

# Marine Time Systems



## Marine Master Clock



**Westerstrand Marine Master Clock is the ideal solution for distribution of both Local and UTC time onboard ships.**

The Master Clock is equipped with several outputs and inputs for control of Slave Clocks as well as distribution of time to computers and other equipment needing correct time.

The four Slave Clock outputs can be individually programmed for different types of clocks. External radio receivers / time synchronisation sources can be connected when higher accuracy is needed

Item No#	Info
123378-01	Marine Master Clock
123378-11	Marine Master Clock with Ethernet connection

## Marine Master Clock Technical data

Crystal frequency:	4.915200 MHz
Accuracy:	0.1 sek./24 hours (+20C°)
Microprocessor:	HD6412394
Time memory:	30 days (Back-up with Super Capacitor)
Ambient temperature:	0° C to +50°C
Relative humidity:	Max. 85% non-condensing
Case:	19" case in aluminium
IP rating:	IP20
Weight:	5.6 kg
Power Supply voltage:	90 - 264V 50/60 Hz and 24VDC
CE-approval, EMC:	Emission: EN61000-6-3, Immunity: EN61000-6-2
Serial outputs:	2 serial ports, one RS232 and one RS422/485
Alarm outputs:	2 Changeover potential-free contacts
Impulse Output 1-4:	2-wire, 1/1 minute, 1/2 minute, second, 1/2 second, time code (TC) 3-wire for forward/back. 1/1-minute alt. 1/2-minute The outputs have short circuit protection that is restored automatically
NMEA input	Yes
Type of time:	LT, UTC
Impulse length:	Minute 0.1-9.9 sec Second 0.1-1 sec
Max. load / output:	2A
Total load all outputs together:	2.5A
Max load/relay output:	230 V 6A.
Program memory:	100 year (EEPROM).
Signal points:	800

Relay output no. 2 can be dedicated to send out a special pulse.  
When this function is enabled the relay is activated every day for 5 seconds at 02.00 UTC.

## Marine Master Clock Option

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### GPS-Receiver

For mounting outdoor. Receives time message from GPS satellites

Item No#	Info
122980-50	GPS-Receiver

## Clocks

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### Instrument Clock

Time Code Marine (TC-M)  
144x144 mm  
Illumination

Item No#	Info
170130-00	HH:MM
170133-00	HH:MM:SS



### Dual Face Clock

Time Code Marine (TC-M)  
Local Time and UTC  
Numbers on dial faces

Item No#	Info
170170-00	Dual Face Clock



### Lumex (HH:MM)

Time Code Marine (TC-M)  
Digit size:  
Lumex 5: 50mm  
Lumex 7: 70mm

Item No#	Info
190000-05	Lumex 5
190020-05	Lumex 7

### Factory option:

22446-00 External dimmer knob



### Horizon IP65

Time Code Marine (TC-M)  
Diameter Ø 300 mm  
Hour marks on dial face  
IP65

Item No#	Info
5133580-00	Horizon Ø 300



### Slave Clock

Time Code Marine (TC-M)  
Numbers on dial face  
Aluminium housing  
Bracket for wall mounting

Item No#	Diameter
2021580-80	Ø 230 mm
2031580-80	Ø 300 mm



### Decorative Clock, Type C

Time Code Marine (TC-M)  
Diameter Ø 300 mm  
White flat dial face with brass hour marks and hands.

Item No#	Info
111452-TCM	Decorative Ø 300