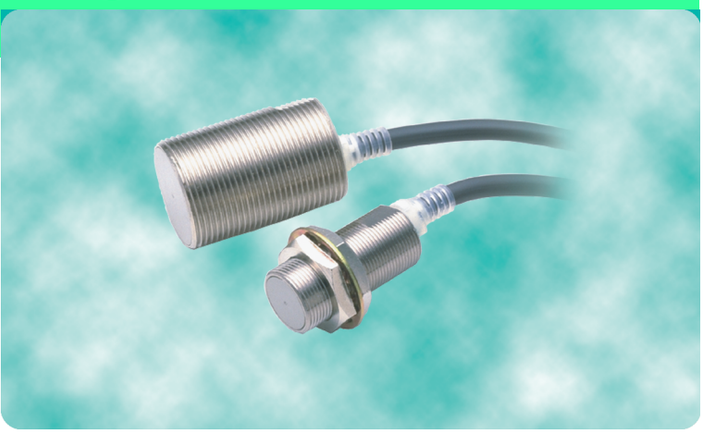
OMRON

Short Barrel Inductive Prox

E2E 2-Wire DC



Reduce Wiring to Control Devices with Short-Barrel 2-Wire DC Prox Sensors

- Thick nickel-plated brass barrel has wrench flats for easy installation
- Solid potted internal circuitry withstands shocks and water washdown to IP67
- High visibility indicator
- Choose prewired or connector models

1200 psi washdown rated

CE

Ordering Information (Shaded models are normally stocked.)

Prewired Sensors

Self-diagnostic output function	Type	Size	Sensing distance	Model NO (Note 1, 2)	Model NC
Yes	Shielded	M12	3 mm	**E2E-X3D1S**	—
		M18	7 mm	**E2E-X7D1S**	—
		M30	10 mm	**E2E-X10D1S**	—
	Unshielded	M12	8 mm	**E2E-X8MD1S**	—
		M18	14 mm	**E2E-X14MD1S**	—
		M30	20 mm	**E2E-X20MD1S**	—
No	Shielded	M8	2 mm	**E2E-X2D1-N**	**E2E-X2D2-N**
		M12	3 mm	**E2E-X3D1-N**	**E2E-X3D2-N**
		M18	7 mm	**E2E-X7D1-N**	**E2E-X7D2-N**
		M30	10 mm	**E2E-X10D1-N**	**E2E-X10D2-N**
	Unshielded	M8	4 mm	**E2E-X4MD1**	**E2E-X4MD2**
		M12	8 mm	**E2E-X8MD1**	**E2E-X8MD2**
		M18	14 mm	**E2E-X14MD1**	**E2E-X14MD2**
		M30	20 mm	**E2E-X20MD1**	**E2E-X20MD2**

Note: 1 . A different oscillating frequency is available. Add a “5” to the part number (e.g., E2E-X3D15-N).
2 . E2E sensors with robotic cable are available. Add a “-R” in the part number (e.g., E2E-X3D1-R).

Sensors With Built-in Connector

Connector size	Self-diagnostic output function	Type	Size	Sensing distance	Model	
					NO (Pins 1 and 4)	NC (Pins 1 and 2)
M12/MicroChange®	Yes	Shielded	M12	3 mm	**E2E-X3D1S-M1**	---
			M18	7 mm	**E2E-X7D1S-M1**	---
			M30	10 mm	**E2E-X10D1S-M1**	---
		Unshielded	M12	8 mm	**E2E-X8MD1S-M1**	---
			M18	14 mm	**E2E-X14MD1S-M1**	---
			M30	20 mm	**E2E-X20MD1S-M1**	---
	No	Shielded	M8	2 mm	**E2E-X2D1-M1G**	**E2E-X2D2-M1G**
			M12	3 mm	**E2E-X3D1-M1G** (See Note 1.)	**E2E-X3D2-M1G**
			M18	7 mm	**E2E-X7D1-M1G** (See Note 1.)	**E2E-X7D2-M1G**
			M30	10 mm	**E2E-X10D1-M1G** (See Note 1.)	**E2E-X10D2-M1G**
M12/MicroChange®		Unshielded	M8	4 mm	**E2E-X4MD1-M1G**	**E2E-X4MD2-M1G**
			M12	8 mm	**E2E-X8MD1-M1G** (See Note 1.)	**E2E-X8MD2-M1G**
			M18	14 mm	**E2E-X14MD1-M1G** (See Note 1.)	**E2E-X14MD2-M1G**
			M30	20 mm	**E2E-X20MD1-M1G** (See Note 1.)	**E2E-X20MD2-M1G**
M8/NanoChange®		Shielded	M8	2 mm	**E2E-X2D1-M3G**	**E2E-X2D2-M3G**
		Unshielded		4 mm	**E2E-X4MD1-M3G**	**E2E-X4MD2-M3G**

