



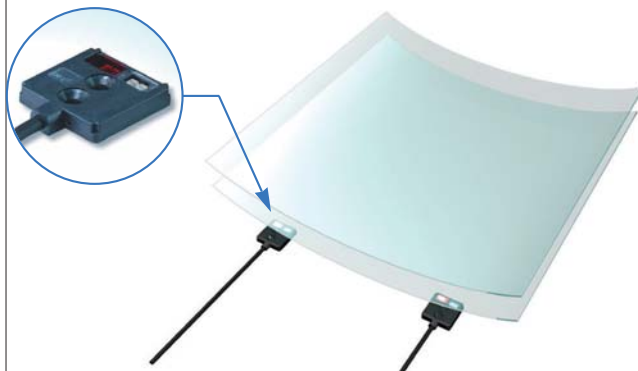
- **Reliably detects inclined transparent glass**
Ideal for flush-mounting in robot end-effector.
- **Unique optical system allows stable detection regardless of warpage or inclination of glass**
Unprecedented reliability in inclined object detection is realized by the use of two red LED light sources
- **Thin (4mm) embedded amplifier photo sensor**
Counterbores for M3 countersunk screws convenient for flush-mounting in robot end-effector.

Type

Detection method	Detecting distance	Model	Operation mode	Output mode
Diffuse-reflective type	20mm	ASG-S20R	Light-ON	NPN Open collector
Limited reflection type	3~15mm	ASG-Z15R		

Applications

Sensor flush-mounted in robot End-Effector
Photo sensor of only 4 mm in thickness flush-mounted in robot hand for detecting the presence of liquid crystal glass.



Optical system employing two LEDs as light sources.
Used for reliable detection of inclined or warped glass.

Difference between ASG-S20R and ASG-Z15R

- ASG-S20R is a diffuse-reflective type sensor with a wide activation range.
If the detected glass is warped, the detecting distance can be 25 mm at maximum.
- ASG-Z15R is a limited zone-reflective sensor with a wide activation range.
If the glass to detect is warped, the detecting distance can be 18 mm at maximum. The sensor is not activated by transparent glass in contact with the sensor.

Rating/Performance/Specification

Type	ASG-S20R	ASG-Z15R
Detection method	Diffuse-reflective sensor for glass detection	Limited zone-reflective sensor for glass detection
Detection object	Transparent glass	
Detecting distance	Transparent glass 20mm max. 25 mm max. (*)	Transparent glass 3 - 15 mm 18 mm max. (*)
Power supply	12~24V DC $\pm 10\%$ / Ripple 10% max.	
Light source	2 red LEDs	
Current consumption	25 mA max.	
Operation mode	Light-ON	
Output mode	Control output	NPN open collector output
	Rating	Sink current 50 mA (30 VDC max.)
Short circuit protection	Provided	
Indicator	Operation indicator : orange LED	
Response time	0.5 ms max.	
Connection	Permanently attached cord (0.15 sq. 3 core 2m length)	
Mass	Approx. 30 g	

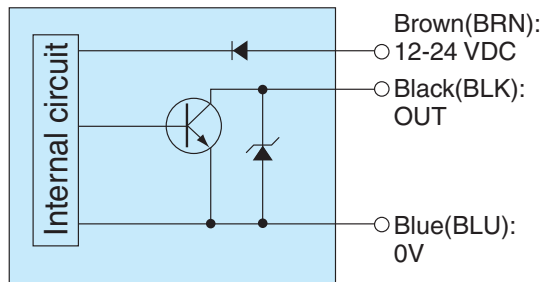
(*) The maximum distance means the distance to the farthest part of an inclined transparent glass. This sensor does not have a sensitivity adjustment volume and must be used with no object interfering with the detection in the surrounding area.

Environmental Specification

Environment	Specification
Ambient light	5,000 lx max.
Ambient temperature	-10 - +55 -C (non-freezing)
Ambient humidity	35~85%RH (non-condensing)
Vibration	10 - 55 Hz / 1.5 mm amplitude / 2 hours each in 3 directions
Protective structure	IP40

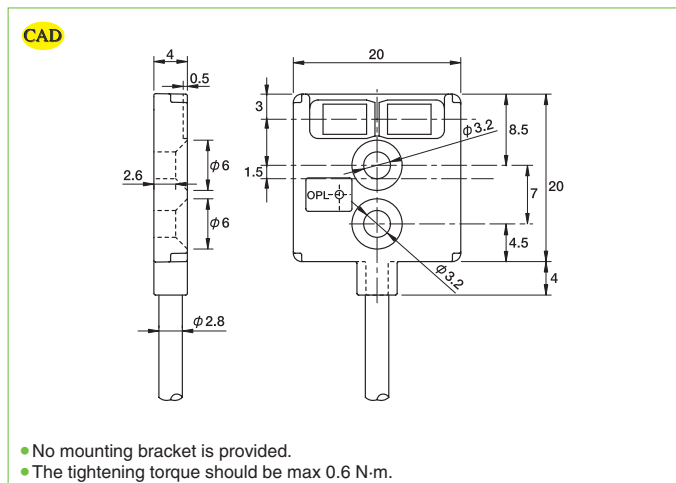
Input/Output Circuit and Connection

NPN output



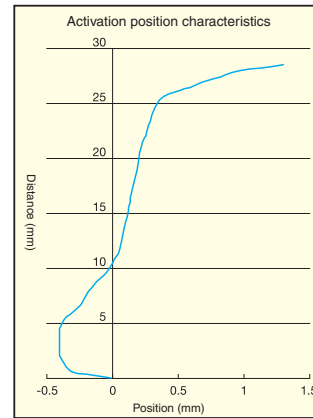
- The output transistor turns off when load short circuit or overload occurs. Check the load and turn the power back on.

Dimensions (in mm)



Activation Position Characteristics (Typical Example)

ASG-S20R



ASG-Z15R

