To prevent screw tightening skipping!
Screw counter
STC3 Series

The number of screws to be tightened can be set from 1 to 99, with the remaining number counted down after each screw is tightened.
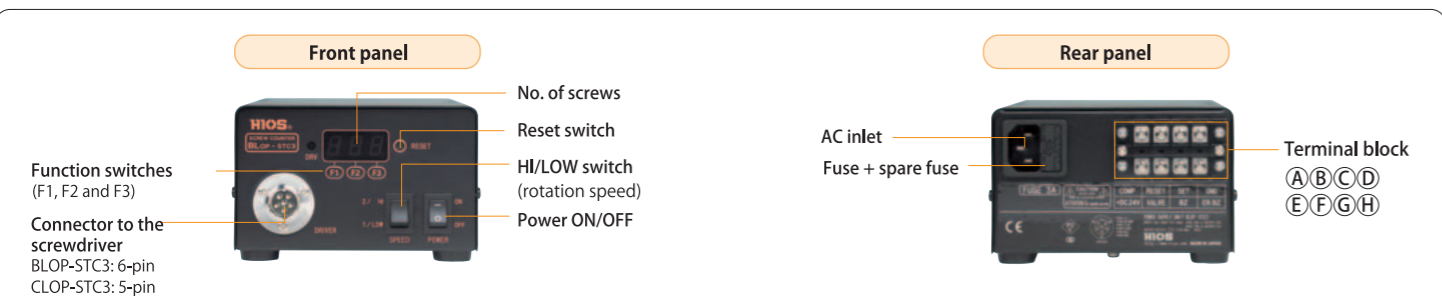
- A buzzer will sound when the final screw has been tightened to notify you of screw tightening completion.
- The countdown number is automatically reset after all screws have been tightened so that work can start on the next job immediately. The screwdriver will not be operable until the next "work set confirmation" SET signal is input (not applicable to SC3 Series).
- Prevents confirmation tightening, additional tightening and secondary tightening from being counted.
- Can be used as a normal power supply by disabling the count function.
（Applicable only to BLOP-STC3 and CLT-70STC3）

		Screw counter			Separate counter (external type)		
Model		STC3 Series		STC Series	SC1 Series		SC3 Series
		BLOP-STC3 《power supply type》	CLT-70STC3 《power supply type》	VZOP-STC	BLOP-SC1	CLOP-SC1	Mini type BLOP-SC3
Functions & compatible screwdrivers							
	Number of screws (1 to 99)	●	●	●	●	●	●
Counting direction	Counting Forward (count-down)	●	●	●	●	●	●
	Reverse (count-up*)	●	–	●	●	–	●
Counting	Display LED	●	●	●	●	●	●
	Build-in timer Count timer	●	●	●	●	●	●
	Work set timer	●	●	●	●	●	–
	Work reset timer	●	●	●	●	●	●
	Reverse count timer	●	–	●	●	–	●
External output	Power supply for external devices Ⓔ	●	●	●	●	●	–
	Control outputⒶ, Ⓕ, Ⓖ	●	●	●	●	●	–
	Control inputⒸ, Ⓑ	●	●	●	●	●	–
	Error outputⒽ	●	●	●	●	●	–
Screwdrivers	DC type Brushless BLG Series (OPC)	●	–	–	●	–	●
	BL Series (OPC)	●	–	–	●	–	●
	Brushed CL Series	–	●	–	–	●	–
	SS Series	–	●	–	–	●	–
	α Series	–	●	–	–	●	–
	AC type Brushless VB Series (OPC)	–	–	●	–	–	–
	VBH Series (OPC)	–	–	●	–	–	–
	Brushed VZ Series (OPC)	–	–	●	–	–	–

* If you unscrew during operation, the count number will go back by one.

