

SLG-165V

Instruction Guide

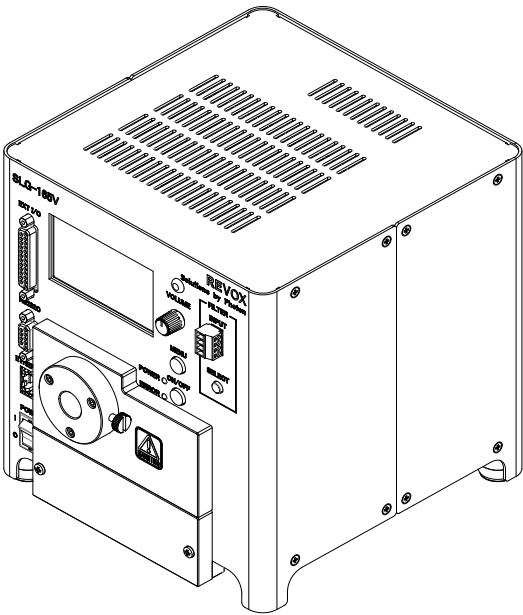
Thank you for purchasing a SLG-165V. To ensure proper use of the product, please read this Instruction Guide before use and keep it for your future reference.

SLG-165V is intended to be used as light sources for image processing and industrial inspections. SLG-165V is used with light guides attached. This enables the selection of a lighting pattern that is suitable for the application.

* A ferrule is not provided with this product. Order one separately.

Features

- The light intensity can be controlled in up to 1024 steps.
- Status confirmation and operation settings can be performed on the LCD.
- In addition to the manual control from the front panel, external control with parallel communications (including digital intensity control and analog intensity control), Ethernet communications, and RS-232C communications is also possible.
- A feedback function is available to suppress fluctuations in the illumination.
- Color filters can be installed.



Light Emitted by the Product

This product emits high-intensity visible light. Because light-absorbing materials convert incident light into heat, heat-sensitive or flammable light-absorbing materials may be damaged. Always observe the following precautions when you use the product. Incorrect usage of the product may jeopardize safety.



- Never look directly into the opening of the ferrule or the light guide exit while light is being emitted. There is a risk of damage to your cornea and retina.
- Never cover the ferrule or light guide exit with your hand or any other part of your body. There is a risk of burn injury.
- Never cover the ferrule or light guide exit. Doing so may result in fire.
- When you illuminate a heat-sensitive, light-absorbing, or flammable material, provide an appropriate distance between the light guide and material and use a suitable light intensity. There is a risk of damage to the material or fire.

* If the above mark appear on the product, refer to this document and confirm any hazards.

1 Important Information for Equipment Safety - Read Before Use -

This product has been designed with full consideration of safety. Incorrect usage of the product may result in fire, electric shock, or other serious accidents. Observe the following precautions.

■Items in the following table indicate that incorrect usage may result in serious injury or death.

Warning	
Do not disassemble or modify the product. Doing so may result in fire or electric shock.	Do not touch the AC power cord during lightning. This may result in electric shock.
Make sure that the product is free of moisture or any liquid. Exposure to water or other liquid may result in fire or electric shock.	Do not touch the plugs or switches with wet hands. Doing so may result in electric shock.
If an abnormal condition, such as smoking, abnormal heating, abnormal odor, or noise, occurs, stop using the product immediately, turn OFF the power switch, and unplug the AC power cord from the wall socket. Continued use may result in fire or electric shock.	Before connecting or disconnecting cables, make sure that the power switch is turned OFF. Failure to do so may results in fire, electric shock or breakdown in the Light Source Unit.

■Items in the following table indicate that incorrect usage may result in injury or property damage.

Caution	
Make sure that the AC power cord meets the following specifications. 100 to 120-V regions: SVT or SJT, AWG18, length: 3 m max., dielectric strength: 125 V min. 200 to 240-V regions: H05VV-F, AWG18, length: 3 m max., dielectric strength: 250 V min.	
Please use designated power sources with stable voltage. Sharing a power source with inverters, motors, etc. may cause malfunction.	Plug the AC power cord directly into the wall socket. Using a power strip or connecting many loads from one electrical socket may cause fire or electric shock.
Make sure that the light guide to be connected matches the product's specifications and dimensions. Using a light guide that does not match the product's specifications and dimensions may result in product failure.	Do not bundle product cables with high-voltage lines or power lines. Doing so may cause the product to malfunction. Allow leeway between the cables when installing them.
Do not drop or subject the product to impact. Doing so may result in product failure.	Always ground the power cord with an earth pin of the plug. Not doing so may cause product failure or electric shock due to static electricity, which may destroy electrical components, including those in the Light Source Unit.
Always place the product on a stable and flat surface. Not doing so may result in the product falling or toppling, which may cause bodily injury or product malfunction.	Do not disconnect cables or disassemble product while operating. Doing so may result in product failure.
Do not place product in direct sunlight or in a very humid environment. Doing so may result in fire due to internal temperature rise.	Always hold onto the plug or connector when disconnecting the cables. Pulling on the cable may damage the cable and result in fire or electric shock.
Do not bend a cable past its natural bending radius or jam a cable into a narrow space when wiring the product. Doing so may cause product failure.	Before moving the product, disconnect all connecting cables. Damaging the cables may result in fire or electric shock.
Do not wipe the product with organic solvents, such as paint thinner or benzene. Discoloration or deterioration of the product surfaces may occur.	If there is dust or other foreign matter on the electrodes, turn OFF the power switch and then use a dry cloth to remove the dust or foreign matter. Failure to do so may result in fire.

