Screwdriver Slow Start Control Box
User Operation Manual

Model : KL – SSBN(BC6P&DC6P)

(Ver 1.0)

KILEWS INDUSTRIAL CO., LTD.

http://www.kilews.com

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KL-SSBN(BC6P&DC6P)
BN Series Screwdriver
Signal I/O Control Box
Users's Manual

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Acknowledgements :

KL-SSBN(BC6P&DC6P) is a trademark of Kilews Industrial Co., Ltd.
BN is a series brushless screwdriver model with new control function of Kilews
SKP-32B-DC6P is a power supply with 24/32 voltage for screwdriver of Kilews
SKP-BE32HL-DC6P is a power supply with 24/32 voltage for screwdriver of Kilews
SKP-40B-DC6P is a power supply with 40 voltage for power torque screwdriver of Kilews

1. Introduction

1.1 Overview

The KL-SSBN(BC6P&DC6P) is an intelligent PLC-to-Screwdriver I/O control module containing built-in microprocessor. Screwdriver is remotely controlled through a simple set of command protocols issued in binary format and transmitted in RS-485 communication interface.

KL-SSBN(BC6P&DC6P) provide slow-start function to improve screw tightening quality under manual operation.

KL-SSBN(BC6P&DC6P) provide three digital output lines to output start, brake and reverse signals to external device. All output signals use MOSFET relay output to support mostly PLC interface.

KL-SSBN(BC6P&DC6P) is the best choice for screwdrivers apply to integrate with PLC in automatic applications.

1.2 Applications

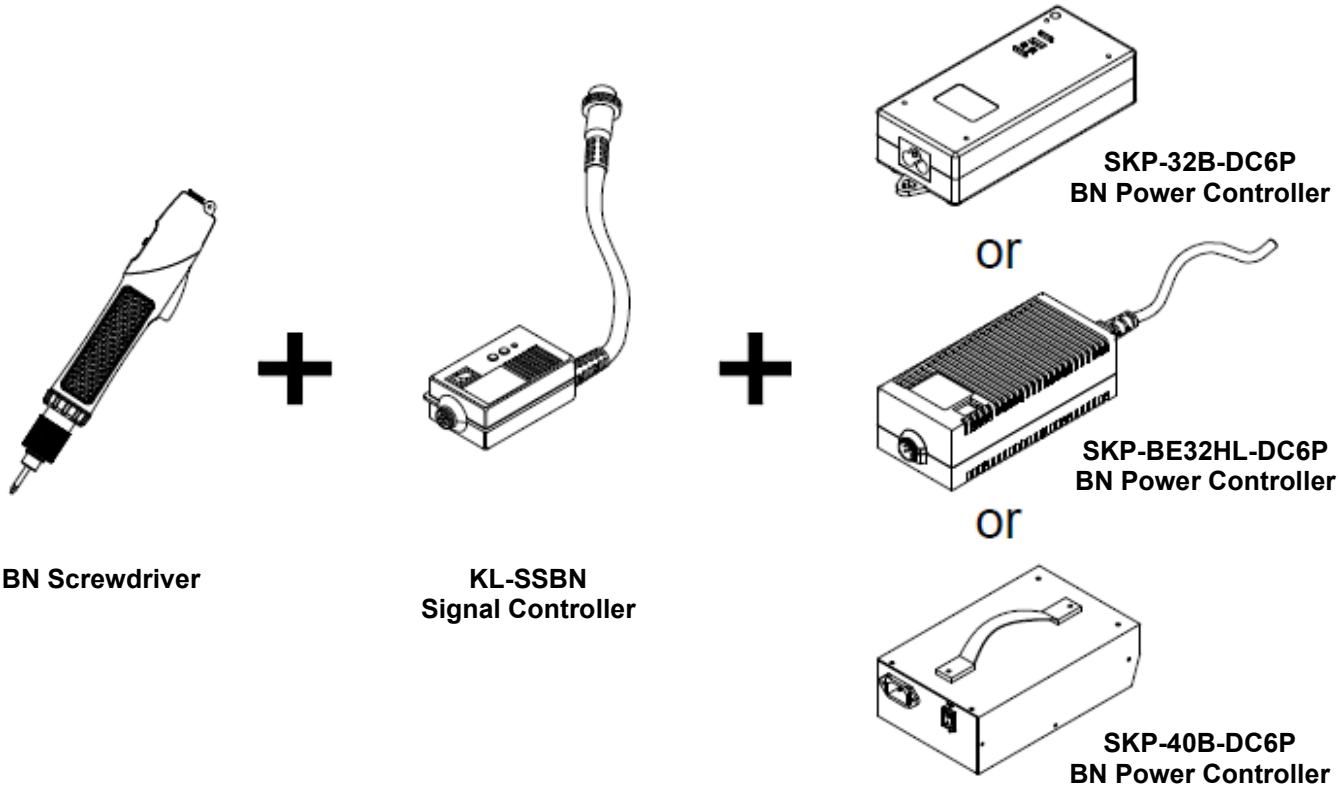
- Assembly qulity control system
- Soft start control

