



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. A-11401
This Certificate consists of 3 pages

This is to certify that the
I.S. Equipment

I.S. Isolators ISpac
91** See Page 2

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

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

*Tested for temperatures down to -15°C



**The pac-Carrier 9195 has vibration class A

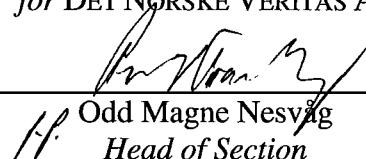
Place and date
Høvik, 2009-11-16
for DET NORSKE VERITAS AS

This Certificate is valid until
2013-06-30



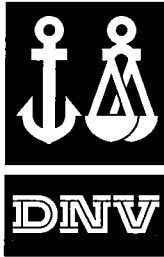
Local Office
DNV Essen


Torsten Dzillak
Surveyor 


Odd Magne Nesvåg
Head of Section

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.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



Cert. No.: A-11401
File No.: 890.50
Job ID: 262.1-003457-2

Product description

ISpac 91** and ISpac System 919* as follow:

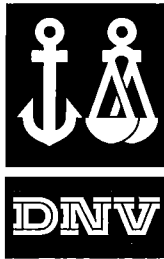
ISpac Isolators	
I.S. Power Supply	9143/10-***-***-*0
Frequency Transmitter	9146/*0-1*-**
Transmitter Supply Unit	9160/**-1*-*1
Transmitter Supply Unit with Limit values	9162/13-11-**
Isolating Repeater HART Input	9163/*3-1*-11
mA Isolating Repeater	9164/13-22-**
Isolating Repeater	9165/**-11-**
Isolation Repeater Loop Powered	9167/**-11-*0
Switching Repeater	9170/**-***-**
I.S. Relay Module	9172/**-11-00
Digital Output	9175/*0-1*-1*
Digital Output Loop Powered	9176/*0-1*-00
Resistance Isolator	9180/**-77-11
Temperature Transmitter	9182/*0-5*-**
Fieldbus Isolating Repeater	9185/1*-**-10
Fibre Optic Isolating Repeater	9186/12-*1-1*
Fibre Optic Isolating Repeater	9186/*5-12-11
ISpac System	
Termination Module	9191/20-00-50
HART-Multiplexer	9192/32-10-10
Supply Module	9193/*0-11-1*
pac-Bus	9194/31-**
pac-Carrier	9195/**-***-***
Connection board	9196/**H-***-***

Application/Limitation

Fieldbus Isolating Repeater must be installed in RF shielded cabinet.

Ex installations 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.

Ex-certification is not covered by this certificate and the following paragraph, which is for
information only, is based on information received from the manufacturer, but not verified
by DNV.



