

Marine Clock SYSTEM

The Seiko Marine Clock is literally the result of Seiko's many years of experience and achievements in its determined pursuit of accuracy and reliability, and horological fine arts and the most advanced electronics are assimilated in it.



QC-6M5



QC-6M4

SEIKO Marine Master Clock QC-6M5/QC-6M4

Features

1/High-accuracy crystal clock

Highly accurate crystal is built in and a Secondary Clock group inboard is driven by the signal of accurate time.
Signals for loggers are available.

2/The power supply automatically switched from AC to DC in case of AC failure.

3/As for the setting of Local Time (LT), an automatic time adjusting by an adjust key is available.

4/It is possible to correct accumulated error (within ± 30 second) by the 0-second adjust button without interrupting the operation.

5/It equips with the digital signal input*/output in accordance with NMEA0183 format.

*Available on QC-6M5 only.

6/The Liquid Crystal Display (LCD) and Secondary Clock Monitors* are illuminated with dimmer.

*Available on QC-6M5 only.

7/The active operation can be monitored on the LCD.

8/A space-saved design and easy operations have been achieved by adopting a thin movement and the microprocessor.



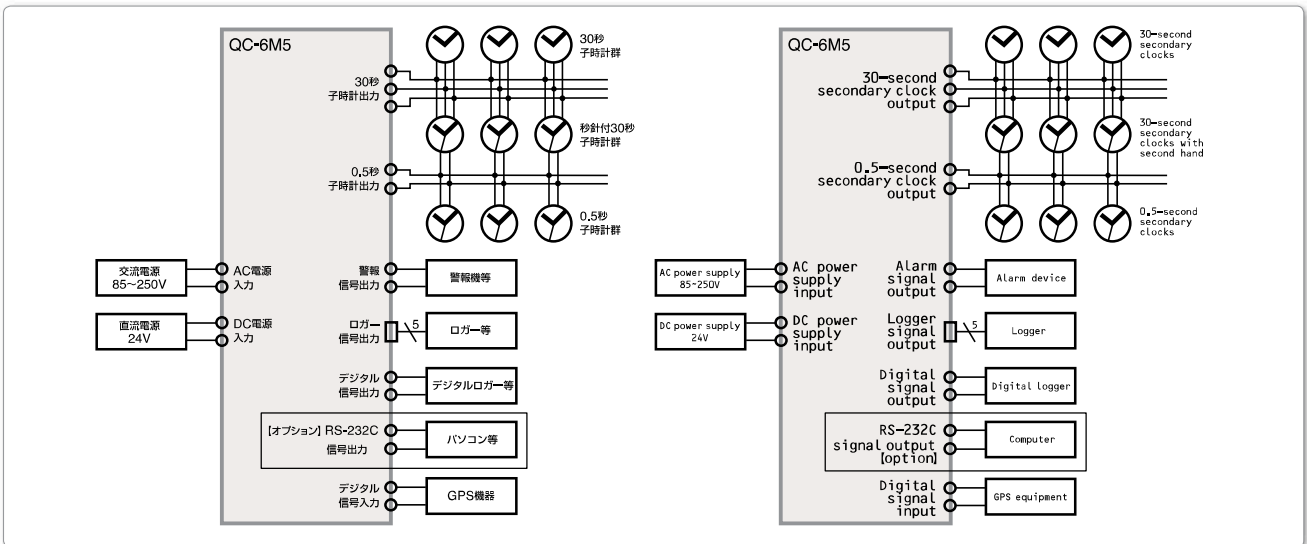