2. Installation Guideline :

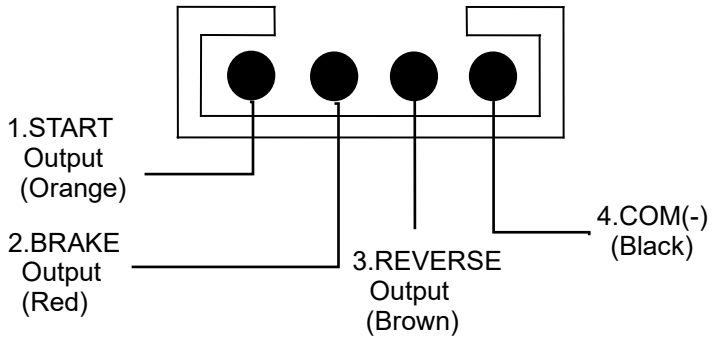
2.1 Assembly Description :

1. KL-SSBN(BC6P&DC6P) signal I/O control box support connect to both 32V (SKP-32B-DC6P, SKP-BE32HL-DC6P) and 40V (SKP-40B-DC6P) power supply.
2. KL-SSBN(BC6P&DC6P) support all 24V, 32V and 40V voltage, it can apply to all KILEWS BN series screwdriver. (BN200 / BN500 / BN800 / TBN / RBN)
3. Please make sure to connect screwdriver with the suitable power supply model.
4. KL-SSBN(BC6P&DC6P) support another alternative KILEWS standard anti EMI cable (3M) to connect to BN series screwdriver, it can reduce electromaganetic interference
5. Please connect KL-SSBN(BC6P&DC6P) to screwdriver then connect to power supply
6. KL-SSBN(BC6P&DC6P) is designed to operation only with the KILEWS BN-BC6P series brushless screwdriver.

   (If connect to the old BC series brushless screwdriver, all function will not work correctly)



2.2 Connector I/O wiring description :



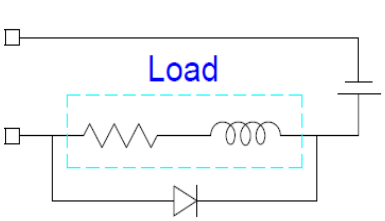
Please find the 14 Pin connector on top of the controller box and follow the input and output control functions wiring :

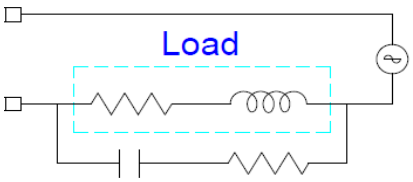
1. When screwdriver is started, output signal to Pin 1 and COM(-) (Pin 4)
2. When screwdriver is braked, output signal to Pin 2 and COM(-) (Pin 4)
3. When screwdriver run reversed, output signal to Pin 3 and COM(-) (Pin 4)

