

4. OPC Signal Output Specifications

4-1. OPC output signals

For the OPC signal output specifications, refer to Table 1. For the timing chart of the OPC signal output.

*Do not use the device with any current exceeding the ratings of +30V and 10mA for each OPC signal output pin.

Table 1. OPC Signal Output Specifications

Signal Name	CN3 Connector Signal Output PIN	Output Conditions	Output Method
FOR signal	PIN4	Screwdriver forward rotation	Open collector output (Low active)
T-UP signal	PIN2	Screwdriver torque up	
REV signal	PIN6	Screwdriver reverse rotation	

4-2. D_ACT input signals

*Use devices rated at +50V, 20mA or more to open/close the D_ACT terminal and GND terminal.

Figure 3 Timing Chart of the OPC Signal Output

Signal Name	CN3 Connector Signal Input PIN	Input signals	Control of driver
D_ACT	PIN3	ON (short-circuit between PIN3-GND)	Driver starts up
		OFF (open-circuit between PIN3-GND)	Driver shuts down

4-3. OPC output signals and D_ACT input signals Timing Chart

OPC output signals and D_ACT input signals Timing Chart

1. Positive rotation movement of the driver controlled by external devices and the clutch movement.

① Pull and tie the screwdriver's Switch Lever with a plastic belt.

② D_ACT input signal turns ON. (D_ACT terminal – GND terminal shorts out) → FOR output signal turns ON. (The driver rotates clockwise.)

③ The screwdriver clutch activates. → T-UP (finish) output signal turns ON. (The signal lasts for 50ms. (The screwdriver stops))

* FOR signal does not turn OFF automatically in conjunction with T-UP (finish) signal.

④ D_ACT input signal turns OFF (D_ACT terminal – GND terminal opens)

2. Reverse rotation movement of the driver controlled by external devices.

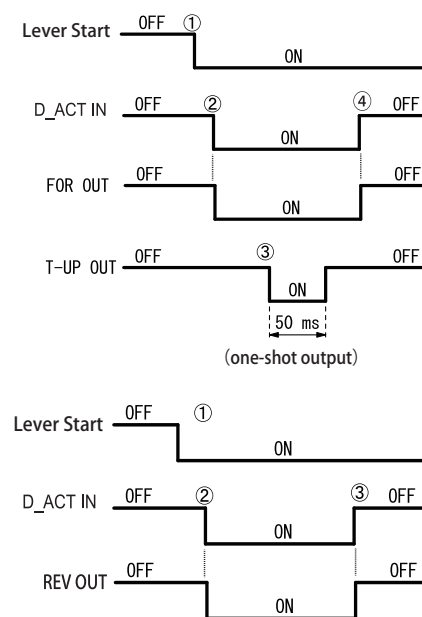
① Pull and tie the screwdriver's Switch Lever with a plastic belt. → REV signal output 0V. (Screwdriver reverse rotation)

• Because there is no torque up during reverse rotation, the T-UP signal is turned off and the output becomes.

② D_ACT input signal turns ON. (D_ACT terminal – GND terminal shorts out) → REV output signal turns ON. (The driver rotates counterclockwise.)

• T-UP (finish) signal is OFF as there is no clutch activation during reverse rotation.

③ D_ACT input signal turns OFF. → REV output signal turns OFF. (D_ACT terminal – GND terminal opens)



5. Accessories

- (1) Instruction Manual (1 copy) (2) Brackets (2 pcs) (3) OPC signal plug (1 pc)
 (4) 5P screwdriver cord [for power supply connection] <1.5m> (1pc)

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BLOP-OST2 Relay Box

Instruction Manual

As of January 2017 Registration Number: No.ET-A060 17A

1. Overview of the Device

By connecting this interface box to a set of the BL-OPC or BLG-OPC and its power supply, these drivers can start up / shut down by inputting D_ACT signals into the CN3 connector with external devices.

In addition, to facilitate the use of the OPC signal by external devices, the device converts the +30V, which is the rated voltage of BL series screwdrivers, to +24V by using a regulator and outputs it to the CN3 connector, the same output location as the OPC signal.

2. Precautions about Usage <<Please read the instructions below before use>>

Be aware that using the device without following these instructions may result in a malfunction of or breakdown with the device and its power supply and screwdriver.

