Proximity Sensors with Built-In Amplifier - Square 2-Wire / 3-Wire, Non Shield

RoHS Front Surface Detection (Detection Distance 4mm) Upper Surface Detection (Detection Distance 4mm) EX4-F12 (2-Wire) EX4-T12 (2-Wire) EMX4-F12 (3-Wire) EMX4-T12 (3-Wire) EMX4-F12C (3-Wire) EMX4-T12C (3-Wire) Operation Indicator LED 6 16 Operation Indicator LED Detecting Face \rightarrow Ø3.2 Hole Ø3.2 Hole 13 Ð **Detecting Face** Ð Front / Upper Surface Detection (Detection Distance 2.5mm) EMX2.5-F8 (3-Wire) EMX2.5-T8 (3-Wire) 11.5 Detecting Face: EMX2.5-T8 Ø3.2 Hole Detecting Face: EMX2.5-F8 **D** Material: Polycarbonate (Case) Accessories: Mounting Brackets (Detection Distance 4mm only

2-Wire					3-Wire						
Part Number	Detecting Surface	Detection Distance	Output	Unit Price	Volume Discount Rate	Part Number	Detecting Surface	Detection Distance	Output	Unit Price	Volume Discount Rate
				1~4 pc(s).	5~9 pcs.					1~4 pc(s).	5~9 pcs.
EX4-F12	Front Surface	4mm	N.O.			EMX2.5-F8	Front Surface	2.5mm	N.O.		
EX4-T12	Upper Surface					EMX2.5-T8	Upper Surface				
For orders larger than indicated quantity, please request a quotation. Part Number					EMX4-F12	Front Surface	4mm	NO			
						EMX4-T12	Upper Surface	411111	N.O.		
					EMX4-F12C	Front Surface	4000	NC			
Examp	le EX4-F12					EMX4-T12C	Upper Surface	4111111	N.C.		
Tor orders larger than indicated quantity, please required to the second sec									quest a quotation		

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Specifications

	DC 2	-Wire	DC 3-Wire							
Type	Front Surface Detection	Upper Surface Detection	Front Surface Detection	Upper Surface Detection	Front Surface Detection	Upper Surface Detection	Front Surface Detection	Upper Surface Detection		
.,,,,,	N.O. (Normally Open)		N.O. (Norm	N.O. (Normally Open) N.C. (Normally Closed)						
Part Number	EX4-F12	EX4-T12	EMX2.5-F8	EMX2.5-T8	EMX4-F12	EMX4-T12	EMX4-F12C	EMX4-T12C		
Rated Operating Voltage	DC12/24V (DC10~30V) Allowable Ripple 3%p-p or less		DC12/24V (DC10~30V) Allo	DC12/24V (DC10~30V) Allowable Ripple 3%p-p or less						
Standard Detected Subject (mm)	Ferrous 20x20x1t		Ferrous 1	Ferrous 20x20x1t						
Effective Operation Distance	4mm±10%		2.5mm	4mm±10%						
Guaranteed Operation Distance	0~2.8mm		0~1.	0~2.8mm						
Reactive Material	Ferrous / Nonferrous Metals (Operation distance vary depending on the material)		Ferrous / Nonferrous Metals (Operation d	Ferrous / Nonferrous Metals (Operation distance vary depending on the material)						
Hysteresis	Approx. 20	0% or less	Approx. 20	Approx. 20% or less						
Operation Cycle Frequency	Up to	200Hz	Up to s	Up to 200Hz						
Rated Operating Current	5~5	0mA	Up to	Up to 50mA						
Voltage Drop	3V or less		1V or	1V or less						
Off-state Current	1.0mA or less		0.1mA	0.1mA or less						
Indicator Light	Operation Indicator		Operation	Operation Indicator						
Service Ambient Temperature	-10~+50°C		-10~+	-10~+50°C						
Temperature Property	Within ±20% (Operation Distance +23°C)		Within ±20% (Operat	Within ±20% (Operation Distance +23°C)						
Withstand Voltage	AC500V 50/60Hz (1 min.)		AC500V 50/6	AC500V 50/60Hz (1 min.)						
Dielectric Strength	50MΩ or more (DC500V)		50MΩ or mo	50MΩ or more (DC500V)						
Vibration Resistance	Full Wave Amplitude: 1.5mm 10~55Hz (in Respective X, Y, Z Direction 2h)		Full Wave Amplitude: 1.5mm 10~55H	Full Wave Amplitude: 1.5mm 10~55Hz (in Respective X, Y, Z Direction 2h)						
Shock Resistance	Within 294m/s ² 11ms (in Respective X, Y, Z Direction each 10 times)		Within 294m/s ² 11ms (in Respectiv	Within 294m/s ² 11ms (in Respective X, Y, Z Direction each 10 times)						
IP	IP67		IP6	IP67						
Case Material	Polycarbonate		Polycar	Polycarbonate						
Lead Wire	0il Resistan 0.D. (Ø3) 0.18m	t Cable 1.0m m², 2 Conductors	0il Resistant 0.D. (Ø3) 0.18mr	Oil Resistant Cable 1.0m O.D. (Ø3) 0.18mm ² , 3 Conductors						
Tightening Torque	0.4N·m	i or less	0.4N·m	0.4N·m or less						
Mass	Approx, 20g		Approx	Approx. 20g						



Do not use this product as a detection

(For human body protection, use products compliant with the local laws and regulations such as OSHA, ANSI and IEC.)

device for human body protection.

Connection / Operation



Reciprocal Interference and Same Frequency Classification

When installing 2 or more Proximity Sensors closely, the distance should be 10 times or more as far as operation distance (from center to center). Mutual Interference may occur if the interval is inadequate.



*Detected Subject Position for Upper Surface Detection Type

Metals around Proximity Sensors change the operation distance and make the operation unstable. Keep surrounding metals away from the sensor.
D dimension (mm) indicates least distance from the detecting surface of Proximity Sensor to surrounding metals. Keep the distance beyond the value in the table above.
When B dimension of EMX2.5-F8=3.7mm (Solid Installation), the detecting surface of Proximity Sensor should be located far from surrounding metals more than 3mm.



Before Using the Products

Note that this product may output a detection signal when the power turns on. For about 25ms when there is no object, for about 100ms when there are some objects around.

Cautions for Mounting

When tightening by screws, ensure that the sensor is not be subjected to stresses. *Sensors may be damaged by tightening with over Tightening Torque 0.4N·m.

UL Recognition

• When using this sensor as a UL recognized component, use the power Class 2. UL recognized components are approved by UL recognition and required to use power Class 2.

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