● Components and Functions of Screw Counter STC3

Front panel
- No. of screws
- Reset switch
- HI/LOW switch (rotation speed)
- Power ON/OFF
- Function switches (F1, F2 and F3)
- Connector to the screwdriver
  BLOP-STC3: 6-pin
  CLOP-STC3: 5-pin

Rear panel
- AC inlet
- Fuse + spare fuse
- Terminal block ⒶⒷⒸⒹ ⒺⒻⒼⒽ

Function switches (F1, F2, F3)	
F1	Set number of screws: 1 to 99 → Set the number of screws to be tightened
	Set count timer: 0.00 to 0.99 sec. → Prevents counting of secondary tightening operations
	Set work set timer: 0.0 to 3.9 sec. → Time until the screwdriver becomes operational
	Set work reset timer: 0.0 to 3.9 sec. → Time until the screwdriver becomes non-operational
	Set reverse count timer: 0.1 to 1.0 sec. → Time until the count start after reverse rotation
F2	Display the number of screws remaining. Control the sound of the buzzer. Setting of ON/OFF of the reverse count control
F3	Control the motion of the counter at any time. Setting the ON/OFF of the torque-up buzzer sound control

Terminal block		
A	COMP	"Work complete" signal output terminal, open collector output (maximum load rating: DC30V/80mA)
B	RESET	Resets the count timer, input terminal for the "work forced release" signal from external device
C	SET	Input terminal for the "work set confirmation" signal
D	GND	(Terminal for grounding) —
E	＋DC24V	Power supply terminal for external device (maximum rating: DC24V/0.2A)
F	VALVE	Output terminal for external equipment, open collector output (maximum load rating: DC30V/80mA)
G	BZ (Buzzer)	Work complete output terminal, open collector output (maximum load rating: DC30V/80mA)
H	ER BZ (Error Buzzer)	Warning output open collector output if work is removed before operation is complete (maximum load rating: DC30V/80mA)

Notes:
- Display and functions of VZOP-STC are partially different from the above.
- The reverse count timer is not included with CLT-70STC3 and CLOP-STC3.

DC Type／For BLG, BL, CL, SS, α Series

Model：BLOP-STC3 (for one screwdriver) RoHS C€	
Compatible screwdrivers 《With power supply》	
Brushless screwdrivers	
●BLG Series (OPC) BLG-4000-OPC, BLG-5000-OPC	
●BL Series (OPC) BL-2000-OPC, BL-3000-OPC, BL-5000-OPC, BL-5020-OPC, BL-7000-OPC	

Primary input power source	AC100-240V, 47-63Hz		
Secondary output voltage	HI (2): about DC31V, LOW (1): about DC20V, 2-step switchable		
External dimensions (mm)	127(W)×208(D)×76(H)mm		
Weight (kg)	1.8kg		
Accessories	Power supply cord: 1.8m with ground wire (1pc) Crimp-type terminals: 8pcs		
Plug Type	A-1	A-2	A-3/C/BF/S

Model：CLT-70STC3 (for one screwdriver) RoHS C€	
Compatible screwdrivers 《With power supply》	
Brushed screwdrivers	
●CL series CL-2000, CL-3000, CL-4000, CL-6000, CL-6500, CL-7000	
●SS series SS-2000, SS-3000, SS-4000, SS-6500, SS-7000	
●α series α-4500, α-5000, α-6500	

Primary input power source	AC100-240V, 47-63Hz		
Secondary output voltage	HI (2): about DC31V, LOW (1): about DC20V, 2-step switchable		
External dimensions (mm)	127(W)×208(D)×76(H)mm		
Weight (kg)	1.8kg		
Accessories	Power supply cord: 1.8m with ground wire (1pc) Crimp-type terminals: 8pcs		
Plug Type	A-1	A-2	A-3/C/BF/S

