

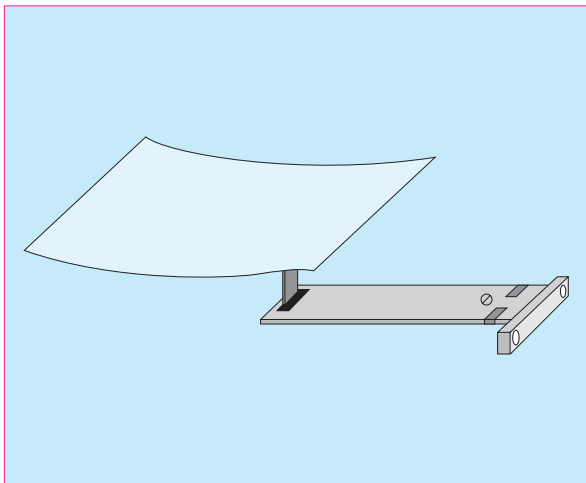
- Collective detection of transparent glass substrates
  - Glass substrates immediately after vapor deposition detectable as long as surface is glossy
  - Mirror-like objects such as stainless steel plates also detectable
- Adaptable to suit each situation including detected object count and pitch
- Each sensor unit independently replaceable
  - If sensor unit for 1 ch is damaged due to shock, etc., the damaged sensor unit can be independently replaced therefore no need to replace the entire sensor.

### Type

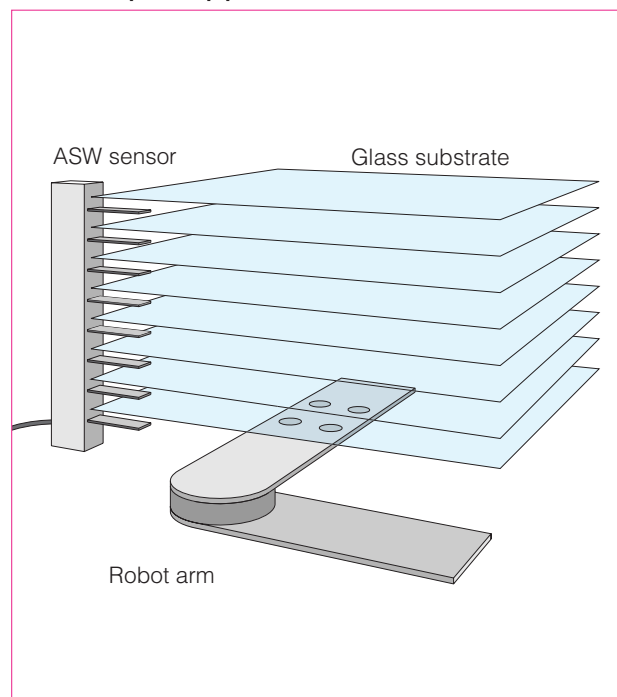
| Detection method | Detection object  | Model               | No. of channels | Substrate pitch | Operation mode | Output mode        |
|------------------|-------------------|---------------------|-----------------|-----------------|----------------|--------------------|
| Reflective type  | Transparent glass | <b>ASW-R06D4228</b> | 28              | 42              | Light-ON       | NPN open collector |

### Overview

ASW is a series of diffuse-reflective type sensors exclusively for glass substrates that detect liquid crystal glass or transparent substrates. An optical system especially designed for glass surface reflection is integrated that reliably detects warped or inclined glass. Operating distance is variable with the sensitivity adjustment provided.



