DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. A-11630
This Certificate consists of 6 pages

This is to certify that the

Peripheral Equipment

with type designation

Remote I/O System Type IS1

Manufactured by

R. Stahl Schaltgeräte GmbH
WALDENBURG WÜRTTEMBERG, Germany

is found to comply with
Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards

Application
Location classes:

Temperature	D
Humidity	B
Vibration	A
EMC	B
Enclosure	C

Place and date
Høvik, 2010-07-05
for DET NORSKE VERITAS AS

Odd Magne Nesvåg
Head of Section

Local Office
DNV Essen

This Certificate is valid until
2014-12-31

Torsten Dzillak
Surveyor

Notice: 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

Remote I/O System Type IS1 Series 94, consisting of following units:

Unit no.	Description	Make	Type
1.	Enclosure	R. Stahl Schaltgeräte GmbH	8127/.....
2.	CPU&Power Module	R. Stahl Schaltgeräte GmbH	9440/12-01-11
3.	CPU&Power Module (Zone 2)	R. Stahl Schaltgeräte GmbH	9440/15-01-11
4.	Socket for CPU&Power Module	R. Stahl Schaltgeräte GmbH	9490/11-11
5.	AIM 0/4-20 mA	R. Stahl Schaltgeräte GmbH	9460/12-08-11
6.	AIM HART 08 (2 wire)	R. Stahl Schaltgeräte GmbH	9461/12-08-11
7.	AIM HART 08 (4 wire)	R. Stahl Schaltgeräte GmbH	9461/12-08-21
8.	TIM R 08 (Resistance)	R. Stahl Schaltgeräte GmbH	9480/12-08-11
9.	TIM mV 08 (Thermoc.)	R. Stahl Schaltgeräte GmbH	9481/12-08-11
10.	AOM HART 08	R. Stahl Schaltgeräte GmbH	9466/12-08-11
11.	AOM 08 0/4-20 mA	R. Stahl Schaltgeräte GmbH	9465/12-08-11
12.	DIM 16 (Namur/Contact)	R. Stahl Schaltgeräte GmbH	9470/22-16-11
13.	DIM 24V 16 (Non Ex)	R. Stahl Schaltgeräte GmbH	9471/10-16-11
14.	DOM 04 23V, 12,5V/40 mA	R. Stahl Schaltgeräte GmbH	9475/. 2-04-21
15.	DOM 04 17V, 11V/40 mA	R. Stahl Schaltgeräte GmbH	9475/. 2-04-11
16.	DOM 04 23V, 10V/40 mA	R. Stahl Schaltgeräte GmbH	9475/. 2-04-31
17.	DOM 08 9,5V, 4,5V/30 mA	R. Stahl Schaltgeräte GmbH	9475/. 2-08-41
18.	DOM 08 17V, 13V/26 mA	R. Stahl Schaltgeräte GmbH	9475/. 2-08-51
19.	DOM 08 23V, 17,5V/20 mA	R. Stahl Schaltgeräte GmbH	9475/. 2-08-61
20.	DOMR 08 (Non Ex)	R. Stahl Schaltgeräte GmbH	9477/10-08-12
21.	DOMR 06 Output relay	R. Stahl Schaltgeräte GmbH	9477/12-06-12
22.	DOMR 08 (Zone 2)	R. Stahl Schaltgeräte GmbH	9477/15-08-12
23.	DOMR 08 Output relay	R. Stahl Schaltgeräte GmbH	9477/12-08-12
24.	Socket for DOM 06	R. Stahl Schaltgeräte GmbH	9490/11-34
25.	Socket for DOM 08	R. Stahl Schaltgeräte GmbH	9490/11-33
26.	BusRail 4 modules	R. Stahl Schaltgeräte GmbH	9494/S1-M4
27.	BusRail 2 modules begin	R. Stahl Schaltgeräte GmbH	9494/S1-B2
28.	BusRail 2 modules end	R. Stahl Schaltgeräte GmbH	9494/S1-E2
29.	Cable for BusRail 1,10 m	R. Stahl Schaltgeräte GmbH	9491/Z0-VB
30.	Cable for BusRail 0.47 m	R. Stahl Schaltgeräte GmbH	9491/Z0-VB