2 Names and Functions of Parts

Caution

Do not place any objects within 100 mm of the air vents on the top panel. Insufficient ventilation may cause heat to accumulate inside the product and result in fire.

LCD Page 3

Displays the status of the product and the Setting Screen.

Parallel Communication Connector Page 2

Connect a parallel communication cable to this connector.

RS-232C Communication Connector Page 6

Connect an RS-232C communication cable to this connector.

Ethernet Communication Connector Page 2

Used for Ethernet communications. Connect an ethernet cable to this connector.

Power Switch Page 2

Turns the power ON and OFF.

Ferrule Page 2

Insert the light guide.

Warning

- This product emits high-intensity visible light. Refer to *Light Emitted by the Product* on page 1 and take suitable safety precautions.
- This product generates high temperatures. Do not touch the area around the ferrule while the product is turned ON or immediately after it is turned OFF. Burning may result.
- Use a light guide that is made of glass fibers. Plastic fibers may be damaged during use.

* Ferrule is not provided with this product. Order one separately.

* The shape of the ferrule depends on the details of the order.

Fan Air Inlet

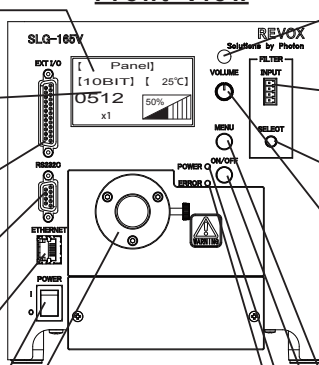
AC Inlet Page 2

Supplies power to the product.

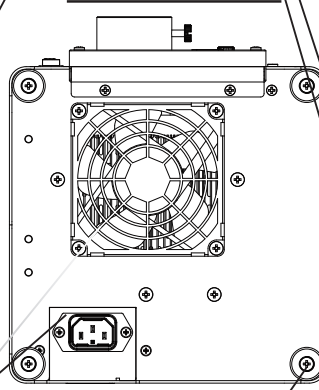
Insulators

To secure the product on the bottom side, remove the mounting screws and tighten them again from behind mounting holes prepared in the installation surface.

Front View



Bottom View



Contrast Adjustment Screw

Remove the rubber cap and adjust the contrast of the LCD with a Phillips screwdriver.

External input connector for filter changer Page 6

Filters can be selected by external input through the connector.

Filter select button Page 6

Filters can be selected by pushing this button which is available only in panel mode.

Operating Knob Page 3

Turn: Selects the item or changes the setting. Increases/decreases the light intensity during manual control.

Press: Sets the selected item.

Selects the step magnification used to increment/decrement the intensity during manual control.

Press for approximately 3 seconds: Locks the operating knob and ON/OFF button. They will be released when this button is pressed again.

Menu Button Page 2

Switches the screen on the LCD.

ON/OFF Button

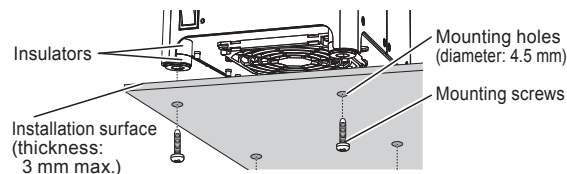
Turns the LED ON and OFF. This button can be used only during manual control.

Power Lamp Page 3

Lit while the power is turned ON.

Error Lamp

Flashes if an error occurs.



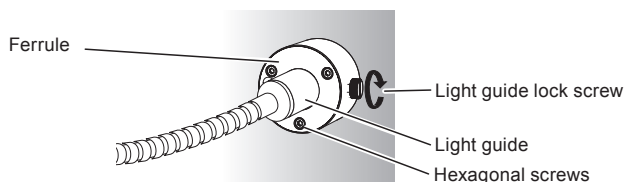
3 Connections

Warning Before connecting the product, make sure that the power is turned OFF. Making connections while the power supply is ON may result in burn injury, electric shock, fire, or damage to the Light Source Unit.

1 Mount the ferrule (sold separately) to the Light Source Unit.

Remove the protective film from the front panel before you attach the ferrule and secure the ferrule with the hexagonal screws.

2 Insert the light guide into the insertion port, then tighten the screw to secure the light guide.



3 To control the product from an external device, connect a suitable cable for the control method.

• Controlling Operation with Parallel Communications

You must provide a cable with a length of 3 m max.

The CBL-D25-3 Cable (sold separately, 3m in length) is available to connect to a PC or other device.

• Controlling Operation with Ethernet Communications

You must provide an ethernet cable with a length of 30 m max.

This product uses auto-negotiation to automatically recognize either a cross cable or a straight cable. Cycle the power if you change the cable type.

• Controlling Operation with RS-232C Communications

You must provide a cross cable with a length of 3 m max.

The CBL-D9C-3 Cable (sold separately, 3m in length) is available to connect to a PC or other device.

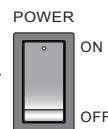
4 Connect the AC power cable to the AC inlet and a wall socket. Use an AC cable for 200 to 240V AC in case of necessity.

5 Turning ON the Power

Press the top of the power switch to turn ON the power supply. Press the bottom of the power switch to turn OFF the power supply.

