</b>	Firmware versions: acc. to document no. AA-31
<b>Other Conditions</b>	<p>For systems consisting of the listed components the final functional arrangement and application software are to comply with appropriate Lloyd's Register Rules and Regulations and shall be subject to project related Plan Approval Process, when installed on LR classed vessels. Documents and drawings for the actual application are to be provided according relevant LR Rules and Regulations.</p> <p>All changes in software are to be recorded as long as the system is in use on board. Documentation of major changes is to be forwarded to LR for evaluation and approval before implemented on board. Certification of modified functionality may be required for the particular vessel.</p> <p>Specific Conditions of Use as stated in applicable Ex-certificates and the conditions of the LR Ship Rules &amp; Regulations of Classification of Ships Part 6, Chapter 2 shall be observed when installed in hazardous areas. The Ex-certification does not form part of this certificate.</p>

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## Type Approval Certificate

The system must be used with fire detectors, power supply modules and valve actuator that have a valid LR Type Approval Certificate and that meet the manufacturer's specification.

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

Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations.

If the specified standards are amended during the validity of this certificate, the product is to be re-approved prior to it being supplied to vessels to which the amended standards apply.

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid Certificate.

**Previous Version:** 05/20018 (E3)

The Design Appraisal Document TSO/24-016209 and its supplementary Type Approval Terms and Conditions form part of this Certificate.



## Appendix

### DESCRIPTION

Alarm and Control System ACS-1 used as:

#### Electrical Release Control System E-GAS for

##### De-centralized Gas Fire-Extinguishing Systems (non-CO<sub>2</sub>)

CP-110 – Control Panel with adapter module ADP-174 (CP01.1xx)

NOV-2-RP – Release Panel (NOV02.0xx)

RP-2001 – Remote Release Panel (RP02.0xx)

JB-5011 – Junction Box (JB05.0xx)

GAS-REL – Interface Module (BG07.440)

#### Electrical Release Control System E-GAS for

##### Centralized Gas Fire-Extinguishing Systems (non-CO<sub>2</sub>)

CP-110 – Control Panel with adapter module ADP-174 (CP01.1xx)

CP-240 – CO<sub>2</sub> remote release panel with adapter module ADP-162 (ACS01.24x)

RP-2001 – Remote Release Panel (RP02.0xx)

JB-5011 – Junction Box (JB05.0xx)

GAS-REL – Interface Module (BG07.440)

Vbxxx-MAR(-U) - Electric valve actuator (xxx = 030, 060, 110, 190, 270, 350), incl.

Interface Module VBX (BG07.420)

Electromagnetic Release Device for Cylinder Group Valves (B04425103, B04425131)

#### Electro-Pneumatic Release Control System EP-CO<sub>2</sub>

CP-110 – Control Panel with adapter module ADP-174 (CP01.1xx)

CP-240 – CO<sub>2</sub> remote release panel with adapter module ADP-162 (ACS01.24x)

Electromagnetic Release Device for Cylinder Group Valves (B04425103, B04425131)

#### Alarm and Control System E-WATER

CP-110 – Control Panel with adapter module ADP-174 (CP01.1xx)

CP-209 – Remote Release Panel with adapter module ADP-170 (ACS01.21x)

CP-220 – Remote Release Panel with adapter module ADP-170 (ACS01.22x)

CP-410 – Display panel for water mist system with adapter module ADP-170/-172

CP-411 – Display panel for fire alarm system with adapter module ADP-170/-172

CP-412 – Display panel for sprinkler system (ACS01.412)

CP-490 – Sprinkler Alarm Panel (ACS01.49x)

RP-01 – Local Release Box (RP01.0xx)

POW-6510 – Battery charger module (BG06.510)

Vbxxx-MAR(-U) – Electric valve actuator (xxx = 030, 060, 110, 190, 270, 350), incl.

Interface Module VBX (BG07.420)

800/24 VST-K-NT – UV-Flame Detector. Egon Harig GmbH



**DESCRIPTION (continued)**

Generic modules that can be used in all above systems:

- RP-01, RP-02 - Local release box (RP01.0xx / RP02.0xx)
- MC-302 – Module Cabinet (300 x 200 x 120 mm)
- MC-304 – Module Cabinet (380 x 300 x 155/210 mm)
- MC-308 – Module Cabinet (600 x 380 x 210 mm)
- MC-310 – Module Cabinet (500 x 500 x 210 mm)
- MC-312 – Module Cabinet (600 x 600 x 210 mm)
- MC-316 – Module Cabinet (600 x 760 x 210 mm)
- MC-320 – Module Cabinet (760 x 760 x 210 mm)
- IO-630y – I/O-Module, y = 0, 2, 3
- IO-634y – I/O-Module, y = 0, 3
- ACS-OUT48 - Output module (BG06.361)
- ACS-OPTO16-A - Module with 16 Opto couplers (working current) (BG06.961)
- ACS-OPTO16-R - Module with 16 Opto couplers (quiescent current) (BG06.964)
- ACS-OPTO48-A - Module with 48 Opto couplers (working current) (BG06.960)
- ACS-OPTO48-R - Module with 48 Opto couplers (quiescent current) (BG06.963)
- CAN-REDU-1 - CAN bus interface module (BG07.582, IF01.001)
- ACS-REL16 - Relay module (BG06.965)
- MEPS-01 - Main/emergency power supply switch (BG06.502/.503/.504/.505)

x, xx = differences in colour; paint layer thickness; surface finish; number of drill holes for control elements and cable glands; number, size and material of cable glands; number and type of terminals, labels as well as software versions.