船舶用親時計

MARINE MASTER CLOCK

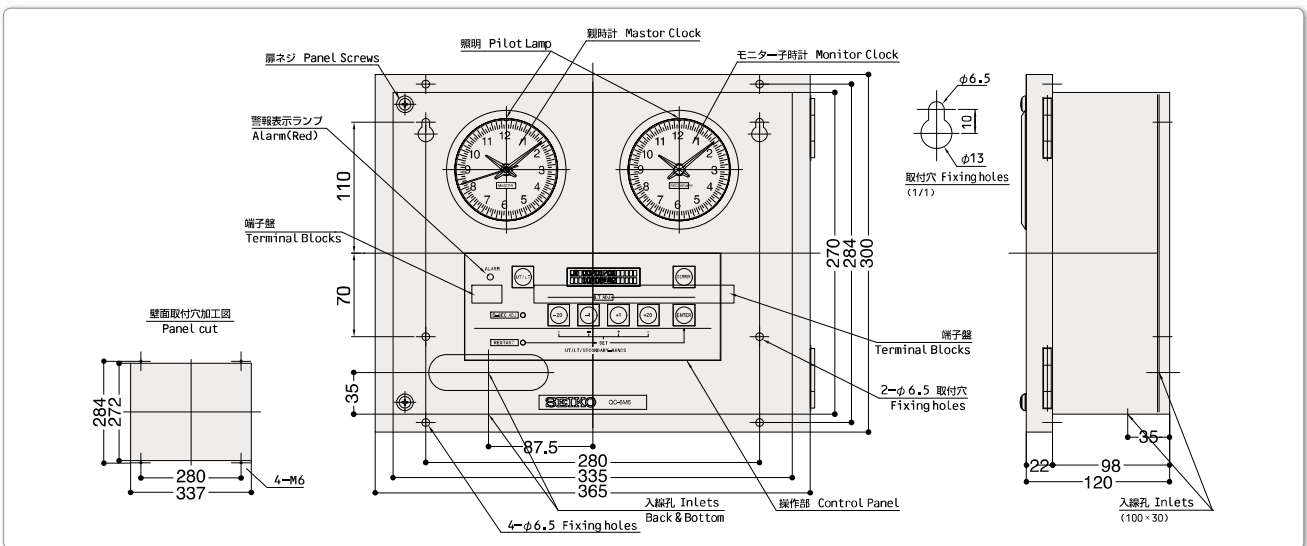


QC-6M5

系統図 Diagram



外形図 Outside view



仕様 Specifications

1 原振 / 水晶発振器 (4,194304MHz)

2 精度 / 日差±0.2秒以内

3 精度保証範囲 / +5°C~+40°C

4 動作温度範囲 / -10°C~+55°C (液晶表示器 0°C~+55°C)

5 動作湿度範囲 / 相対湿度35~90% (ただし結露のないこと)

6 内装時計

デジタル時計 (MASTER/SECONDARY切り換え式) /
16桁2行LCD表示器 (STN半透過型、文字高4.89mm)

アナログ時計 (MASTER) / 中3針0.5秒運針時計、文字板径80mm

アナログ時計 (SECONDARY) / 2針30秒運針時計、文字板径80mm

内装時計は、調光機能付き照明を内蔵

7 操作部 / 9ボタン+16桁2行LCD表示部によるデジタル入力

8 入出力

0.5秒子時計出力 / 2線式 (正転のみ)、子時計20台接続可能 (240mA以下)

30秒子時計出力 / 3線式 (正逆転)、子時計130台接続可能 (1,560mA以下)
(秒針付き30秒子時計は、0.5秒子時計出力、30秒子時計出力の両方に1台づつカウントします)

デジタル信号出力 / 平衡2線式 (RS-422)、1ポート、NMEA0183準拠

デジタル信号入力 / 平衡2線式 (RS-422)、1ポート、NMEA0183準拠

RS-232C信号出力【オプション】 / 不平衡2線式 (RS-232C)、1ポート
(内容はデジタル信号出力と同一です)

ロガー信号出力 / 5線式、1ポート (合計150mA以下)、24V (COMMON)、
30秒有極信号出力 (+)、30秒有極信号出力 (-)、
調針中信号出力 (-)、逆転中信号出力 (-)

警報信号出力 / 2線式、1ポート (100mA以下)、24V (COMMON)、警報 (-)

9 時刻合わせ機構

電源投入時 / デジタル表示部、前面ボタンによる入力

通常運用時 / 0秒リセットボタン (±30秒アジャスト) による微調整
0.5秒子時計は停止および早送りによる自動調針

LT変更時 / LTアジャストボタンによる調整

30秒子時計を自動調針
UT±13時間の範囲で1分単位の設定可能、自動日付変更

自動LT調整 / デジタル信号入力端子に、NMEA0183対応のGPS機器が接続され、かつ本製品基板上の自動LT調整スイッチがONになっている場合、GPS機器からの、「Local Zone」データにより、自動的にLTを調整します。一度LT調整されると次の1時間はGPS機器からのLTは受け付けません。

