

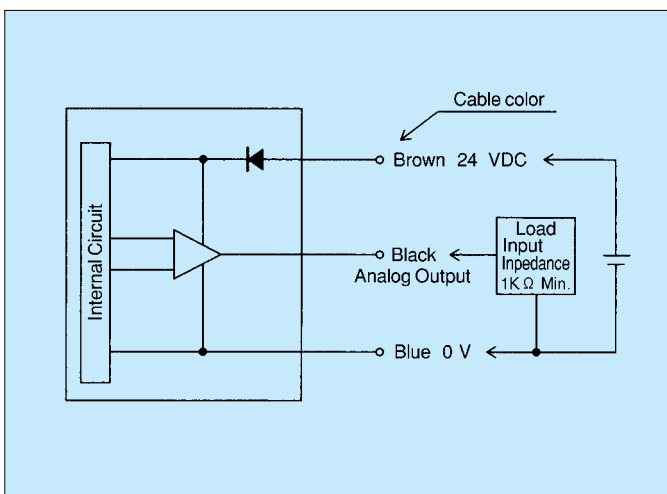
# US-S25AN series

ULTRASONIC SENSORS  
ANALOG TYPE

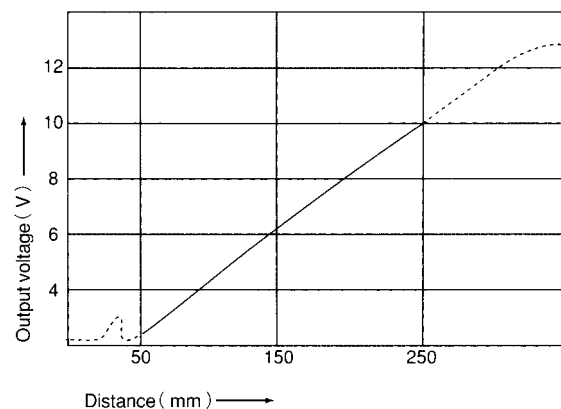
- Easy to handle M18 cylinder type
- Amplifier built in type, easy setting
- Not influenced by the background
- This is a 18mm cylinder shape amplifier built-in type analogue distance sensor that uses micro ultrasonic elements.



## OUTPUT CIRCUIT



## Distance VS OUTPUT CHARACTERISTICS



- Abnormal voltage occurs at or under 60mm of setting distance. Output is not stable at or over 250mm. Effective range of the detection distance is between 60mm and 250mm and the range of the output voltage is between 2.2V and 10V. Use between these limits.
- The output voltage may change due to noise. Take sufficient anti-noise measures in a place with noise.

## SPECIFICATIONS

|                           |   |
|---------------------------|---|
| Model                     | US-S25AN  |
| Detection                 | Reflection type   |
| Range                     | 6 - 25cm ± 1cm  |
| Object Resolution         | 30 × 30mm ( t = 1 Aluminum Plate Sample )   |
| Power Supply              | 24 VDC ± 10% , Ripple 10%( Max. )   |
| Current Consumption       | 25mA( Max. )  |
| Response Time             | 10V 2V : 30ms( Max. )<br>2V 10V : 300ms( Max. )                                   |
| Output Mood               | Analog output V = 2.2 - 10V<br>Source current I = 10mA( Max. ) Output voltage 10V |
| Resolution Power          | 2mm = 80mV( Min. )  |
| Linearity                 | ± 5% / FS( Full scale )Max.   |
| Temperature               | 0.025%FS( Full scale )/   |
| Ultrasonic Wave Frequency | 360kHz ± 15kHz  |
| Led Indicator             | None  |
| Case Material             | Polycarbonate   |
| Connection                | Flying lead( outer dia 4mm ) 0.2sq × 3cores 2m                                    |
| Weight                    | 65g( Max. )   |
| Protection                | Output short circuit protection<br>Power supply reverse connecting protection     |

## ENVIRONMENT

|                              |   |
|------------------------------|---|
| Operating temp.              | - 10 - + 55<br>( Excluding uneven temperature in the air where ultrasonic oscillation transfers ) |
| Humidity                     | 35 - 85 %RH   |
| Operating Velocity Of Window | 1m/sec( Max. )  |
| Case protection              | IP54( No condensation on the ultrasonic element part )  |
| Vibration                    | 10 Hz - 55 Hz. amplitude 1.5mm. 2Hr. X.Y.Z Directions   |
| Shock                        | 490 m/s <sup>2</sup> 2Hr. X.Y.Z Directions<br>( Excluding the ultrasonic element part )           |

## SET-UP ADJUSTMENT AND DETECTION OBJECTS

- With the detection object at the centre of the ultrasonic axis, a normal distance output voltage is obtained. Set up the unit so that the passing detection objects can be detected at as close to the centre axis as possible. The centre axis of the sensor and that of the ultrasonic can be out by a few degrees.
- Objects to be detected are limited. With objects that absorb sound, soft cloths and sponges, the operation distance reduces a great deal and the unit may not operate. Confirm with a hard object, such as an iron sheet, at the same distance.  
The detection distance is not affected by a transparent object or a black object.  
For objects with polished surface, such as mirrors, reflection sound may not come back to the sensor due to the angle of the passing objects.  
Be careful.
- When it is used on liquid level, add countermeasures to reduce waves.
- The minimum resolution is 2mm, but an accuracy of 1mm max. can be obtained by integrating the analogue output voltage.

## DIMENSIONS