AC Type／For VB, VBH, VZ Series

Model：VZOP-STC (for one screwdriver) RoHS	
Compatible screwdrivers	
Brushless screwdrivers	
●VB Series (OPC) (only 100 V /120V) VB-1510-OPC, VB-1510-18-OPC VB-1820-OPC, VB-3012-OPC (including PS type) VB-4504PS-OPC	
●VBH Series (OPC) (only 100 V /120V) VBH-1820PS-OPC, VBH-3012PS-OPC	
Brushed screwdrivers	
●VZ Series (OPC) (only 100 V /120V) VZ-1510-OPC, VZ-1820-OPC, VZ-3012-OPC, VZ-4506-OPC (including PS type) VZ-4506PS-OPC	

Primary input power source	AC100V (50/60HZ)	AC120V (50/60HZ)
External dimensions (mm)	160(W)×175(D)×84(H)mm	
Weight (kg)	1.5kg	
Accessories	Power supply cord: 1.8m with ground wire (1pc) Crimp-type terminals: 8pcs	
Plug Type	A-1	A-2

Connection to PLC (programmable controller)
You can use the screwdriver with OPC specifications by cutting the cable for OPC at the tip to expose the lead and connect it to the PLC.
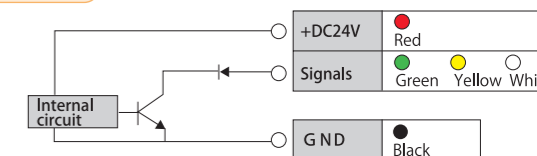
Note：The models connectable to the PLC are only AC type/VB, VBH, VZ screwdrivers (OPC).

Screwdrivers with OPC
- ● These screwdrivers have the function to send out signals of forward and reverse rotations and torque-up.
- ● The signals are separated by the photo coupler for safety.
- ● The output is open collector output (Max. 24V/20mA) and can be directly connected to the PLC, etc.

Internal circuit diagram
- ＋DC24V — Red
- Signals — Green Yellow White
- GND — Black

Guide for output wire colors
- ●Red: input of ＋DC24V
- ●Black: input of GND
- ●Green: signal output of forward rotation
- ○White: signal output of torque-increase
- ◐Yellow: signal output of reverse rotation

About PLC
For the time chart, please download the operation manuals of VB-OPC or VZ-OPC in PDF available on the HIOS website.

● Plug Type

Voltage	100V		120V	220-240V			
	Type A	Type A-1	Type A-2	Type A-3	Type C	Type BF	Type S
Plug Type							

SC1 Series

The counter function can be added easily by connecting this to the existing HIOS power supply.

DC Type／
For BLG, BL Series

Model：BLOP-SC1 (for one screwdriver) RoHS CE
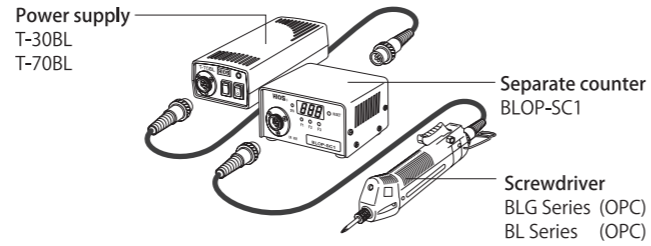
Compatible screwdrivers

Brushless screwdrivers
● BLG Series (OPC)
● BL Series (OPC)

Primary input power source	DC20／31V
Secondary output voltage	Same as the secondary output voltage of the connected power supply.
External dimensions (mm)	110(W)×100(D)×55(H)mm
Weight (g)	600g
Accessories	Power supply cord: 1.5m (1pc)　Crimp-type terminals: 8pcs

● Configuration of components

Power supply
T-30BL
T-70BL

Separate counter
BLOP-SC1

Screwdriver
BLG Series (OPC)
BL Series (OPC)

● Connectable power supplies and screwdrivers

Power supplies	Connectable screwdrivers (OPC)
T-30BL (for one screwdriver)	BLG-4000-OPC, BL-2000-OPC, BL-3000-OPC
T-70BL (for one screwdriver)	BLG-4000-OPC, BLG-5000-OPC, BL-2000-OPC, BL-3000-OPC, BL-5000-OPC, BL-5020-OPC, BL-7000-OPC

