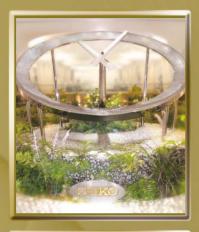
SEIKO

SYSTEM CLOCKS Catalogue



















SEIKO TIME SYSTEMS INC.

MASTER CLOCK (GPS Synchronization)

RACK-MOUNT TYPE

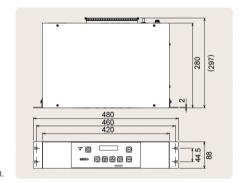




*GPS-200 is available separately.

QCG-200 ROHS

- QCG-200 is a master clock which is capable of receiving the precise time information from GPS (Global Positioning System) operated by the U.S. and can retain a high-accuracy in the internal clock at all times.
- Exclusive GPS antenna with receiver unit (GPS-200) is available separately to make a time correction for the internal clock in the QCG-200 periodically.
- QCG-200 is capable of making analog secondary clocks activate directly and synchronizing them with a precise time.
- **QCG-200** is capable of generating time data (in accordance with RS-422) for digital secondary clocks and other computer systems.
- \blacksquare Automatically time synchronization with GPS (Global Positioning System).
- Time Accuracy when synchronized by GPS signal is within ±5ms.
- Exclusive GPS antenna with receiver unit can be purchased separately.
- High-accuracy crystal clock inside (Accuracy daily rate: within±0.1s).
- Rack-mounting type complied with EIA (Electronic Industries Alliance) Standard.
- Maximum 110pcs. of secondary clocks can be activated.
- Both Two hands and Three hands secondary clocks can be activated.
- Serial data signal output (RS-422) is available to synchronize digital clocks and so on.
- Liquid Crystal Display (LCD) with dimmer function for monitor clock in 3 steps (off-mid-hi) on the front panel.
- Daylight saving time and leap time can be set by key input.
- Time adjustable with Time Server (SNTP) through LAN (RJ45) as an optional extension system (QCG-200 N).
- Signal auto changer unit QCG-200SC is available as an option for the dual master clock (QCG-200) operation.



CONTENTS			SPECIFICATIONS	
	Input / Output Signals	1-sec. polarized signal	Controlled by 2 wires (only clockwise) (Max. 110pcs. of analog secondary clocks can be connected, together with analog secondary clocks of 30-sec. signal.)	
		30-sec. polarized signal	Controlled by 2 wires (only clockwise) (Max. 110pcs of analog secondary clocks can be to connected, together with analog secondary clocks of 1-sec. signal.)	
		GPS I/F	Data input: Serial data (in accordance with RS-422) 1PPS input: Received by 2 wires Power supply: DC 5V (powered by QCG-200) Sealed: 1 wire * To be connected the exclusive GPS antenna with receiver unit (GPS-200). Available separately. * To be connected with 6 sealed wires cable (as an option).	
		Serial data signal output	RS-422 : Time information (Year / Month / Day / Date / Hour / Minute / Second) in SEIKO format shall be sent every second.	
	Crystal oscillator frequency		32.768kHz	
MASTER	Time accuracy	-	within $\pm 0.1 \mathrm{s}$ / day (0 $^\circ$ C $^\sim$ +40 $^\circ$ C)	
CLOCK	Time accuracy when synchronized by GPS signal		within ±5ms	
	Frequency of synchronizing with GPS signal		Every 10 min.	
	LCD display		16digits 2 lines with back light	
	Operation unit		8keys	
	How to adjust the time		When powering on : Automatic setting by GPS or manual setting by key input When operating : Periodical and automatically synchronization by GPS signal or manual setting by key input Setting for Time difference : Manual setting by key input *Against UTC, time difference from -12h to +14h can be set by minutes.	
	Daylight saving time		Manual setting by key input	
	Leap second		Manual setting by key input	
	Over current protection		Power input : Non-fuse breaker Internal circuit : Fuse 5A Secondary clock signal output : Non-fuse breaker	
	Alarm detection		If this product detects a decrease in voltage in internal circuit and NFB in secondary clock signal output, the ALARM LED lamp lights up.	
Power sup	ply		AC85~264V, 47~63Hz	
Power con			50W	
Operational temperature and humidity range		nd humidity range	0° C \sim +50 $^{\circ}$ C $^{\prime}$ 20 \sim 90% with no dew condensation	
Dimensions			OCG-100 : W480×H88×D280mm (excluding protruded portion) GPS-100 : W142×H67×D110mm (with a 1m cable)	
Material			Steel with pearl-gray painted	
Weight			QCG-200: Approx. 3.5kg GPS-200: Approx. 420g	

MASTER CLOCK (QUARTZ)

WALL-MOUNT TYPE



QC-55301 / 55302

QC-5500 Series

QC-55101/55102 693

QC-55201/55202 689

QC-55301/55302 603

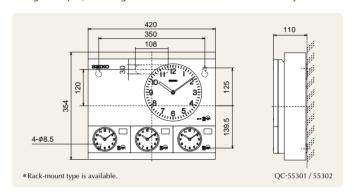
SEIKO QC-5500 Series is a high-precision quartz master clock. By connecting with an external master clock generating 30-sec polarized signal output, time correction can be made. Models operating on AC 110V (QC-55X01) and AC 220V (QC-55X02) are available.

(1) Master clock function (QC-5510X, QC-5520X and QC-5530X)

Up to 30 secondary clocks can be connected to each channel (if the current consumption of each secondary clock is 12mA).

(2) External synchronization function

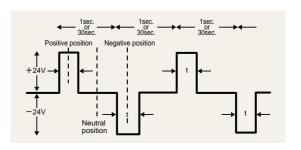
By connecting with an external master clock generating 30-sec polarized signal output, the loss/gain of the clock is corrected automatically.



CONTENTS			SPECIFICATIONS		
FUNCTIONS	Model No.		QC-55101 / QC-55102	QC-55201 / QC-55202	QC-55301 / QC-55302
	Number of secondary clock circuits		1 circuit	2 circuit	3 circuit
	Crystal oscillator frequency		4.194304 MHz		
	Time accuracy		Weekly rate of less than ± 0.7 seconds ($+5^{\circ}\text{C}{\sim}+35^{\circ}\text{C}$) ; no accumulated error after time correction		
	Time Master clock		Year, month, date hour, minute, and seconds; and Digital display in 24-hour indication (not displayed during power failure)		
	display	Monitor clock	30-second interval hand movement		
	Time	Master clock	Setting of year, month, date, hour, minute and seconds		
	setting	Monitor clock	60X speed quick advance of hands by APC system		
	Daylight s	aving time	Setting of year, month, date and hour for start date, and month, date and hour for end date		
MASTER		Driving signal	DC 24V 30-	24V 30-sec. polarized signal ; Pulse width of 0.5-sec. ; No-contact	
CLOCK		Max. number of secondary	30 units	60 units	90 units
GLUGK	Secondary	clocks to drive	12mA / unit ; 30 units / circuit		
	clock	Maximum driving	360mA	720mA	1,080mA
	driver	capacity	360mA / circuit		
	univo	Backup power	DC 24V; Built-in sealed Ni-Cd rechargeable battery		
		Battery protection	Overdischarge prevention circuit		
		Signal voltage detection	Signal voltage stopper	function (stops output when secondary cloc	k driving voltage lowers)
	External synchronization		DC 24V 30-sec. polarized signal; Every hour except 7, 19, 0, and 12 oʻclock; Synchronizable loss/gain range Less than 15 seconds		
	Synchronization output		RS-422		
Power supply			QC-55X01 : AC 110V ±10	% or DC 24V ±10% QC-55X02 : AC 220	V \pm 10% or DC 24V \pm 10%
Power c	onsumption		21W	32W	42W
Power failure backup Master clock Secondary clock driver		Master clock	Approx. 5 years (no indication on digital display, counting by internal clock only)		
		Secondary clock driver	30 hours (in case of power failure of more than 30 hours, hands are adjusted automatically after recovery.)		
Operational temperature range and humidity range		e range and humidity range	-10 °C \sim $+50$ °C $/$ 20 \sim 80% with no dew condensation		
Dimensions			W420×H354×D110mm		
Material			Front panel : ABS and stainless steel, pe		ainless steel, pearl gray with a slight gloss
Weight			Approx. 7.0kg	Approx. 7.2kg	Approx. 7.5kg
Accessories			Plastic foot, 4 pcs; Miniature fuse; Instruction manual; Mounting hole drilling template; and Insulated crimp terminal		
Options			Rack-mounting fittings (in accordance with EIA Standard)		

How to Drive Secondary Clocks Accuracy and Synchronization of Secondary Clocks

The role of the secondary clock in a time-keeping system is to accurately reproduce the time signal supplied by the master clock. The master clock and secondary clocks are connected electrically , and the Crystal oscillator frequency of 32.768kHz or 4.194304 MHz/sec. from the master clock is reduced in several stages by the frequency diving LSI and finally transmitted to the secondary clock as a 1-sec. or a 30-sec. polarized signal of ± 24 V DC. The secondary clock converts this electrical signal into mechanical energy and, with the same precision as the master clock, simultaneously displays the correct time.



INDOOR SECONDARY CLOCK(24V)

WALL TYPE / RECESSED TYPE

Current consumption of a wall type and a recessed type secondary clock is 12mA. Input signal of a wall type and a recessed type secondary clock is 30-sec. polarized signal / DC 24V. (*F-001 is 1-sec. polarized signal / DC 24V.)

260-mm Diameter Round Type



SC-200C @

Dial S	teel, White
${\bf Hourmarker} - {\bf B}$	lack
Hands ——— A	Juminum, Blac
Frame S	teel, Cream
Thickness 4	0mm
Weight1	.0kg



SC-201 (SHS)

Dial — Aluminum, Silve
Hour marker — Black
Hands ——— Aluminum, Blac
Frame — Steel, Semi-mat blan
Thickness —— 40mm
Weigh 1.0kg

300-mm Diameter Round Type



SC-304 @

00 004	
Dial ———	Brass, White hairline finis
Hour marker — Hands — — Outer Frame — Thickness — — Weight — —	Aluminum, Black Polished chromium finish 46mm

310-mm Diameter Round Type



SC-300 ROHS SC-300C ROHS

(cream color) is also available.

Dial -	— Steel, White
Hour marker	- Black
Hands	- Aluminum, Black
Frame	— Steel, Gray
Thickness -	— 40mm
187 . 1 .	1 Fl



SC-301 C ROHS SC-301 ROHS

(gray color) is also available

Dial ———	Steel, White
Hour marker —	Black
Hands —	Aluminum, Black
Frame ———	Steel, Cream
Thickness	40mm
Weight	1 5ka



SC-302

Dial	Steel, White
Hour marker -	Black
Hands	Aluminum, Black
Frame	Steel cream
Thickness -	40mm
Weight -	1.5kg



SC-305 65

Dial	- Aluminum, Silve
Hour marker -	- Black
Hands ———	- Aluminum, Black
Frame	- Steel, Semi-mat, Black
Thickness -	- 40mm
Weight -	- 1.5ka



SC-306 E

Dial	Steel, White
Hour marker —	Black
Hands ——	Aluminum, Black
Frame ——	Steel, Cream
Thickness —	40mm
Mainhs	. 1 Eka



SC-316C (RHS)

30-3100
(cream color) is also available.
Dial Steel, White
Hour marker — Black
Hands — Aluminum, Black
Frame — Steel, White
Thickness —— 40mm
Weight ——— 1.5kg

410-mm Diameter Round Type



SC-400 @ SC-400C

(cream color) is also available

Dial -	Steel, White
Hour m	arker — Black
Hands	Aluminum, Black
Frame	Steel, Gray
Thickne	ess 55mm
Weight	2.5kg



SC-419

Dial Steel, White
Hour marker — Black
Hands ——— Aluminum, Blad
Frame — Steel, White
Thickness — 55mm
Woight 2 5kg





E 001

310-mm Diameter Round Type with second hand (1-sec. polarized signal)

F-001
Dial Steel, White
Hour marker — Black
Hands — Aluminum, Black
Frame ——— Steel, White
Thickness —— 40mm
Weight ——— 1.5kg
*F-001 is driven entirely by Master Clock OCG-100.

Square Type with Standard Frame



SC-320 (ms) SC-320C (ms)

(cream color) is also available.

Dimensions - W310×H310×D45m
Dial Steel, White
Hour marker — Black
Hands ——— Aluminum, Blad
Frame — Steel, Gray
Weight ——— 2.0kg



SC-323K 🔤

Dimensions	— W310 ×H310 ×D75mm
Dial	Cloth covered, Black
Hour marker	- Blass, White hair-line finish
Hands —	Blass, White hair-line finish
Frame	Steel, Cream
Speaker-	Max. input 4W



2.0ka



SC-324 PM

Dimensions — W310×H310×D45mm
Dial — Aluminum, Silver
Hour marker — Black
Hands — Aluminum, Black
Frame Steel, Semi-mat black
Weight ——— 2.0kg

SC-420C @ !







SC-422K

Dimensions -	- W420 ×H310 ×D7
Dial	- Steel, White
Hour marker -	- Black
Hands	– Aluminum, Black
_	0: 10

Steel, Cream - Cloth covered, Black - Max. input 4W With output transformer

> Input impedance : 7kΩ Output impedance : $8k\Omega$ - 3.0kg

Square Type with Wood Finish



SC-322S

SC-421 - Wood, Walnut finish Hour marker — Brass, Silver metallic painted Hands Brass. Silver metallic painted

*SC-322S: W300×H210×D45mm (1.0kg) *SC-421 : W420×H295×D45mm (1.5kg)

Recessed Type



Sharp, straight-bar type hour marker

SC-340S (SC-440S (SC-440S)

Movement cover

Brass. White hairline finish Hour marker

Brass, White hairline finish

- Brass, White hairline finish *SC-340S : 300mm diameter (0.5kg) *SC-440S : 400mm diameter (0.6kg)



Straight-bar type, with numerals for the quarter-hours

SC-341S

Hour marker

Movement cover Brass. White hairline finish

Brass. White hairline finish

- Brass, White hairline finish *SC-341S: 300mm diameter (0.5kg)



Circular type hour marker

SC-342 SC-441

Movement cover

- Brass. White hairline finish Hour marker Brass, White hairline finish

- Brass, White hairline finish

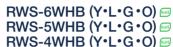
*SC-342 : 300mm diameter (0.5kg) *SC-441 : 400mm diameter (1.0kg)

DOUBLE-FACED TYPE

Current consumption of a double-faced secondary clock is 24mA. Input signal of a double-faced secondary clock is 30-sec. polarized signal/DC 24V.



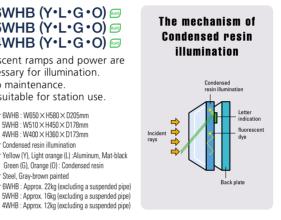


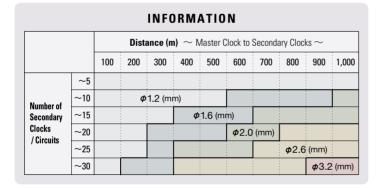


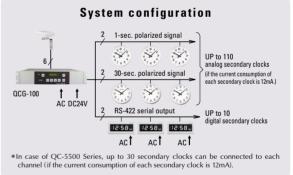
- Fluorescent ramps and power are unnecessary for illumination.
- Easy to maintenance.
- To be suitable for station use.



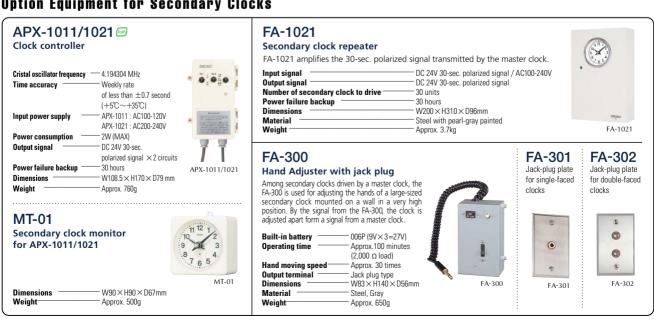
Green (G), Orange (O): Condensed resin Frame Steel, Gray-brown painted 6WHB : Approx. 22kg (excluding a suspended pipe) Weight 5WHB : Approx. 16kg (excluding a suspended pipe)







Option Equipment for Secondary Clocks



QUARTZ BELL TIMER



An intelligent timer for offices, schools, factories, and other locations.

Melody time signals are programmable for up to one week.

CONTENTS	SPECIFICATIONS	
Power supply	AC 90V-120V, AC 200V-240V, 50/60Hz	
Power consumption	Approx. 4.0W	
Power failure backup	Clock : 24 hours, program : 10 weeks	
Operating temperature range	-10℃~+50℃	
Time accuracy	Within ±3 sec./month (+5℃~+35℃)	
Signal output	2 independent channels (dry contact signal)	
Contact out put capacity	AC 125V / 5A , AC 250V / 3A, DC 30V / 5A	
Program setting range	In 1-minute increment	
Dimensions	W270×H372×D58.5mm	
Weight	Approx. 2.0kg (main body)	

QBT-30 ROHS

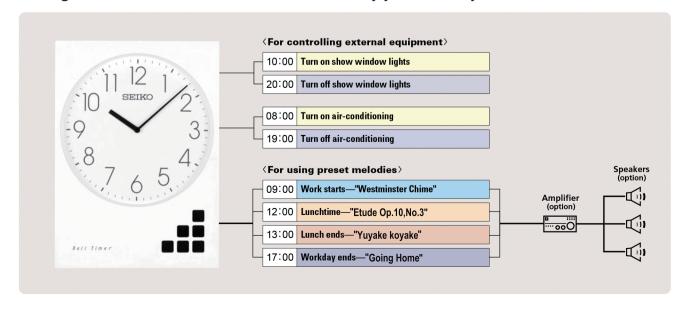
Announces the start of work, lunchtime, and the end of work with beautiful melodies. Refined design and outstanding function make this a necessity for every office.

- \blacksquare Up to 60 programs can be set a week at a time.
- Different settings for each day of the week are OK.

 Resetting for different times each day is simple and convenient.
- The 4 melodies can be combined as preferred.
- External output can be used to manage lighting, air-conditioning, and so on.

For example, a setting like this is easy to do!

Manage time at school or in the office or the way you've always wanted to!



DIGITAL CLOCK

INDEPENDENT CLOCK

For indoor / outdoor rain proof Type



RBC-200N Wall type



RBC-302N

Suspended type (Double-faced)



RBC-303N
Bracket type (Double-faced)

SPECIFICATIONS	
RBC-200N (Wall type)	RBC-302N, 303N (Dobule-faced type)
200mm (Orange)	200mm (Yellow)
W950×H380×D184mm	W950×H380×D300mm
30kg	65kg
Within ±0.2 sec./day at normal temperature	
−20°C~+60°C	
AC (50/60Hz) Time synchronization with the master clock is possible.	
Approx. 1.6A (Including 0.7A for internal illumination)	Approx. 1.9A (Including 0.7A for internal illumination)
FL-32W×1 (With automatic flasher)	
Magnetic inversion system Changeover between 12-and 24-hour indications	
Approx. 10hours	
Steel, Metallic brown Front : Transparent glass (Thickness : 3mm)	
	RBC-200N (Wall type) 200mm (Orange) W950×H380×D184mm 30kg Within ±0.2 sec./day -20°C- AC (5C Time synchronization with 1 Approx. 1.6A (Including 0.7A for internal illumination) FL-32W×1 (With Magnetic inv Changeover between 12 Approx. Steel, Met

^{*}Please turn off the illuminating light while the clock is shone directly by the sun in the daytime.

For Indoor Type



Suspended type (Double-faced)

CONTENTS		SPECIFICATIONS	
Model No.		SLC-100W (Wall type) SLC-102W (Double-faced type)	SLC-120E (Wall type) SLC-122E (Double-faced type)
Digit height		100mm (White)	120mm (Orange)
Dimensions	Wall type	W620×H170×D60mm	W670×H200×D60mm
Dilliciisions	Double-faced	W626×H176×D170mm	W676×H200×D170mm
Weight	Wall type	3.5kg	3.8kg
vveignt	Double-faced	12.5kg	13.5kg
Accuracy		Within ±0.2 sec./day at normal temperature	
Operational temperature range		−10°C~+50°C	
Input power		AC (50/60Hz) Time Synchronization with the master clock is possible.	
Current	Wall type	Approx. 0.1A	Approx. 0.2A
consumption	Double-faced	Approx. 0.2A	Approx. 0.4A
Display		White / Orange LED Changeover between 12-and 24-hour indications	
Case		Plastic, Yellowish white	

WEEKLY DIGITAL CLOCK



WDC-402 [RHS]

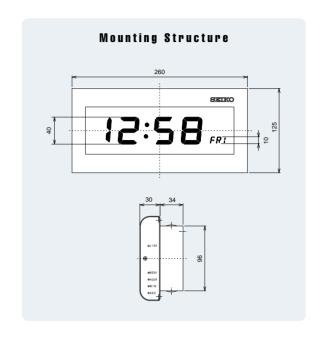
Display Digital height Dimensions Weight LED (White) Time : 40mm, Day : 10mm W260×H125×D64mm

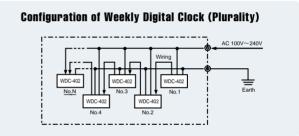
Approx. 1.3kg

In addition to its single usage, this weekly digital clock is uniquely designed in such a way that it can form an original world time clock by applying multiple units. No need for a master clock since it is a twin synchronous system. (A power box is required when multiple clocks are used to form a world time clock.)

The installation can be either wall type or recessed type. And a map panel of your design can be prepared on request.

Configuration of Weekly Digital Clock (Simple substance) Local Voltage (AC100V-240V) Local Voltage (AC100V-240V) Earth Configuration of Weekly Digital Clock (Simple substance) DC24V 30-sec. polarized signal Time synchronization with master clock





MORNING ALARM CLOCK



■ To be suitable for hotel use

Type Dimensions

Weight

■ Easy to make time settings by using the remote controller GT-940RC (optional).

■ Alarm signal output is available.

■ GT-943 is equipped with automatic light regulating sensor.

Panel embedded type W120×H70×D26.5mm

Approx. 130a

Time accuracy
Input power supply
Power failure backup
124 hours
15 second (+5°C~+35°C)
17 y ± 10%
Power failure backup
16 y = 24 hours
17 y = 10 y =

W66×H111×D28mm

Approx. 100g (excluding dry cell batteries)

Remote controler (Optional)

Outer Dimensions

JTDOOR CLOCK

LARGE-SIZED WALL CLOCK (OUTDOOR/RAINPROOF)

Dial of a large-sized clock is made of steel except for internal illumination type which is made of acrylic resin. Input signal of a wall type secondary clock is 30-sec. polarized signal/DC 3.6V. Cost for installation work is not included. Power consumption of \$\phi\$550 and \$\phi\$700mm types is 18mA, and that of \$\phi\$900 and \$\phi\$1,000mm types is 60mA.

550-mm Diameter



FC-503 Ess

Coffee brown color

Cover glass — Polycarbonate

Thickness -- 90mm Weight -- 4.7kg

900-mm Diameter



FC-903 PM

Steel,

Coffee brown color Polycarbonate Cover glass —

Thickness -- 150mm

Weight -

700-mm Diameter



FC-703 POS

Frame - Steel, Coffee brown color Cover glass — Polycarbonate Thickness

99mm Weight - 7.5kg

FC-7131

Thickness -Weight -

All the other specs.are the same as those of FC-703.

illumination type - 170mm — 11.5kg



FC-707 ROHS



Frame - Stainless steel polished **Cover glass** Polycarbonate Thickness -99mm

· 7.0kg Weight -

FC-7171 Internal illumination type

Thickness -— 170mm — 10.7kg Weight —

All the other specs.are the same as those of FC-707.



FC-7191 Internal illumination type



Steel, Coffee brown color Cover glass — Polycarbonate Thickness — 170mm Thickness — Weight —

1000-mm Diameter



Weight -

FC-103 PM

Frame -Steel

Coffee brown color Cover glass Polycarbonate Thickness -

25kg



FC-108 (B)

Stainless steel polished Frame

Cover glass Polycarbonate 150mm

Thickness -Weight -25kg



Protector for 700-mm outdoor wall clock

TK-S2 EIS

Frame Stainless steel.

*Photo example: TK-S2 furnished on FC-703

Coffee brown color

Controller AP-4031 ROHS

When installing a secondary clock, a controller for exclusive use with it is required (optional).

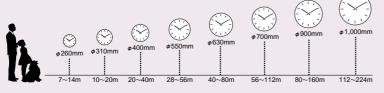
Controller Case



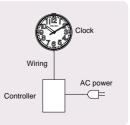
QF-BOX ROHS



Visibility Distance



Configuration of Large-Sized **Wall Clock**



LARGE-SIZED DOUBLE-FACED POLE CLOCK (RAINPROOF)

Cost for pole and installation work are not included. Input signal of a pole clock is 30-sec. polarlized signal / DC3.6V. Power consumption of a pole clock is 18mA×2.