When the power supply is turned ON, the Initialization Screen will appear on the LCD and it will be followed by the Operation Screen. Also, the power lamp will light.

* When you turn OFF the power, leave it OFF for at least 10 seconds before you turn it back ON.



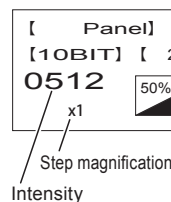
6 Adjusting the Light Intensity

The default operating mode of the product is manual control.

Turn the operating knob to increase or decrease the light intensity displayed on the left side of the LCD.

When you press the operating knob, the display under the intensity will change in the following order: x1, x10, and x100. In this way, you can set the step magnification that is used to increment/decrement the intensity.

Press the ON/OFF button to turn ON and OFF the light source.



To change the operating mode to enable using external control, change the setting on the MODE Setting Screen. Refer to *Operations on the LCD* on page 3 for information on the MODE Setting Screen.

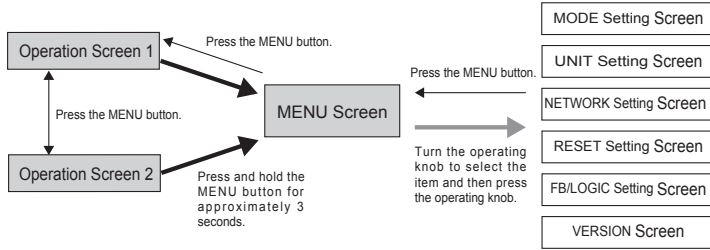
You can set one of the following methods of external control in the product. The default status of the light source is OFF for external control.

- Parallel Communications with Digital Intensity Control: Refer to page 4.
- Parallel Communications with Analog Intensity Control: Refer to page 4.
- Ethernet Communications: Refer to page 5.
- RS-232C Communications: Refer to page 6.

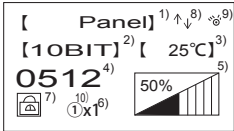
4 Operations on the LCD

When the power switch is turned ON, the Initialization Screen will appear on the LCD and it will be followed by Operation Screen 1. To confirm the status or set up the operation of the product, you can change the display by operating the MENU button and the operating knob.

Screen Transitions



Operation Screen 1



*1 Refer to Error Information Screen on page 7 for details.

*2 When you press the operating knob, the magnification will change in the following order: x1, x10, and x100. For example, if you turn the operating knob by 2 clicks while x10 is displayed, the light intensity will increase by 20 steps.

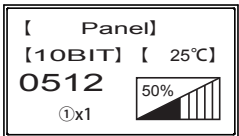
*3 Refer to the description of the operating knob on page 2 for details.

*4 Refer to FB/LOGIC Setting Screen on this page for details.

*5 For the details, refer to the Operation instructions shown in Page.6.

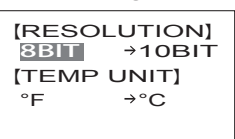
#	Item	Description
1	Operating mode	The operating mode that is set on the MODE Setting Screen is displayed.
2	Resolution	The total number of steps in the light intensity is displayed.
3	LED temperature	The temperature of the LED module is displayed.
4	Intensity	The current setting of the light intensity is displayed.
5	Intensity indicator	The intensity is displayed as a percentage. If an error is detected ^{*1} , ⊗ icon will be displayed.
6	Magnification	The step magnification that is used to increment/decrement the intensity is displayed. ^{*2}
7	Lock Icon	This icon is displayed while operation on the front panel is locked after the operating knob is pressed for approximately 3 seconds. ^{*3}
8	FB Icon	This icon is displayed when feedback control ^{*4} is enable.
9	LED ON Icon	This icon is displayed while the LED is ON.
10	Filter No.	The number of the selected filter(hereinafter referred to as Filter No.) is shown.

Operation Screen 2



Other items are the same as for Operation Screen 1.

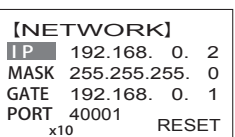
UNIT Setting Screen



On this screen, set the total number of the light intensity steps and the unit for temperature value to be shown.
(Defaults: 10 bits and °C)

Item	Description
8BIT	Sets the total number of light intensity steps for all operating modes to 8 bits (256 steps).
10BIT	Sets the total number of light intensity steps for all operating modes to 10 bits (1024 steps).
°F	Sets the temperature unit for the Operation Screen to degrees Fahrenheit.
°C	Sets the temperature unit for the Operation Screen to degrees Celsius.

NETWORK Setting Screen



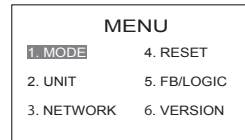
Use this screen to change the network settings.
Turn the operating knob to move the cursor to the required item and then press the operating knob.
Turn the operating knob to change the digits. When you press the operating knob for the IP, MASK, or GATE item, the cursor will move between the digits that are separated by periods.
To return to the previous status so that you can move the cursor between items, press the MENU button.

* If you have made changes on the NETWORK Setting Screen when you move to the MENU Screen, a message to confirm whether to save the settings will be displayed. If you have saved the settings when you move to the Operation Screen, a message that prompts you to restart the product will be displayed. Follow the instructions on the display and cycle the power switch.

Item	Description	Default
IP	Sets the IP address of the product.	192.168.0.2
MASK	Sets the subnet mask of the product.	255.255.255.0
GATE	Sets the default gateway of the product.	192.168.0.1
PORT	Sets the port number to receive the data that is sent from the external device.	40001
RESET	Resets all items on this screen to the default settings.	—

* If you change the port number, the step magnification will be displayed. When you press the operating knob, the step magnification will change to x1, x10, x100, or x1000.

