

Digital Fiber Amplifier

D2RF/D2GF Series

Analog Output Model
D2RF-TAN
D2RF-TAP

Instruction Manual

- Thank you for purchasing the D2RF 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.

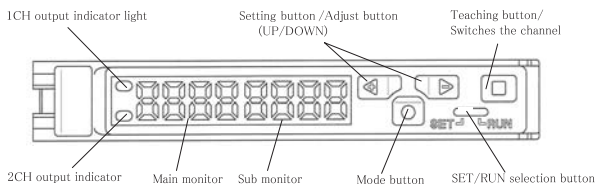
Safety Precautions



- 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:
 1. A dusty or steamy place
 2. A place generating corrosive gas
 3. A place directly receiving water or oil mist.
 4. A place that is subjected to heavy vibration or impacts.
- 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 in a 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.

Part Description

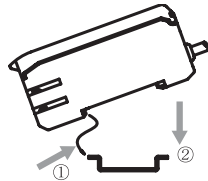


Model	Analog Output
Cable type	D2RF-TA (N/P)
Power source, voltage	12-24V DC \pm 10% including ripple
Consumption current	45mA or less / 24V (When not using analog output)
Response time	60 μ s / 250 μ s / 2 ms (Fast/Standard/Long)
Control output	NPN / PNP Open collector 100mA / 30V or less Load current: 100mA or less Residual voltage: 1.8V or less
Output method	Selectable Light on / Dark on
Short-circuit protection	Incorporated
Light source	Red LED
Indicator light / Display	Output Indicator: Orange / 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 - 9 sec.
Analog Output	4 to 20 mA
Operating temperature/humidity	-25 ~ +55°C / 35 ~ 85% RH No freezing and No condensation
Store 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
Material	Case: PPE, Cover: PC
Weight	70g (Including cable)

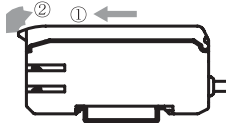
Mounting Amplifier

● Attaching to and Removing from DIN rail

- Attaching the amplifier.
Attach the front of the amplifier onto the DIN rail or mounting bracket. Press the back of the amplifier down until it snaps into place.



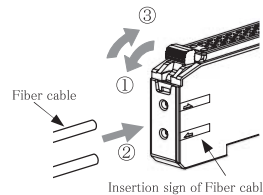
- Amplifier removal.
Push the amplifier in the direction of ①, lift the front of the sensor and remove.



● How to connect the fiber cables

- Open fiber lock lever.
- Insert fiber into holes to stop.

Approximately 15mm guided by fiber sign
Return fiber lock lever until it stops.

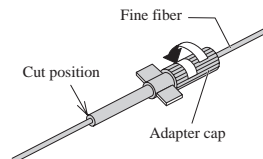


CAUTION

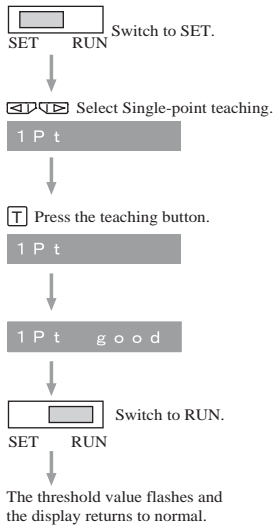
When using diffuse reflection co-axial fiber cables the cable with the single core or white line is the emitter, the multi-core fiber is the receiver.

● How to use Fiber Adapter

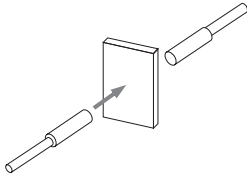
- Turn adapter cap completely counter-clockwise, then insert the fiber.
- Lock the cable by turning adapter cap clockwise.
- Cut the excess fiber with fiber cutter.



