Screwdriver Slow Start Control Box
User Operation Manual

Model : KL - SSBN

(Ver 1.0)

KILEWS INDUSTRIAL CO., LTD.

http://www.kilews.com

Y2F124-1-001

KL-SSSBN
BN Series Screwdriver
Signal I/O Control Box
Users's Manual

Copyright Notice :

Acknowledgements :

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

1. Introduction

1.1 Overview

The KL-SSBN 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 fromat and transmitted in RS-485 communication interface.

KL-SSBN proivde slow-start function to improve screw tightening quility under manual operation.

KL-SSBN 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 is the best choice for screwdrives apply to integrate with PLC in automatic applications.

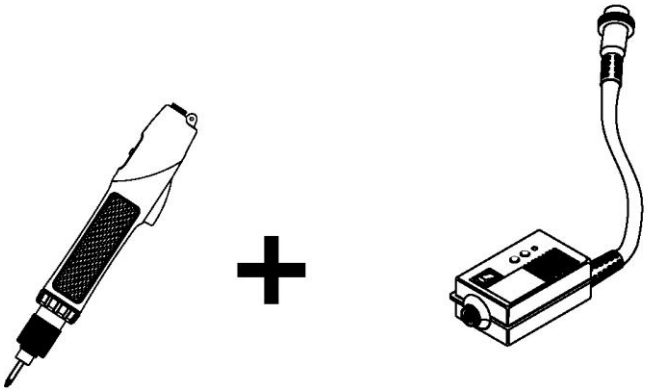
1.2 Applications

- Assembly qulity control system
- Soft start control

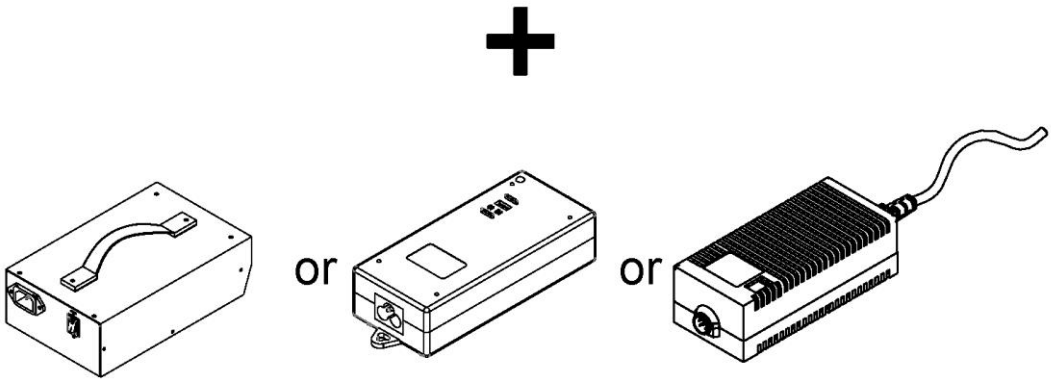
2. Installation Guideline :

2.1 Assembly Description :

1. KL-SSBN signal I/O control box support connect to both 32V (SKP-32BC, SKP-BE32HL) and 40V (SKP-40B) power supply.
2. KL-SSBN support all 24V, 32V and 40V voltage, it can apply to all KILEWS BN series screwdriver. (BN200 / BN500 / BN800 / TBN / RBN)
3. All KILEWS BN series brushless screwdrivers, KL-SSBN and BN Power supply are designed to use the same 6 Pin connector.
4. Please make sure to connect screwdriver with the suitable power supply model.
5. KL-SSBN support another alternative KILEWS standard anti EMI cable (3M) to connect to BN series screwdriver, it can reduce electromaganetic interference
6. Please connect KL-SSBN to screwdriver then connect to power supply
7. KL-SSBN is designed to operation only with the KILEWS BN series brushless screwdriver.
   (If connect to the old BC series brushless screwdriver, all function will not work correctly)

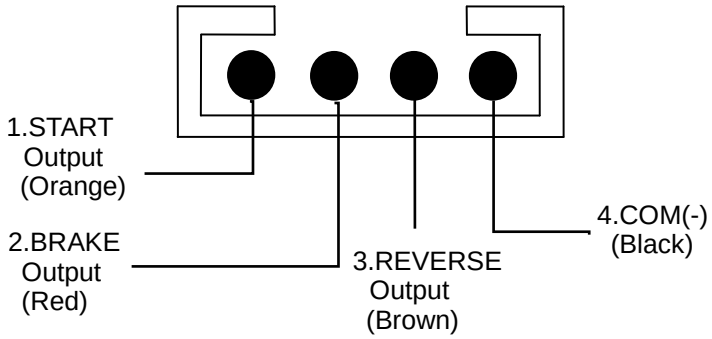


BN Screwdriver **KL-SSBN Signal Controller**



SKP-40B BN Power Controller **SKP-32BC BN Power Controller** **SKP-BE32HL BN Power Controller**