Note: 1 . A different oscillating frequency is available. Add a "5" to the part number (e.g., E2E-X3D15-N).
2 . E2E sensors with a "G" in the part number denotes alternate pin arrangement. Refer to the *Connections* section.
3 . Connector cordsets: For MicroChange® use OMRON Y96E-44□D□; for NanoChange® use Omron XS3F-M42□-40□-R.

Sensor With Pigtail Connector

Type	Size	Sensing distance	Polarity	Model
				NO
Shielded	M12	3 mm	Yes	**E2E-X3D1-M1GJ**
			No	**E2E-X3D1-M1J-T**
	M18	7 mm	Yes	**E2E-X7D1-M1GJ**
			No	**E2E-X7D1-M1J-T**
	M30	10 mm	Yes	**E2E-X10D1-M1GJ**
			No	**E2E-X10D1-M1J-T**
Unshielded	M12	8 mm	Yes	**E2E-X8MD1-M1GJ**
	M18	14 mm		**E2E-X14MD1-M1GJ**
	M30	20 mm		**E2E-X20MD1-M1GJ**

Note: 1 . A model with no polarity has a residual voltage of 5 V, which must be taken into consideration together with the interface condition (the PLC's ON voltage, for example) when connecting the proximity sensor to a load.
2 . Connector cordsets: Use OMRON Y96E-44□D□.

Sensor With Four-Pin Connector

Type	Size	Sensing distance	Model	
			NO (Pins 3 and 4)	NC (Pins 2 and 3)
Shielded	M8	2 mm	**E2E-X2D1-M1**	**E2E-X2D2-M1**
	M12	3 mm	**E2E-X3D1-M1**	**E2E-X3D2-M1**
	M18	7 mm	**E2E-X7D1-M1**	**E2E-X7D2-M1**
	M30	10 mm	**E2E-X10D1-M1**	**E2E-X10D2-M1**
Unshielded	M8	4 mm	**E2E-X4MD1-M1**	**E2E-X4MD2-M1**
	M12	8 mm	**E2E-X8MD1-M1**	**E2E-X8MD2-M1**
	M18	14 mm	**E2E-X14MD1-M1**	**E2E-X14MD2-M1**
	M30	20 mm	**E2E-X20MD1-M1**	**E2E-X20MD2-M1**

Accessories

Description		Model
Mounting brackets	Fits M8 size sensors	**Y92E-B8**
	Fits M12 size sensors	**Y92E-B12**
	Fits M18 size sensors	**Y92E-B18**
	Fits M30 size sensors	**Y92E-B30**
Silicone rubber covers for shielded sensors	Fits M12 size sensors	**Y92E-E12-2**
	Fits M18 size sensors	**Y92E-E18-2**
	Fits M30 size sensors	**Y92E-E30-2**
Connector cordsets	See Y96E and XS Connector Cordsets data sheets for details	

Note: Use OMRON Y96E-44□D□ cordsets with M12 connector; use XS3F cordsets with M8 connector.

Replacement Parts

Description		Model
Mounting hardware including one pair of metal nuts and one washer	Fits M8 size sensors	**M8-MHWS**
	Fits M12 size sensors	**M12-MHWS**
	Fits M18 size sensors	**M18-MHWS**
	Fits M30 size sensors	**M30-MHWS**

