

Digital Fiber Amplifier

D2RF/D2GF Series

D2RF-T □ D2GF-T □
 D2RF-2T □ D2GF-2T □
 D2RF-TC □/4 D2GF-TC □/4
 D2RF-2TC □/3/4 D2GF-2TC □/3/4

Instruction Manual

- Thank you for purchasing DSA Series. We hope you are fully satisfied with this product and enjoy its performance.
- Carefully read this instruction manual and keep it for future reference.

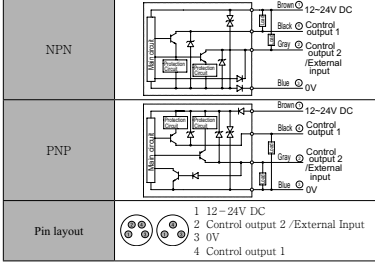
Carefully read and understand the safety precautions before operation. The important information is provided to protect your health and property. Do not apply any other installing or operating procedure other than that described in this manual.

Safety Precautions

- CAUTION**
- It is dangerous to wire or attach/remove the connector with the power on. Make sure to turn off the power before operation.
- Make sure to use the product with the protective cover attached and closed.
- Installing in the following places may result in malfunction:
 - A dusty or steamy place
 - A place generating corrosive gas
 - A place directly receiving scattering water or oil.
 - A place suffered from heavy vibration or impact.
- The product is not designed for outdoor use.
- Do not use the sensor in transient state after power on (approx. 100 ms).
- Do not wire with the high voltage cable or the power line. Failure to do this will cause malfunction by induction or damage.
- The sensor performance or digital display values may depend on the individual units or the condition of detected product.
- This product is not an explosion-proof construction. Do not use the product under flammable, explosive gas or liquid environment.
- Do not use the product in water.
- Do not disassemble, repair, or convert the product. Failure to do this may cause failure, fire, or electric shock.
- Operate within the rated range.

This product cannot be used as a safety device to protect human body.

Input/Output Schematic



Manual Adjustment

Pressing the UP/DOWN button in the RUN mode flashes the threshold. It indicates that adjustment is possible. Adjust to any value using the UP/DOWN button. When using the zone teaching, the threshold of upper/lower limit can be set individually.

① Normal ② When using zone teaching
 Setting Lower Limit (Far) Setting Upper Limit (Near)

Automatically returns to the normal display 5 seconds after completion of the setting (no operation).
 * No operation state for 5 seconds during setting automatically returns the display to normal as well.

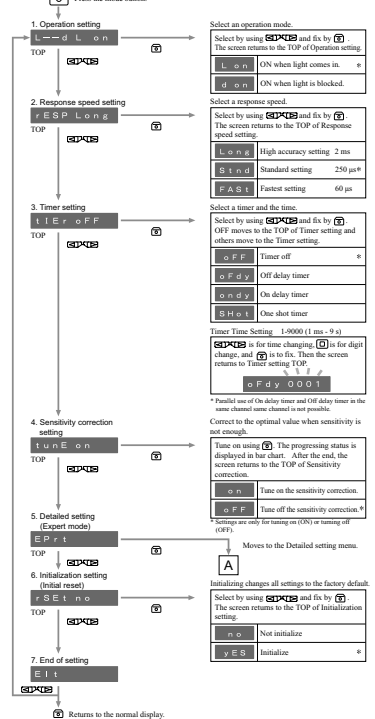
Error Display in Teaching

An error message is displayed in the event of error during adjustment.

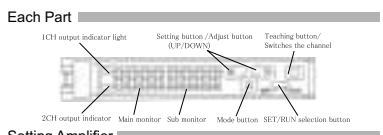
Refer to the table below for readjustment.

Err 1	Indicates shortage of light intensity or no difference of light intensity.
Err 2	Indicates a sampling error in teaching of a moving object.
Err 3	Indicates a calculation error.
op 1 / op L 1	Indicates that the teaching is interrupted.