### Sample Application



## Rating/Performance/Specification

| Model                        | ASW-R06D4228   |
|------------------------------|--|
| Detection method             | Diffuse-reflective type for glass substrate  |
| Detecting distance           | Transparent glass at 20 mm max. (warp $\pm 10^\circ$ max.), up to 25 mm                    |
| Detection object             | Transparent glass (vapor-deposited glass detectable as long as surface is glossy *1)       |
| No. of channels              | 28 channels + 1 channel (dummy)  |
| Applicable pitch             | 42mm   |
| Power supply                 | 24V DC $\pm 10\%$ / Ripple 10% max.  |
| Current consumption          | 680 mA max. (with all channels activated)  |
| Output mode                  | NPN open collector (each channel) sink current 30 mA (30 VDC) max.                         |
| Operation mode               | Light-ON   |
| Response time                | 7 ms max.  |
| Light source                 | Red LED (660 nm)   |
| Indicator                    | Operation indicator: orange LED x 28 (channel) (provided on comb teeth)                    |
| Connection (Connector type)  | Permanently attached robot cable (2 m) with connector at end *2 (57-30360 provided by DDK) |
| Mass                         | About 2.4kg  |
| Replacement comb tooth model | ASW-CU60R  |
| Ambient light                | 5000 lx max.   |
| Ambient temperature          | 5-40°C   |
| Ambient humidity             | 35-85%RH (non-condensing)  |
| Protective structure         | IP40   |
| Vibration                    | 10-55 Hz / 1.5 mm amplitude / 2 hours each in 3 directions                                 |
| Dielectric withstanding      | 500V AC for 1 minute   |
| Insulation resistance        | 500 VDC, 20 M $\Omega$ or higher   |

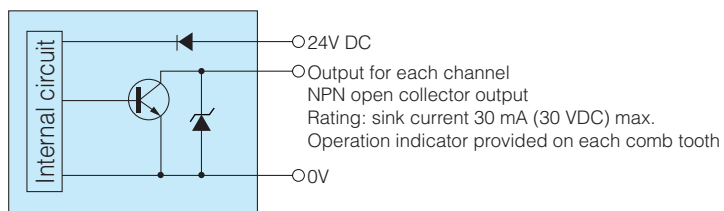
- For model Nos. and configuration, see the following page.

\*1 Detecting distance may be reduced for vapor-deposited glass depending on the film quality (check in advance).

\*2 Cable (provided by Kurabe): bending radius: 60 mm; bending life: 300,000 cycles; AWG 28 x 40; ETFE insulated; with flame-retardant PVC sheath

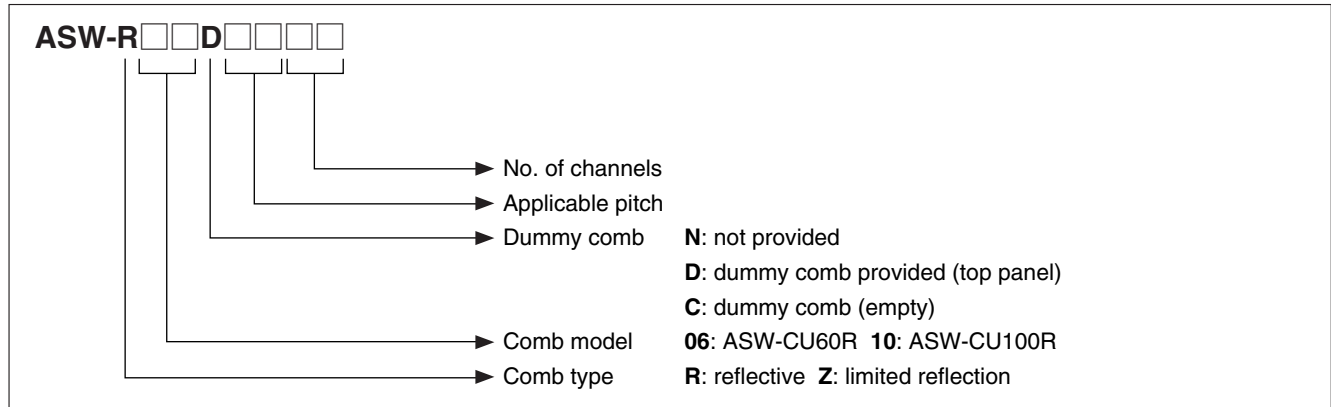
## Input/Output Circuit and Connection

NPN output type



# ASW

## Model No. and Configuration



## Connector External Connection