自動時刻修正 / デジタル信号入力端子に、NMEA0183対応のGPS機器が接続されている場合、23:30~23:50 (UT) の間に、±30秒以内の時計誤差を修正します。

10 内照調光機構 / 前面キースイッチによる3段階調整 (消灯、減光、通常)

11 電源

交流電源 / 電圧範囲: AC85~250V
周波数範囲: 47~63Hz
消費電力: 50W

直流電源 / 電圧範囲: 24V±10%
消費電力: 2.2A
(交流電源停電時に、直流電源に自動切り換え)

12 外形寸法 / 365(W)×300(H)×120(D)mm (突起部除く)

13 質量 / 5.6kg

14 外装 / 鋼板メラミン焼付塗装 (薄緑-2.5G7/2又は青緑-7.5BG7/2)

1 Crystal oscillation / 4,194304MHz

2 Accuracy daily rate / within ±0.2 second/day

3 Temperature range for the rated accuracy / +5°C~+40°C

4 Operating temperature range / -10°C~+55°C (LCD 0°C~+55°C)

5 Operating humidity range / 35~90% RH (no dew condensation)

6 Monitor clocks

Digital clock (MASTER/SECONDARY alternative) /

Two lines of 16-digit LCD
(STN half penetration type and character height of 4.89mm)

Analog clock (MASTER) /

With second-hand, 0.5-second step, φ80mm dial.

Analog clock (SECONDARY) /

Two hands, 30-second step, φ80mm dial.

These clocks are illuminated with dimmer.

7 Operation panel / Nine buttons and two lines of 16-digit LCD for key-input

8 Input/Output

0.5-second Secondary Clock output /

Two wired system (Only clockwise)
20 Secondary Clocks can be connected. (Less than 240mA)

30-second Secondary Clock output /

Three wired system (Clockwise / Counterclockwise)
130 Secondary Clocks can be connected. (Less than 1,560mA)
(Power consumption of a 30-second Secondary Clock with second-hand is counted as both one 0.5-second Secondary Clock output and 30-second Secondary Clock.)

Digital signal output /

Two balanced wired system (RS-422), One port NMEA0183 format

Digital signal input /

Two balanced wired system (RS-422), One port NMEA0183 format

RS-232C signal output [option] /

Two unbalanced wire system (RS-232C)
One port (The content is the same as the digital signal output.)

Logger signal output /

Five wired system. One port.
24V (COMMON). (Less than 150mA in total).
30-second polarized pulse output (+),
30-second polarized pulse output (-),
Signal output (→) : for the status during time adjusting,
Signal output (←) : for the status during counterclockwise.

Alarm signal output /

Two wired system, One port, 24V (COMMON), (Less than 100mA), Alarm (→)

9 Time Adjusting

When power is turned on / Key-input by buttons and LCD.

At normal operation / Reset to "00" sec. by 0-second adjust button (±30 second adjustment). After the above operation, Hands of 0.5-second Secondary Clock will follow by stop or fast-forwarding.

When LT is changed / Adjustment by LT adjust button is effective only for 30-second Secondary Clock. Setting of time at step of one minute is available within the range of UT±13 hours. (Date will be adjusted automatically.)

Automatic LT adjustment / Available when the switch of Automatic LT Adjustment on PCB is ON. When the external signal of the NMEA0183 format is fed, LT is applied automatically in accordance with the "Local Zone" data from the GPS equipment. The interval of one hour is necessary for the continuity automatic adjustment.

Automatic UT adjustment / When the external signal of the NMEA0183 format is fed, UT is applied automatically within 30 seconds in accordance with the data from the GPS equipment. (23:30-23:50)

10 Dimmer function for Monitor Clocks

In 3 steps (Off-Mid-Hi) on the front panel

11 Power supply

AC power supply / Range of input voltage : AC 85~250V
Range of frequency : 47~63Hz
Power consumption : 50W

DC power supply / Range of input voltage : DC 24V±10%
Current consumption : 2.2A

Power supply automatically switched from AC to DC supply without interruption in case of AC power failure.