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Information on Ex-Certification received from manufacturer – Not verified by DNV		
Equipment	Certified	Certificate No.
9143/10-***-***-0	II (2) GD [Ex ib] IIC/IIB and II 3 G Ex nA II T4	BVS 05 ATEX E 152 X
9146/*0-1*-1* Ex i Isolators	II 3 (1) G Ex nAc nCc [ia] IIC T4 II (1) D [Ex ia] IIC	BVS 05 ATEX E 0171 X
9146/*0-1*-6* Non Ex i Isolators	II 3 G Ex nAc nCc II T4	BVS 09 ATEX E 094 X
9160/**-1*-11 Ex i Isolators	II 3 (1) G Ex nA nC [ia] IIC T4 II (1) D [Ex iaD]	DMT 03 ATEX E 010 X
9160/**-1*-61 Non Ex i Isolators	II 3 G Ex nA nC II T4	BVS 07 ATEX E 176 X
9162/13-11-1* Ex i Isolators	II 3 (1) G EEx nA nC [ia] IIC T4 II (1) D [Ex iaD]	FM 06 ATEX 0008 X
9162/13-11-6* Non-Ex i Isolators	II 3 G Ex nA nC II T4	Manufacturers declaration of conformity
9163/*3-1*-11	II 3 (1) G Ex nA nC [ia] IIC T4 II (1) D [Ex iaD]	BVS 04 ATEX E 127 X
9164/13-22-06 9164/13-22-07 9164/13-22-09 (Ex e Input)	II 2 G (1) GD Ex e mb [ia] IIC T4	KEMA 04 ATEX 1236 X
9164/13-22-08 (Ex i Input)	II 2 G (1) GD EEx ia IIC T4	KEMA 04 ATEX 1298
9165/**-11-1* Ex i Isolators	II 3 (1) G Ex nA nC [ia] IIC T4 II (1) D [Ex iaD]	DMT 03 ATEX E 012 X
9165/**-11-6* Non Ex i Isolators	II 3 G Ex nA nC II T4	DMT 03 ATEX E 012 X
9167/**-11-00 Ex i Isolators	II 3 (1) G Ex nA [ia] IIC T4 II (1) D [Ex iaD]	BVS 04 ATEX E 082 X
9167/**-11-50 Non- Ex i Isolators	II 3 G Ex nA II T4	BVS 04 ATEX E 082 X
9170/**-**-2* 9170/**-2-** 9170/**-3-**	II (1) G [Ex ia] IIC II (1) D [Ex ia] IIC	DMT 02 ATEX E 195 X
9170/**-0-1* 9170/**-1-1* 9170/**-4-1*	II 3 (1) G Ex nAc nCc [ia] IIC T4 II (1) D [Ex ia] IIC	DMT 02 ATEX E 195 X
9170/*1-**-6*	II 3 G Ex nAc nCc II T4	BVS 09 ATEX E 072 X
9172/**-11-00	II 3 (1) G Ex nA nC [ia] IIC T4 II (1) D [Ex iaD]	BVS 04 ATEX E 097 X
9175/*0-1*-1*	II 3 (1) G Ex nA nC [ia] IIC T4 II (1) D [Ex iaD]	DMT 03 ATEX 043 X



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9176/*0-1*-00	II 3 (1) G Ex nA [ia] IIC T4 II (1) D [Ex iaD]	BVS 04 ATEX E 075 X
9180/**-77-11	II (1) GD [EEx ia] IIC/IIB and II 3 G EEx nAC T4	BVS 05 ATEX E 176 X
9182/*0-5*-1*	II 3 (1) G Ex nAc nCc [ia] IIC T4 II (1) D [Ex ia] IIC	BVS 02 ATEX E 243 X
9182/*0-5*-6*	II 3 G Ex nAc nCc II T4	BVS 08 ATEX E 016 X
9185/1*-5-10	II (2) GD [EEx ib] IIC/IIB and II 3 G EEx nA II T4	DMT 02 ATEX E 246 X
9185/12-45-10	II 3 G EEx nA II T4	DMT 02 ATEX E 246 X
9186/12-11-1*	II 2 (1) G Ex e mb ib [ia, op is] IIC T4 II (1) D [Ex iaD]	BVS 06 ATEX E 145 X
9186/*5-12-11	II (1) GD [Ex op is] IIC II 3 G Ex nA nC II T4	BVS 07 ATEX E 068 X
919*	II 3 G Ex nA II T4 or II 3 G Ex nA nC II T4	BVS 03 E 213 X

Type Approval documentation

Test Report from Teknologisk Institutt no. 310-04-0043
Test Report from Phoenix Contact ICS PAC Träger dated 19.03.1998.
Extention Update and Addition of modules 2009-10-01 / STMZ/ Ka
Type Approval Documentation-Table 3 2009-06-30 STM/Kaiser/sr
Typprøfbericht Nr.4651/04 vom 01.10.2004
Typprøfbericht Nr.4919/06 vom 16.05.2006
Typprøfbericht Nr.4931/06 vom 28.06.2006
Typprøfbericht Nr.4632/04 vom 13.08.2004
EMC Test Report No.SAE-Stahl 399 vom 13.07.2004
Typprøfbericht Nr.4633/04 Rev.1 vom 13.12.2007
Typprøfbericht Nr.4634/04 vom 13.08.2004
Typprøfbericht Nr.4577/04 vom 12.05.2004
Typprøfbericht Nr.4909/06 vom 12.05.2006
Prøfbericht Nr. E61323 vom 28.08.2006
DNV Essen Certificate retention survey report for A-9518, dated 2009-06-30.

Tests carried out

Applicable test according to Standard for Certification No. 2.4.



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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