

# Signal Controller Ti98, Ref.no. 245.80.312

## Operating and installation manual



Front panel

### About this manual

This manual is divided in 2 parts:

- Operating manual
- Installation manual explains the details for:
  - Mechanical mounting
  - Connection diagram showing how to replace the TI 96.
  - Electric connection diagrams for most common applications.
  - Configuration of the unit
  - Test procedure after installation

### Technical Data

Voltage supply:	24V DC (18-31,2V DC)
Power consumption:	3 W
Relay contacts:	Max. voltage: 250V Max. current: 6A
Dimensions:	206 x 116 x 40 (L x H x D)
Weight:	0.6 kg
Cable area:	0,2 - 2.5 mm <sup>2</sup>
Max cable diameter:	14 mm (for optional enclosure)
Colour:	Black RAL9005
Protection class:	IP55 (on front), IP20 (on rear side)
Operating ambient temp:	0 °C ... +50 °C

### General

Signal Controller Ti98 is a signal controller for both whistle and morse light. It is a robust, simple to use and inexpensive unit which can be installed in all types of vessels.

Features:

- Panel made of membrane key technology
- LCD matrix display that shows all necessary information
- All illumination on the panel has red light and the brightness can be adjusted with dimmer buttons
- "Whistle activated" output
- General Emergency Alarm input
- Input for external manual push button that activates the output(s) chosen on the panel.
- Separate mains for whistle and morse light/lantern
- Possibility to enable/disable characters to be used in automatic mode
- All signalling can be made automatic or by hand manoeuvre

Compliance to following standards:

EN60945 ,CISPR 16-2-1, CISPR 16-2-3, CISPR 16-4-2  
EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-6  
EN61000-4-11

## Automatic Signalling

The automatics has by default 5 signal characters. 5 more characters can easily be enabled in the software. All characters can be used for the whistles or the morse light or both simultaneously. The outputs to be activated is shown on the display. The period time can be changed between 60, 90 and 120 sec. If the automatics is on and an activation is done of the panels manual button or external push button will immediately turn the automatics to off. Characters and period time can be changed both when automatics is on or off. A LED indicator above the button shows the status of the automatics.

## Manual Signalling

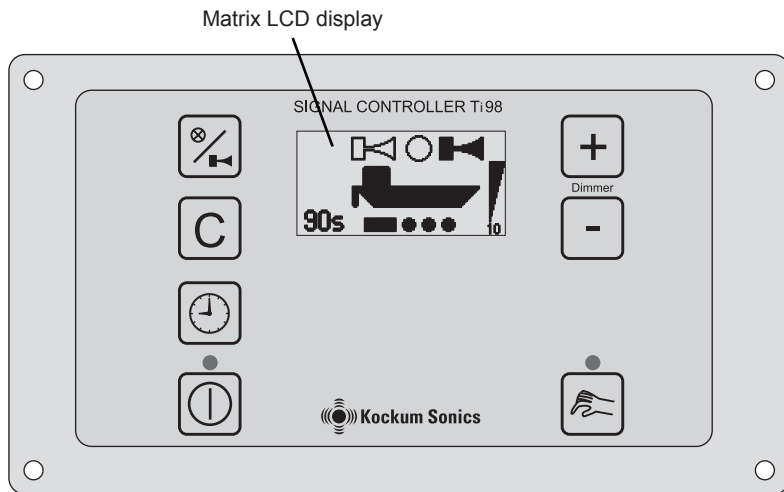
The push button for manual activation on the panel activates the chosen outputs shown on the display. When used, it will de-activate the automatics if enabled.

## Whistle active function

When a whistle are activated a potential-free relay output will change its state. This is very useful if a Sound Signal Surveillance System is installed onboard such as Kockum Sonics S90. With this relay it is possible to connect to the surveillance system to mute the ships own whistle.

## GEA function

The control unit has an input for GEA that can be controlled by an external potential free relay. Activating this input will stop any automatics and activates all connected whistle and morselight (even if they are disabled in the software). The signal pattern is controlled by the connected external GEA system. The information for the time interval and character will be replaced with the text "EXTERNAL ALARM". After the last activated signal there is a time out of 5 seconds before the units returns to normal function.



