



Pneumatic and electric
warning horns for
rolling stock safety

kockumation.com

Long history of acoustic safety

Taking its heritage from the renowned Kockum Shipyard, Kockum Sonics has been active in the field of rolling stock acoustic safety for more than 100 years. In 1922, the Swedish Railway Company purchased three railcars from Deutsche Werke Kiel for operation in the south of Sweden. These were the first rail vehicles to have a TYFON® installed, and the rest is history.

Since then our company has grown into a worldwide leading supplier of warning horns for the railway industry.

Innovative Acoustic Designs

Kockum Sonics has always been focused on providing reliable acoustic warning solutions to meet the needs of our customers. Over the years we have delivered several innovative design solutions not only for rolling stock but also for marine and industrial applications worldwide.

Today we have a diversified product portfolio for rolling stock, ranging from classic air-driven horns to advanced electronic horns and control systems. By listening to our customers and using our vast experience of acoustics and signaling, we have been able to design new products and technologies to meet our customers' needs and gaining their confidence and trust.

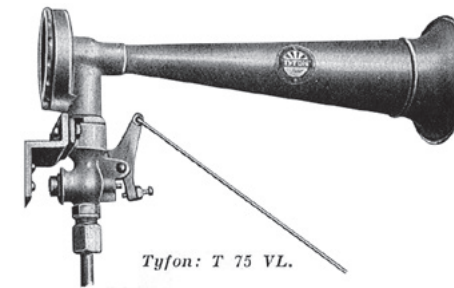
TYFON® The original – 100 years of history



TYFON®
MKT 75/5-CHIME



The world-renowned TYFON® has been used in trains, trams, and metros since the 1920s and reflects a long tradition of acoustic reliability and efficiency.



Tyfon: T 75 VL.

The TYFON® T 75 VL, the first ever pneumatic warning horn used on rolling stock

TYFON® 5-chime warning horn developed for the North American market

-  Achieves a very high sound pressure at low air consumption
-  All US and Canadian fundamental frequencies available
-  Full rich sound with harmonic contents up to several kHz
-  All bells are reversible for bi-directional usage.

TYFON® Pneumatic horns

The distinguished sound of the pneumatic TYFON® is renowned in all fields of high-power audio signalling. For this reason, rolling stock manufacturers and operators throughout the world have chosen to equip their railway vehicles with TYFON® pneumatic warning horns.



As technology pioneers for over 100 years, Kockum Sonics has been a major driving force in the development and design of cutting edge warning horns used in an unrivalled variety of rail vehicle applications.

The prime choice of warning horn for all types of railway vehicles

Exceptional acoustic performance

- Adjustable sound pressures depending on requirements
- Sound pressures are available from very soft to extremely loud
- Wide range of standard fundamental frequencies
- Customized frequencies and mounting solutions on request

Options for extreme weather and environmental conditions

- Integrated heating elements for cold weather conditions
- Stainless steel protection grids to prevent debris, snow and ice to affect horn performance

Cost-effective operation and maintenance

- Low life-cycle costs
- Corrosion resistant and durable
- Almost unlimited titanium diaphragm lifespan
- No adjustments/tuning required during horn lifetime

TYFON® Pneumatic warning horns



TYFON®
MKT 75/370



TYFON®
MKT 75/460



TYFON®
MKTH 75/370



TYFON®
MKT 75/660



Kockum Sonics offers a wide range of the TYFON® warning horn, for all types of rolling stock. Customer based solutions, adjustable sound pressures and frequencies.

Fully compliant to all railway acoustic standards and regulations

TSI LOC & PAS certified
EN 15153-2:2020
UIC 644
GM/RT2131
EN 15153-4:2020

Acoustical Characteristics, Sound pressure levels

101 - 109 dB(C) @ 25 meters EN 15153-2
120 - 125 dB(A) @ 5 meters UIC 644
91 - 101 dB(A) @ 7 meters EN 15153-4 (Medium-range)
86 - 94 dB(C) @ 25 meters GM/RT2131

Standard available frequencies

261/311/350/370/415/440/460/470/494/512/
622/660/800/1160 Hz

Accessories

Heating devices for various voltages

- 24 VDC / 15 W
- 33 VDC / 33 W
- 230 VAC / 33 W

Environmental Characteristics

Temperature range: -40 to +70°C
-40 to +158°F
Protection class: IP56

Protection grids

To prevent debris, dust and snow entering and interfering with the TYFON® function.

Customized solutions

For example special mounting brackets and air connections on request.