For CL, SS and α Series

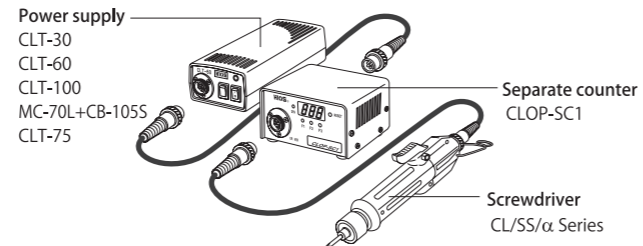**Model：CLOP-SC1** (for one screwdriver) RoHS CE

Compatible screwdrivers

Brushed screwdrivers
● CL Series
● SS Series
● α Series

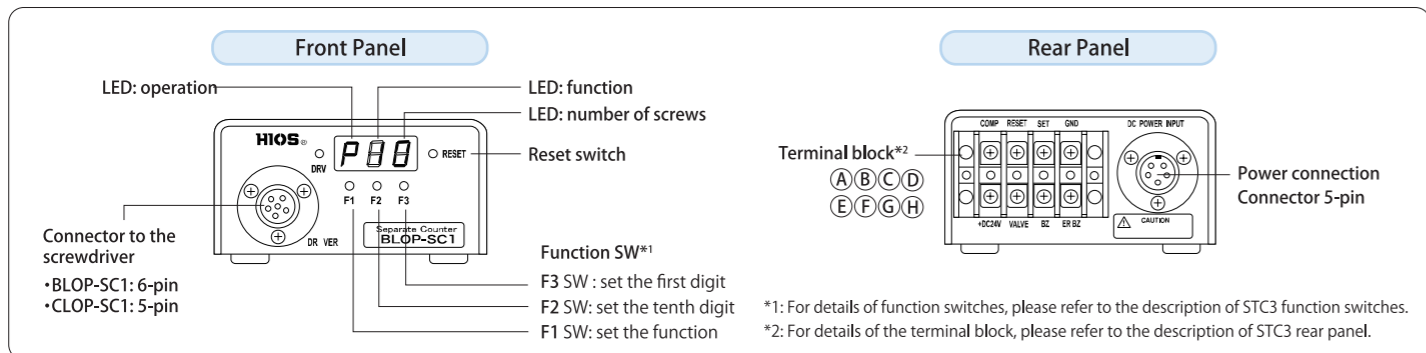| Primary input power source	DC20／31V
Secondary output voltage	Same as the secondary output voltage of the connected power supply.
External dimensions (mm)	110(W)×100(D)×55(H)mm
Weight (g)	600g
Accessories	Power supply cord: 1.5m (1pc)　Crimp-type terminals: 8pcs

● Configuration of components

Power supply
CLT-30
CLT-60
CLT-100
MC-70L+CB-105S
CLT-75

Separate counter
CLOP-SC1

Screwdriver
CL/SS/α Series

● Connectable power supplies and screwdrivers

Power supplies		Connectable screwdrivers
CLT-30 (for one screwdriver)		CL-2000, CL-3000, SS-2000, SS-3000
CLT-60 (for one screwdriver)		CL-2000, CL-3000, CL-4000, CL-6000, CL-6500, CL-7000
CLT-100 (for two screwdrivers)		SS-2000, SS-3000, SS-4000, SS-6500, SS-7000, α-4500, α-5000, α-6500*
MC-70L	Up to 20 screwdrivers	CL-2000, CL-3000CL-4000, SS-2000SS-3000, SS-4000
+CB-105S	Up to 10 screwdrivers	CL-6000, CL-6500, CL-7000, SS-6500, SS-7000, α-4500, α-5000
(multiple)	Up to 5 screwdrivers	α-6500
CLT-80 (for one screwdriver)		CL-9000

* α-6500 cannot be connected with CLT-100 (for two screwdrivers).