### Default characters:

- T "Making way through the water"
- M "Making no way through the water"
- R "Vessel at anchor"
- D "Vessel not under command"
- B "Towed vessel"

### Optional characters

(see section "Configuration of the unit" how to enable):

- A "Keep clear (inland)"
- U "Vessel aground"
- E "Altering my course to starboard"
- I "Altering my course to port"
- S "I am operating astern propulsion"



### Output selector\*

Press this to select the output to be used. Depending of the configuration (see section "Configuration of the unit") a mix of Aft, Fore whistle and morselight could be chosen.



### Character selector\*

Press this to browse between different output signal characters. See see section "Configuration of the unit" how to enable more characters.



### Time interval selector\*

Press this to choose appropriate time interval between 40, 60, 90 or 120 sec of the given signal characters.



### Automatic activation

Turns the signal controllers automatics on or off. A LED above the button shows if the function is on or off. When automatics is ON the text "AUT" will be shown on the display and the LED for the Manual activation button will be lit when the character is generated. The remaining time interval will also be shown under the text "AUT". If Automatics is turned off, the LED above the button will be turned off and if an character is generated the text "AUT" will flash until the character has finished.

Symbol	Description
	Whistle de-selected
	Whistle selected
	Morse light de-selected
	Morse light selected



Bargraph shows the actual dimmer value. Can be set between 0 and 10.



Dimmer

### Dimmer

Changes the brightness of the red background light and the 2 LED's.



### 120s

This field shows the selected time interval.



### Manual activation

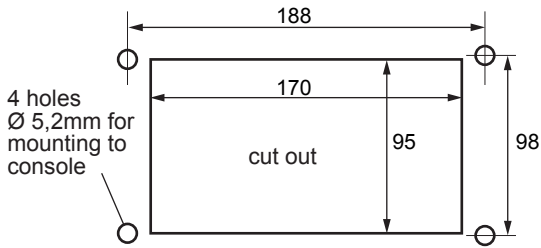
Pressing this directly stops the automatics if it's on. Activate outputs selected on the display. When manually activating, either by pushing this button or by external push button, the text "MAN" will be shown on the display.

\* Only selectable when automatics is turned off.

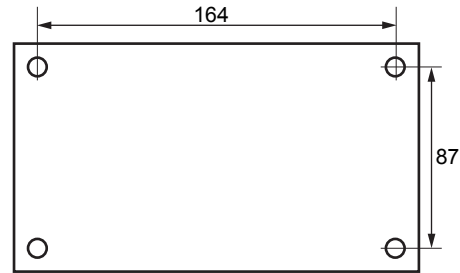
# INSTALLATION

## Mechanical mounting

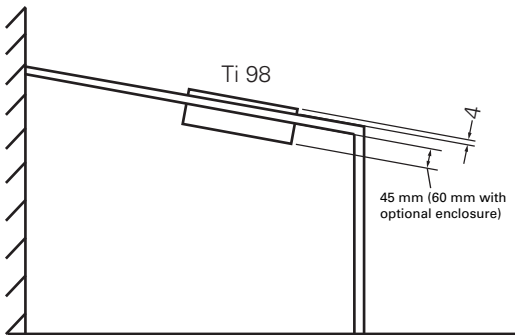
### Panel mounting



### Bulkhead mounting - Rear view



Note! Extra enclosure for bulkhead mounting and protection as an option. Must be ordered separately. Ref no: 217.76.066



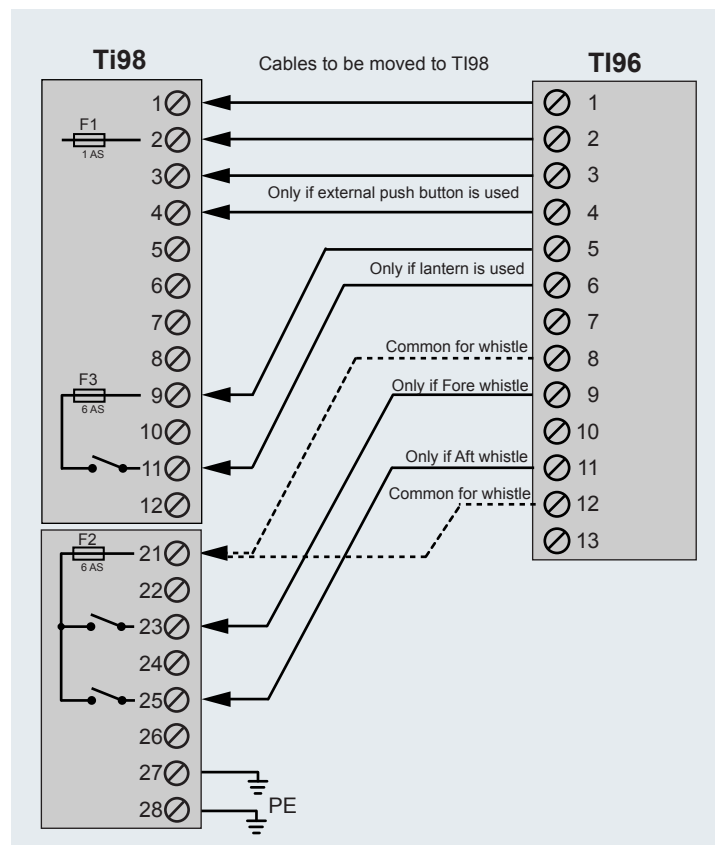
(all units in mm)

