

## Pressure Sensor of Stainless Steel Construction Is Ideal for a Wide Range of Applications

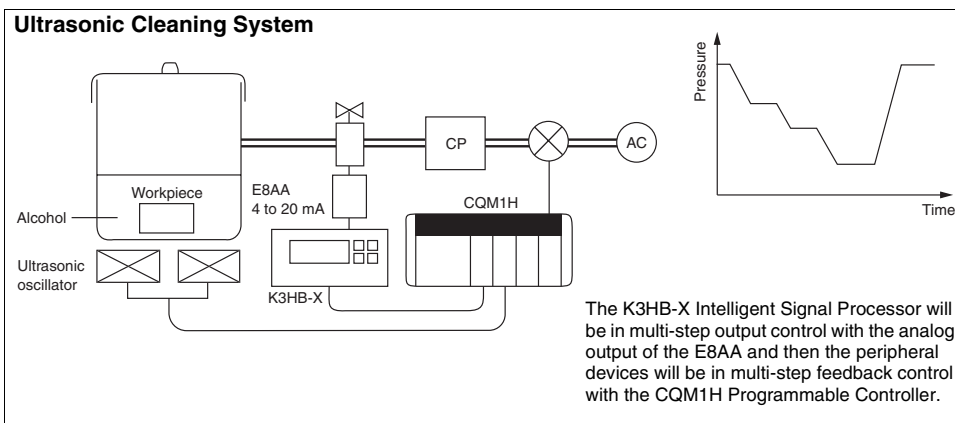
- Incorporates double diaphragms consisting of SUS316L stainless steel and silicone diaphragms that are applicable to a variety of gases and liquids.
- Two models with different pressure sensing ranges: 0 to 500 kPa and 0 to 1 MPa.
- Linear output from 4 to 20 mA with excellent linearity.
- IEC IP66 degree of protection: Washable with water.



**⚠** Be sure to read *Safety Precautions* on page 4.

## Application Examples

- **Semiconductor Manufacturing Equipment:** Pressure monitoring and control
- **Automatic Assembly Equipment:** Pneumatic pressure control
- **Robots:** Pneumatic pressure control
- **Production Lines:** Pneumatic pressure control
- **Industrial Material Pneumatic Transportation Systems**
- **Pressure Tank:** Pressure control
- **Tank Level Control**



## Ordering Information

Pressure range	Output configuration	Model
0 to 500 kPa	Linear output (4 to 20 mA)	<b>E8AA-M05</b>
0 to 1 MPa		<b>E8AA-M10</b>