Function Setting



Cable type	Standard type		Color mark type	
	IP66	D2RF-T (N/P)	D2GF-T (N/P)	D2GF-2T (N/P)
MS connector type	IP66	D2RF-TC (N/P) 4	D2GF-TC (N/P) 4	D2GF-2TC (N/P) 4/3
Power source, voltage	12-24V DC ±10% (including a ripple)			
Consumption current	45mA or less / 24V			
Response time	60µs/250µs/2ms (Fast/Standard/Long)			
Control output	Light on / Dark on Switching type in the function			
Short-circuit protection	Incorporated			
Light source	Red LED		Green LED	
Indicator light / Display	Output Indicator light - Orange (output 1/output 2) / 7 segment 8 digit display			
Sensitivity setting	Teaching / Manual adjustment			
Timer function	OFF, On delay timer, Off delay timer, One-shot timer			
Timer time	1ms-9s			
Setting input/output	External input setting (Teaching/counter reset)			
Operating temperature/humidity	-25 ~ +55°C / 35 ~ 85%RH (No freezing and No condensation)			
Storage temperature/humidity	-40 ~ +70°C / 35 ~ 85%RH (No freezing and No condensation)			
Shock resistance	10 ~ 55Hz Amplitude 1.5mm 2 hours for each direction of X, Y and Z			
Protective category	IP50 / IP66			
Material	PPE : Case, PC : Cover, Case (IP66)			
Weight (Including cordes)	M8 Connector type : 18g, 23g (IP66)			

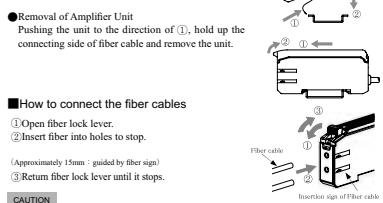


Setting Amplifier

Attaching and Removing to/from DIN rail

① Attachment of Amplifier Unit
 Hook the claw of the connecting side of fiber cable to the DIN rail. Then press down the hook until it locks.

② Removal of Amplifier Unit
 Pushing the unit to the direction of ①, hold up the connecting side of fiber cable and remove the unit.

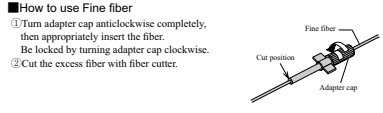


How to connect the fiber cables

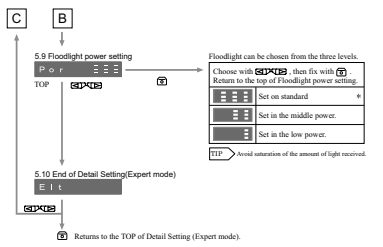
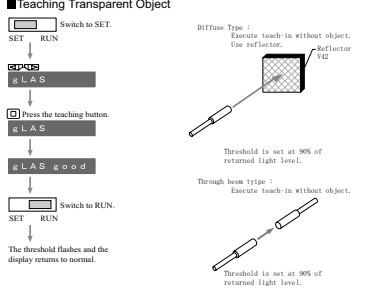
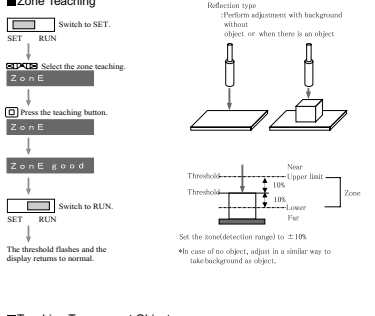
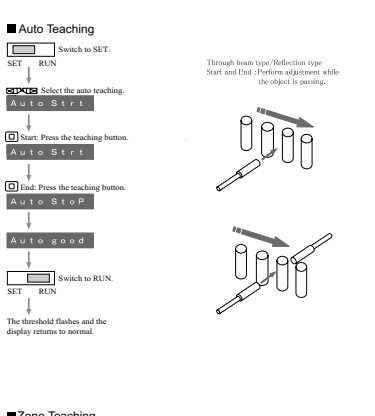
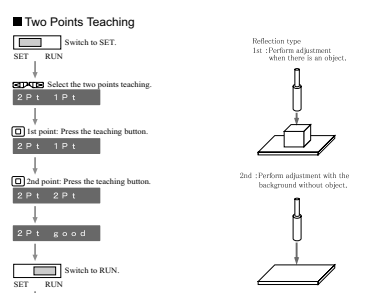
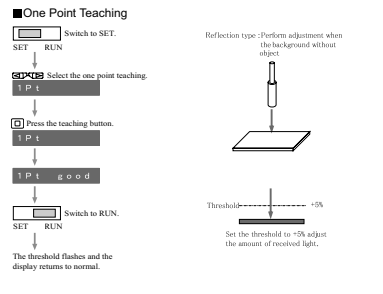
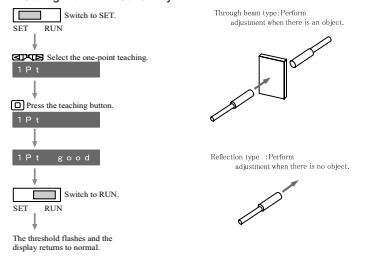
① Open fiber lock lever.
 ② Insert fiber into holes to stop.
 ③ Return fiber lock lever until it stops.