Specifications

Ratings/Characteristics

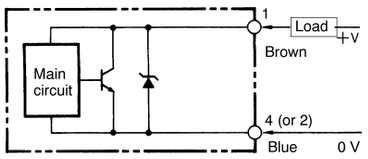
Model		**E2E-X2D□**	**E2E-X4MD□**	**E2E-X3D□**	**E2E-X8MD□**	**E2E-X7D□**	**E2E-X14MD□**	**E2E-X10D□**	**E2E-X20MD□**
Size		M8		M12		M18		M30	
Type		Shielded	Unshielded	Shielded	Unshielded	Shielded	Unshielded	Shielded	Unshielded
Sensing distance		2 mm (0.08 in) ±10%	4 mm (0.16 in) ±10%	3 mm (0.12 in) ±10%	8 mm (0.31 in) ±10%	7 mm (0.28 in) ±10%	14 mm (0.55 in) ±10%	10 mm (0.39 in) ±10%	20 mm (0.79 in) ±10%
Supply voltage (operating voltage)		12 to 24 VDC, ripple (p-p): 10% max., (10 to 30 VDC)							
Leakage current		0.8 mA max.							
Sensing object		Magnetic metals (refer to *Engineering Data* for non-magnetic metals)							
Setting distance		0 to 1.6 mm (0 to 0.06 in)	0 to 3.2 mm (0 to 0.13 in)	0 to 2.4 mm (0 to 0.09 in)	0 to 6.4 mm (0 to 0.25 in)	0 to 5.6 mm (0 to 0.22 in)	0 to 11.2 mm (0 to 0.44 in)	0 to 8.0 mm (0 to 0.31 in)	0 to 16.0 mm (0 to 0.63 in)
Standard object (mild steel)		8 x 8 x 1 mm (0.31 x 0.31 x 0.04 in)	20 x 20 x 1 mm (0.79 x 0.79 x 0.04 in)	12 x 12 x 1 mm (0.47 x 0.47 x 0.04 in)	30 x 30 x 1 mm (1.18 x 1.18 x 0.04 in)	18 x 18 x 1 mm (0.71 x 0.71 x 0.04 in)	30 x 30 x 1 mm (1.18 x 1.18 x 0.04 in)	30 x 30 x 1 mm (1.18 x 1.18 x 0.04 in)	54 x 54 x 1 mm (2.13 x 2.13 x 0.04 in)
Differential travel		15% max. of sensing distance		10% max. of sensing distance					
Response frequency		1.5 kHz	1.0 kHz	1.0 kHz	0.8 kHz	0.5 kHz	0.4 kHz	0.4 kHz	0.1 kHz
Operation (with target object approaching)		D1 models: Load ON D2 models: Load OFF							
Control output (switching capacity)		3 to 100 mA (5 to 100 mA with residual voltage of 5V for -M1J-T models) Diagnostic output: 50 mA for -D1S models							
Diagnostic output delay		0.3 to 1 s							
Circuit protection		Surge absorber, load short-circuit protection (for control and diagnostic output)							
Indicator		D1 models: Operation indicator (red LED), operation set indicator (green LED) D2 models: Operation indicator (red LED)							
Enclosure rating	IEC	IP67							
	NEMA	1, 4, 6, 12, 13							
Material	Body	Stainless steel		Brass					
	Sensing face	PBT							

Operation

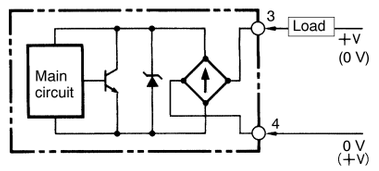
Output Circuits

E2E-X□D□ DC 2-wire Models

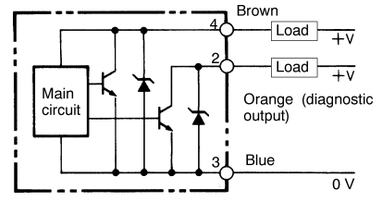
E2E-X□D□
Without Diagnostic Output



E2E-X□D1-M1J-T
No Polarity



E2E-X□D1S
Without Diagnostic Output



Note: 1 . The load can be connected to either the +V or 0-V side.
2 . The E2E-X□D1-M1J-T has no polarity. Therefore, terminals 3 and 4 have no polarity.