2.3 Pin assignment description :

Pin No.	Function	I/O	Loop Interface
1	Start Output	Output	MOS Relay
2	Brake Output	Output	MOS Relay
3	Reverse Output	Output	MOS Relay
4	COM(-)	-	Common for output

2.4 Relay output wiring diagrams :





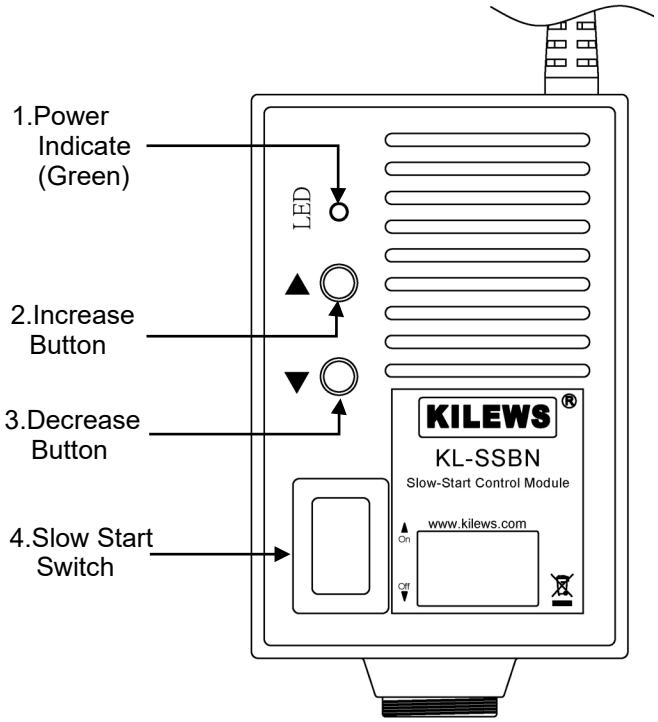
R-C Snubber

Regulate the spike voltage generated on the inductive load as follows :