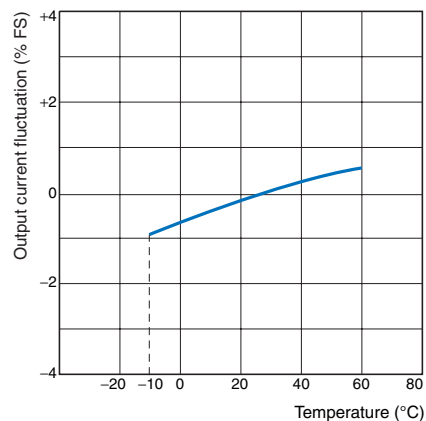
## Ratings and Specifications

Item	Model	E8AA-M05	E8AA-M10
Power supply voltage		12 to 24 VDC $\pm 10\%$ , ripple (p-p): 5% max.	
Current consumption		40 mA max. (standard value including 20-mA output current) at rated pressure	
Pressure type		Gauge pressure	
Pressure range		0 to 500 kPa	0 to 1 MPa
Withstand pressure		980 kPa	2 MPa
Applicable material		Non-corrosive gasses, non-corrosive liquids, inert gasses	
Accuracy (linear output)		$\pm 1\%$ FS max. with a resistive load of 150 $\Omega$ at 23°C	
Hysteresis (linear output)		$\pm 0.5\%$ FS max.	
Linearity (linear output)		$\pm 1\%$ FS max.	
Response time		100 ms max.	
Linear output		4 to 20 mA with a permissible resistive load of 300 $\Omega$ max.	
Ambient temperature		Operating: $-10^{\circ}\text{C}$ to $60^{\circ}\text{C}$ (with no icing) Storage: $-25^{\circ}\text{C}$ to $70^{\circ}\text{C}$ (with no icing)	
Ambient humidity		Operating/Storage: 35% to 95% (with no condensation)	
Temperature influence		$\pm 0.09\%$ FS/ $^{\circ}\text{C}$ max. between $-10^{\circ}\text{C}$ and $60^{\circ}\text{C}$	
Voltage influence		Max. output current fluctuation of $\pm 0.5\%$ FS at 12 VDC $\pm 10\%$ or 24 VDC $\pm 10\%$ with a ripple of 5%	
Insulation resistance		100 M $\Omega$ min. (at 500 VDC) between current carry parts and case	
Dielectric strength		1,000 VAC, 1 min	
Vibration resistance		Destruction: 10 to 500 Hz, 1.5-mm double amplitude or 100 m/s <sup>2</sup> for 2 hours each in X, Y, and Z directions	
Shock resistance		Destruction: 1,000 m/s <sup>2</sup> 3 times each in X, Y, and Z directions.	
Degree of protection		IEC 60529 IP66 (excluding end of cable)	
Pressure inlet		R(PT)1/4	
Connection method		Pre-wired (standard cable length: 2 m)	
Weight (packed state)		Approx. 250 g	
Material	Pressure port and casing	SUS316	
	Diaphragm	SUS316L	
	O-ring	Fluorocarbon rubber	
Accessories		Protective cap, instruction manual	

## Engineering Data (Typical)

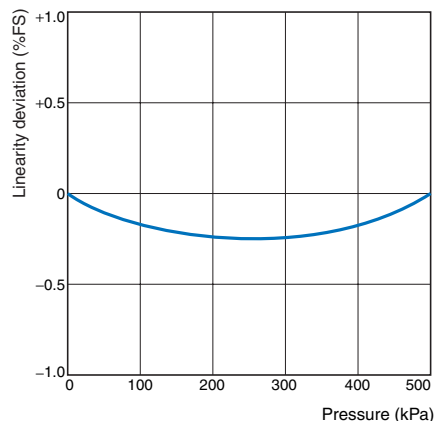
### Output Current Fluctuation vs. Temperature

E8AA-M10



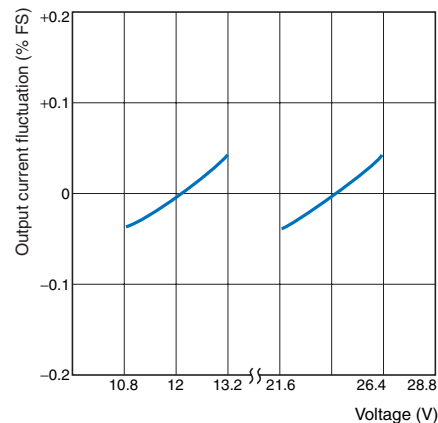
### Linearity

E8AA-M05



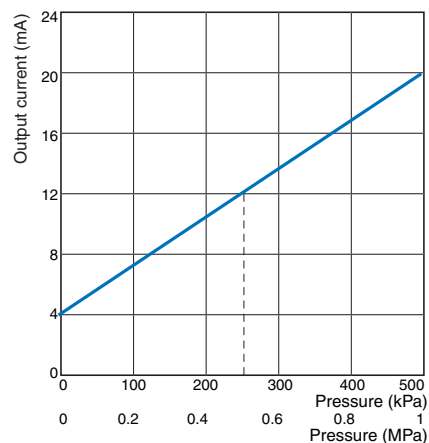
### Output Current Fluctuation vs. Voltage

E8AA-M10



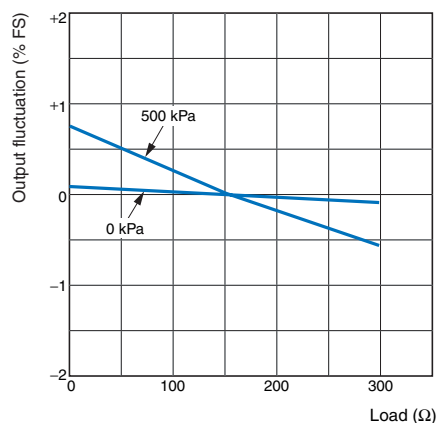
### Output Current vs. Pressure

E8AA-M05 (E8AA-M10)