31.	Termination busrail begin	R. Stahl Schaltgeräte GmbH	9494/A1-B0
32.	Termination busrail end	R. Stahl Schaltgeräte GmbH	9494/A1-E0
33.	Termination busrail beg S-D	R. Stahl Schaltgeräte GmbH	9494/A2-B0
34.	Termination busrail end S-D	R. Stahl Schaltgeräte GmbH	9494/A2-E0
35.	Plug-in terminal (screw)	R. Stahl Schaltgeräte GmbH	9490004670
36.	Plug-in terminal (spring)	R. Stahl Schaltgeräte GmbH	9490002670
37.	Plug-in terminal (screw)	R. Stahl Schaltgeräte GmbH	9490001670
38.	Plug-in terminal (spring)	R. Stahl Schaltgeräte GmbH	9490003670
39.	Plug-in terminal (screw)	R. Stahl Schaltgeräte GmbH	9490005670
40.	Plug-in terminal (spring)	R. Stahl Schaltgeräte GmbH	9490006670
41.	SUB D Zone 1 CPU	R. Stahl Schaltgeräte GmbH	9490001220
42.	SUB D Zone 2 CPU	R. Stahl Schaltgeräte GmbH	3157320
43.	Fieldbus Isolating Repeater	R. Stahl Schaltgeräte GmbH	9373/21-12-10

The certificate A-10522 has been extended by the units:

Unit No.	Type		Description
1	9440/22-01-11	9440	CPU & Power Module (20...35 V DC supply)
2	9440/22-01-21		CPU & Power Module (90...253 V AC supply)
3	9490/11-12 9490/13-12		Socket for CPU&Power Module 9440/22-01-*1
4	9460/15-08-12		Analog Input Module (AIM)
5	9461/15-08-12		Analog Input Module HART (AIMH)
6	9465/15-08-12		Analog Output Module (AOM)
7	9466/15-08-12		Analog Output Module HART (AOMH)
8	9470/25-16-12		Digital Input Module (DIM Namur)
9	9471/15-16-12		Digital Input Module (DIM 24V)
10	9494/L1-Va		BusRail Extention (a=6 to 9 for 0.5 to 2m cable)
11	9490007670		Plug-in terminal (non Ex/ Ex nL, screw)
12	9490008670		Plug-in terminal (non Ex/ Ex nL, spring)
13	9490015670		Plug-in terminal (non Ex/ Ex nL, screw)
14	9490016670		Plug-in terminal (non Ex/ Ex nL, spring)
15	9490002220		SUB D plug Zone 1, RS485 IS

16	9490003220		SUB D plug Zone 1, RS485 Ex i
17	8126/.4..-.		Enclosure (type of protection Ex e)
18	8163/.-....-.....		Cable Gland (type of protection Ex e)

The certificate A-11630 has been extended by the units:

Unit No.	Type		Description
1	9441/12-0*-*0	9440	CPU Module
2	9444/12-11		Power Module (20...35 V DC supply)
3	9492/12-11-*1 9492/12-11-*2		Socket for CPU Module 9441/12-0*-*0 and Power Module 9444/12-11

Manufactured by

R. STAHL Schaltgeräte GmbH, 74638-Waldenburg, Germany

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Product certificate
Each delivery of the application system is to be certified according to Pt.4 Ch.9 Sec.1. The certification test is to be performed at the manufacturer of the application system according to an approved test program before the system is shipped to the yard. After the certification the clause for application software control will be put into force.

Clause for application software control
All changes in software are to be recorded as long as the system is in use on board. The records of all changes are to be forwarded to DNV for evaluation and approval. Major changes in the software are to be approved before being installed in the computer.

Application/Limitation

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

Type Approval documentation

CD ROM: Is 1 Ships, Dated 2001-12-14
Product presentation I.S. 1 Rev.3.1 dated 1999-11-09
Test reports:
DNV 2002-3277, rev.02, Kriwan 001036_03_C / 001036_05_C

List of Documentation covering types added in certificate A-10522:

Type 9475/.2-0.-.1 (DOM 04 and DOM 08)

▪ ATEX Certificate:	2. supplement PTB 99 ATEX 2220	03.09.2002
▪ Data sheet:	9475/12 & 9475/22	18.08.2006
▪ Mechanical Arrangement:	94 750 11 00 0	00 / 20.03.2002
▪ Block Diagram:	94 750 12 00 0	01 / 12.06.2002
▪ Instruction Manual:	94 756 01 30 0	01 / 2005