12 Dimensions / 365(W)×300(H)×120(D)mm

13 Weight / 5.6kg

14 Exterior / Painted steel (Pale green:2.5G7/2 or Bluish green:7.5BG7/2)

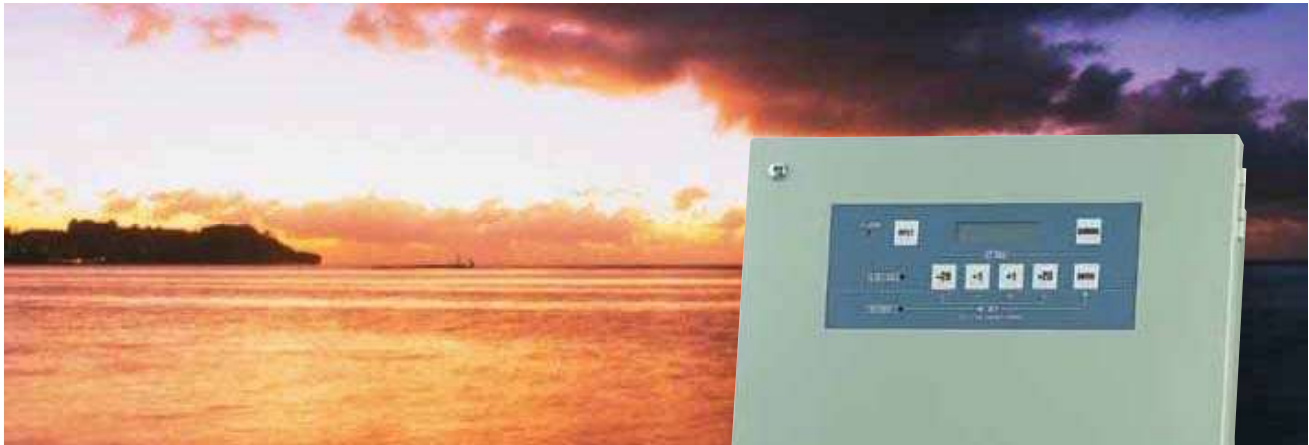
予備品 Spare parts

予備品には、QC-6M5用にSP-5A・SP-5Bの2種類があります。
航海中の万一のトラブルに備え必要な予備品をお選びください。

We have prepared the exclusive spare parts for QC-6M5; SP-5A・SP-5B.