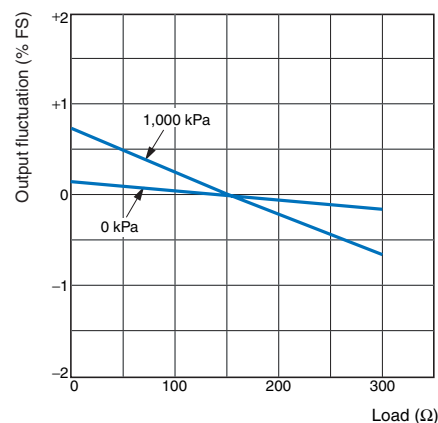


### Output Current vs. Load

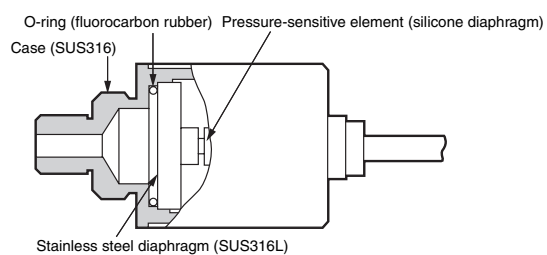
E8AA-M05



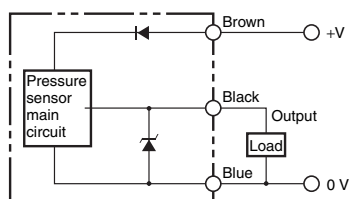
E8AA-M10



## Nomenclature



## I/O Circuit Diagram



## Safety Precautions

### WARNING

This product is not designed or rated for ensuring safety of persons. Do not use it for such purposes.



### Precautions for Correct Use

Do not use the product in atmospheres or environments that exceed product ratings.

#### Mounting

- The cable is in a hollow pipe in order to keep the pressure inside the Sensor the same as the atmospheric pressure. If the pipe is clogged, the accuracy of the Sensor may be lowered.
- Do not bend or impose a heavy weight on the output cable.
- Make sure that the tip of the output cable is open and not clogged with dust or water.
- If the diaphragms are damaged, the Unit will not operate properly. Do not insert a screwdriver or steel wire into the interior of the pressure-sensitive parts.
- The characteristics of the Unit will change if foreign material is stuck to the stainless steel diaphragm.

- The mounting screw for the pressure inlet is a PT1/4 taper screw. Do not use any other type of screw.
- Apply sealing tape to the PT1/4 screw part so that there will be no pressure leakage.
- The most suitable wrench is 22 mm in size.
- Do not apply a tightening torque higher than 49 N·m.
- Do not use the E8AA for applications in which the E8AA comes into direct contact with medical or food products.

#### Wiring

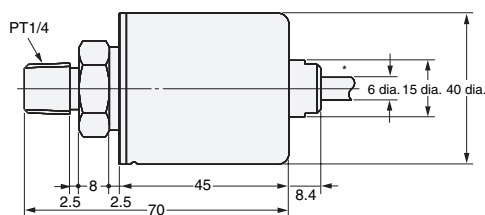
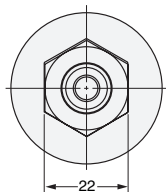
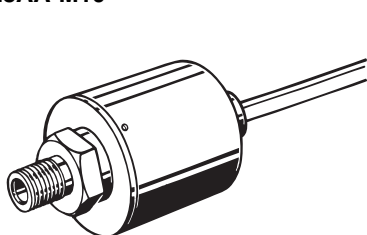
- If it is necessary to cut the output cable, make sure that the tip of the hollow pipe is not clogged.

## Dimensions

(Unit: mm)

E8AA-M05

E8AA-M10



\* 6-dia. vinyl-insulated round cable (in hollow pipe) with 3 conductors, (Conductor cross-section: 0.3 mm<sup>2</sup>, Insulator diameter: 1.5 mm); Standard length: 2 m

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