MENU Screen



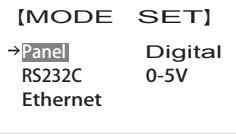
Highlighting shows the position of the cursor.
Turn the operating knob to move the cursor. Select the required item and press the operating knob to change to one of the following screen.

You can set up the operation of the product on the following screen.
An arrow (→) is displayed to the left of the current setting. Turn the operating knob to move the cursor to the required item and then press the operating knob to set the corresponding item.
Press the MENU button to go back to the MENU Screen from a Setting Screen.

When you move from the MENU Screen to the Operation Screen, the settings on the Setting Screen are updated (except for settings on the NETWORK Setting Screen).

MODE Setting Screen

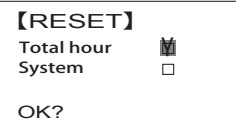
Set the operating mode on this screen.
(Default: Panel)



Item	Description
Panel	Sets the mode for manual control from the front panel.
RS232C	Sets the mode for external control with RS-232C communications.
Ethernet	Sets the mode for external control with Ethernet communications.
Digital	Sets the mode for external control with parallel communications with a digital intensity control input. You can specify the intensity with a digital signal input.
0-5V	Sets the mode for external control with parallel communications with an analog intensity control input. You can specify the intensity with an analog signal input from 0 to 5V. The intensity on the Operation Screen is displayed in 256 or 1024 steps.

RESET Setting Screen

On this screen, you can reset the total time and the items on the Setting Screen into their default settings (except for the items on the NETWORK Setting Screen).

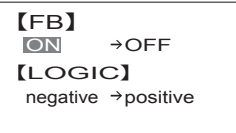


Turn the operating knob to move the cursor between the items. Press the operating knob to select the required item.

Item	Description
Total hour	Select this item to reset the total time on the Operation Screen.
System	Select this item to reset the settings on the MODE, UNIT, and FB/LOGIC Setting Screen.
OK?	Select this item to reset the selected items.

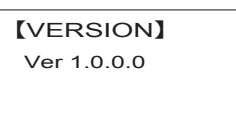
FB/LOGIC Setting Screen

Use this screen to enable/disable feedback and set the logic of pins 2 to 13 on the parallel communications connector.
(Default: OFF and positive logic)



Item	Description
ON	Enables feedback control, which detects temperature changes during 40% to 80% illumination and suppresses fluctuations in the illumination. The FB icon will be displayed at the top-right of the Operation Screen if feedback is enabled.
OFF	Disables feedback to suppress fluctuations in the illumination.
negative	Applies negative logic to pins 2 to 13 on the parallel communications connector and filter changer external input connector Pin 2 to 4. Operation in this document is described for positive logic. If you set negative logic, you will need to interpret the descriptions for when the photocoupler is ON as for when the photocoupler is OFF. For example, for positive logic, the light is turned OFF when the photocoupler turns ON for pin 13 during manual control. For negative logic, the light is turned OFF when the photocoupler turns OFF.
positive	Applies positive logic to pins 2 to 13 on the parallel communications connector and filter changer external input connector Pin 2 to 4. The descriptions in this document are based on positive logic.

VERSION Screen



This screen shows the version of the control software in the product.
If you inquire about the operation of the product, inform REVOL of the version number given on this screen.

5 Controlling Operation with the Parallel Communications Connector

You can set up operation and confirm the status of the product with signals that are input and output on the parallel communications connector.

Parallel Communications Connector Layout (25-pin D-sub Socket)

The following figure shows the arrangement of the connector pins. The applicable pins depend on the operating mode that is set on the MODE Setting Screen.

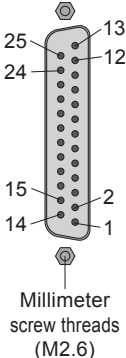


Diagram of a 25-pin D-sub connector. Pins 1, 2, 12, 13, 14, 15, 24, and 25 are labeled. Millimeter screw threads (M2.6) are shown at the top and bottom.

Pin number	Signal	Description	Items on the MODE Setting Screen			
			Panel	RS232C/Ethernet	Digital	0-5V
1	IN COM	Input common			●	●
2	B0	Digital intensity control inputs			●	
3	B1				●	
4	B2				●	
5	B3				●	
6	B4				●	
7	B5				●	
8	B6				●	
9	B7				●	
10	B8				●	
11	B9			●		
12	LOCK ¹	Intensity lock input				●
13	LED SW	LED ON/OFF input			●	●
14 to 17	NC	—				
18	LED ERR	LED error output	●	●	●	●
19	LED TMP	LED temp. error output	●	●	●	●
20	LED ON	LED ON output	●	●	●	●
21	OUT COM	Output common, GND	●	●	●	●
22, 23	NC	—				
24	AN IN	Analog intensity control input				●
25	AN GND	Analog intensity control GND				●

Legend •: These pins can be used in the corresponding operating modes.

*1 If 0-5V is set on the MODE Setting Screen, you can use the intensity lock input (LOCK).

* The logic of pins 2 to 11 (B0 to B9) on the parallel communications connector, which are underlined above, depends on the setting on the FB/LOGIC Setting Screen.