● Components of Separate Counter SC1

Front Panel

LED: operation
LED: function
LED: number of screws
Reset switch

HIOS
P 8 8 ○ RESET
DRV
F1 F2 F3
Separate Counter
BLOP-SC1
DR VER

Connector to the screwdriver
・BLOP-SC1: 6-pin
・CLOP-SC1: 5-pin

Function SW*1
F3 SW: set the first digit
F2 SW: set the tenth digit
F1 SW: set the function

Rear Panel

Terminal block*2
Ⓐ Ⓑ Ⓒ Ⓓ
Ⓔ Ⓕ Ⓖ Ⓗ

COMP RESET SET GND DC POWER INPUT
+DC24V VALVE BZ ER BZ CAUTION

Power connection
Connector 5-pin

*1: For details of function switches, please refer to the description of STC3 function switches.
*2: For details of the terminal block, please refer to the description of STC3 rear panel.

SC3 Series

Only 120g!
This palm-sized compact counter can be directly connected to a screwdriver.

DC Type／
For BLG, BL Series

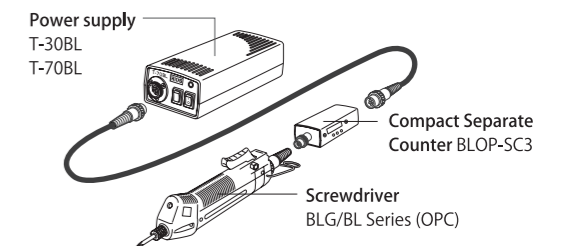**Model：BLOP-SC3** (for one screwdriver) RoHS CE

Compatible screwdrivers

Brushless screwdrivers
● BLG Series (OPC)
● BL Series (OPC)

Primary input power source	DC20／31V
Secondary output voltage	Same as the primary power voltage
External dimensions (mm)	67(W)×25(D)×25(H)mm
Weight (g)	120g
Accessories	Hanger for mounting: 1 set

Image of fitting

● Connection of components

Power supply
T-30BL
T-70BL

Compact Separate
Counter BLOP-SC3

Screwdriver
BLG/BL Series (OPC)

● Connectable power supplies and screwdrivers

Power supplies	Screwdrivers (OPC)
T-30BL (for one screwdriver)	BLG-4000-OPC, BL-2000-OPC, BL-3000-OPC
T-70BL (for one screwdriver)	BLG-4000-OPC, BLG-5000-OPC, BL-2000-OPC, BL-3000-OPC, BL-5000-OPC, BL-5020-OPC, BL-7000-OPC

Notes：
・Always use BLOP-SC3 by hanging it from the balancer.
・Do not use this device for horizontal screw tightening.

● Components and Functions of Compact Separate Counter SC3

Display Panel

Display the number of screws
Display the function

Connector to the
power supply (5P)

Connector to the
screwdriver (6P)

Function switches
F3 SW : set the first digit
F2 SW : set the tenth digit
F1 SW : set the function

Function switches (F1, F2, F3)		
F1	Set number of screws: 1 to 99 → Set the number of screws to be tightened	
	Set count timer: 0.00 to 0.99 sec. → Prevents counting of secondary tightening operations	
	Set work reset timer: 0.1 to 3.9 sec. → Time until the screwdriver becomes non-operational	
	Set reverse count timer: 0.1 to 1.0 sec.→ Time until the count start after reverse rotation	
	Set the system → Display the number of screws remaining. Control the sound of the buzzer. Setting ON/OFF of the reverse count control. Setting ON/OFF of the torque-up buzzer sound control	
F2	Set the tenth digit → Increases by 1 each time you press it	
F3	Set the first digit → Increases by 1 each time you press it	