### Recommended spare parts (to be kept onboard):

Ref.	Description	Data	Kockum Sonics ref. no.
F1	Fuse 5 x 20 mm	315 mA fast blow	205.56.121
F2, 3	Fuse 5 x 20 mm	6.3 A slow blow	205.56.260

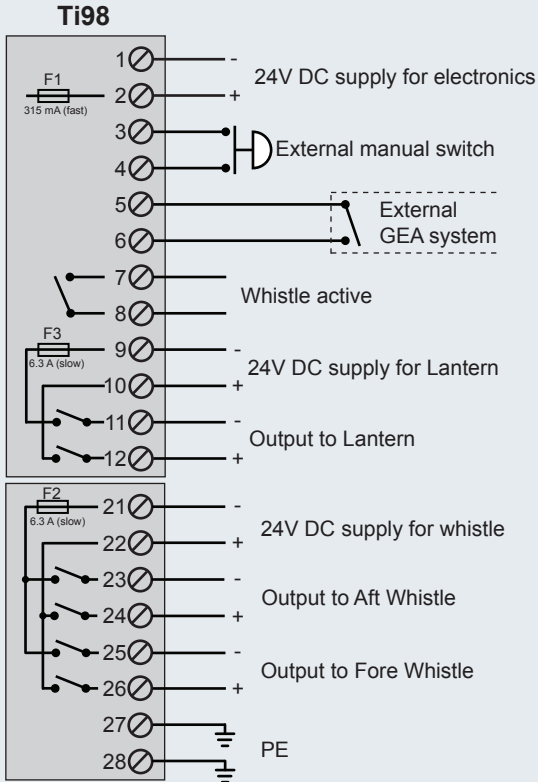


## Connection diagram showing how to replace the TI 96

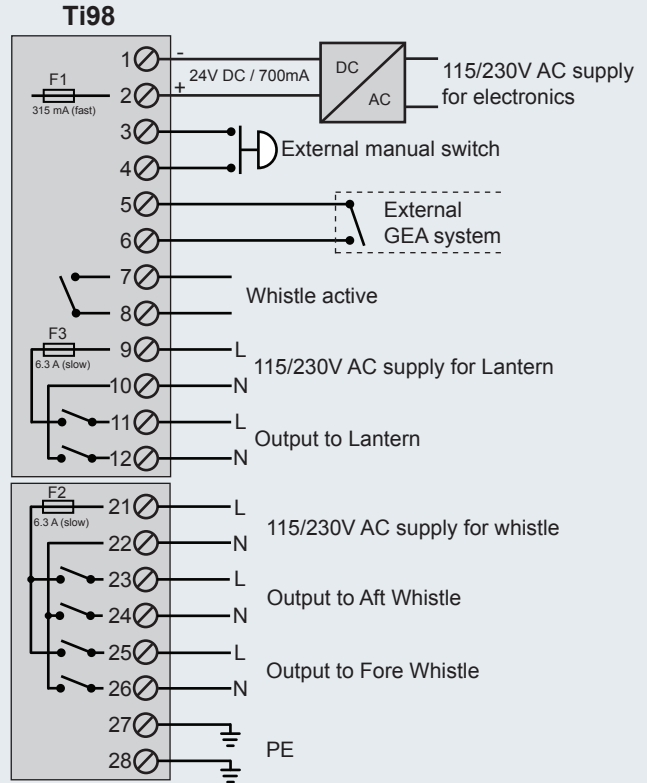


# Example of electric connection diagrams for most common applications