Dimensions

Unit: mm (inch)

Prewired Models
(Shielded)

Fig. 1: **E2E-X2D□**

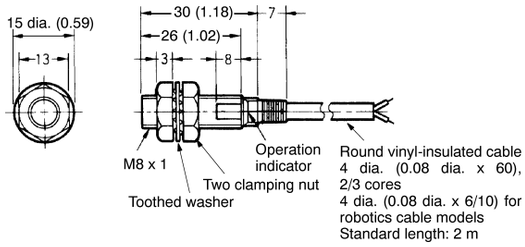
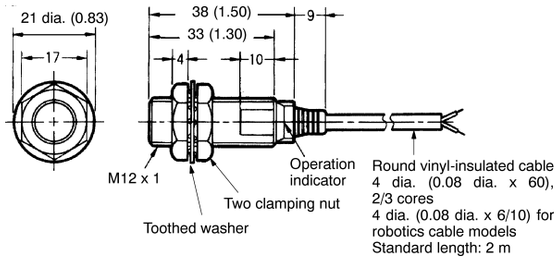


Fig. 3: **E2E-X3D□**



Prewired Models
(Unshielded)

Fig. 2: **E2E-X4MD□**

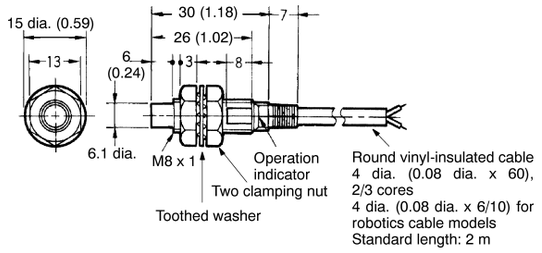
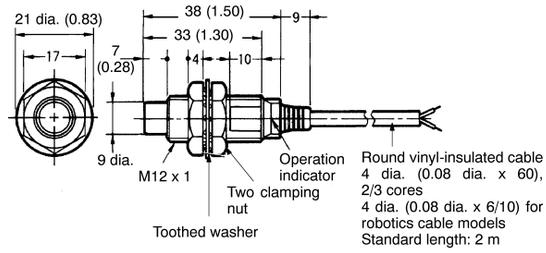


Fig. 4: **E2E-X8MD□**



Unit: mm (inch)

Prewired Models (Shielded)

Fig. 5: **E2E-X7D□**

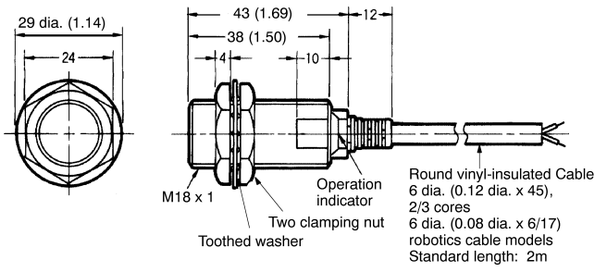
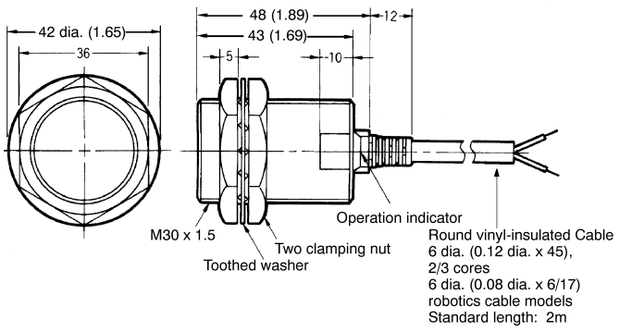


Fig. 7: **E2E-X10D□**



Prewired Models (Unshielded)

Fig. 6: **E2E-X14MD□**

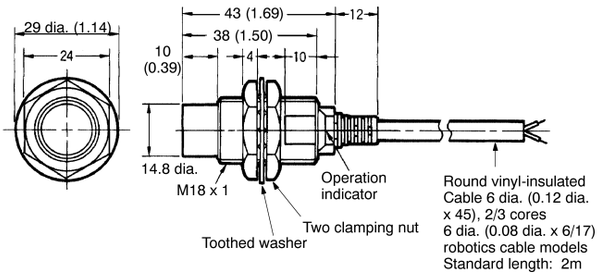
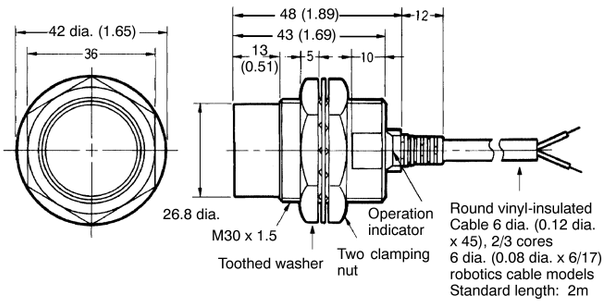