- Correctly connect the BL-OPC or BLG-OPC screwdriver and the power supply for BL or BLG to the specified connectors of the device. Wrong connection may result in malfunction or breakdown.
- Do not directly connect the +24V pin of the CN3 connector or the external +24V power supply to the BL-OPC or BLG-OPC signal pins of the CN3 connector.
- Set the speed selector switch of the power supply for BL or BLG to HI. If it is used at LOW, the output voltage of the +24V pin of the CN3 connector decreases accordingly, resulting in a malfunction.
- Do not overload to the BL-OPC screwdriver. If the +30V voltage of the power supply for BL decreases to +25V or lower due to overloading, the voltage at the +24V pin of the CN3 connector decreases accordingly, resulting in a malfunction.
- If an external device requires a constant voltage of +24V without being affected by overloading, prepare a separate external power supply for the external output circuit.
- Do not use the +24V output of the CN3 connector for any purpose other than for the OPC signal. Otherwise, overcurrent will flow through the internal circuit of the BL-OPC screwdriver, resulting in a breakdown. Other unspecified usage will affect the screwdriver's tightening performance or result in a malfunction or breakdown.
- Avoid any usage in which the ratings of +30V and 10mA will be exceeded for each OPC signal pin of the CN3 connector. Overcurrent will result in a malfunction of or breakdown with the device and the screwdriver.
- Use devices rated at +50V, 20mA or more to open/close the D_ACT terminal and GND terminal.
- Do not directly connect external devices in which noise may occur, such as relays, motors, buzzers, and lamps, to the OPC signal pins of the CN3 connector. Drive noise or overcurrent from external devices will result in a malfunction of or breakdown with the device and the BL-OPC screwdriver. If external devices in which noise may occur need to be connected, mount noise suppression components such as photo couplers and diodes with reference to Examples 5 and 6 in Figure 2, and carefully confirm the effectiveness before use.

3. How to Use the Device

- Connect the device with the BL-OPC or BLG-OPC screwdriver and the power supply for BL or BLG using a screwdriver cord, as shown in Figure 1.
- Connect external devices to the CN3 connector of the device.
- Fix the Switch Lever of the driver to keep it on.
- Turn on the power of the power supply for the screwdriver.
- The OPC signal is output from the CN3 connector according to the operation of the screwdriver.

*For OPC signal output specifications and timing, refer to 4. OPC Signal Output Specifications.

- The driver starts up by connecting the D_ACT terminal and GND terminal of the CN3 connector with external devices.
- The driver shuts down by disconnecting the D_ACT terminal and GND terminal of the CN3 connector.

Figure 1 Connection drawing

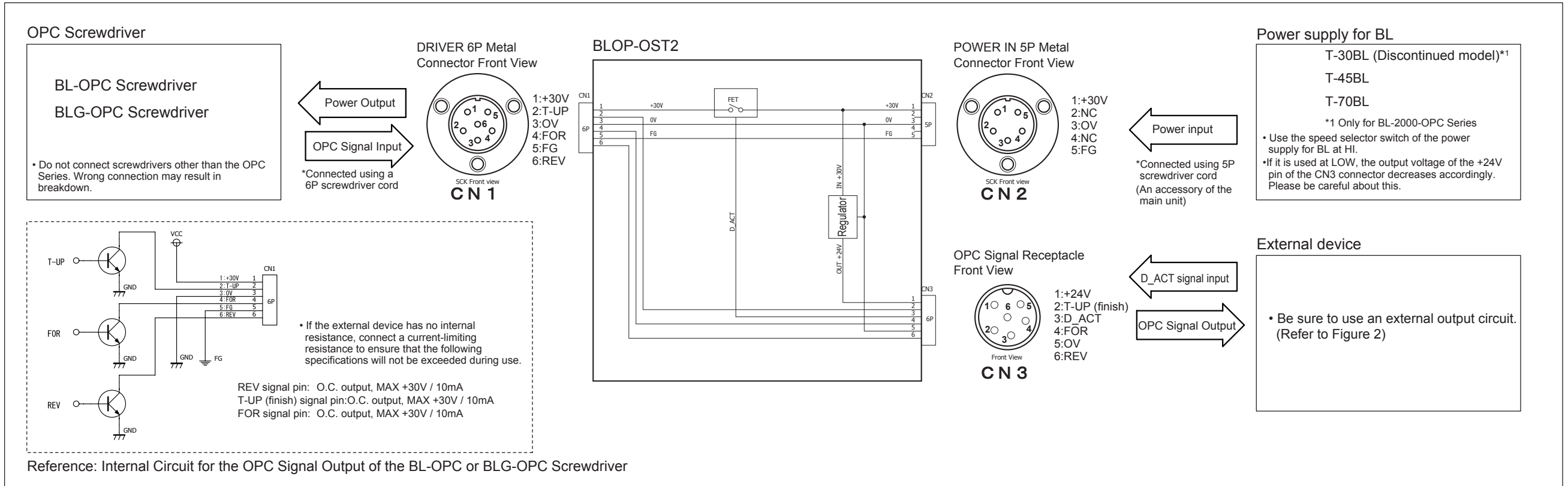


Figure 2 External Output Circuit Example

