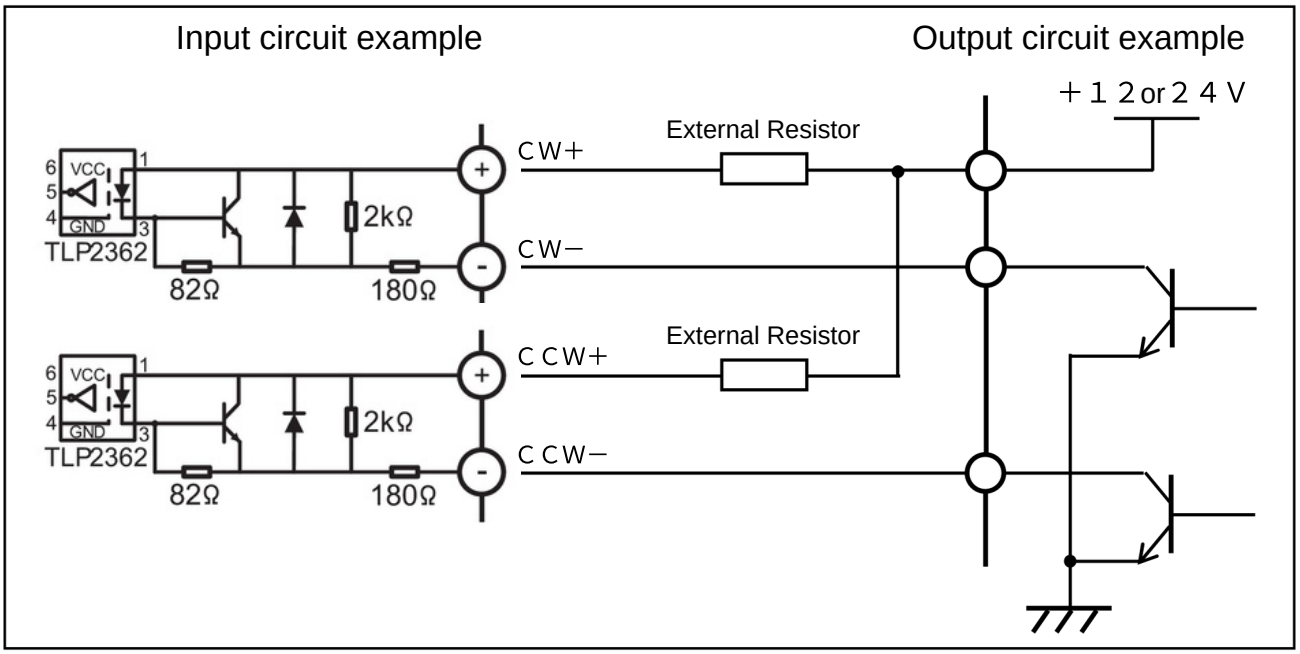
SEP/2025

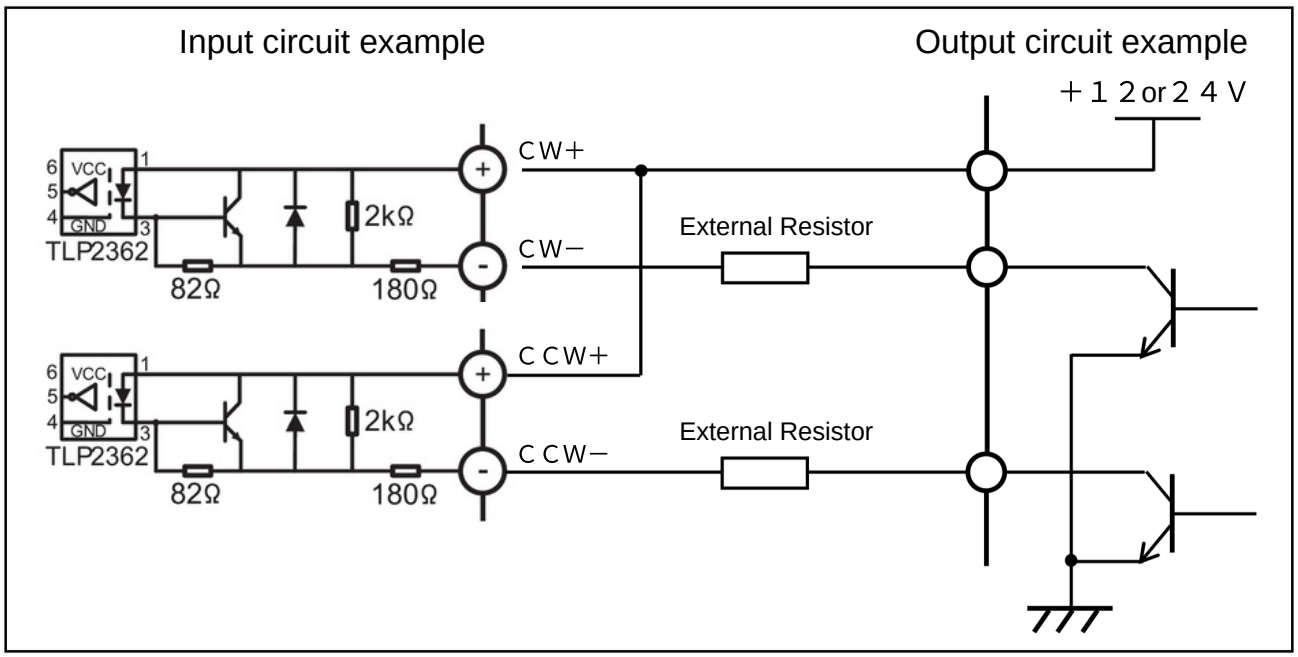
Techno Drive Co, Ltd.

External resistor for 12V or 24V signal input

Our drivers support 5V signal input as standard. When 12V or 24V signals are input over the range described in the manual, an external resistor must be added as shown in the diagram below.



OR



The external resistance is calculated as follows:

・Input forward current of the photocoupler: I_F

- Input forward voltage of photocoupler: V_F

(Internal resistance + External resistance) x I_F + V_F = Input voltage

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External resistance = (Input voltage - V_F) / I_F - Internal resistance

Substituting the following values into this formula

- Forward current I_F = 12mA
- Photocoupler input forward voltage I_F = 1.5V
- Internal resistance 82 + 180 = 262Ω (for the resistance value shown in the diagram)

The external resistance value is as follows.

・Input voltage = 12V　External resistance = 613Ω → 620Ω recommended

・Input voltage = 24V　External resistance = 1613Ω → 1.6KΩ recommended

Note: Depending on the model and production date, there may be products with an internal resistance value of 270Ω or 390Ω. In this case, calculate as above or refer to the table below.

External Resistance Table

		Input voltage	
		１２V	２４V
Internal Resistance	２６２Ω	613Ω（620Ω recommend）	1613Ω（1.6KΩ recommend）
	２７０Ω	605Ω（620Ω recommend）	1605Ω（1.6KΩ recommend）
	３９０Ω	485Ω（470Ω recommend）	1485Ω（1.5KΩ recommend）

To prevent burnout, use 1/2W type external resistors.