



Type Approval Certificate

[Programmable Logic Controllers]

Initial Approval 18 May 2022

Manufacturer R. STAHL Schaltgerate GmbH
Am Bahnhof 30, 74638 Waldenburg, Germany

Product Description Type : Intrinsically Safe Remote I/O System IS1 / IS1+
" See Appendix 1 "



Approval Condition " See Appendix 1 "

THIS IS TO CERTIFY that the above-mentioned product has been approved in accordance with the relevant requirement of this Society's Rules and / or of the recognized standards as follows.
Pt. 6, Ch. 2, Art. 301 of the Rules for Classification, Steel Ships.

This Certificate is valid until 17 May 2027
Issued at Busan, Korea on 18 May 2022



This certificate is signed electronically in accordance with IMO FAL.5/Circ.39/Rev.2. Validation and authentication of the certificate can be confirmed from "<http://e-cert.krs.co.kr>" by using the tracking No(ME22018542266) and certificate No.(HMB45922-AC001).



KOREAN REGISTER

*General Manager of
Marine & Ocean Equipment Team*

- Note :**
1. This certificate will be valid subject to complying with the approval conditions described on the certificate and/or on the Rules of this Society.
 2. This certificate will be invalid from the expiry date aforementioned unless the extension or renewal has been granted to the applicant or the manufacturer.
 3. Any significant modifications or changes in design or construction to the above product without approval from this Society will render this certificate invalid.
 4. Should the specified rules, regulations or standards be amended during the validity of this certificate, the product is to be re-approved by this Society in accordance with the requirements as amended.

Product Description and/or Approval Condition

Date of Issue : 18 May 2022

A. Product Description

1. Product Specification

1) Remote I/O System Series 94** are consist of the following Modules.

Module	Description
9440/15	CPU & Power module for up to 16 I/O modules, with Display
9440/22	CPU & Power module for up to 8 I/O modules, with Display
9442/32	CPU Module
9442/35	CPU Module
9445/32	Power Module
9445/35	Power Module
9462/12-0*-11	Analog Input Module 6/8x AI for HART transmitters, 0/4...20mA, line monitoring, FS
9468/3*	Analog Universal Module HART 8x AI/AO for HART transmitter /valves, 0/4...20mA, line monitoring
9469/35-08-1*	Universal Module HART 8x AI/AO or 4x AI/AO + 4 DI/DO for transmitters, control valves, PNP proximity switches, solenoids
9470/3*	Digital Input Output Module 16x DI/DO, for volt-free contacts and low energy valves, 2 frequency input up to 20kHz, line monitoring
9471/35	Digital Input Output Module NAMUR 16x DI or DO, for NAMUR proximity switches, solenoid valves, frequency Signals
9472/35	Digital Input Output Module 24 V 16x DI or DO, for PNP/NAMUR proximity switches, solenoid valves, frequency Signals
9475/3*	Digital Output Module, Line Monitoring
9477/12	Relay Module
9477/15	Relay Module
9478/22	Digital output module with valve for compressed air Ambient temperature: 0...60 °C
9482/32	Temperature Input Module
9482/33	Temperature Input Module
9494	Bus Rail
9495/15	Isolating Module
9496/32	Socket
9496/35	Socket
9721/13-11	Media Converter FXopis/TX SC SM/MM Ex op is
9721/13-42	Unmanaged Switch
9787/15-11-11	USB RS485 Converter
7145	Standard Enclosure
8150	Standard Enclosure
9490	Socket
9185/11	Fieldbus Isolating Repeater
9185/12	Fieldbus Isolating Repeater
SUB D Connector	RS 485-IS (162693 & 201805)
Terminals	Terminals for I/O Modules (spring / screw)