Type 9440/22 CPU & Power Module with PNO interface

▪ Data sheet:	9440/22 + 9490	03.04.2007
▪ ATEX Certificate:	KEMA 02 ATEX 1333 X + 1. supplement + 2. supplement	
▪ Test Report	KEMA 2023968	10.07.2007
▪ Mechanical Arrangement:	94 401 03 00 0	02 / 24.11.2004
▪ Mechanical Arrangement:	94 401 33 00 0	00 / 11.12.2004
▪ Mechanical Arrangement:	94 402 03 00 0	01 / 24.11.2004
▪ Block Diagram:	94 401 02 00 0	01 / 21.10.2002
▪ Block Diagram:	94 402 02 00 0	00 / 04.08.2003
▪ Instruction Manual:	94 406 07 31 0	10 / 2003
▪ Instruction Manual:	94 906 01 31 0	03 / 2005

Type 94**/.5-..-.2 I/O Modules for installation in Zone 2

▪ ATEX Certificate:	KEMA 06 ATEX 0291 X + 1. supplement	
▪ Test Report	KEMA 2083387	12.01.2007
▪ Test Report	KEMA 2105121	20.03.2007
▪ Test Report	KEMA 2105121 Issue 2	07.05.2007
▪ Mechanical Arrangement:	94 000 02 00 0	03 / 19.12.2006

Type 9460/15-08-12 (AIM) & 9461/15-08-12 (AIMH)

▪ Data sheet::	9461/15	03.04.2007
▪ Block Diagram:	94 600 12 00 0	02 / 08.03.2007

▪ Block Diagram:	94 610 02 00 0	01 / 07.10.1999
▪ Instruction Manual:	94 616 02 31 0	21.05.2007

Type 9465/15-08-12 (AOM) & 9466/15-08-12 (AOMH)

▪ Data sheet::	9466/15	03.04.2007
▪ Block Diagram:	94 610 02 00 0	01 / 07.10.1999
▪ Block Diagram:	94 650 12 00 0	00 / 30.11.2005
▪ Instruction Manual:	94 666 02 31 0	21.05.2007

Type 9470/25-16-12 (DIM NAMUR) & 9471/15-16-12 (DIM 24V)

▪ Data sheet::	9470/25	07.03.2007
▪ Block Diagram:	94 700 32 00 0	01 / 18.10.2006
▪ Block Diagram:	94 710 32 00 0	01 / 18.10.2006
▪ Instruction Manual:	94 706 02 31 0	21.05.2007
▪ Instruction Manual:	94 716 02 31 0	21.05.2007

Type 9494/L1-Va (a = 6 to 9)

▪ Test Report:	PTB Ex 06-26167	01.12.2006
▪ Mechanical Arrangement:	94 940 04 00 0	02 / 20.02.2006

CD ROM: DNV Documentation, dated 2007-07-11

List of Documentation covering types added to certificate A-11630:

Type 9441/12-0*-*0 CPU Module and Type 9444/12-11 Power Module with Type 9492/12-1*-** Socket

Data sheet:	9441 + 9444	10.07.2009
ATEX Certificate:	KEMA 08ATEX0155 X	13.03.2009
Test Report	KEMA 210423400	13.03.2009
Mechanical Arrangement:	9441 0 000 002 0	01 / 21.01.2009
Mechanical Arrangement:	9444 0 000 002 0	00 / 12.02.2009
Mechanical Arrangement:	9492 0 000 002 0	01 / 19.02.2009
Mechanical Arrangement:	9492 0 000 010 0	00 / 19.02.2009
Block Diagram, CPU:	9441 0 000 003 0	01 / 22.01.2009
Circuit Diagram PM:	9444 0 000 006 0	01 / 13.02.2009
Block Diagram, Socket:	9492 0 000 003 0	01 / 19.02.2009
Block Diagram, Socket:	9492 0 000 011 0	01 / 22.01.2009
Instruction Manual:	9441 6 031 005 0	27/05/2009

Test reports:
Kriwan 009396_01_G; STAHL 5602/09; Kriwan 009057_01_B; NKL GmbH_2009-01-23;

Retention survey report, Waldenburg/Essen dated 2010-03-23.

Tests carried out

Applicable tests acc. to S.f.C.2.4

Certificate retention survey

The scope of the retention/renewal survey 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 survey 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

Retention survey is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE