

SEIKO

SEIKO MULTI TIMING SYSTEMS

CT-1000 | ST-306 | PS-110





■ Features


- **Five measurement modes, including counting, parallel counting, parallel lap time and split time measurement, parallel delay start and group parallel counting, are available to cover all kinds of sports events and practices.**
- **The sports printer measures in 1/1,000 second increments.**
Selection from the 10 arithmetic operations such as raising, discarding or rounding off the decimals can be made to print out the data according to the type of the sports event.
- **The data obtained from start till the end of a race is recorded as a block and stored in memory.**
Up to 3,000 data and up to 100 blocks of data can be stored in memory. Recall and reprint can be selected from only the desired block of data and all the blocks of data.
- **The lithium ion battery is used to power the sports printer, enabling the printer to be used in many places, while making it easy to handle the power supply.**
- **The data can be output to external equipment such as scoreboards and personal computers.**

SEIKO MULTI TIMING SYSTEMS

CT-1000

SEIKO SPORTS PRINTER

System Components

Sports Printer: 1 unit Roll Paper: 1 roll Lithium ion battery: 2 pcs. 
Grip Switch(GS-31): 2 pcs. Ribbon Cassette: 1 pce. Battery Charger: 1 pce.



Grip Switch

CT-1000 Main Unit

Battery Charger



OPTION

Expansion Unit
EX-916

An input channel can be expanded to the maximum 10 channels.

OPTION

Synchronization Cable / **SY-456**
Ribbon Cassette / **ERC-22**
Roll Paper / **RP-03**



■ Main Functions

- Up to 23 hours, 59 minutes, 59 seconds and 999 can be measured.
- The order of arrival can be counted from 1 to 9,999.
- Time to a maximum 10 lanes (10 channels) can be measured by the use of EX-916.
- Starting from the preset time, not only starting from "0", is available.
- Counting down from the preset time to "0" is available. Furthermore, in addition to the above count-down function, counting up from "0" continuously after count-down is useful for marathons.
- CT-1000s, connected by synchronizing cables (SY-456), will execute time recording complete synchronization.
- A trunk-type case is used as the housing of the sports printer to ensure a longer durability. The housing has an accessory storage compartment to accommodate the grip switch and other accessories to carry the sports printer smoothly.
- As the sports printer is compatible with CT-916Ⅱ, the various optional equipment for CT-916 can also be used with the sports printer without any modification.



OPTION

Grip Switch

GS-31 (with 2.5m cable)

GS-32 (with 5.5m cable)

GS-33 (with 10m cable)



■ Specifications

Time accuracy	Daily rate: ± 0.1 seconds (+25°C)	
Time measuring range	Up to 23 hours, 59 minutes, 59 seconds 999 in hours, minutes, seconds.	
Time measurement resolution	Raising, discarding and rounding off 1/10 seconds, 1/100 seconds and 1/1,000 seconds.	
Number of simultaneously measurable input channels	Control panel: 3 channels Connectors: 2 channels EX-916 (option): 10 channels	
Memory capacity	Up to 3,000 data, and up to 100 blocks of data	
Display unit	Display element	LCD
	Display item	Calendar and time data Time counter display Battery life indicator
Printer unit	Printer	EPSON M-190 model (Mechanical 5x7 dot matrix 24 char./line) 2.5 line/sec.
	Printing paper	Ordinary roll paper having a diameter of 57.5 mm \pm 0.5 mm x 70 mm or smaller
Power supply	Lithium ion battery	DC7.2V, 10.8Wh, 2 pieces
	Recharger	AC100V~240V, 50/60 Hz
Temperature	For use	-5°C ~ +40°C (non-condensing)
	For storage	-15°C ~ +55°C (non-condensing)
Appearance	Dimensions	W 358 x H 107 x D 357 mm (excluding protruding portions)
	Material	Panel: Steel. Case: Aluminum
Weight	Approx. 4.6 kg.	

■ Features

■ As an upcount timer and downcount timer, it can be used as a timing display system for various sports event including swimming, track races, marathon, walking race, skiing, cycling, soccer, and rugby and basket ball and other games.

■ ST-306 can also be used for the display of game points and deuce points in tennis.

■ ST-306 can measure lap time, split time and finish time.

In addition, it can memorize and re-display either lap or split times for a maximum of 25 athletes.

■ ST-306 has an auto repeat function in which the time is upcounted and downcounted at fixed intervals to sound a buzzer at a preset time.

Accordingly, ST-306 can be used as a pace-clock.

■ ST-306 is battery-powered, and can be used both indoors and outdoors.



SEIKO MULTI TIMING SYSTEMS

ST-306

SEIKO SPORTS TIMER

System Components

Sports Timer: 1 unit Battery Box: 1 box
Grip Switch: 1 pce.

■ Main Functions

● The following three maximum time ranges are available which can be changed over from each other to cover a wide range of sports events:
a) 99h59m59s b) 59m59s9 c) 59m59s99

● The upcount function is available in two modes: one in which the time is counted up from zero, and the other in which the time is counted up from a preset time.

● The downcount function has a crossover counting mode in which the time is downcounted from a preset time to zero and in succession upcounted from zero. This mode is suitable for marathon and the like.

● ST-306 can be used in combination with a wide variety of SEIKO sports equipment.

■ Specifications

Display		Magnetic rotary bar, yellow, character height 200mm, 6 digits
Time accuracy		±0.04 sec/hr. (+5°C ~ +35°C)
Measuring function	Upcounting	Maximum measuring time 99h59m59s (59m59s9, 59m59s99)
	Downcounting	Memory and memory call Lap or split time. Count or number of measurements storable: 25 max. Preset time 99h59m59s ~ 1s.
Auto repeat (REPEAT)		Automatic cyclic time counting from 0 to a preset time, and beeping of buzzer for approx. 5 sec. after every expiration of preset time.
Power supply		"AA" dry cell x 8 pcs.
Battery service life under continuous duty*		LR06"AA" alkaline dry cell: approx. 50 hrs. (at +25°C)
Operating environment	Location	Indoors and outdoors (provided that permanent outdoor installation is prohibited.)
	Temperature	For use 0°C ~ +50°C (non-condensing) For storage -10°C ~ +55°C (non-condensing)
Appearance	Dimensions	W 1,230 x H 330 x D 150 mm
	Material	Aluminum, yellow
Weight		12.5kg (including dry cells)
Grip switch		Cord length, 5 m, φ60; w/START/STOP and LAP/SPLIT/RESET buttons
Equipment available for connection with ST-306		PS-110/109/107/105, CT-1000/916, CT-400/300, PT-7000/6000, ST-2000/900/800 series, RT-120, WG-300/200, DM-400/300/200

* Typical value when operated continuously in the upcounting mode. It should be noted that the battery service life varies dependent on the operating conditions, ST-306 parameter settings, ambient temperature and other environmental conditions.

■ Features

■ **PS-110 is an electronic audio-visual start signal generator that can be used for all types of events.**

It generates a start signal by sound and flashlight.

■ **PS-110 does not use gunpowder, and is safe to handle and storage.**

Misfire when due to send off a signal or nuisance trailing smoke after fire has nothing to do with the electronic starter.

■ **PS-110 can generate a synthesized firing signal or an electronic beep, whichever is preferred.**

■ **The starting officer can use the Headset Microphone to amplify and communicate his/her voice message to the athletes.**

■ **PS-110 can be used with one Speaker Box or more or with other equipment to suit your sports system.**

SEIKO MULTI TIMING SYSTEMS

PS-110

SEIKO ELECTRONIC STARTING SYSTEM

System Components

Start Pistol (PS-78): 1 pce. Speaker Box (PS-56): 1 pce.
Headset Microphone (PS-61): 1 pce.
Cable with a termination box (PS-81): 1 pce.



■ Specifications

Start Pistol (PS-78)

Strobe	Xenon lamp	
Power supply	LR06 "AA" alkaline dry cell x 2 pcs. (DC 3V)	
Battery life (alkaline dry cells)	Approx. 1,200 times (Number of times light can be emitted continuously in 1-minute intervals.)	
Temperature	For use	-10°C ~ +50°C (non-condensing)
	For storage	-15°C ~ +60°C (non-condensing)
Appearance	Dimensions	W 210 x H 40 x D 145mm
	Material	Aluminum, black gray
Weight	Approx. 410g (excluding dry cells, cord)	

Headset Microphone (PS-61)

Output	Impedance, 1.6kΩ, ±30%	
Sensitivity	-68dB ±3dB	
Type	Condenser microphone	
Appearance	Dimensions	W 160 x H 68 x D 170 mm
	Material	ABS resin, black
Weight	Approx. 45g (including cord)	

Speaker Box (PS-56)

Audio input	-20dB (100KΩ)	
Rated output	6 W (max. 10 W)	
Power supply	LR06 "AA" alkaline dry cell x 8 pcs. [DC 12 V]	
Battery life (alkaline dry cells)	Pistol sound: approx. 8,000 operations until sound pressure falls below 91 dB (at a distance of 10 m)	
Operating sound pressure level	93dB (at a distance of 10 m)	
Temperature	For use	-5°C ~ +40°C (non-condensing)
	For storage	-15°C ~ +50°C (non-condensing)
Appearance	Dimensions	W 102 x H 258 x D 216 mm
	Material	ABS resin, ivory
Weight	Approx. 1.6kg (excluding dry cells)	



6-MODE SYSTEM

1 Count Mode

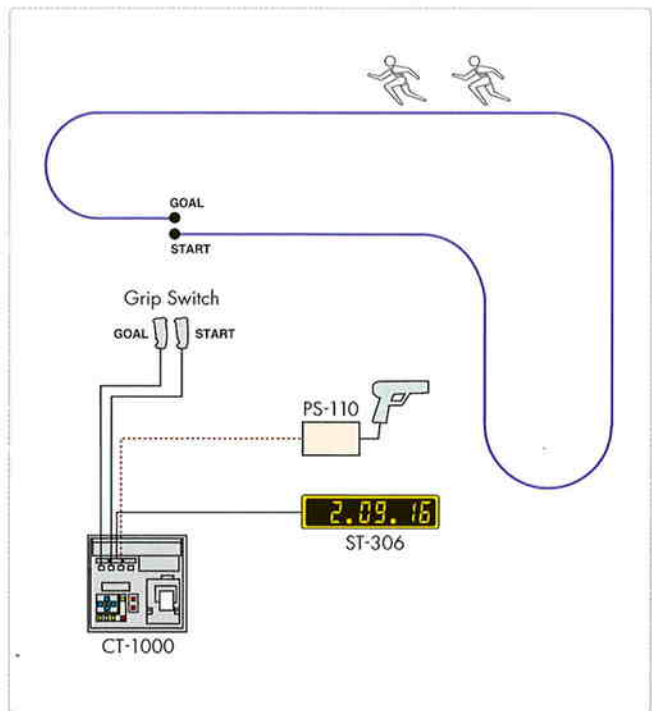
Track events, marathons & cycling races, etc.

- The times from the start to finishes (channel inputs) and the places (number of inputs) are printed out.
- The places are printed out in four digits (0001 to 9999).
- After reaching the count 9999, the placing count recycles to 0000, and repeats again. (9999 - 0000 - 0001 - 0002 - -)

[Print Image]

SEIKO Rev 1.0	
-0.9-	
DATE	2001-03-30
START	001 00:00:00
	0001 02:09:16
	0002 02:09:20
	0003 02:09:24
	0004 02:09:34
	0005 02:09:40
	02:09:43
	0001 02:09:51
	0002 02:10:01

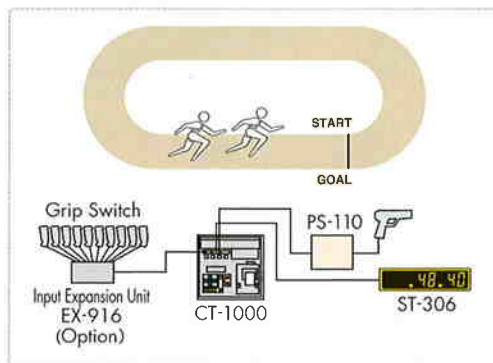
Block No.
Count No.(Place No.)
Time Data
T Test Print Mark (Place Nos.were cleared)



2 Parallel Count Mode

Track events, swim meets & marathons, etc.

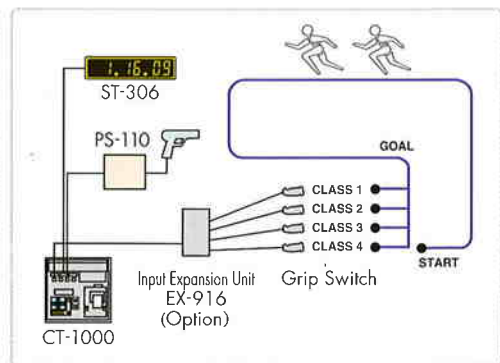
- In this mode, the count mode is used for each lane (channel), the lane numbers (channel numbers), number of laps, and times are printed out.
- EX-916 (option) allows for max 10 channels of grip switch input.



[Print Image] Example of 800m Track Event

SEIKO Rev 1.0	
-1.1-	
DATE	2001-03-30
START	001 00:00:00.00
#03	0001 00:00:48.40
#04	0001 00:00:48.76
#07	0001 00:00:49.09
#02	0001 00:00:49.36
#05	0001 00:00:50.26
#06	0001 00:00:50.63
#08	0001 00:00:50.98
#01	0001 00:00:51.61
#04	0002 00:01:52.50

Input Channels (Lane No.)
Block No.
Number of laps
First lap for No.03
// No.04
// No.07
// No.02
// No.05
// No.06
// No.08
// No.01
2nd lap for No.04



[Print Image] Example of Marathon (Four Classes)

SEIKO Rev 1.0	
-1.9-	
DATE	2001-03-30
START	001 00:00:00
#03	0001 01:16:09
#01	0001 01:16:17
#04	0001 01:16:19
#02	0001 01:16:29
#03	0002 01:16:34
#04	0002 01:16:37
#02	0002 01:16:45
#01	0002 01:16:46


Channel No. (Class No.)
Block No.
Count No. (Place No.)
The 1st finish time of Class 3
// 1
// 4
// 2
The 2nd finish time of Class 3
// 4
// 2
// 1

* Two Grip Switches are furnished as standard. Additional Grip Switches are available upon request.

A multi-function timer designed for use in various sports events.

Model CT-1000 started by PS-110 or Grip Switch
outputs data / results to ST-306 in different applications.

3 Parallel Lap/Split Mode

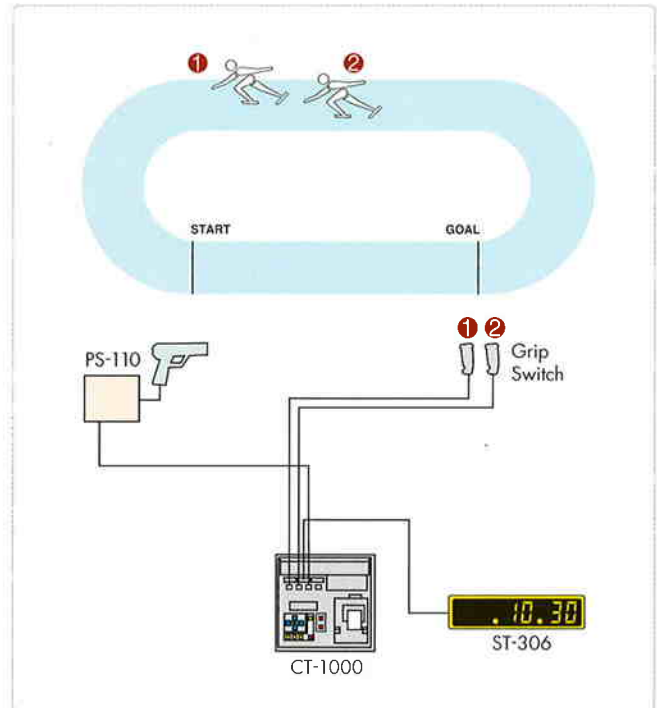
Speed skating, various relay events & motor sports, etc. 

- In this mode, every time record and the difference between two successive time records are printed simultaneously for each lane (channel).
- In a race where the contestants are required to make a number of laps., channels are assigned to respective contestants, and the lap times and split times of each contestant can be measured and recorded.
- The mode is also useful in obtaining data for pace scheduling.


[Print Image] Example of Speed Skating

SEIKO Rev 1.0	
-2,1-	
DATE	2001-03-30
START	001 00:00:00.00
#02	0001 00:00:10.30
#01	0001 00:00:10.37
#01	00:00:34.44
#02	00:00:24.07 L
#02	00:00:39.36
#02	00:00:26.06 L

- Lane No.
- Block No.
- Number of laps
- The 1st split time of the 2nd lane
- The 1st split time of the 1st lane
- The 2nd split time of the 1st lane
- The 2nd lap time of the 1st lane
- The 2nd split time of the 2nd lane
- The 2nd lap time of the 2nd lane



4 Parallel Delay Start Mode

Marathons & Nordic skiing, etc. 

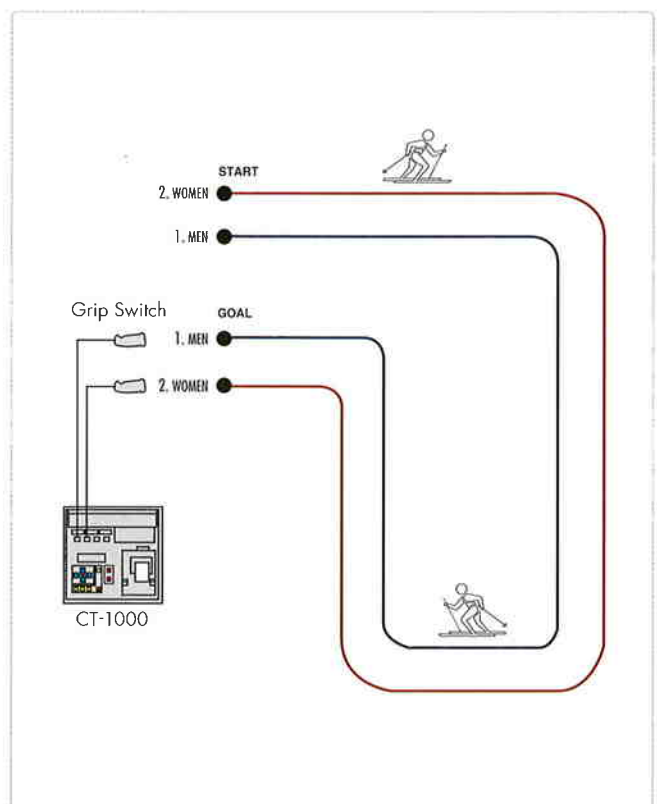
- This mode is suitable for citizens' marathon, Nordic skiing, and the like in which starting is made one by one or in groups sequentially.
- Enter an input every time a contestant of each group has reached the finish line, and the CT-1000 will print out the finish No., finish times, places, and split times.
- EX-916 (option) allows for max 10 channels of grip switch input.

[Print Image] Example of Nordic Skiing


● Start of First Group (MEN) at 10:00 ● Start of Second Group (WOMEN) at 10:10

SEIKO Rev 1.0	
-3,8-	
DATE	2001-03-30
START	001 09:50:00
#01	10:00:00 S
#02	10:10:00 S
#01	10:30:13
#01	0001 00:30:13 ¥
#01	0002 00:30:16
#01	10:30:18
#01	0003 00:30:18
#01	10:30:46
#02	0004 00:30:46
#02	10:43:06
#01	0001 00:33:06
#02	10:43:09
#02	0002 00:33:09
#02	10:43:12
#03	0003 00:33:12
#02	10:43:16
#02	0004 00:33:16

- Group No.
- Places
- Block No.
- The time which a time counter was
- 1st group/men start time
- 2nd group/women start time
- The finish time of the top contestant in the 1st group
- The split time of the top contestant in the 1st group
- The finish time of the 2nd contestant in the 1st group
- The split time of the 2nd contestant in the 1st group
- The finish time of the top contestant in the 2nd group
- The split time of the top contestant in the 2nd group
- The finish time of the 2nd contestant in the 2nd group
- The split time of the 2nd contestant in the 2nd group