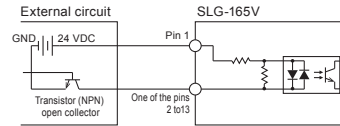
Input Signals

Pins 1 to 13 on the parallel communications connector are used for input signals that turn ON the photocouplers inside the product to set and write data.

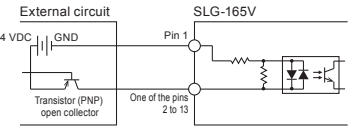
Input signal specifications					
Rated input voltage	Maximum input voltage	ON voltage/ON current	OFF voltage/OFF current	Response time	Input impedance
24 VDC	26.4 VDC	20 VDC min./6 mA min.	3 VDC max./1 mA max.	Approx. 10 ms	12 kΩ (per terminal)

Both sinking (NPN) and sourcing (PNP) inputs are supported by the product.

Sinking



Sourcing

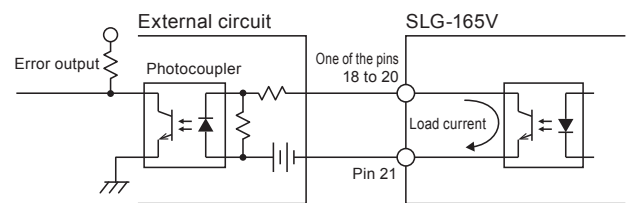


Output Signals

The status between pin 21 and pins 18 to 20 on the parallel communications connector changes from open to closed to report the status of the product.

Input signal specifications			
Rated input voltage	Maximum input voltage	Load current	Leak current
24 VDC	26.4 VDC	10 mA max.	50 uA max.

Output Circuit Example



Digital Intensity Control Inputs

The light intensity is controlled to any of 1024 levels with parallel signal inputs. Use pins 2 to 11 (B0 to B9) on the parallel communications connector. Refer to the following logic table for the settings.

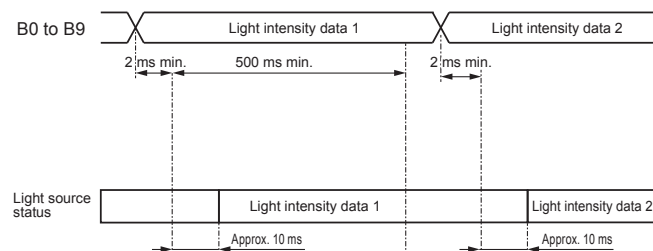
Logic Table

Set value	B9	B8	B7	B6	B5	B4	B3	B2	B1	B0	Radiant quantity
0	0	0	0	0	0	0	0	0	0	0	Minimum value
1	0	0	0	0	0	0	0	0	0	1	
2	0	0	0	0	0	0	0	0	1	0	
255	0	0	1	1	1	1	1	1	1	1	
1022	1	1	1	1	1	1	1	1	1	0	
1023	1	1	1	1	1	1	1	1	1	1	Maximum value

1: Photocoupler ON 0: Photocoupler OFF

* When negative logic is set on the FB/LOGIC Setting Screen, the legend is as follows:
1: Photocoupler OFF 0: Photocoupler ON

* When 8BIT is set on the UNIT Setting Screen, only pins B0 to B7 can be used.



LED ON/OFF input

When Digital or 0-5V Is Set on the MODE Setting Screen

Input a signal to pin 13 (LED SW) on the parallel communications connector to turn ON the photocoupler and turn ON the light source (Response time: 10ms typ.).

Status Output

If an LED error (open or shorted) is detected, the circuit between pin 18 (LED ERR) and pin 21 (OUT COM) is closed.

If an LED temperature error is detected, the circuit between pin 19 (LED TMP) and pin 21 (OUT COM) is closed.

While the LED module is lit, the circuit between pin 20 (LED ON) and pin 21 (OUT COM) is closed.

Analog Intensity Control Input

The light intensity is controlled with a voltage between 0 and 5V applied to pin 24 (AN IN) on the parallel communications connector. Pin 25 (AN GND) is the ground.

The light intensity is 1 when both pins are open.

* When you use the analog intensity control input, you can use the intensity lock input to suppress fluctuations in the intensity caused by fluctuations in the analog voltage.

* The light intensity that is set with the analog input is not stored in the product.

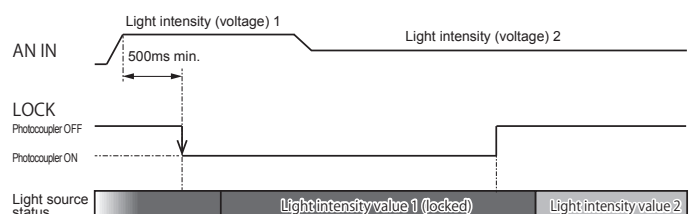
* Use a 10-kΩ potentiometer for the analog input.

Intensity Lock

If 0-5V is set on the MODE Setting Screen, you can input a signal to pin 12 (LOCK) on the parallel communications connector to turn ON the photocoupler.

The light intensity control is locked (disabled) while the photocoupler is ON. During that time, even if the voltage that is applied to pin 24 on the parallel communications connector fluctuates, the intensity will remain stable.

* If you cycle the power while the intensity control is locked, the intensity is locked to 0. Release the lock to continue operation.



6 Controlling Operation with Ethernet Communications

You can set up operation and confirm the status of the product with commands input and output through the Ethernet connector. When you control operation with Ethernet communications, set *Ethernet* on the MODE Setting Screen. Also, set the network addresses on the NETWORK Setting Screen to enable connecting the product to the network. Refer to *Operations on the LCD* on page 3 for information on the MODE Setting Screen and the NETWORK Setting Screen.

