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English (Global)

BE-A301 | For small diameter tubes Optical Bubble Sensor BE-A

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*Photo may vary from actual product.

RoHS compliant

Dimensions

Product Number	BE-A301
Part Number	BE-A301
Product	For small diameter tubes Optical Bubble Sensor
Details	for $\varnothing 3$ mm $\varnothing 0.125$ in tube
Product name	For small diameter tubes Optical Bubble Sensor BE-A

As of July 16, 2018
 Specifications and design of the products are subject to change without notice for the product improvement.

Spec Detail

Item	Specifications
Product Number	BE-A301
Part Number	BE-A301
Detectable air gap	0.8 mm 0.032 in or more (Note) Sensing air gap refers to the width of an air bubble formed in the entire area of the inner diameter of the tube. Please note that this product cannot sense very small air bubbles or water drops.
Sensing object	Liquid (Note) Sensing is affected by dirt or residues adhered to the inner wall of the tube. Please maintain the tube regularly.
Applicable tube dia. (OD×ID)	$\varnothing 3$ mm × $\varnothing 2$ mm $\varnothing 1/8$ in × $\varnothing 1/16$ in (Note) When using a tube out of specifications or it doesn't have a smooth surface, please test sensing on the actual machine before use.
Applicable tube type	Transparent resin tube (equivalent to PFA) (Note) When using a tube out of specifications or it doesn't have a smooth surface, please test sensing on the actual machine before use.
Supply voltage	5 to 24 V DC ± 10 % Ripple P-P 10 % or less
Current consumption	15 mA or less
Output (Incorporated with 2 outputs)	NPN open-collector transistor •Maximum sink current: 50 mA •Applied voltage: 30 V DC or less (between output and 0 V) •Residual voltage: 2 V or less (sink current at 50 mA) 1 V or less (sink current at 16 mA)

Output (Incorporated with 2 outputs):Output operation	Switchable either Liquid-absent-ON or Liquid-present-ON
Output (Incorporated with 2 outputs):Short-circuit protection	Incorporated
Response time:When detecting bubble	20 μ s or less (Note) Actual response time may differ from specification (typical example using applicable tube) due to dimension, light transmission or surface state of test tube in use.
Response time:When detecting liquid	80 μ s or less (Note) Actual response time may differ from specification (typical example using applicable tube) due to dimension, light transmission or surface state of test tube in use.
Operation indicator	Orange LED (lights up with absent liquid)
Protection circuits	Power supply reverse polarity protection , Output reverse polarity protection
Environmental resistance : Protection	IP40 (IEC)
Environmental resistance : Ambient temperature	-25 to +55 °C -13 to +131 °F (No dew condensation or icing allowed), Storage: -30 to +80 °C -22 to +176 °F (Note) Liquid being detected should also be kept within the rated ambient temperature range.
Environmental resistance : Ambient humidity	35 to 85 % RH, Storage: 35 to 85 % RH
Environmental resistance : Ambient illuminance	Fluorescent light: 1,000 lx at the light-receiving face
Environmental resistance : Voltage withstandability	1,000 V AC for between one min. between all supply terminals connected together and enclosure
Environmental resistance : Insulation resistance	20 M Ω , or more, with 250 V DC megger between all supply terminals connected together and enclosure
Environmental resistance : Vibration resistance	10 to 150 Hz frequency, 0.75 mm 0.030 in double amplitude or maximum acceleration 49 m/s ² , in X, Y and Z directions for two hours each
Environmental resistance : Shock resistance	100 m/s ² acceleration in X, Y, and Z directions three times each
Emitter element	Infrared LED(Peak emission wavelength: 855 nm 0.034 mil, non-modulated)
Material	Enclosure: PBT, Tube holder: Polyamide, Indicator: Polycarbonate
Cable	0.09 mm ² 4-core cabtyre cable 1 m 3.280 ft
Cable extension	Extension up to total 100 m 328.084 ft is possible with 0.3 mm ² , or more, cable. (Note)Confirm that the power supply voltage at the end of cable is more than 4.5 V when using an extension of over 20 m 65.167 ft.
Clamping torque	0.5N•m or less
Weight	Net weight: 15 g approx., Gross weight: 25 g approx.
Compliant regulation	EMC Directive compliance, RoHS Directive compliance

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