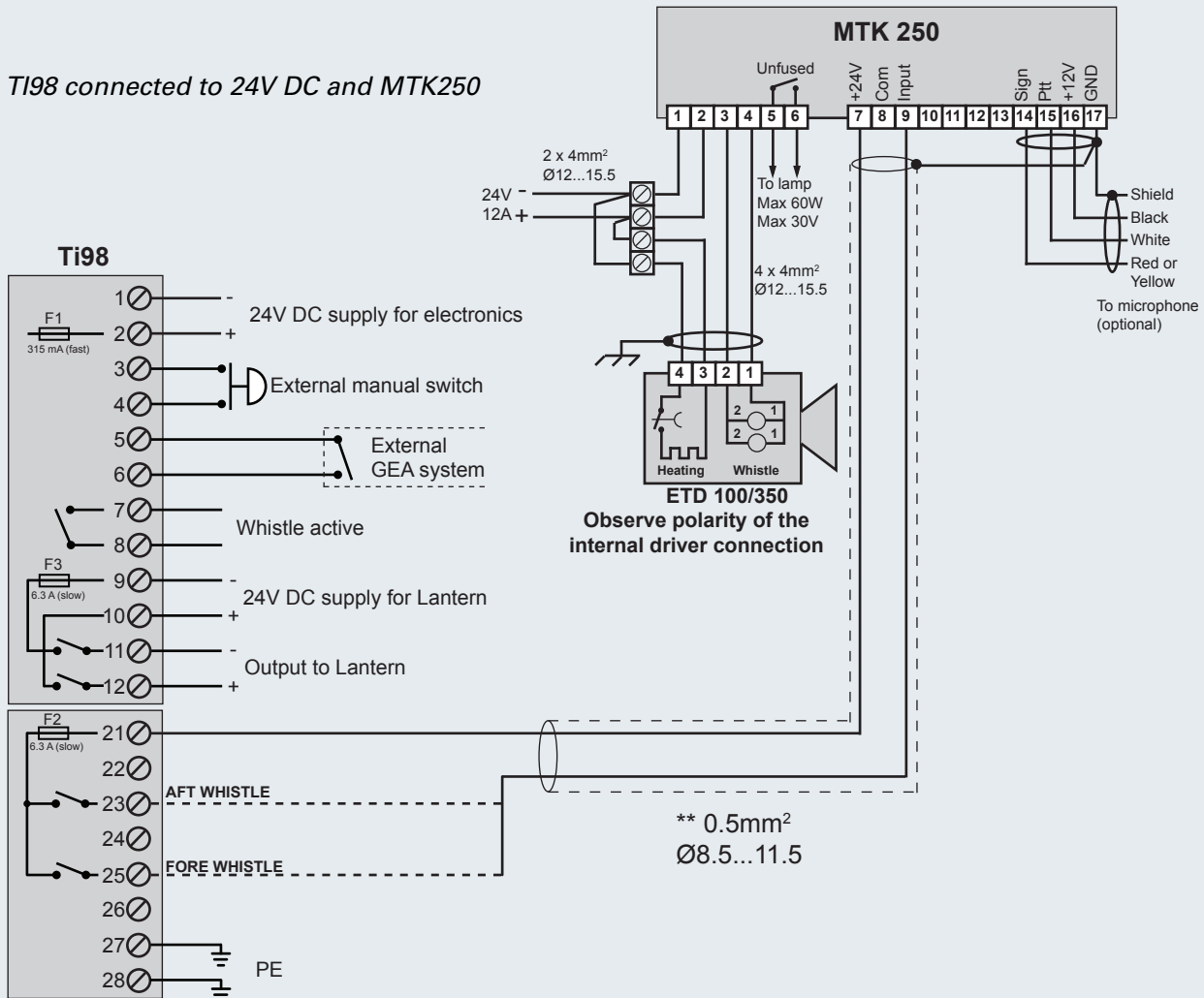
Ti98 connected to 24V DC supply



Ti98 connected to 115/230 AC supply



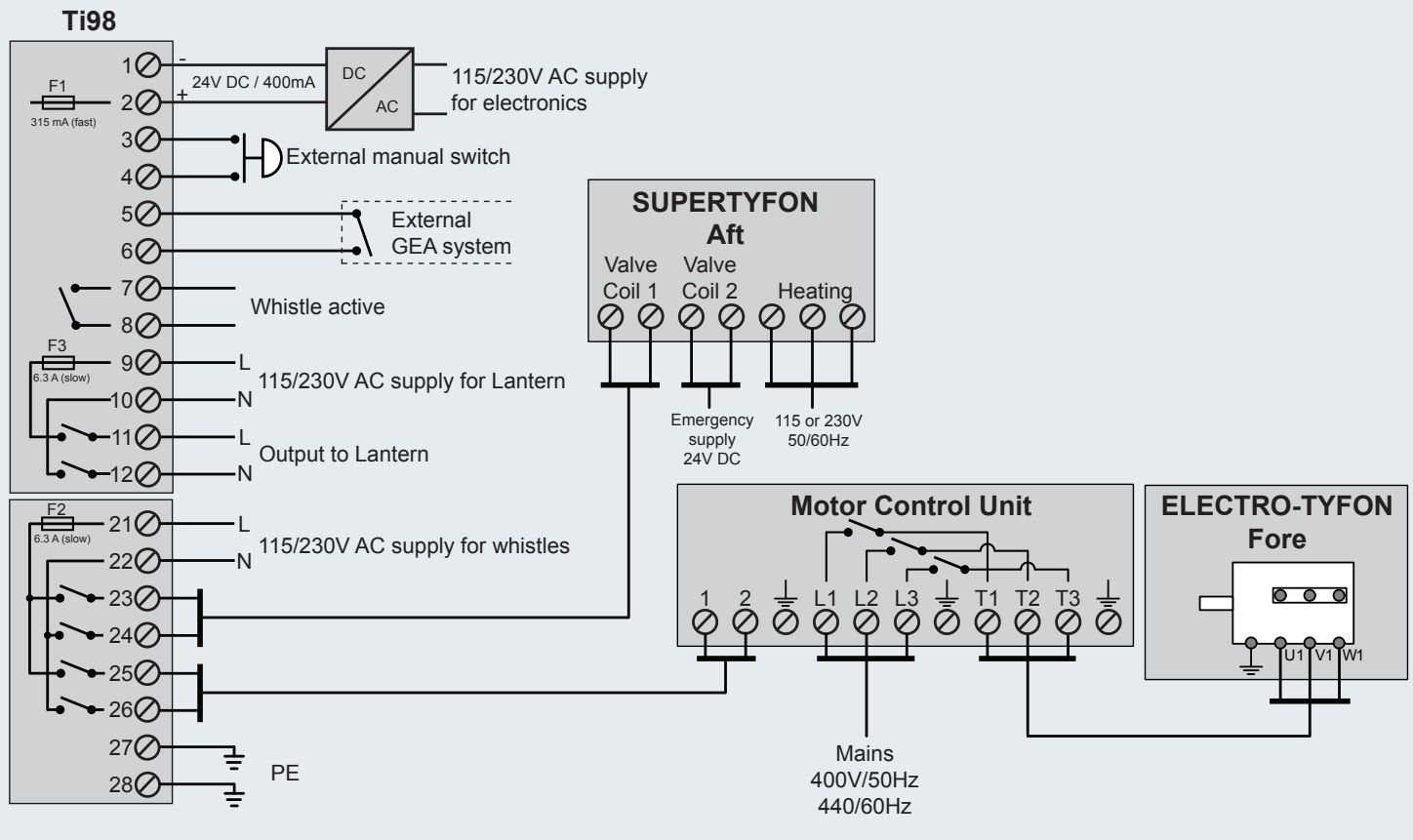
Ti98 connected to 24V DC and MTK250



NOTE!