5 Group Parallel Count Mode

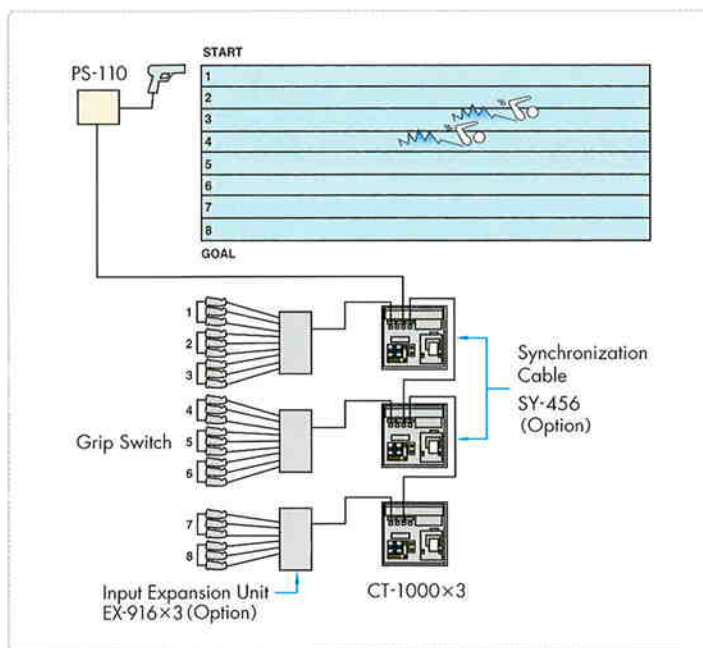
Track events and swim meets, etc. 

○ This mode handles official track events, swim meets, etc. where three judges are required per lane. In this case, three channels are used for one competitor and the middle time recorded of the three is printed out with a mark "=".

[Print Image] Example of Swimming


SEIKO Rev. 1.0	
-4.5-	Lane No.
DATE 2001-03-30	Block No.
START 001 00:00:00.0	
#1-1 0001 00:00:09.3	
#1-3 0001 00:00:09.4	=
#1-2 0001 00:00:09.6	
#2-0 0001 00:00:10.3	=
#2-4 0001 00:00:10.3	
#2-5 0001 00:00:10.4	

Official Time Mark
Number of laps
Judge No.



* Two Grip Switches are furnished per printer as standard. Additional Grip Switches are available upon request.

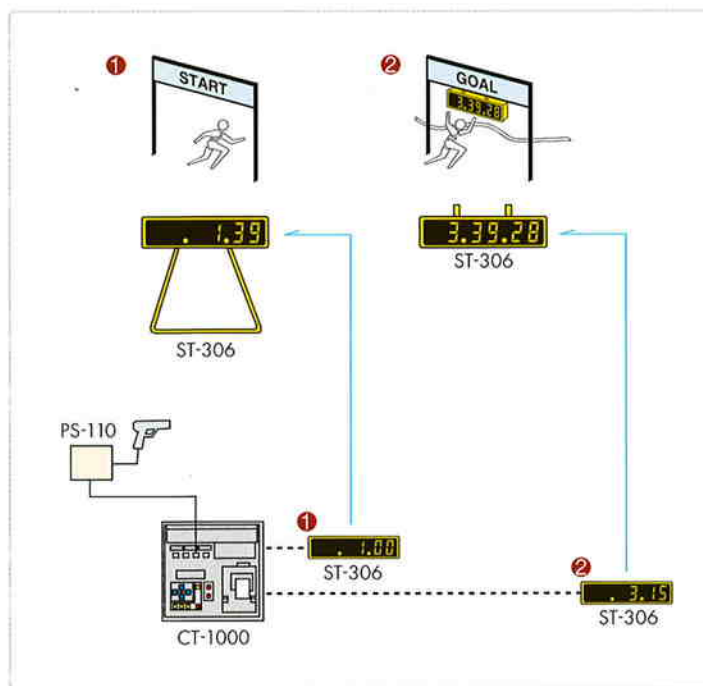
6 Synchronous Mode

Marathons, etc. 

○ Multiple units of ST-306 can be started simultaneously by one CT-1000. Those ST-306s and CT-1000 are utilized such as for marathons.

• Example •

- 1 Connect and start ST-306 #1 at START point by CT-1000. Once started, disconnect ST-306 from CT-1000 to run as an independent timer of ST-306.
- 2 Connect and run ST-306 #2 at FINISH point or the on a CAR. After operated independently, disconnect as well.
- 3 All those 2 units of ST-306 keep the same timing as CT-1000.



The design and specifications are subjects to change without prior notice for product improvement.

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