船舶用親時計

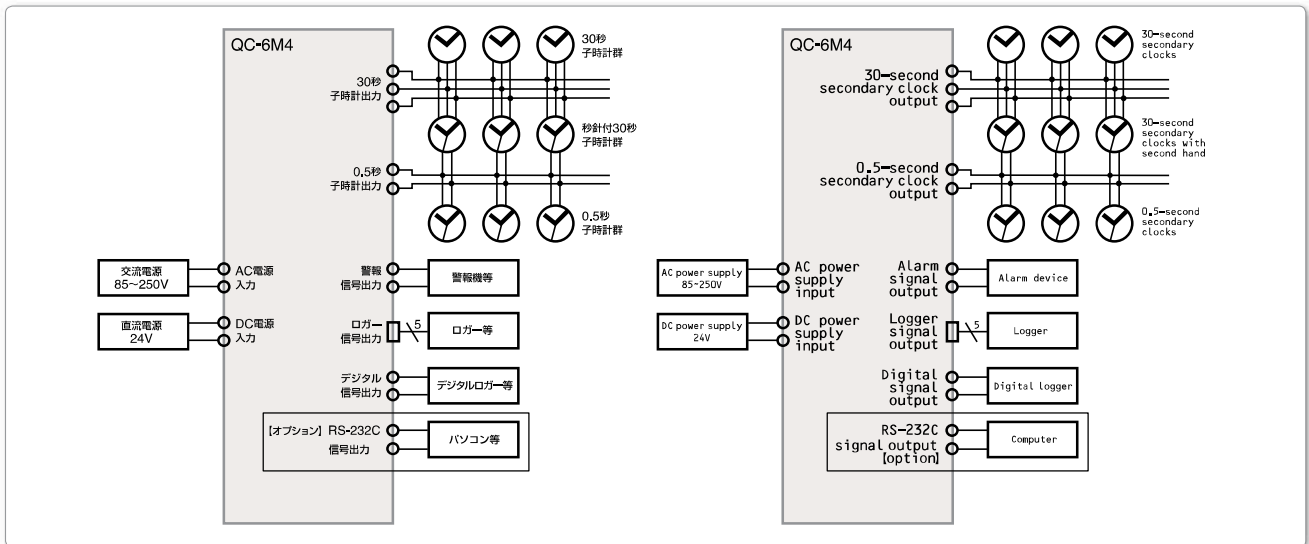
MARINE MASTER CLOCK



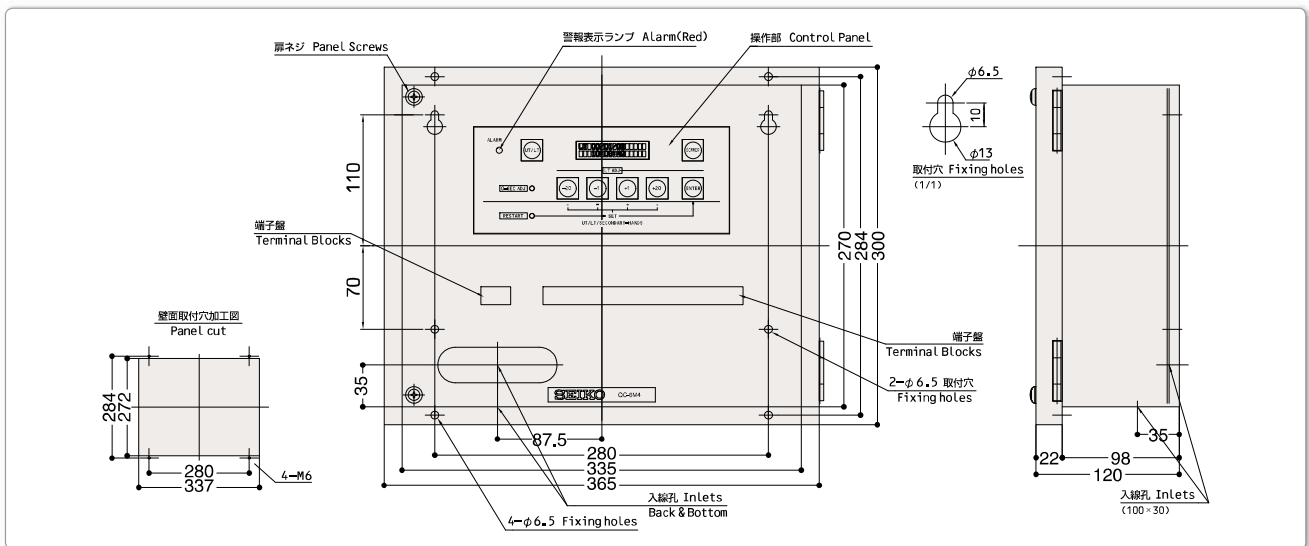
QC-6M4



系統図 Diagram



外形図 Outside view



仕様 Specifications

- 1 原振** / 水晶発振器(4,194304MHz)
- 2 精度** / 日差±0.2秒以内
- 3 精度保証範囲** / +5℃~+40℃
- 4 動作温度範囲** / -10℃~+55℃(液晶表示器 0℃~+55℃)
- 5 動作湿度範囲** / 相対湿度35~90%(ただし結露がないこと)
- 6 内装時計**
デジタル時計(MASTER/SECONDARY切り換え式) /
16桁2行LCD表示器(STN半透過型、文字高4,89mm)
調光機能付き照明を内蔵
- 7 操作部** / 9ボタン+16桁2行LCD表示部によるデジタル入力
- 8 入出力**
0.5秒子時計出力 / 2線式(正転のみ)、子時計10台接続可能(120mA以下)
30秒子時計出力 / 3線式(正逆転)、子時計65台接続可能(780mA以下)
(秒針付き30秒子時計は、0.5秒子時計出力、30秒子時計出力の両方に1台づつかウントします)
デジタル信号出力 / 平衡2線式(RS-422)、1ポート、NMEA0183準拠
RS-232C信号出力【オプション】 / 不平衡2線式(RS-232C)、1ポート
(内容はデジタル信号出力と同一です)
ロガー信号出力 / 5線式、1ポート(合計150mA以下)、24V(COMMON)、
30秒有極信号出力(+)、30秒有極信号出力(-)、
調針中信号出力(-)、逆転中信号出力(-)
警報信号出力 / 2線式、1ポート(100mA以下)、24V(COMMON)、警報(-)
- 9 時刻合わせ機構**
電源投入時 / デジタル表示部、前面ボタンによる入力
通常運用時 / 0秒リセットボタン(±30秒アジャスト)による微調整
0.5秒子時計は停止および早送りによる自動調針
LT変更時 / LTアジャストボタンによる調整
30秒子時計を自動調針
UT±13時間の範囲で1分単位の設定可能
自動日付変更
- 10 内照調光機構** / 前面キースイッチによる3段階調整(消灯、減光、通常)
- 11 電源**
交流電源 / 電圧範囲: AC85~250V
周波数範囲: 47~63Hz
消費電力: 35W
直流電源 / 電圧範囲: 24V±10%
消費電力: 1.4A
(交流電源停電時に、直流電源に自動切り換え)
- 12 外形寸法** / 365(W)×300(H)×120(D)mm(突起部除く)
- 13 質量** / 5.0kg
- 14 外装** / 鋼板メラミン焼付塗装(薄緑-2,5G7/2又は青緑-7,5BG7/2)
- 1 Crystal oscillation** / 4,194304MHz
- 2 Accuracy daily rate** / within ±0.2 second/day
- 3 Temperature range for the rated accuracy** / +5℃~+40℃
- 4 Operating temperature range** / -10℃~+55℃ (LCD 0℃~+55℃)
- 5 Operating humidity range** / 35~90% RH (no dew condensation)
- 6 Monitor clocks**
Digital clock (MASTER/SECONDARY alternative) /
Two lines of 16-digit LCD
(STN half penetration type and character height of 4,89mm)
Illuminated with dimmer
- 7 Operation panel**
Nine buttons and two lines of 16-digit LCD for key-input
- 8 Input/Output**
0.5-second Secondary Clock output /
Two wired system (Only clockwise)
10 Secondary Clocks can be connected, (Less than 120mA)
30-second Secondary Clock output /