2.2 Connector I/O wiring description :



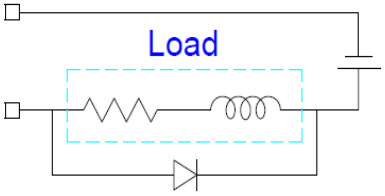
Please find the 14 Pin connector on top of the controller box and follow the input and output control functions wiring :

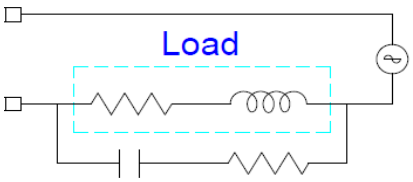
1. When screwdriver is started, output signal to Pin 1 and COM(-) (Pin 4)
2. When screwdriver is braked, output signal to Pin 2 and COM(-) (Pin 4)
3. When screwdriver run reversed, output signal to Pin 3 and COM(-) (Pin 4)

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 :





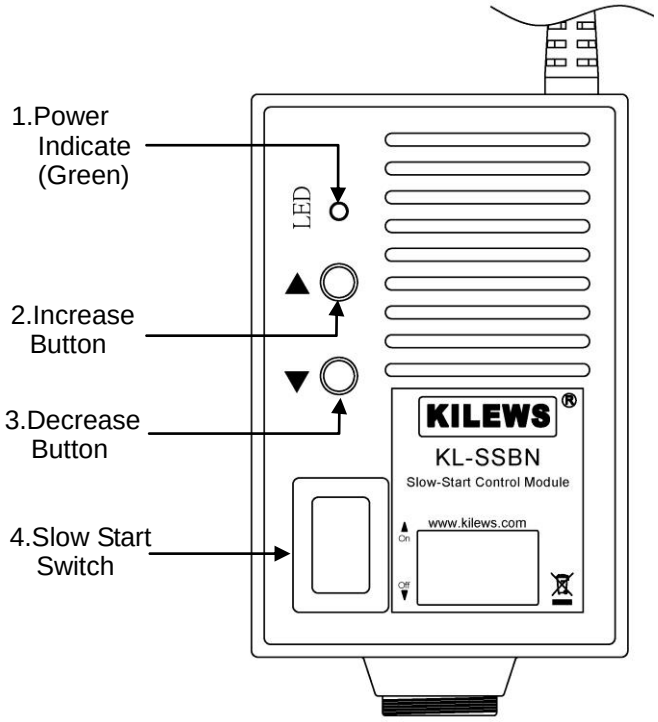
R-C Snubber

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 :

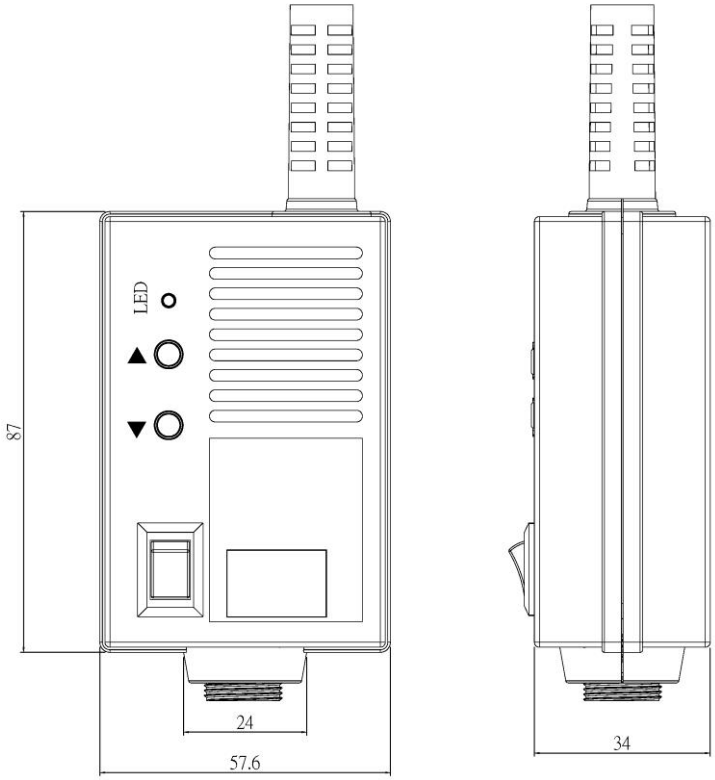


No.	Function	Description
1	Power / Comm. Error / Gate Enable LED (Green / Blink)	1. Power on and connected display Green light on 2. When disconnect or loss communication with screwdriver , display Green light and blink every 0.5 sec.
2	**▲(UP)**	1. Press▲ button for 6 sec to reset to factory default 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.