※ **MOS Relay output circuit max is DC +/-40V, +/-250mA**

3. Operation Description :

3.1 Panel setting description :

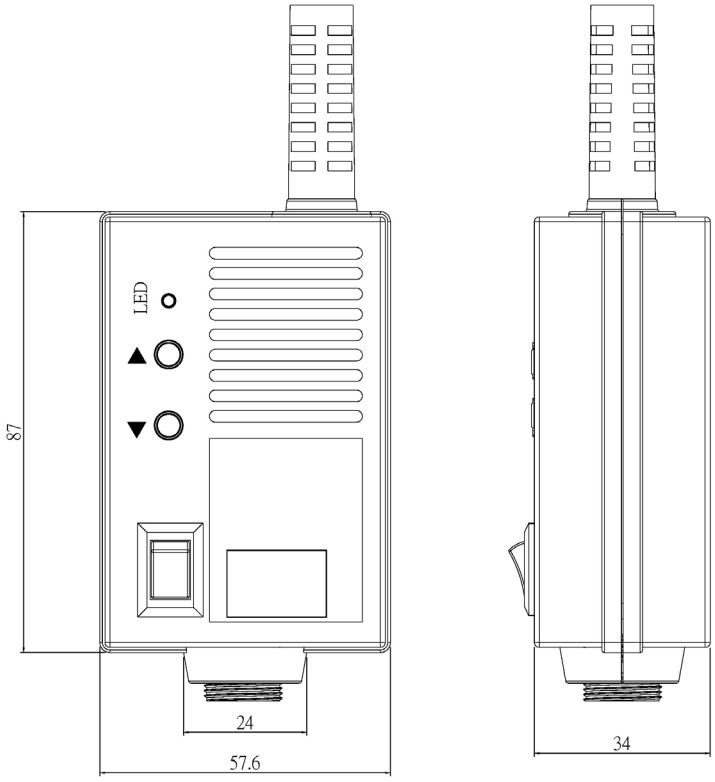


No.	Function	Description
1	Power / Comm. Error / Gate Enable LED (Green / Blink)	1. Power on and connected display Green light on 2. When disconnect or loss communication with screwdriver , display Green light and blink every 0.5 sec.
2	**▲(UP)**	1. Press▲ button for 6 sec to reset to factory default values (RC:0.0，SP:L0)
3	**▲(UP) + ▼(DOWN)**	1. Press both ▲and ▼ button for 2 Sec to enter setting mode, LED display **[RC]**. 2. Press both button for 1 Sec to change to set next function. 3. LED display **[RC]-[SP]--** Exit. 4. Screwdriver control will be disabled and the power light will flash each 5 Sec between setting mode. 5. Use ▲or▼button to change the setting value RC : Slow start time 0.0 ~ 9.9 Sec. SP : Slow start speed level L0 ~ L9
4	Slow Start Switch	1. Toggle this switch to disable or enable [RC] [SP] function, LED display will turn off when function is disabled. 2. If function is enabled, LED will display [NO] , [L1] ~[L9] depends on the setting status.

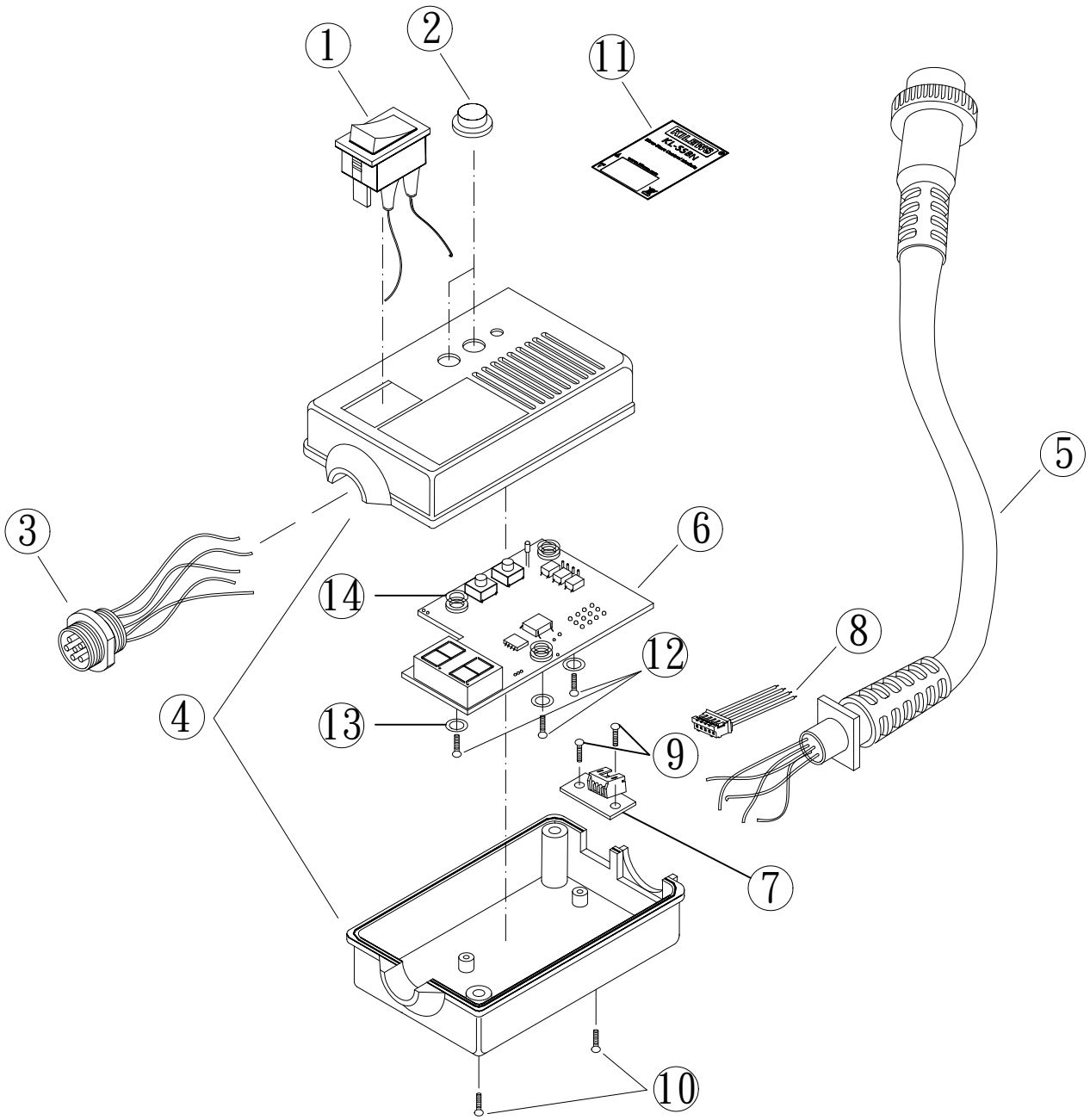
3.2 LED Display in setting mode and error code description :

