



[1] EC-TYPE EXAMINATION CERTIFICATE

[2] Equipment or Protected System Intended for use
in Potentially explosive atmospheres
Directive 94/9/EC

[3] EC-Type Examination Certificate Number: Nemko 03ATEX013

[4] Equipment or Protective System: Wireless Temperature Monitoring System

[5] Applicant: Kongsberg Maritime Ship Systems AS

[6] Address: N-7005 Trondheim
Norway

[7] This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] Nemko AS, notified body number 0470 in accordance with Article 9 of Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report no. 200244128

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

CENELEC EN 50021 1994
CENELEC EN 50014: 1997 + A1: 1999 + A2: 1999 , CENELEC EN 50020 1994
CENELEC EN 50281-1-1

[10] If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

[11] This EC-TYPE EXAMINATION CERTIFICATE relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.


[12] The marking of the equipment or protective system shall include the following :



II 3(1) GD

EEx nA[ia] IIC T5 Tamb 85°C

Oslo, 2003-04-11


Rolf Hoel
Certification Department

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Enterprise number:
NO 974404532

[13] Schedule

[14] EC-TYPE EXAMINATION CERTIFICATE No Nemko 03ATEX013

[15] Description of Equipment or Protective System

The Sentry GB-100-System constitutes a wireless temperature monitoring system for measurement of temperature in parts of rotating machinery. The system comprises a signal processing/barrier unit model GBP100 with type of protection EEx nA[ia] IIC T5, up to 16 intrinsically safe RF-antennas, model GBS, are connected to the power supply via coaxial cables. Up to 16 wireless intrinsically safe temperature sensors, GBW are mounted in machinery. The intrinsically safe parts of the system are covered by the certificate Nemko 03ATEX016X

Type Designations and Types of Protection

The Sentry GB-100 System comprises the listed parts.

Signal processing / barrier unit

GBP100/abbc(d)

The letters abcde denote the following:

a: type of communication protocol

bb: number of sensors connected

c: Software options

d(d): sensor type dX= EEx ia IIC version

Code: II 3(1) GD EEx nA[ia] IIC Tamb: 85°C

Stationary Antenna

GBS1aa/bb-cc

The letters aaabcc denote the following:

aa: Mechanical design

bb: Thread length

cc: cable length

Codes:

EEx ia IIC T6/T5/T4 mechanical design aa= 50 or 51 (design with external conductive plastic cover)

EEx ia IIB T6/T5/T4 mechanical design aa=30 or 31

Tamb: 80°C /95°C /100°C

Temperature Sensor

GBWaaa/bc-ddd

The letters aaabddd denote the following:

aaa: Mechanical design.

b: Mounting versions

c: Sensor tip design

ddd: Sensor length

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Codes:

EEx ia IIC T6/T5/T4 mechanical design aa= 50 or 51 (design with external conductive plastic cover)

EEx ia IIB T6/T5/T4 mechanical design aa=30 or 31

Tamb: 80°C /95°C /100°C

Data

Power supply 18-32V DC

Maximum safe voltage Um: 250V

Max RF pulse power out 100mW , mean RF power 140 μW, 856MHz

[16] Report No. 200244128 and the listed descriptive documents

Descriptive Documents

Name/Number	Rev.	Date	Title/Description
GBP100/ ----- X Block diagram	B	2003-03-28	Block Diagram
GBX-1	C	2003-03-12	Ex-protection Schematics 4 sheets
7212C391.0040	C	2003-03-20	PCB component lay out side B
7212C391.0020	C	2003-03-20	PCB lay out side B
7212C391.0010	C	2003-03-20	Side A viewed from side B
7212C391.0000 GBX-1	C	2003-02-20	Parts list 2 pages
7212C391.0000.	C	2003-02-20	PCB Specification
Beskrivelse av sikkerhetskomponenter	V4	2003-01-16	Parts list
GBP100_1_EX	C	2003-01-08	Sentry02 Schematics 10 sheets
Sentry 02/C_EX GBP-3	C	2003-02-07	PCB lay out drawings 10 sheets
Sentry02/C_EX.Bom	A	2003-01-16	Bill of Materials 4 sheets
M415!spc.txt		2003-02-07	PCB specification 2 pages
11892	E	2003-01-10	DC/DC Converter 10069 Schematics 3 pages
PA10069 PCB 11901G		2003-01-10	PCB lay out 3 sheets
11896	C	2003-01-16	Design spec. 1 page
11891E	-	2003-01-20	Parts list 5 pages
11901G	-	2003-01-10	PCB spec.
GB-162	-	2001-02-20	4-20mA med SPI grensesnitt 5 sheets
7212-362.004	1	2001-03-17	PCB lay out
7212-362.104	1	2001-03-17	PCB lay out
7212-362.002	1	2001-03-17	PCB lay out
7212-362.001	1	2001-03-17	PCB lay out
7212-362.007	1	2001-03-17	PCB lay out
7212-362.107	1	2001-03-17	PCB lay out
GBP-2 7212-362.0001	C	2003-01-17	Parts lists GB 162 Rev C 3 pages
7212-362.9001	-	2003-01-17	PCB spec.
3.02.0005.2.00	2	2000-10-07	Schematic drawing PPCB DS 856MHz Inductive Coupler
7212.372.0070	-	2001-12-03	Sammenstillingstegning for GBS-1
GBS-1	-	2003-03-13	Bill of Materials
GBW-4	A	2002-01-15	PCB for 3 x 9,8mm SAW sensor
7212-379.0010	-	2002-01-15	GBW-4 7212-279.0000
7212-379.0020	-	2002-01-15	GBW-4 7212-279.0000
7212-379.0040	-	2002-01-15	GBW-4 7212-279.0000