▣ Communications Specifications

TCP/IP, UDP/IP, and Ethernet (Baud rate: 10 Mbps or 100 Mbps, automatically detected; Transmission medium: 10BASE-T or 100BASE-TX)

▣ Command Formats

An external device such as a PLC or image processing device sends the send data to the product. The external device can get the receive data as the execution result. Commands are exchanged by ASCII code. Commands should begin with a header code and end with an end code as control codes shown below.

• Send Data for Setting Commands

Function	Description	Header	Send command		End Code	Default ^{*1}
			Instruction	Data		
Light Intensity Setting	Sets the light intensity of the product	STX (0x02)	WDA	When 10BIT is Set on the UNIT Setting Screen 0000 to 1023. (0000: Minimum intensity, 1023: Maximum intensity)	ETX (0x03)	0000 or 000
ON/OFF Setting	Turns the LED ON or OFF.		WD8	When 8BIT is Set on the UNIT Setting Screen 000 to 255. (000: Minimum intensity, 255: Maximum intensity)		0
Reply IP Address Setting	Sets the IP address to which the product sends the execution result.		WDD	0: OFF, 1: ON		192.168.0.016
Reply Port Setting	Sets the port number to which the product replies the execution result.		WIP	000.000.000.000 to 255.255.255.255 (Specify all digits, e.g., specify 192.168.0.005 instead of 192.168.0.5) ^{*2}		30001
Filter No. selection	Selects the filter No.		WPT	0000 to 65535 (Specify all digits, e.g., specify 04561 instead of 4561.)		1
			WFC	1~5		

^{*1} Any changes to the above default settings will be retained after the power supply is turned OFF except for the ON/OFF setting.

^{*2} Changes to setting made with the WIP or WPT instructions are enabled after the product is cycled.

• Send Data for Query Commands

Function	Description	Header	Send command	End Code
			Instruction	
Setting Query for Light Intensity	Gets the light intensity set with the Ethernet communications.	STX (0x02)	RDA	ETX (0x03)
Query for ON/OFF Setting	Gets the ON/OFF setting status.		RDD	
Version Query	Gets the version of the control software in the product.		V	
Temperature Query	Gets values for the LED temperature and PCB temperature of the product.		RDT	
Status Query	Gets the error status of the product.		REC	
Filter No Query	Gets Filter No.		RFP	

• Receive Data for Setting Commands

Function	Header		Receive command		End Code
	Normal send data	Send data error	Instruction	Data	
Light Intensity Setting, ON/OFF Setting, Reply IP Address Setting and Reply Port Setting	ACK (0x06)	NAK (0x15) ^{*1}	Sent Command	Sent data	ETX (0x03)

^{*1} "NAK" is replied to Light intensity setting commands and ON/OFF setting commands sent NOT with ethernet communications.

• Receive Data for Query Commands

Function	Header		Receive command		End Code
	Normal send data	Send data error	Instruction	Data	
Setting Query for Light Intensity Commands	ACK (0x06)	NAK (0x15)	RDA	nnnn ^{*1}	ETX (0x03)
Query for ON/OFF Setting			RDD	0:OFF 1:ON	
Status Query			REC	nnnnn ^{*2}	
Temperature Query			RDT	nnn, mmm ^{*3}	
Version Query			Ver	n.n.n.n ^{*4}	
Filter No Query			RFP	1~5	

^{*1} RDA commands should be in 4 digits in both cases of 10 BIT and 8 BIT is set on the Unit Setting Screen.

^{*2} From the left, the digits indicate total irradiation time, LED temperature, LED open status, LED short status and Fan slowdown.

"0" is set for normal status. "1" is set for error status. "2" is set for abnormal status. When total irradiation time is over 30,000 hours, "1" is shown.

^{*3} From the left, the digits indicate LED temperature, comma and PCB temperature.

^{*4} Version number is set. e.g) 1.0.0.0

▣ Command Examples

• Setting Commands

Function	Instruction	Description	Send data	Receive data for normal send data	Receive data for send data error*
Light Intensity Setting	WDA	Setting the intensity to 512 in the product	<STX>WDA0512<ETX>	<ACK>WDA0512<ETX>	<NAK>WDAnn<ETX>
ON/OFF Setting	WDD	Turning the LED OFF	<STX>WDD0<ETX>	<ACK>WDD0<ETX>	<NAK>WDDnn<ETX>
Reply IP Address Setting	WIP	Setting 192.168.0.2 as the reply address	<STX>WIP192,168.000.002<ETX>	<ACK>WIP192,168.000.002<ETX>	<NAK>WIPnn,nn.nn.nn<ETX>
Reply Port Setting	WPT	Setting 13484 as the reply port	<STX>WPT13484<ETX>	<ACK>WPT13484<ETX>	<NAK>WPTnn<ETX>
Filter No. selection	WFC	Selects the filter No.	<STX>WFC3<ETX>	<ACK>WFC3<ETX>	<NAK>WFCn<ETX>

