D5V

Contact Displacement Sensor Integrated with Amplifier Enables Inline Measurement of a Wide Range of Objects at a Low Operating Force



- Works with a low operating force (0.29 N) to detect a wide variety of objects including glass, plastic, and rubber objects.
- Models with digital output for B7A Units and models with 4- to 20-mA linear output corresponding to the 0- to 5-mm measurement range are available.
- Three types of measurement head can be selected according to the object: Ball, pin, or flat.
- The XS3 Sensor I/O Connector makes Sensor connections simple.

Ordering Information

Measurement range	Output specifications	Actuator	Resolution	Model
5 mm	4 to 20 mA	Ball type	10 µm	**D5VA-3B1**
		Pin type		**D5VA-3P1**
		Flat type *1		**D5VA-3F1**
	B7A serial communications output *2	Ball type	1 µm	**D5VM-3B1**
		Pin type		**D5VM-3P1**
		Flat type *1		**D5VM-3F1**

*1. Flat-type actuators have a hole 5-mm deep for an M2.5 screw in the tip so that an actuator can be mounted externally.
*2. Use the D5VM-3□1 in combination with the B7A Link Terminal Output Unit or a C200H or CQM1 B7A Interface Unit. Use 16- or 32-point Units with a standard transmission delay time (19.2 ms). (A high-speed type cannot be used).

Approved Standard Ratings

Conformance to EN50081-1, pr50082-2

Rated current	100 mA
Rated voltage	24 VDC

Ratings and Specifications

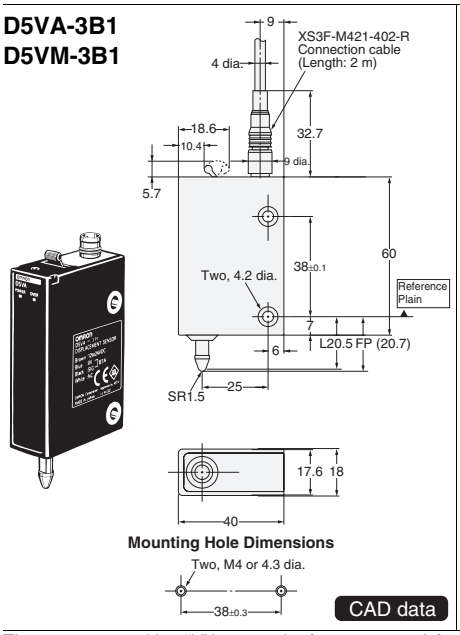
Item / Model	D5VA-3□1	D5VM-3□1
Power Supply voltage	12 to 24 VDC±10% *1	
Current consumption	80 mA max.	
Measurement range	5 mm	
Maximum actuator travel distance	Approx. 5.7 mm	
Offset adjustment range	±0.25 mm	
Resolution	10 μm	1 μm
Linearity	0.5% FS max.	
Repeat accuracy	10 μm max.	
Response time	6 ms max.	37 ms max. (including transmission delay time)
Operating force	0.3 N max.	
Output	Linear current output: 4 to 20 mA (Allowable load resistance: 0 to 300 Ω)	B7A serial communications output (BCD and multipoint ON/OFF output modes *2)
Mounting method	Two M4 screws	
Indicators	Power and overtravel indicators	Power, overtravel, setting, and output indicators
Mechanical durability	10,000,000 operations min.	
Temperature influence	±0.04% FS/°C max.	
Operating temperature	–10 to 55 °C (with no icing or condensation)	
Storage temperature	–25 to 65 °C (with no icing or condensation)	
Humidity range	35% to 85% (with no icing or condensation)	
Insulation resistance	100 MΩ min. (at 100 VDC)	
Dielectric strength	1,000 VAC, 50/60 Hz for 1 min	
Noise resistance	Noise level: 1.5 kV with a pulse width of 100 ns to 1 μs	
Vibration resistance	10 to 55 Hz, 0.75-mm double amplitude	
Shock resistance	196 m/s^2	
Connection cable	2 m (XS3F-M421-402-R provided)	
Weight	Approx. 80 g (without cable)	
Material	ABS and PC polymer alloy	

*1. If power is supplied to both the D5VM-3□1 and B7A Output Link Terminal from a single power supply, the supply voltage must be 24 VDC±10%.
*2. BCD or multipoint output mode can be selected with the mode selector.

Dimensions (The illustration shows the D5VA-□□□.)

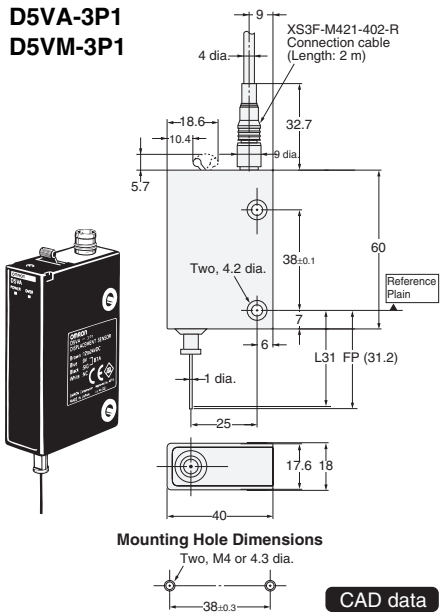
(Unit: mm)

D5VA-3B1
D5VM-3B1



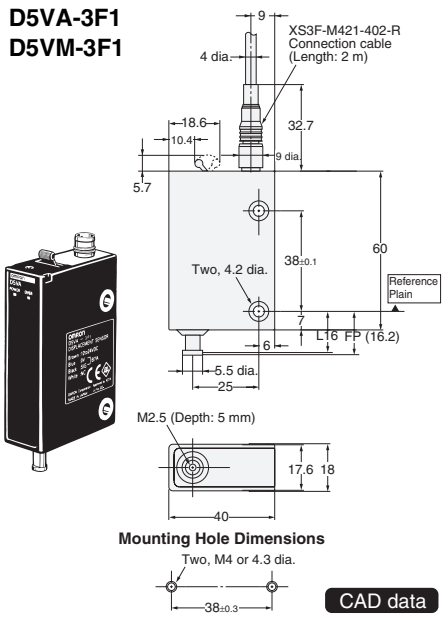
CAD data

D5VA-3P1
D5VM-3P1



CAD data

D5VA-3F1
D5VM-3F1



CAD data

The output at position "L" is set at the factory to 4 mA for the D5VA, and to 0000 for the D5VM (BCD mode). In the free position (FP), EEEE is output, and when pressed in excess of the measurement range, FFFF is output.

For safety precautions and further details, refer to *Contact Displacement Sensors Series Catalog* (Cat. No. X071).

Cat. No. F802-E1-01

In the interest of product improvement, specifications are subject to change without notice.