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7212-379.0000	-	2003-01-13	Bill of materials for GBW-4
7212-379.0000	-	2002-01-15	PCB spec.
GB-150	E	2003-04-02	Sentry stationary antenna GBS100/- and GBS/130 for IIB
GB-456	-	2003-04-02	Sentry stationary antenna GBS150 for IIC
GB-273	A	2003-04-02	Sentry wireless sensor GBW105/AF- and GBW205/AF for IIB
GB-457	-	2003-04-02	Sentry wireless sensor GBW305/AF- for IIC
GB-242	A	2003-04-02	Sentry wireless sensor GBW106/AF- and GBW206/AF for IIB
GB-463	-	2003-04-03	Sentry wireless sensor GBW306/AF- for IIC
GB-410	C	2003-04-09	Sentry GBP100/
GB-467	-	2003-04-09	Montering av styreklo/jordingsklemme GBP100/-
UT-199	-	1984-03-10	Styreklo/Guide disc
GB-409	B	2003-03-27	Koblingsskjema Sentry-Ex GBP100/
GB-449	-	2003-03-27	Koblingsskjema GBP1--
E2619	C	2003-04-09	Name Label for GBP100/
GB-408	C	2003-03-31	Ex merking av GBW2/--/--
GB-427	-	2003-02-10	Dimensional Sketch

[17] **Special Conditions for Safe Use**

Certificate Nemko 03ATEX016X

[18] **Essential Health and Safety Requirements**

Covered by item 9

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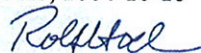
SUPPLEMENT 1 TO EC-TYPE EXAMINATION CERTIFICATE**[14] EC-TYPE EXAMINATION CERTIFICATE No Nemko 03ATEX013****[15] Description of Equipment or Protective System**

The certificate is extended to include descriptive documents that show the various types of sensor, antenna and Signal processing unit.

[16] Report No. 24943**Descriptive Documents**

Name/Title	Drawing No.	Rev.	Date	Sheets
Signal Processing Unit, GBP---	GB-725	-	2004-06-28	1
Stationary antenna, GBS----	GB-724	-	2004-06-28	1
Sensor GBW1----	GB-724	-	2004-06-28	1

Oslo, 2004-10-18

**Rolf Hoel**
Certification Department

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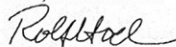
Enterprise number:
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SUPPLEMENT 2 TO EC-TYPE EXAMINATION CERTIFICATE**[14] EC-TYPE EXAMINATION CERTIFICATE No Nemko 03ATEX013****[15] Description of Equipment or Protective System**

Various technical changes and changes of documentation. The technical changes has no influence on the Ex safety of the apparatus.

[16] Report No. 133907**Descriptive Documents**

Name/Title	Drawing No.	Rev.	Date	Sheets
Sentry GBP100/----2X Ex utgave Sammenstillingstegning	GB-410	D	20.11.2003	1
Name label for GBP100/-----X EEx-version Detail drawing	E-2619	F	11.06.2004	1
Ex merking av GBW2--/--, EExIIB og GBW3--/--, EExIIC Detaljtegning	GB-408	F	04.09.2009	1
Koblingskjema Sentry – Ex GBP100/-----X Detaljtegning	GB-409	C	20.11.2003	1
Ex merking av GBS1--/- EEx IIC og EEx IIB Detaljtegning	GB-427	B	21.11.2003	1
Koblingskjema Sentry GBP1--/-----X SPU – Ex Protection – Power Supply Detaljtegning	GB-449	A	20.11.2003	1
Sentry stationary antenna..... Assembly Drawing	GB-456	C	28.10.2009	1
Sentry rotating sensor.... Assembly Drawing	GB-457	D	07.09.2009	1
Sentry trådløs temperaturføler sammenstillingstegning	GB-463	B	28.04.2005	1
Montering av jordingsklemme for GBP100 EX	GB-467	B	23.11.2005	1
Styreklø / Guide disc Detaljtegning	UT-199	A	21.11.2003	1
BOM for GBS-1	GBS-1_BOM	A	08.12.2006	1
BOM for GBX-1	GBX-1_BOM	D	11.02.2008	2
PCB specification for GBX-1	7212C391.0000	D	15.11.2010	1
BOM for GBP1A	GBP-1A_BOM	B	10.11.2003	4
PCB specification for GBP-1A	GBP-1A_PCB Spec	B	03.05.10	2
PCB layout for GBP-1A	7212-394.0001	D	27.06.2003	10
Sentry Stationary antenna Type GBS150/- Dimensional sketch	GB-140	K	03.09.2009	1
Sentry/Ex. beskrivelse av sikkerhetskomponenter	-	V5	11.02.2008	1
Sentry Ex-protection. Master Sheet	GBX-1	D	11.02.2008	4
Sammenstillingstegning for GBS-1	7212-372.000	1	03.12.2001	1
PCB specification for GBS-1	7212-372.	0001	03.12.01	1
PCB specification GBW-4	7212-379.000	1	15.01.2002	1
SENTRY wireless temperature sensor and stationary antennas	342530	A	12.12.2009	1

Oslo, 2010-12-15**Rolf Hoel, Certification Department**

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