(Approximately 15mm - guided by fiber sign)

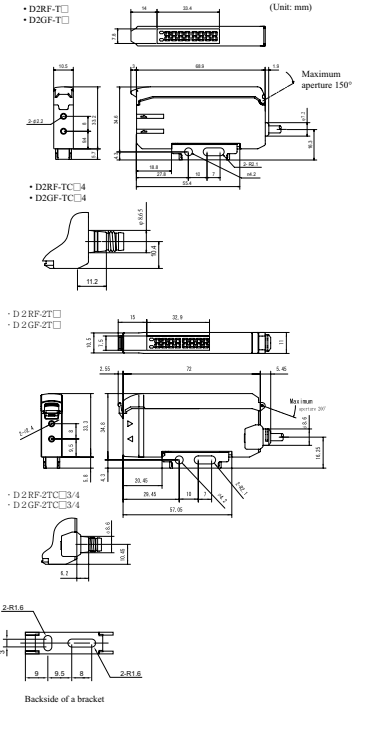
CAUTION
 With Coaxial reflection fiber, set single core fiber or white-lined fiber to the emitter. Then set Multi weak fiber to the receiver.



Adjustment



Dimensional drawing



Precautions for Function Setting

- means factory default setting.
- Unavailable settings are not indicated automatically.
- There are not any troubles and failures.
- Hold down the operation button for approx. 0.3 seconds if not especially specified.
- The sub monitor starts flashing when each setting selection becomes available.
- The monitor in use of the counter function displays "U" when the up-counter is selected, and displays "d" when the down-counter is selected.

Switching Channel

Press [CH 2] on Run mode, target channel blinks and switch to it.

Returning to Normal Display with One Button

Pressing the [E] button for 2 seconds or more in setting each function enables to return to the normal display (RUN mode) without using [E] (Exit).

Key Lock

Hold down the operation button for 2 seconds or more simultaneously in the RUN mode. Operate in the same way to cancel as well.

Change threshold of Alarm output

With Alarm Setting (Alarm output need to be fixed at 5.5 Input/Output setting), threshold (Output timing) can be changed.

SAM Circuit (ASC = Automatic Sensitivity Control)

Threshold value will be automatically reset as the sensor continuously monitors returned light. Sudden change of returned light, like cleaning of lens, will trigger reset of the best threshold computed in the circuit (SAM circuit).

APC (Auto Power Control)

Emission LED power is continuously kept at same level compensating damping of LED in the long run of working time. For this function detection level is kept same as preset level.

Options