Three wired system (Clockwise / Counterclockwise)
65 Secondary Clocks can be connected, (Less than 780mA)
(Power consumption of a 30-second Secondary Clock with second-hand is counted as both one 0.5-second Secondary Clock and 30-second Secondary Clock.)
Digital signal output /
Two balanced wired system (RS-422), One port NMEA0183 format
RS-232C signal output [option] /
Two unbalanced wire system (RS-232C)
One port (The content is the same as the digital signal output.)
Logger signal output /
Five wired system, One port,
24V (COMMON), (Less than 150mA in total).
30-second polarized pulse output (+),
30-second polarized pulse output (-),
Signal output (-) : for the status during time adjusting,
Signal output (-) : for the status during counterclockwise.
Alarm signal output /
Two wired system, One port, 24V (COMMON), (Less than 100mA), Alarm (-)
- 9 Time Adjusting**
When power is turned on / Key-input by buttons and LCD.
At normal operation / Reset to "00" sec. by 0-second adjust button (±30 second adjustment). After the above operation, Hands of 0.5-second Secondary Clock will follow by stop or fast-forwarding.
When LT is changed / Adjustment by LT adjust button is effective only for 30-second Secondary Clock, Setting of time at step of one minute is available within the range of UT ±13 hours, (Date will be adjusted automatically.)
- 10 Dimmer function for Monitor Clocks**
In 3 steps (Off-Mid-Hi) on the front panel
- 11 Power supply specifications**
AC power supply / Range of input voltage : AC 85~250V
Range of frequency : 47~63Hz
Power consumption : 35W
DC power supply / Range of input voltage : DC 24V±10%
Current consumption : 1,4A
Power supply automatically switched from AC to DC supply without interruption in case of AC power failure.
- 12 Dimensions** / 365(W)×300(H)×120(D)mm
- 13 Weight** / 5,0kg
- 14 Exterior** / Painted steel (Pale green:2,5G7/2 or Bluish green:7,5BG7/2)

予備品 Spare parts

予備品には、QC-6M4用にSP-4A・SP-4Bの2種類があります。
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