Fig. 8: **E2E-X20MD□**



Connector Models (Shielded)

Fig. 9: **E2E-X2D□-M1G**

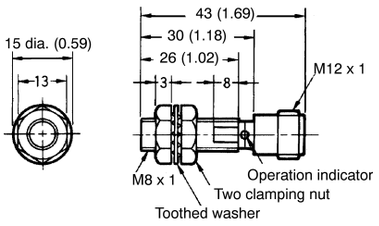


Fig. 11: **E2E-X3D□-M1G**

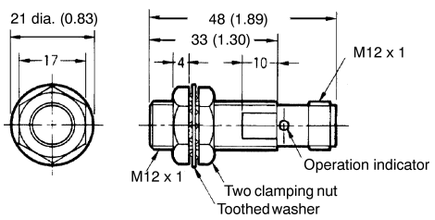
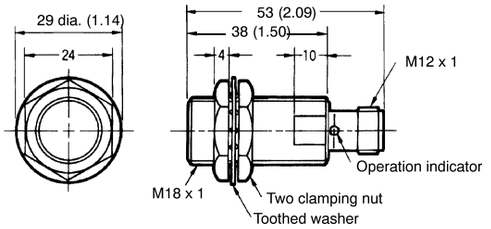


Fig. 13: **E2E-X7D□-M1G**



Connector Models (Unshielded)

Fig. 10: **E2E-X4MD□-M1G**

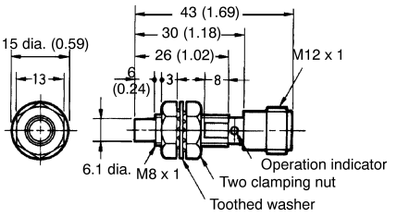


Fig. 12: **E2E-X8MD□-M1G**

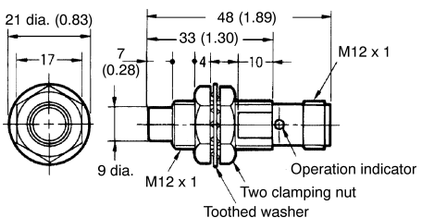
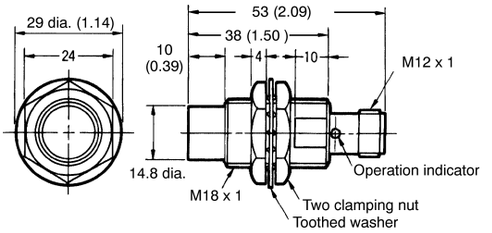


Fig. 14: **E2E-X14MD□-M1G**



Unit: mm (inch)

Fig. 15: E2E-X10D□-M1G

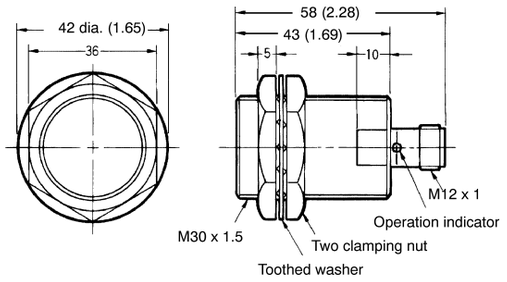
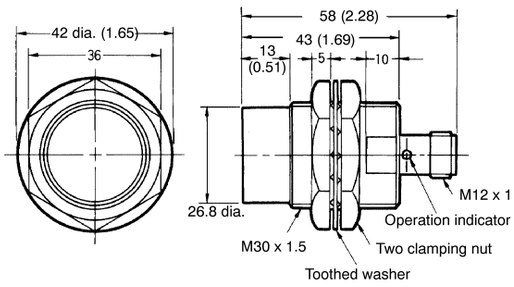
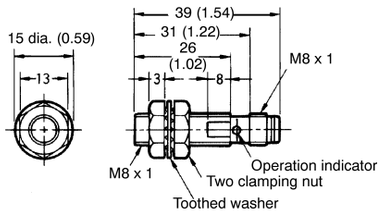