• Query Commands

Function	Instruction	Description	Send data	Receive data for normal send data	Receive data for send data error*
Light Intensity Setting	RDA	Setting query of light intensity	<STX>RDA<ETX>	<ACK>RDA0512<ETX>	<NAK>RDAnn<ETX>
ON/OFF Setting	RDD	Query for ON/OFF setting	<STX>RDD<ETX>	<ACK>RDD0<ETX>	<NAK>RDDnn<ETX>
Status Query	REC	Query for error status	<STX>REC<ETX>	<ACK>REC00000<ETX>	<NAK>RECnn<ETX>
Temperature Query	RDT	Query for LED temperature and PCB temperature	<STX>RDT<ETX>	<ACK>RDT023,020<ETX>	<ACK>RDTnn,nn<ETX>
Filter No. query	RFP	Gets filter No.	<STX>RFP<ETX>	<ACK>RFP3<ETX>	<NAK>RFPn<ETX>

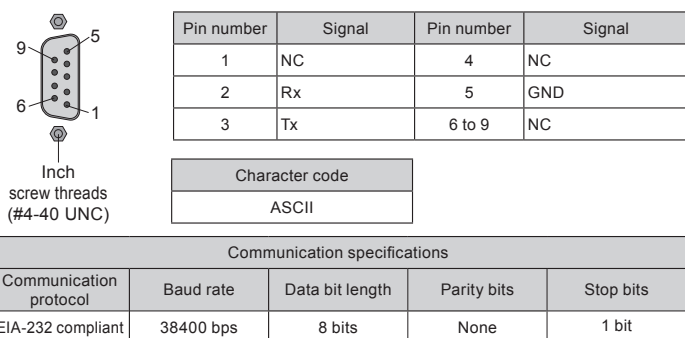
*The codes to be shown in the position of "nn" in the receive data for send data error will be the same as the instruction command received by the product.

7 Controlling Operation with RS-232C Communications

You can set up operation and confirm the status of the product with commands input on the RS-232C communications connector. When you control operation with RS-232C communications, set RS232C on the MODE Setting Screen. Refer to *Operations on the LCD* on page 3 for information on the MODE Setting Screen.

RS-232C Communication Connector Layout (9-pin D-sub Socket)

The following figure shows the arrangement of the connector pins.



*Use a cross cable of 3-m length max.

Command Formats

An external device such as a PLC or image processing device sends the send data to the product. The external device can get the receive data as the execution result.

Commands are exchanged by ASCII code. Commands should begin with a header code and end with an end code as control codes.

For the set commands and query commands, refer to page 5, "Controlling Operation with Ethernet Communications."

* "NAK" is replied to Light intensity setting commands and ON/OFF setting commands sent NOT with RS-232C communications.

8 Operation instructions for filter changer

1 Control modes

Filter changer can be controlled in the following three control modes:

Ethernet control mode

Filter No. can be selected by WFC commands in RS-232C communication commands control mode:
※ Refer to Page 5.

Panel mode control with filter select button

When you push the button once, the filters shift to another one by one. The changer will turn clockwise. Holding the button down will not result in continuous shifting.

Parallel communication control with External input

Filter No. Input Terminal (4 pins) is mounted. Through the external connector, select the Filter No. by binary states shown below.

Pin No.	Function
1	Input COMMON
2	Filter No. BIT0
3	Filter No. BIT1
4	Filter No. BIT2

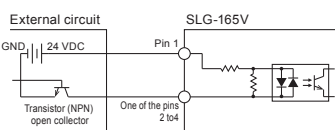
Filter No	Pin 4 (BIT 2)	Pin 3 (BIT 1)	Pin 2 (BIT 0)
1	OFF	OFF	OFF
2	OFF	OFF	ON
3	OFF	ON	OFF
4	OFF	ON	ON
5	ON	OFF	OFF

※ The above example is for the case FB/LOGIG setting is POSITIVE.

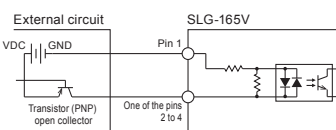
For the case FB/LOGIG setting is NEGATIVE, all the settings should be reversed. "ON" should be changed to "OFF," and vice versa.

Both sinking (NPN) and sourcing (PNP) inputs are supported by SLG-165V.

Sinking



Sourcing



2 Filter size

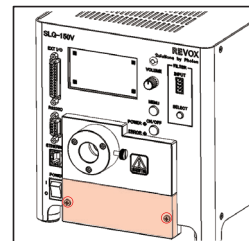
The filter of the following size could be used.
φ26.5±0.5mm t=1.8 +0.2 -0

3 Filter replacement

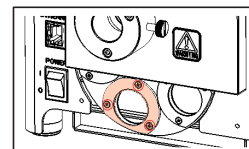
Place SLG-165V with front panel parallel to the working table.

Use a magnetic screw driver so that no screws are dropped in the SLG-165V.

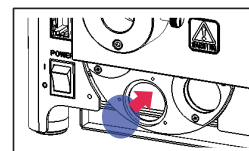
1. Turn off SLG-165V. Untighten the two screws marked with red circles and remove the front cover.



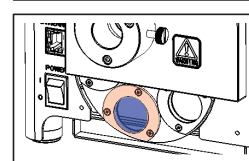
2. Remove the filter holder untightening the three screws marked with red circles.



3. Place the filter in the hole where the holder is removed.



4. Put the filter holder onto the filter, secure it with screws, and reattach the front cover.



※ In case filter hole position is deviated for some reasons, turn off SLG-165V and turn it on for initialization.

9 Error Information Screen

When an error is detected, the error lamp will flash and the Error Information Screen will appear.