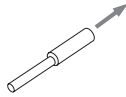
Setting Maximum Sensitivity



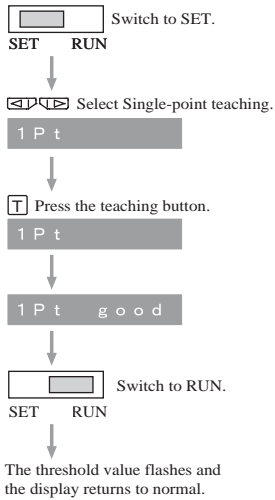
Thru-beam type: Perform the adjustment with an object present.



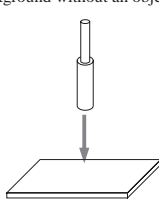
Reflective type: Perform the adjustment without an object present.



Single Point Teaching



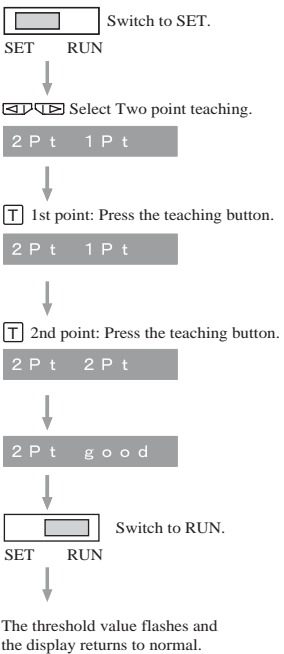
Reflective type: Perform the adjustment on the background without an object present.



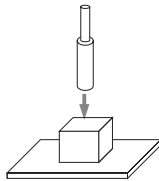
Threshold ----- +5%

The threshold is set to 5% more than the received light intensity value.

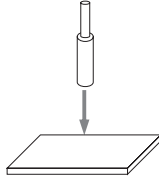
Two Point Teaching



Reflective type:
1st: Perform the adjustment with the object present.



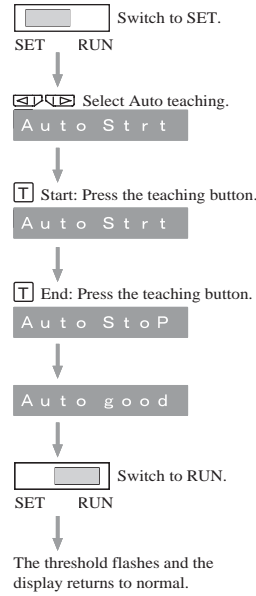
2nd: Perform the adjustment on the background without the object present.



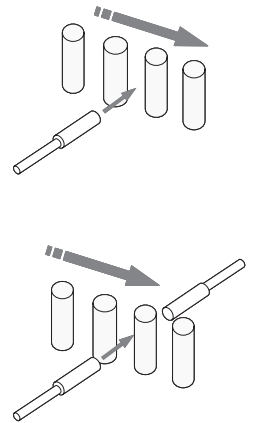
Threshold ----- 1st
----- 2nd

The threshold is set to the center between the 1st and 2nd points.

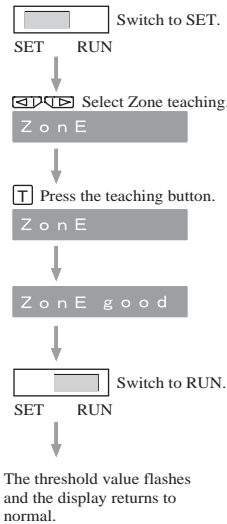
Auto Teaching



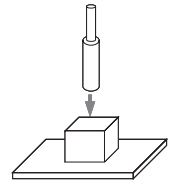
Thru-beam / Reflective type:
Start and end: Perform the adjustment with objects passing by the sensor.



Zone Teaching



Reflective type: Perform the adjustment with the object present.