Symbol	Definition	Description
RC	Set Slow Start Time	1. Press ▲+ ▼ for 2 Sec, LED will display **[RC]** 2. Use ▲ or ▼ to increase or descrease slow start time value from 0.0 to 9.9 sec
SP	Set Slow Start Speed Level	1. Press ▲+▼ for 1 sec after set **[RC]**, LED will display **[SP]** 2. Use ▲or▼ to increase or descrease slow start speed level from L0 (100%, Disable) or L1 to L9 (30%~90%)
L1~L9	Slow Start Speed Level	1. When **[SP]** set to **[L1] ~ [L9]**, indicate the slow start speed level.
N0	No Slow Start Function	1. When [SP] set to [L0] , disable slow start function
E3	Under Voltage Protection	1. Screwdriver will stop when the operation voltage is lower. 2. LED will display **[E3]** to indicate Over voltage protection. 3. Screwdriver will disable 10 sec then automaic recovery
E4	Over Temp. Protection	1. Screwdriver will stop when the operation temperature is higher. 2. LED will display **[E4]** to indicate Over temperature protection. 3. Screwdriver will disable 10 sec then automaic recovery
E5	Stall Protection	1. Screwdriver will stop when motor is abnormal stalled after start. 2. LED will display **[E5]** to indicate stall protection. 3. Screwdriver will disable 10 sec then automaic recovery
E7	Push plate Error	1. Screwdriver will stop when push plate change between motor running. 2. LED will display **[E7]** to indicate abnormal operation. 3. Switch push plate back to recovery
E8	Brake Error	1. Screwdriver will stop when the abnormal brake signal appeared before start. 2. LED will display **[E8]** to indicate abnormal brake error. 3. Check and fix the brake mechanism to recovery
E9	Memory Error	1. Screwdriver will stop when the internal flash memory fail. 2. LED will display **[E9]** to indicate internal flash memory error. 3. Screwdriver will disable 10 sec then automaic recovery

4. Techical Diagram :



KL-SSBN



No.	PARTS NO.	PARTS NAME-E	PARTS NAME-C	Q'ty
1	HC10004-2	Slow Start Switch	緩啟動開關	1
2	H10205	Button	塑膠按鍵	2
3	PZ50165-3	Connector (BC6PIN)	BC6芯插座	1
4	EC30006-7	Case (A Pair)	外殼(組)	1
	EC30006-7-ESD	Case (A Pair)-ESD	外殼(組)-防靜電	1
5	AA50001-65N	CORD ASSEMBLY (DC6Pin)	電源線 (DC6Pin)	1
6	EG50106-3	P.C.B	控制機板	1
7	EG50107	4P Connector	4P排插座機板	1
8	P11019-1	4P Connect Wlre	4P排插含線	1
9	CH20102-5	SCREW M3*6	螺絲 M3*6	2
10	CH90152-1F	SCREW M3*12	螺絲 M3*12	2
11	YTM0268	Sticker-Model	面板貼紙	1
12	CH20161-3	SCREW M3*8	螺絲 M3*8	3
13	P11020-5	WASHER	墊片 （上）	3
14	P11020-5	WASHER	墊片 （下）	3