700-mm Diameter



FC-7831

Internal illumination type

Frame Steel, Coffee brown color
Cover glass Polycarbonate
Thickness 300mm
Weight 20kg



FC-7871 ROHS

Internal illumination type

Frame Stainless steel
Cover glass Polycarbonate
Thickness 300mm
Weight 18.5kg



FC-7851

Internal illumination type

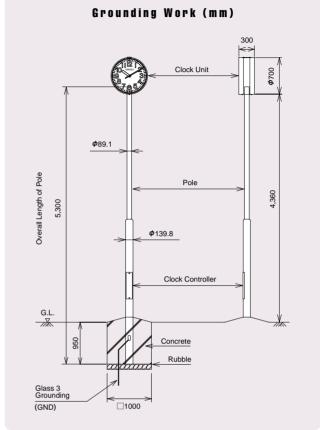
Frame Steel, Coffee brown color
Cover glass Polycarbonate
Thickness 300mm
Weight 20kg



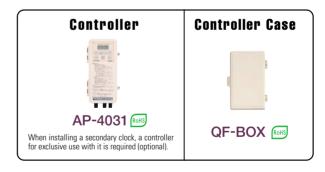
FC-7891 ROHS

Internal illumination type

Frame Steel, Coffee brown color
Cover glass Polycarbonate
Thickness 300mm
Weight 20kg



(Pole and base are shown here for reference purpose only.)



LARGE—SIZED SUSPENDED TYPE CLOCK (OUTDOOR / RAINPROOF)



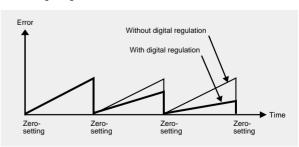
FC-7631

Double-faced type with internal illumination

Frame Steel,
Coffee brown color
Cover glass Polycarbonate
Thickness 300mm
Weight 21kg
Input voltage DC 3.6V
Current 18mA×2
consumption

Digital Regulation

Gain or loss of the clock controller can be detected and corrected automatically by every zero-setting operation if conducted at regular intervals. This function is called the digital regulation.



Remarks:

In case that an output voltage from a master clock is DC 24V (except QC-5500 Series), you need a resistor adaptor R-700 or R-900 (optional) which has to be connected between the FC-series and the master clock.

SOLAR-POWERED CLOCK

Wall Type: Cost for installation work is not included. Double-faced Pole Type: Cost for pole and installation work are not included.

Wall Type

*SL-10 (Solar Cell Panel) is included.





- Steel, Coffee brown color **Cover glass** — Polycarbonate

Thickness -90mm Weight - 4.7kg



QF-703 645

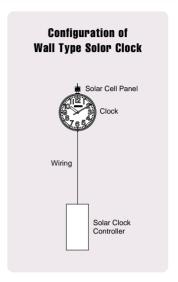
- Steel, Coffee brown color Frame -**Cover glass** — Polycarbonate Thickness -99mm

Weight - 7.5kg



QF-707 6HS

- Stainless steel Frame — **Cover glass** — Polycarbonate Thickness -99mm Weight -7kg



Double-faced Pole Type *SL-10 (Solar Cell Panel) is included.



QF-787 (CHS)

Frame Stainless steel Cover glass -- Polycarbonate Thickness 300mm 18kg Weight



QF-783 PHS

Frame Steel, Coffee brown color Cover glass -Polycarbonate Thickness 300mm Weight 19.5kg



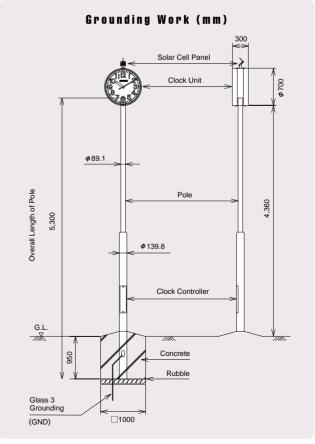
QF-785 645

Steel, Coffee brown color Cover glass -Polycarbonate Thickness -300mm Weight 19.5kg

QF-789 6HS

Steel, Coffee brown color Polycarbonate Cover glass -Thickness -300mm Weight -19.5kg





(Pole and base are shown here for reference purpose only.)

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