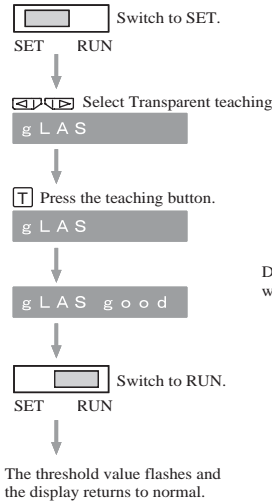


Threshold ----- Near Upper limit
----- 10%
----- 10%
----- Far Lower limit
Zone

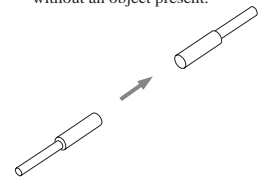
The zone (detection area) is set to +/- 10% of the received light intensity value.

* If the target is not present perform the teach function on the background.

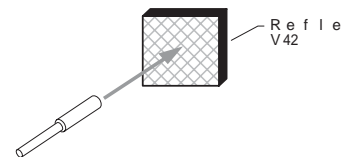
Transparent Object Teaching



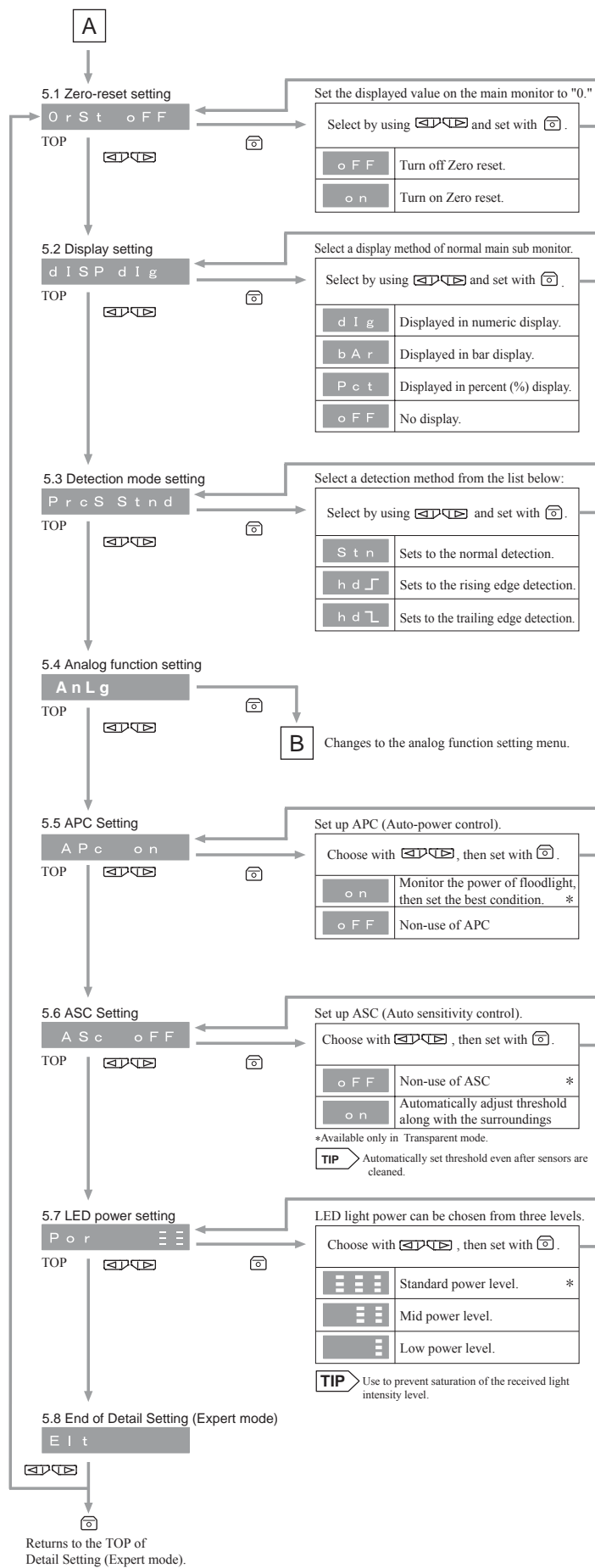
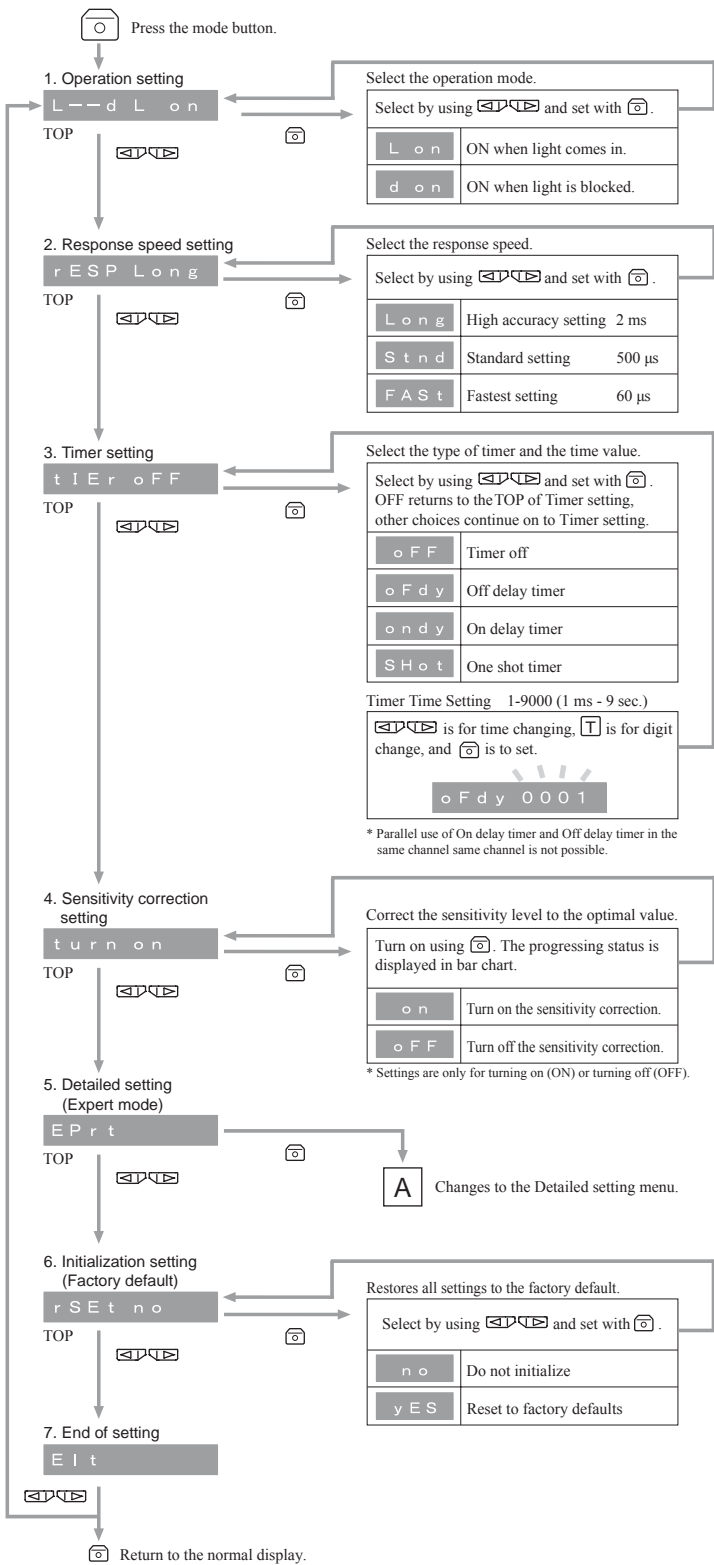
Thru-beam type: Perform the adjustment without an object present.