2. Approved Drawings and Documents

1) Approved Drawings

Drawing number	Designation	Date
94 400 03 00 0	Mechanical Arrangement	2010-07-16
94 400 17 00 0	Block diagram 9440/15	2006-08-10
Datasheet	CPU & Power Module for Installation	2015-01-29
94 406 09 31 0	Instructions	2015-09-10
94 401 02 00 0	Block diagram 9440/22	2002-10-21
94 401 03 00 0	Mechanical arrangement 9440/22	2010-11-09
94 401 27 00 0	Aluminum & isolating plates	2002-11-14
94 401 33 00 0	Mechanical Arrangement Socket	2004-02-11
94 402 02 00 0	Block diagram 9440/22	2007-05-23
Datasheet	CPU & Power Module and Sockets for Installation in Zone 1 / Div. 1 Type 9440/22; Type 9490	2013-05-26

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Drawing number	Designation	Date
94 406 07 31 0	Instructions	2012-03-06
9442 0 000 002 0	Mechanical arrangement Zone 2	2021-02-03
9442 0 000 003 0	Block diagram	2017-02-22
9442 0 000 021 0	Mechanical arrangement Zone 1	2021-07-26
9442 0 000 023 0	Block diagram LP3	2021-08-20
9442 0 000 024 0	Block diagram LP4	2021-08-20
9442 6 031 001 0	Instructions	2020-02-07
Datasheet	IS1+ CPU module for Zone 2 / Div. 2	2019-04-18
9445 0 000 002 0	Mechanical arrangement	2020-09-23
9445 0 000 003 0	Block diagram	2017-12-13
9445 0 000 032 0	Block diagram	2020-12-16
9445 6 031 001 0	Instructions	2018-09-27
Datasheet	IS1+ Power module for Zone 2 / Div. 2	2019-04-18
9496 0 000 002 0	Mechanical arrangement Socket-3S	2019-04-04
9496 0 000 004 0	Circuit diagram	2016-10-17
9496 0 000 015 0	Mechanical arrangement Socket-4S	2019-04-04
9496 0 000 016 0	Circuit diagram	2019-04-04
9496 6 031 001 0	Instructions	2019-04-29
9462 0 000 002 0	Block diagram	2008-03-17
94 700 10 00 0	Mechanical arrangement	2010-02-12
Datasheet	Safety Analog Input Module HART Ex i / I.S. Inputs, 8/6 Channels, Type 9462	2016-06-02
9462 6 031 001 0	Instructions	2021-07-08
9468 0 000 002 0	Block diagram	2012-09-13
9400 0 000 002 0	Mechanical arrangement	2012-07-30
Datasheet	Analog Universal Module HART Type 9468/32 (Zone1)	2016-06-02
Datasheet	Analog Universal Module HART Type 9468/33 (Zone2)	2016-04-27
9468 6 031 001 0	Instructions for Zone 1	2021-08-27
9468 6 031 002 0	Instructions for Zone 2	2020-07-14
9470 0 000 002 0	Block diagram	2012-07-31
9400 0 000 002 0	Mechanical arrangement	2012-07-30
Datasheet	Digital Input Output Module Type 9470/32 (Zone1)	2014-11-04
Datasheet	Digital Input Output Module Type 9470/33 (Zone2)	2014-11-04
94 706 12 31 0	Instructions Zone 1	2021-09-13
94 706 13 31 0	Instructions Zone 2	2020-07-17
9475 0 000 002 0	Block diagram	2012-11-06
9400 0 000 002 0	Mechanical arrangement	2012-10-02
Datasheet	Digital Output Module 4-Channel Version for Zone 1 Type 9475/32-04-2	2013-09-18
Datasheet	Digital Output Module 4-Channel Version for Zone 1 Type 9475/32-04-.2	2013-09-18
Datasheet	Digital Output Module 8-Channel Version for Zone 1 Type 9475/32-08-.2	2013-09-18
Datasheet	Digital Output Module 8-Channel Version for Zone 2 Type 9475/33-08-.2	2013-07-19
94 756 26 31 0	Instructions	2020-10-02
94 756 21 31 0	Instructions	2020-10-02
94 756 11 31 0	Instructions	2020-10-02
94 756 12 31 0	Instructions	2020-10-02
9482 0 000 002 0	Block diagram	2013-09-09
9400 0 000 002 0	Mechanical construction	2012-10-02
Datasheet	Temperature Input Module for Zone 1	2015-07-23
Datasheet	Temperature Input Module for Zone 2	2015-07-23
9482 6 031 001 0	Instructions Zone 1 / Div. 1	2020-10-01
9482 6 031 002 0	Instructions Zone 2 / Div. 2	2020-10-02
94 950 02 00 0	Mechanical arrangement	2010-03-01
94 000 02 00 0	Mechanical arrangement	2006-12-19
94 000 04 00 0	BusRail circuits Ex n I/O Module	2005-11-07
94 770 06 00 0	Partition between I/O Module	2001-04-17
9400 0 000 008 0	Mechanical arrangement I/O Module	2015-12-09
9469 0 000 003 0	Block diagram	2017-08-04
Datasheet	Ex n HART universal module Zone 2	2018-04-12
Datasheet	IS1+ HART Universal module Zone 2 Ex n	2021-04-13