Variations of our protection grids



Acoustic development and testing in our own anechoic room in Malmö, Sweden

TYFON® Electric horns

Maximum acoustic performance and reliability

The electric TYFON® warning horn and amplifier system is a high-performance option on vehicles which has limited or no access to compressed air, such as Trams or Metros.

Our largest electric horn TYFON® TW 370/2 can also be used as a replacement of pneumatic horns as it is certified according to the latest version of the TSI LOC&PAS.

Trust in our experience and expertise in acoustic safety

Top of the line acoustic performance and customer experience

- From low to very high sound pressure levels
- 5 customizable and adjustable acoustic audio signals
- Any type of audio can be used besides the classic warning horn, for example bells, gongs, whistles or even speech
- Developing our customers' new acoustic requests - for free!

Options for extreme weather and environmental conditions

- Integrated heating elements for cold weather conditions
- Stainless steel protection grids to prevent dust, debris, snow and ice to affect horn performance

Cost-effective operation and maintenance

- Low life-cycle costs – High MTBF
- No preventive maintenance required
- Corrosion resistant and durable



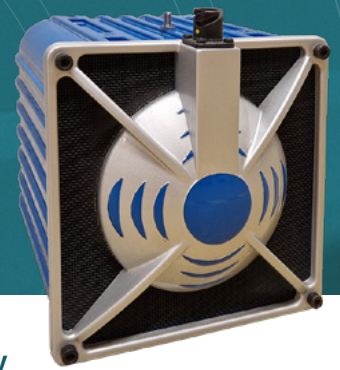
For more than 10 years, our customers in North America, Europe, Middle East, India and all the way to Australia, have relied upon the safety of the Kockum Sonics electric horn systems.

TYFON® Innovative acoustic designs

TYFON®
TW 370/1



TYFON®
TW 370/F1



AMPLIFIER
TK 251/252/253



TYFON®
TW 370/2



TYFON® electric horn systems from Kockum Sonics are well suited for trams, metros and LRVs which are required to fulfill EN 15153-4. One horn system is enough to fulfill the functionality of both Medium-range and Short-range sound pressures and acoustic signals.

TYFON® TW 370/1

Robust and reliable horn suitable for many applications

Characteristics

Sound pressure level:	< 115 dB(A) at 5 m
<i>(Max sound pressure depends on frequency/audio file)</i>	< 129 dB(A) at 1 m
Protection class:	IP 56
Temperature range:	-40 to +70°C
Maximum acoustic power:	125 W
Optional heating device:	15 W

TYFON® TW 370/F1V

Developed with a folded funnel design for a very compact yet powerful warning horn. Easy to install on most vehicles.

Characteristics

Sound pressure level:	< 116 dB(A) at 5 m
<i>(Max sound pressure depends on frequency/audio file)</i>	< 130 dB(A) at 1 m
Protection class:	IP 56
Temperature range:	-40 to +70 °C
Maximum acoustic power:	125 W
Optional heating device:	33 W

TK 251/252/253 AMPLIFIER

The heart of our electric horn system. It has a storage capacity of up to 5 different acoustic signals, each with their own gain setting.

Characteristics

Output power:	250 W
Input reaction time:	< 0.1 sec.
Protection class:	IP67
Temperature range:	-40 to +70°C

Operating voltage:

TK 251	24 VDC
TK 252	110 VDC
TK 253	37.5 VDC

TYFON® TW 370/2

Very loud and TSI LOC&PAS certified warning horn. Suitable for many applications.

Characteristics

Sound pressure level:	< 120 dB(A) at 5 m
<i>(Max sound pressure depends on frequency/audio file)</i>	< 134 dB(A) at 1 m
Protection class:	IP 56
Temperature range:	-40 to +70 °C
Maximum acoustic power:	250 W
Optional heating device:	15 W



HQ SWEDEN

Kockum Sonics AB

Industrigatan 39
P.O. Box 1035
SE-212 10 Malmö
Sweden
Tel: +46 (0)40 671 88 00
Fax: +46 (0)40 21 65 13
E-mail: sales@kockumsonics.com



UNITED KINGDOM

Kockum Sonics (UK) Ltd.

Unit 7, Leighton Industrial Park
Billington Road
Leighton Buzzard BEDS LU7 4AJ
United Kingdom



SWITZERLAND

Kockum Sonics AG

Brandholzweg 2
CH-8304 Wallisellen
Switzerland



CHINA

Kockum Sonics, Shanghai office

Kockum Sonics China
Room 303, Building 15-5
No 999 Ningqiao Road
Pudong New District
201208 Shanghai
China