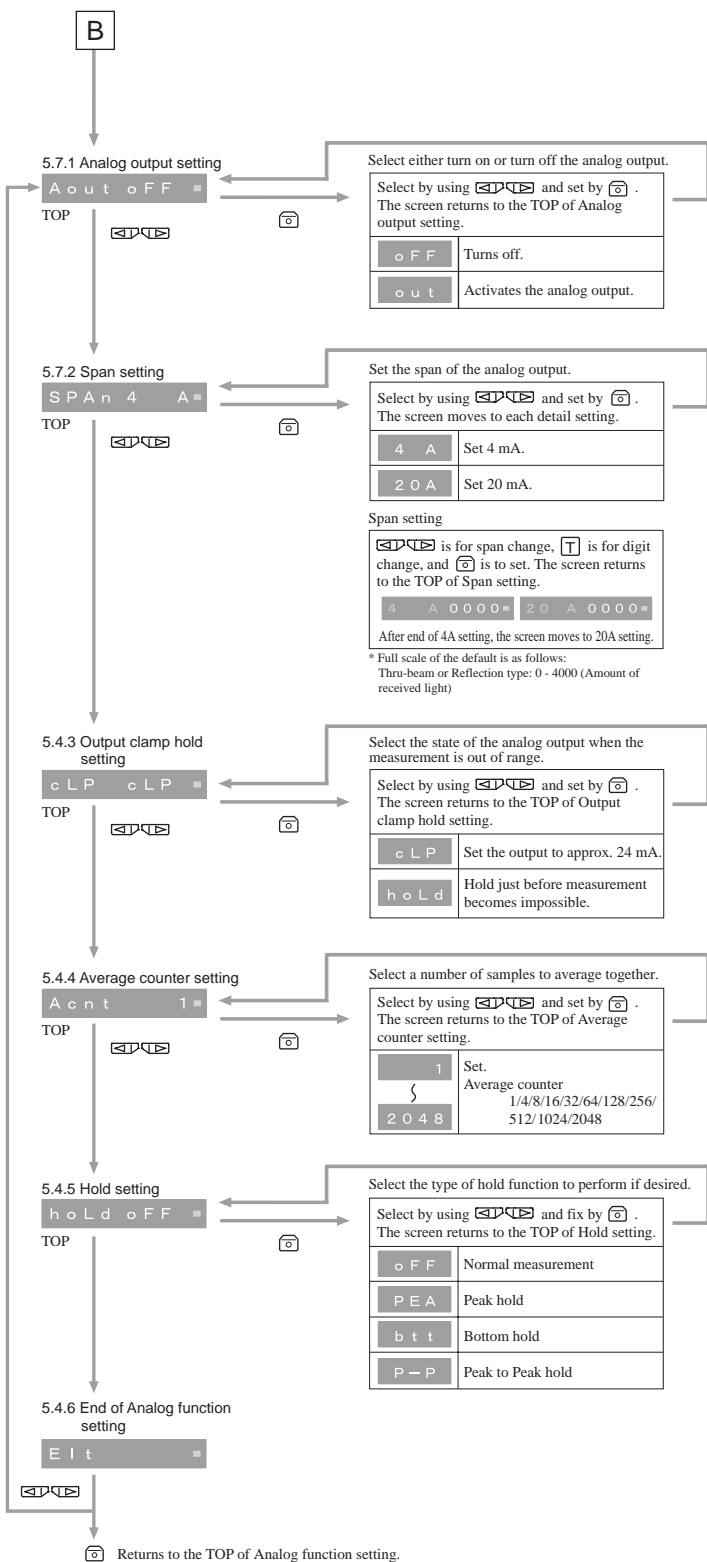
Diffuse Reflective type: Perform the adjustment without an object present. Use a reflector.



