

TYPE EXAMINATION CERTIFICATE

This is to certify:

That the Sound Signal Appliances (Whistle/ Bell & Gong)

with type designation(s)
Ships whistles, bell and gong

Issued to

Kockum Sonics AB
Malmö, Sweden

is found to comply with
Convention on the International Regulations for Preventing Collisions at Sea, 1972 as am.

Application :

See page 2.

Issued at **Høvik** on **2016-07-07**

for **DNV GL**

This Certificate is valid until **2021-06-16**.

DNV GL local station: **Malmö**

Approval Engineer: **Frederik Tore Elter**

Jan Tore Grimsrud
Head of Section

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 Examination Certificate and not to the approval of equipment/systems installed.

Product description

• Supertyfon AT 150/200 with Valve Unit TV784	Exposed (tested to -45°C)
• Supertyfon AT 150/330 with Valve Unit TV784	Exposed (tested to -45°C)
• Supertyfon MKT150/90 with Valve Unit TV784	Exposed (tested to -45°C)
• Supertyfon MKT150/110 with Valve Unit TV784	Exposed (tested to -45°C)
• Electrotyfon MT150/130	Exposed (tested to -45°C)
• Electrotyfon MT150/140	Exposed (tested to -45°C)
• Electrotyfon MTX150/120	Exposed (tested to -45°C)
• Electrotyfon MTX150/130 (tested arctic)	Exposed (tested to -45°C)
• Electronic tyfon ETD/100/350	Exposed
• Power Amplifier MTK250	Protected
• Signal Controller TLG2000	Protected
• Contactor units TK75A, TK85A, TK80A, TK90A	Protected
• Bell KB30	Exposed
• Gong KG50	Exposed
• Electronic Timer TI66	Protected

Constellations:

Whistles:

- Supertyfon AT 150/200, or
- Supertyfon AT 150/330, or
- Supertyfon MKT150/90, or
- Supertyfon MKT150/110

All with Valve Unit TV784 and signal controller TLG2000

- Electrotyfon MT150/130 with contactor unit TK75A/TK85A, or
- Electrotyfon MT150/140 with contactor unit TK75A/TK85A, or
- Electrotyfon MTX150/120 with contactor unit TK80A/TK90A, or
- Electrotyfon MTX150/130 with contactor unit TK80A/TK90A, or
- Electronic tyfon ETD/100/350 with power Amplifier MTK250

All with signal controller TLG2000

Bell and gong:

- Bell KB30
- Gong KG50

All with Electronic Timer TI66, or signal controller TLG2000

Application/Limitation

• Supertyfon AT 150/200	: For vessels with length (LOA): $75 \leq \text{LOA} < 200\text{m}$
• Supertyfon AT 150/330	: For vessels with length (LOA): $< 200\text{m}$
• Supertyfon MKT150/90	: For vessels with length (LOA): $\geq 200\text{m}$
• Supertyfon MKT150/110	: For vessels with length (LOA): $\geq 200\text{m}$
• Electrotyfon MT150/130	: For vessels with length (LOA): $75 \leq \text{LOA} < 200\text{m}$
• Electrotyfon MT150/140	: For vessels with length (LOA): $75 \leq \text{LOA} < 200\text{m}$
• Electrotyfon MTX150/120	: For vessels with length (LOA): $\geq 200\text{m}$
• Electrotyfon MTX150/130	: For vessels with length (LOA): $\geq 200\text{m}$
• Electronic tyfon ETD100/350	: For vessels with length (LOA): $20 \leq \text{LOA} < 75\text{m}$
• Compass safe distance:	
○ Supertyfon whistles	: $> 5,00$ metres
○ Electrotyfon whistles	: $> 3,20$ metres
○ Electronic tyfon	: $> 4,50$ metres
○ Bell and gong	: $> 1,50$ metres

- The above sound signal appliances to be installed in accordance with the Convention on the International Regulations for Preventing Collisions at Sea, 1972, Annex III/1 (e), (f), (g), rule 34 and maker's instructions.
- Marked units in product description are tested for low temperature down to – 45 °C, in accordance to IEC60945 low temperature testing.
- Units listed in DELTA test report: T209200-2 - DANAK19/16279 – Arctic test for Marine Type Approval of horns, are tested for icing / freezing rain as drescribed in test report.

Type Examination documentation

DNV GL No	Title	Document No
43	Datasheet: Electronic TYFON Whistle ETD100-350 with Power Amplifier MTK 250	KSM276E-1337
42	Datasheet: SUPERTYFON MKT150/90	KSM267-1525
41	Datasheet: Contactor Unit TK80	KSM742E-1517
40	Datasheet: ELECTRO-TYFON MTX150/130	KSM521EN-1403
39	Datasheet: ELECTRO-TYFON MT150/130	KSM520EN/1409
38	Datasheet: SUPERTYFON MKT150/110 with Valve Unit TV 784	KSM268EN-1450
37	Datasheet: ELECTRO-TYFON MTX150/120	KSM 602-0814
36	Datasheet: Signal Controller TLG2000	KSM 557/0425
35	Datasheet: SUPERTYFON AT150-330 with Valve Unit TV 784	KSM335-1442
34	Datasheet: SUPERTYFON AT150-200 with Valve Unit TV 784	KSM334-1442
33	Datasheet: Bell and Gong KB30/KG50	KSM354E_1435
32	Report: Kockum Sonics AB - Arctic test for Marine Type Approval of horns Assessment of compliance with relevant parts of IEC 60945 for low temperature -45 °C	T209200-2 - DANAK1916279
31	Track records of ship	
30	Approval-Norge DNV_2	
27	Datasheet: Push-button Switches and Morse Key	KSM 481/0401
26	Report: Sound Measurements on Ships Whistle	9822D
25	Report: Sound Measurements on Ships Whistle	3827D
24	Report: Sound Measurements on Ships Whistle	8471C
23	Report: SP environmental testing of Signal Controller TLG2000	P102120
21	Report: EMC Type approval testing of Whistles and Bell & Gong system	A402357-1
20	Report: DELTA Test Report EMC Type approval testing of Electronic Whistle System	A402357-2
17	Report: BSH IEC60945 TLG 2000	6291/003/02
15	Report: EMC test on TLG 2000	F104186
14	Report: EMC Type approval testing of Whistles and Bell & Gong system	DANAK-198739
13	Report: DELTA Test Report EMC Type approval testing of Electronic Whistle System	DANAK-198741
10	Report: Sound Measurements 981127	

Tests carried out

- Environmental tests: IEC60945(2002)
- Performance tests COLREG-72 as am., Annex III:
 - Sound Signal Intensity
 - Directional Properties
 - Fundamental Frequency

Marking of product

The Manufacturer and Type Designation to be applied to the equipment in a clearly visible location. In addition the equipment shall be marked with serial number, safe distance to magnetic compass, power consumption and/or supply voltage.

Certificate Retention Survey

A retention survey is to be performed at least once every second year, and again upon renewal of this certificate.

The scope of the retention/renewal survey is to verify that the production quality conditions stipulated for the type approval are complied with and that no alterations are made to the product design or its components and/or materials without appraisal by the Society.