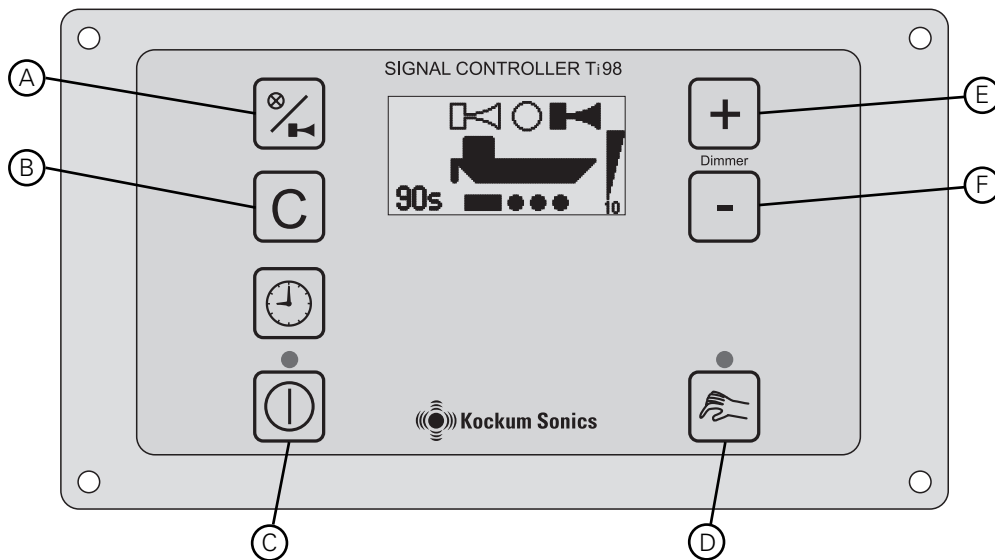
Don't use terminal 7 on the MTK250 as a feeding supply for the Ti98 terminal 2

*Ti98 connected to one SUPERTYFON and one ELECTRO-TYFON with motor control unit TK 75 /TK 80*

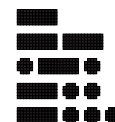


*For details such as cable dimensions etc, see respective products datasheet.*

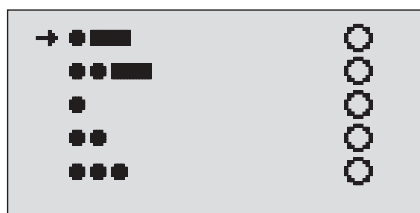
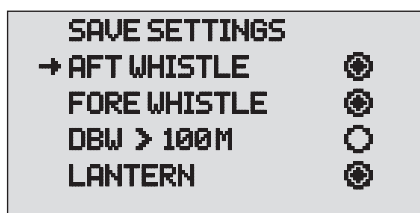
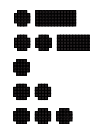
## Configuration of the unit



Available characters  
(cannot be disabled):



Optional characters  
(can be enabled):



The Ti98 is delivered with full functionality, i.e. all outputs are enabled.

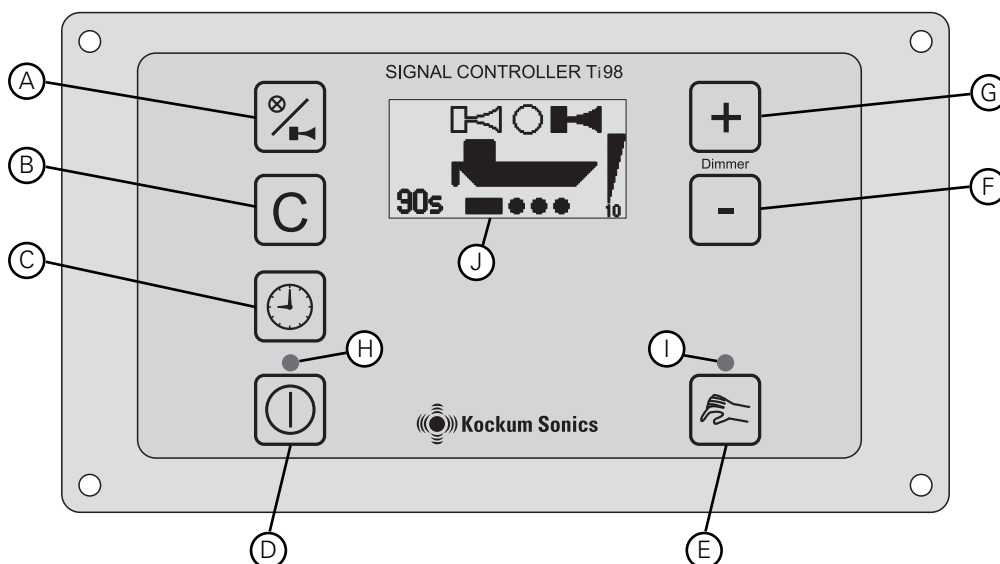
However, in some application it is desirable to disable some functionality such as the lantern output, enable more signal characters etc.

To make this, the unit has to be in configuration mode.