Function Setting



Function Setting (Continued)



Precautions for Function Settings

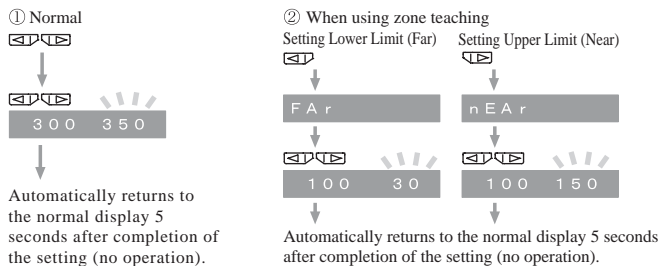
- * indicates factory default setting
- * Settings that are not available will not be indicated automatically
 This does not indicate a problem or failure.
- * Hold down the operation button for approx. 0.3 seconds if not specified differently.
- * The sub monitor starts flashing when each setting selection becomes available.

Manual Setting

Manual Adjustment

Pressing the UP/DOWN button in the RUN mode flashes the threshold value. This indicates that adjustment is possible. Adjust to any value using the UP/DOWN button.

When using the zone teaching, the threshold values of both the upper and lower limit can be set individually ②.



* No operation state for 5 seconds during setting automatically returns the display to normal as well.

Error Display

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.
not cPLt	Indicates that the teaching process was interrupted.

Returning to Normal Display from Function Settings

Pressing and holding the for more than 2 seconds while in the function settings will return the sensor to the normal display (RUN mode) without using Eit (Exit).

* Invalid while setting the timer time, or span value.

Key Lock

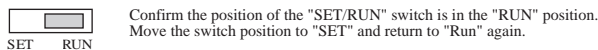
Cancels all the operations. Useful to prevent accidental operation.

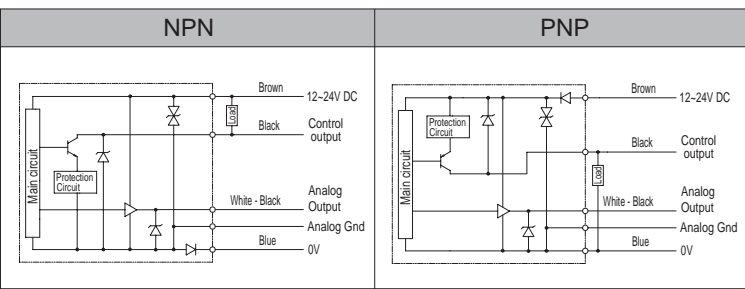
Hold down both of the buttons for more than 2 seconds in the RUN mode to activate the Key Lock function. Repeat this procedure to cancel the Key Lock.



Reset "Peak/ Bottom hold"

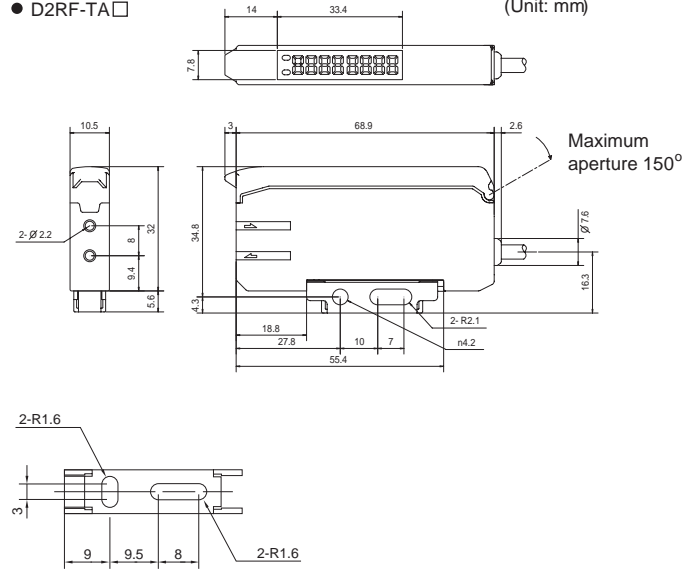
The Peak/Bottom hold function can be reset by changing the amplifier from Run to Set and back again.





● D2RF-TA□

(Unit: mm)



Backside of bracket

Options

	End Unit
	BEF-BE01-W190 (2 pcs)

- Specifications and equipment are subject to change without any obligations on the part of manufacture
- For more information, questions and comments regarding products, please contact us below

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