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Drawing number	Designation	Date
9469 6 031 001 0	Instructions	2020-09-21
9400 0 000 008 0	Mechanical arrangement I/O Module	2015-12-09
9472 0 000 003 0	Block diagram	2015-12-11
Datasheet	Digital Input Output Module NAMUR for Ex n Zone 2	2019-02-20
Datasheet	Digital Input Output Module 24 V for Ex n Zone 2	2019-02-20
9471 6 031 001 0	Instructions	2019-03-08
9472 6 031 001 0	Instructions	2019-03-08
94 770 12 00 0	Mechanical arrangement	2010-09-20
94 770 13 00 0	Block diagram	2001-11-29
Datasheet	Digital Output Module Relay and Socket for Zone 1	2015-05-06
94 776 10 31 0	Instructions	2015-11-03
94 700 10 00 0	Mechanical arrangement	2010-02-12
94 770 02 00 0	Block diagram	2001-10-23
Datasheet	Digital Output Module Relay Ex nA / NI Outputs, 8 Channels for Zone 2 / Div. 2	2015-01-08
94 776 05 31 0	Instructions	2018-08-13
9478 0 000 002 0	Mechanical arrangement	2010-10-27
94 750 12 00 0	Block diagram	2010-07-30
Datasheet	Digital Output Module Valve, Type 9478	2016-01-12
9478 6 031 001 0	Instructions	2018-11-06
91 850 02 00 0	Mechanical arrangement	2014-02-05
91 850 06 00 0	Circuit diagram LP1	2014-02-07
91 850 09 00 0	Circuit diagram LP2	2002-10-21
Datasheet	Fieldbus Isolating Repeater, Type 9185/11	2016-10-05
Datasheet	Non Ex i Isolator 9185/12	2014-11-10
91 856 12 31 0	Instructions	2016-04-15
9494 0 000 002 0	Mechanical arrangement	2015-11-23
9494 0 000 003 0	Mechanical arrangement	2015-11-23
9494 0 000 007 0	Circuit diagram BusRail Standard	2015-11-20
9494 0 000 010 0	Circuit diagram BusRail Extension	2015-11-20
Datasheet	BusRail, Series 9494+	2021-09-26
94 946 01 31 0	Instructions	2021-07-08
9721 0 000 003 0	Mechanical arrangement	2012-11-20
9721 0 000 005 0	Mechanical arrangement	2015-11-06
Datasheet	Media Converter FX op is / TX SC for Zone 2	2021-11-21
Datasheet	Unmanaged Switch FX op is / TX SC for Zone 2	2021-11-21
9721 6 031 001 0	Instructions	2019-01-15
9721 6 031 008 0	Instructions	2018-03-02
Datasheet 8150	Standard enclosure Zone 1 for Remote I/O	2021-11-21
Datasheet 7145	Standard enclosure Zone 2 for Remote I/O	2021-11-21
Datasheet	Remote I/O System General	2013-12-03
94 950 18 00 0	Circuit Diagram	2006-11-21
94 906 02 31 0	Instruction	2011-04-01
Datasheet	PC Software IS Wizard, Series 9499	2018-11-20
Datasheet	DTM Series IS1+, 9499 DTM/Series	2018-11-20
9787 0 000 002 0	Mechanical arrangement	2018-06-28
9787 0 000 004 0	Circuit diagram	2018-03-22
9787 6 031 001 0	Instructions	2018-08-07
Datasheet	USB RS485 Converter	2021-11-21