1. Press the button C and D at the same time while powering up the unit. A menu as the picture to the upper left is shown.
2. With the button E and F the arrow can be moved up or down to select the row (function) to be changed.
3. While on this row press the button C to toggle it on or off. A filled circle means that this function is enabled.
4. If a signal character should be enabled, just move the arrow down until the picture for characters is shown.
5. When settings is done move to the 'SAVE SETTINGS' and press the button D. The unit will now restart with the new settings.

Note! The 'DBW > 100M' means that if whistles are fitted at a distance apart of more than 100m this feature must be enabled. In that case it is not possible to operate both AFT and FORE whistle simultaneously according to Colreg rule 34(f). Only AFT whistle will be used.

## Test procedure after installation



When installation and any configuration is completed, the function of the unit should be performed.

1. Power up the unit and the display should be visible. Try to change the illumination with use of the dimmer buttons F and G.
2. Press button A until both whistles and lantern is chosen (depends of the configuration). A filled symbol for whistle or lantern means that this output has been chosen.
3. Press the button E. The selected output is now activated. Check also that the LED I lights up when the button is pressed.
4. Press the button D to turn on the automatic signalling of the chosen output(s). Check that the LED H lights up. The sequence (character) of the output will be the same as shown in the display and can be changed by the B button. Time interval (repeat frequency) of the selected character is shown on the display and can be changed by the C button.
5. Turn off the automatic signalling by pressing the button D once again. The LED H will be turned off.
6. Chose individual outputs with the button A and test its function with button E.
7. If external push button is connected, test this. The selected whistle on the display will be activated.

Note! If the display has no backlight after power on, try to to adjust with the dimmer.



### Push-button Switch

TL - 80 or TL - 85 (with lamp/LED) for panel or box mounting. Box mounted size (including box): height 107mm (fig. shows TL - 80)

Type	Ref. no.
TL - 80	24500009
Box (IP66)	24500007
Lamp block	20570033
Lamp 230V	20560124
Lamp 115V	20560125
LED for 24V	20560127



### AC-DC converter for supplying Ti98

Universal AC input range from 85 ~ 264V AC 50/60 Hz.  
Easily mounted on DIN rail type TS-35/7.5 or 15.  
Dimensions:  
22.5 x 90 x 100 mm (WxHxD)  
Weight: 0.19 kg

Type	Ref. no.
MDR-20-24	20142028



### Extra protective box for Ti98

If extra protection is needed of the unit's rearside or the possibility to mount the unit on the wall.  
Includes cable penetrations.  
Dimensions:  
196 x 140 x 104 mm (WxHxD)  
Weight: 1.1 kg

Type	Ref. no.
Enclosure	21775055



**Marine equipment including  
TYFON<sup>®</sup>, SUPERTYFON<sup>®</sup>, ELECTRO-TYFON<sup>®</sup>, LOADMASTER<sup>®</sup>, LEVELMASTER H8<sup>®</sup>  
is supplied by.....**

**HEAD OFFICE**

**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: info@kockumsonics.com Internet: www.kockumsonics.com

with affiliated companies in . . .

**CHINA**

**Kockum Sonics**

2123 Pudong Da Dao 506, Dragon Pearl  
Complex, Shanghai 200135, CHINA  
Tel: +86 (21) 5885 2729, 5860 3661  
Fax: +86 (21) 6853 84 00  
E-mail: jamescao@sonicschina.net

**SWITZERLAND**

**Kockum Sonics AG**

Oberdorfstrasse 64, Postfach 448, CH-8600 Dübendorf, Switzerland  
Tel: +41(0) 820 31 91 Fax: +41(0) 821 26 52  
E-mail: info@kockumsonics.com

**RUSSIA**

**Kockum Sonics**

14, Obvodny Kanal, RU-192019, St. Petersburg, Russia  
Tel: +7 (8) 812 412 70 04 Fax: +7 (8) 812 412 70 04  
E-mail: info@sonics.ru

**UNITED KINGDOM**

**Kockum Sonics (UK) Ltd.**

Unit 7, Leighton Industrial Park, Billington Road  
Leighton Buzzard BEDS LU7 4AJ, United Kingdom  
Tel: +44(0)1525 85 23 23 Fax: +44(0)1525 85 35 05  
E-mail: sales@kockumsonicsuk.com

*Kockum Sonics, a*

**KOCKUMATION**

*company*