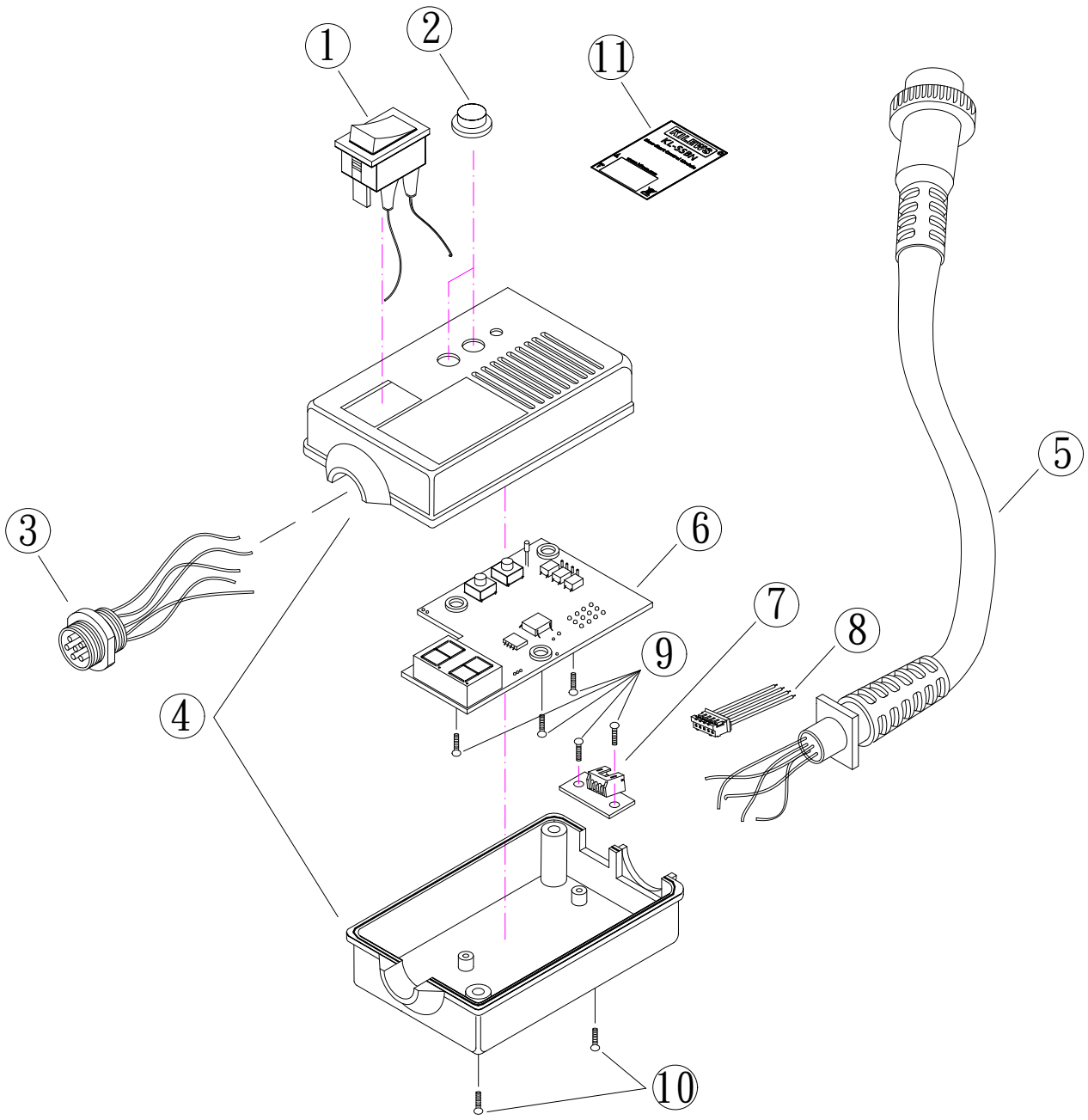
3.2 LED Display in setting mode and error code description :

Symbol	Definition	Description
	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
	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%)
	Slow Start Speed Level	1. When **[SP]** set to **[L1] ~ [L9]**, indicate the slow start speed level.
	No Slow Start Function	1. When [SP] set to [L0] , disable slow start function
	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
	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
	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
	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
	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
	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 (6PIN)	6芯插座	1
4	EC30006-7-ESD	Case (A Pair)	外殼(組)防靜電(ROHS)	1
5	AA50001-83N	CORD ASSEMBLY (BC6Pin)	電源線 (BC6Pin)	1
6	EG50106-1	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	5
10	CH20102	SCREW M3*12	螺絲 M3*12	2
11	YTM0268	Sticker-Model	面板貼紙	1