The item that corresponds to the error will be highlighted. For example, a shorted light circuit is indicated in the screen shown below.

If an error is detected for the fan speed, in addition to the highlighting, "warn" is displayed instead of the fan speed.

【ERROR Report】	
LED 25°C ¹⁾	PCB 35°C ²⁾
LED SHORT ³⁾	OPEN ³⁾
FAN 2500 rpm ⁴⁾	
Press MENU key	

#	Item	Description
1	LED temperature	The LED module has reached a high temperature. The light output will stop.
2	PCB temperature	The main board has reached a high temperature. The light output will stop.
3	LED status detection	An open or shorted light circuit has occurred.* The light output will stop.
4	Fan speed	The fan in the product has slowed down or stopped. The light output will continue.

* An open light circuit may not be detected when the intensity is low.

- Press the MENU button to switch between the Operation Screen and this screen. If the light output is stopped, the ⊗ icon will be displayed at the center of the intensity indicator on the Operation Screen.
- Eliminate the error and then cycle the power. If the error continues after cycling the power, contact REVOK.

* Also, the error lamp will flash continuously when the actual lighting time exceeds 30,000 hours.

unit:mm

unit:mm

unit:mm

unit:mm

11 Main Specifications

Product name	LED Fiber Optic Illuminator
Model	SLG-165V
Applicable fiber bundle diameter	Ø8 to 14 mm
Light distribution angle	30° (Full angle)
LED color	White
Drive method	Constant-current drive
Light control method	Variable-current control
Number of channels	1 channel
Input power supply	100 to 240 VAC (±10%), 50/60 Hz [For usage in Japan: 100 VAC (±10%), 50/60 Hz]
Power consumption (typ.)	205 VA [For usage in Japan: 100 VAC, 190W]
Inrush current (typ.)	15 A at 100V AC, 30 A at 200V AC from a cold start
Ground leakage current	3.5 mA max. (264 VAC, 60 Hz, with no load) [For usage in Japan: 1 mA max. (100 VAC, 60 Hz, with no load)]
Insulation withstand voltage (Input-FG)	1,500 VAC for one minute, cutoff current: 10 mA, 500 VDC, 20 MΩ min.
Operating environment (indoor use only)	Temperature: 5 to 40°C, Humidity: 20% to 80% (with no condensation) Altitude: 2,000m max., Transient overcurrent: Category II, Pollution level: 2
Storage environment	Temperature: -15 to 60°C, Humidity: 20% to 85% (with no condensation)
Cooling method	Forced cooling
Environmental regulations	RoHS compliant
Material, coating, and surface processing	Aluminum alloy (Alumite)
Weight	Approx 5.1kg
Accessories	One Instruction Guide

● Environmental Regulation

EU RoHS Directive

The RoHS Directive is short for the "restriction of use of certain hazardous substances in electrical and electronic equipment." As a directive, it restricts the use of specific hazardous substances for new electrical and electronic equipment marketed in the EU on or after July 1, 2006, and restricts the use of six substances, which are (1) lead, (2) mercury, (3) cadmium, (4) hexavalent chromium, (5) polybrominated biphenyl (PBB), and (6) polybrominated diphenyl ether (PBDE).

*Standards for "RoHS Directive-Compliant Products"

Lead	Mercury	Cadmium	Hexavalent chromium	PBB	PBDE
1000ppm max.	1000ppm max.	100ppm max.	1000ppm max.	1000ppm max.	1000ppm max.

(Items that are exempted in the RoHS Directive are excluded from these standards.)

China RoHS Directive

China RoHS Directive is formally known as "Management Methods for Controlling Pollution by Electronic Information Products", which was implemented on March 1, 2007 in China. Same as EU RoHS Directive, this regulation restricts the usage of six substances such as lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyl (PBB), and polybrominated diphenyl ether (PBDE). This regulation requires electronic information products which are manufactured or imported, and sold in China, to clearly disclose contents of the 6 restricted substances listed below.

Name and amount of toxic and hazardous substances or elements							
Usage Deadline for Environmental Protection	Product name	Toxic or Hazardous Substances and Elements					
		Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent chromium (Cr(VI))	PBB	PBDE
	Integrated lights and control units	×	○	×	○	○	○
○: Indicates that this toxic or hazardous substances contained in all the homogeneous materials for this part, according to SJ/T11363-2006 is within the limit requirement. ×: Indicates that this toxic or hazardous substance contained in all the homogeneous materials for this part, according to SJ/T11363-2006, is over the limit requirement. *Lead and cadmium are excluded in EU RoHS.							
Usage deadline for environmental protection The number used in this logo is based on "Management Methods for Controlling Pollution by Electronic Information Products" and related regulations from People's Republic of China. It shows the product usage duration in years for environmental protection. After finishing a product usage, the product needs to be re-used or discarded appropriately following local law and regulations, complying with safety and usage caution.							

产品中有毒有害物质或元素的名称及含量							
环保使用期限	产品	有毒有害物质或元素					
		铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
	照明·电源一体型	×	○	×	○	○	○
○: 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。 ×: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-2006 标准规定的限量要求。 (注) 铅和镉中的 "×", 因欧洲 RoHS 没限定, 故用 "○" 表示。							

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- In nuclear energy control systems, railroad systems, aviation systems, vehicles, combustion equipment, medical equipment, amusement machines, or safety equipment.
- In applications involving serious risk to life or property, particularly applications demanding a high level of safety.

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Ask any product queries to the following.



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