3. Test Reports, etc.

1) Test Reports

- Report No. 10280 dated 2014-01-17 issued by STAHL
- Report No. 10281 dated 2014-01-17 issued by STAHL
- Report No. 10155 dated 2013-08-12 issued by STAHL
- Report No. 10282 dated 2014-01-17 issued by STAHL
- Report No. 6337/12 dated 2014-07-30 issued by STAHL
- Report No. 6339/12 dated 2012-12-11 issued by STAHL
- Report No. 10035/13 dated 2013-03-01 issued by STAHL
- Report No. 10238/13 dated 2013-12-09 issued by STAHL
- Report No. 10264 dated 2014-05-20 issued by STAHL

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- Report No. 190742-02-01-A-01-e dated 2019-11-21 issued by KRIWAN
- Report No. 150404-02-01-A-05-e dated 2015-08-31 issued by KRIWAN
- Report No. 150404-03-01-A-05-e dated 2015-08-31 issued by KRIWAN
- Report No. 150404-01-01-B-01/01 dated 2015-10-15 issued by KRIWAN
- Report No. 210631-01-01-A-01-e dated 2021-09-23 issued by KRIWAN
- Report No. 190742-AU01+UMS01 dated 2019-09-23 issued by KRIWAN
- Report No. 200001-AU01+UMS01 dated 2020-01-28 issued by KRIWAN
- Report No. 200721-AU01+UMS01 dated 2020-08-24 issued by KRIWAN
- Report No. 130756-01-01-B-02 dated 2013-11-28 issued by KRIWAN
- Report No. 009057_01_B dated 2009-02-05 issued by KRIWAN
- Report No. 200721-AU01+BMT01 dated 2020-08-31 issued by KRIWAN
- Report No. 10278 dated 2014-01-17 issued by STAHL
- Report No. 10279 dated 2014-01-17 issued by STAHL
- Report No. 2002-3277 dated 2002-10-24 issued by NET NORSKE VERITAS
- Report No. 10567 dated 2014-05-21 issued by STAHL
- Report No. 11787 dated 2019-08-26 issued by STAHL
- Report EMC-Testreport dated 2013-01-13 issued by NKL
- Report EMC-Testreport dated 2013-08-07 issued by NKL
- Report EMC-Testreport dated 2014-01-14 issued by NKL

B. Approval Condition

1. Application & Limitation

- 1) This approval is granted on the basis of the test reports and the approved documentation.
- 2) The manufacturer should inform this Society of all kinds of revisions of the equipment. If the changes are recognized to affect functionality of the approved equipment, type test to confirm the reliability of the revised equipment may be performed in the presence of our surveyor.
- 3) Degree of protection shall be complied with Rule Pt. 6 Ch. 1 Sec. 2 201.2. (5).
- 4) This certificate covers hardware listed under Product specification.
- 5) Explosion-proof certification by a notified/recognized Certification Body is not covered by this certificate. Ratings and Special Condition for Safe Use in hazardous areas are to be obtained from the relevant valid Ex-Certificate.

2. Individual Product Cert. and Drawing Approval Requirement

- 1) Individual product certification is not required.

3. Marking

- 1) The product or packing is to be marked with the manufacturer's name and type designation on a suitable position.

4. Others

- 1) Test condition (IACS UR E10 Rev. 7)

Test	Condition	Remark
EMC	All locations excluding the bridge and deck zone	-
Temperature	-25 ~ +70 °C	-
Vibration	Acceleration $\pm 0.7g$	-

* Note 1) :

- EMC Emission and Immunity is to be satisfied with
- a) Hardware installed in KR approved enclosure, see Appendix A.1.1. for possible options
 - b) EMC-Cable gland or separate screen rails inside the enclosure or Cabinet to connect the screen of the signal cables
 - c) Shielded signal cables

< End of Certificate >