Fig. 16: E2E-X20MD□-M1G



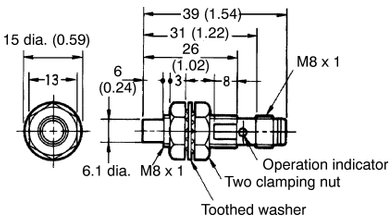
M8 Connector Models (Shielded)

Fig. 17: E2E-X2D□-M3G



M8 Connector Models (Unshielded)

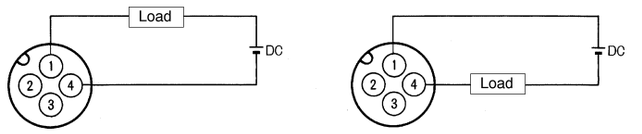
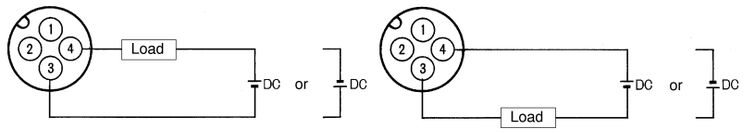
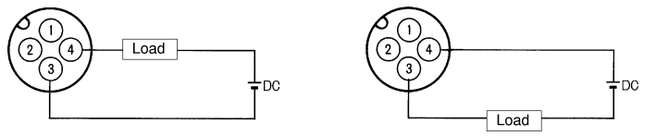
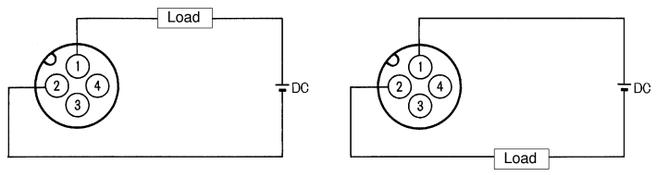
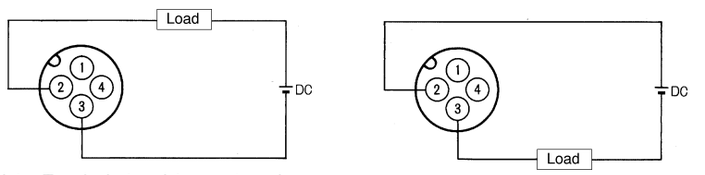
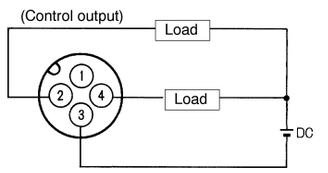
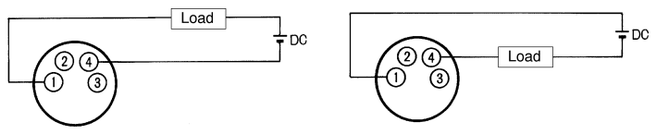
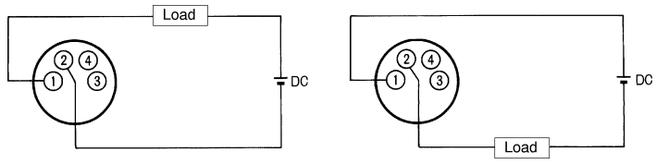
Fig. 18: E2E-X4MD□-M3G



Connection

Pin Arrangements

E2E-X□D□-M□ DC 2-wire Models

Connector	Self-diagnostic output	Output configuration	Applicable models	Pin arrangement
M12 Micro Change®	No	NO	**E2E-X□D1-M1G□** (See Note.)	 Note: Terminals 2 and 3 are not used.
			E2E-X□D1-M1J-T	 Note: 1 . Terminals 1 and 2 are not used. 2 . Terminals 3 and 4 have no polarity.
			E2E-X□D1-M1	 Note: Terminals 1 and 2 are not used.
		NC	**E2E-X□D2-M1G** (See Note.)	 Note: Terminals 3 and 4 are not used.
			E2E-X□D2-M1	 Note: Terminals 1 and 4 are not used.
	Yes	NO	**E2E-X□D1S-M1**	 Note: Terminals 1 is not used.
M8 Nano Change®	No	NO	**E2E-X□D1-M3G**	 Note: Terminals 2 and 3 are not used.
		NC	**E2E-X□D2-M3G**	 Note: Terminals 3 and 4 are not used.

Note: Pin arrangements conform to IEC standards.

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To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

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