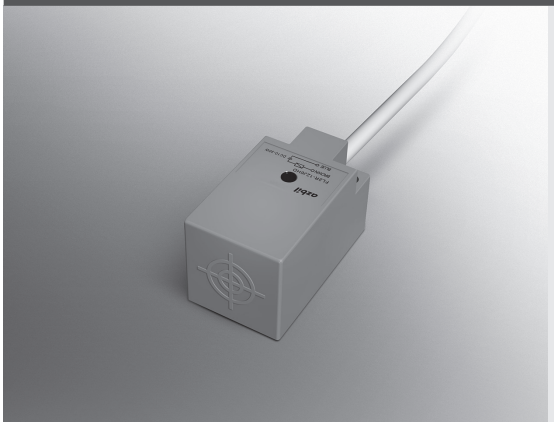
Vehicle-Mounted Square Proximity Switches

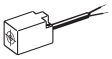
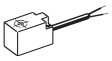
FL2R-V Series | Proximity Switch for Vehicle Mounting with High Surge Resistance



- **Dedicated surge absorption circuit ensures high surge resistance of 1 kV**
- **Seal capabilities (IP67) that support mounting in vehicles**
- **Easy-to-understand at-a-glance indicator lamp (red LED)**

ORDER GUIDE

●DC2-wire type

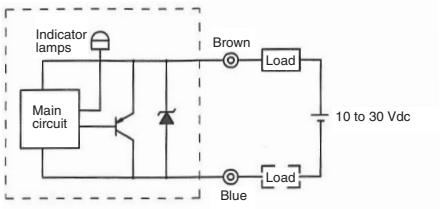
Actuation method	Appearance	Sensing distance	Sensing face	Output operation mode	Catalog listing
High-frequency oscillation		12 mm	Top	N.O.	**FL2R-12J6HV**
				N.C.	**FL2R-12K6HV**
			Side	N.O.	**FL2R-12J6SV**
				N.C.	**FL2R-12K6SV**

SPECIFICATIONS

●DC2-wire type

Catalog listing	FL2R-12J6□V	FL2R-12K6□V
Actuation method	High-frequency oscillation (unshielded)	
Rated supply voltage	12/24 Vdc	
Operating voltage range	10 to 30 Vdc	
Leakage current	0.8 mA max.	
Rated sensing distance	12 ± 1.2 mm	
Standard target object	40 x 40 x 1 mm iron	
Differential travel	15% of sensing distance max.	
Hysteresis	0.1 mm max.	
Operation mode	N.O.	N.C.
Output mode	DC 2-wire type, transistor output	
Control output	Switching current 3 to100 mA, voltage drop 3V max., output dielectric strength 30 Vdc	
Operating frequency	800 Hz min.	
Temperature characteristics	±10% max. of sensing distance for the −25 to +70˚C range when +25˚C is taken as standard temperature	
Supply voltagecharacteristics	±1% max. of sensing distance with ±15% voltage fluctuation, taking rated supply voltage as standard voltage	
Indicator lamps	Lights (red or green) during output	Lights (red) during output
Setting lamp	Light (green) in stable area	——
Operating temperaturerange	−25 to +70˚C	
Storage temperaturerange	−25 to 70˚C	
Operating humidityrange	35 to 95% RH	
Insulation resistance	50 MΩ min. (at 500 Vdc) between case and electrically live metal	
Dielectric strength	500 Vac 50/60 Hz for 1 minute between case and electrically live metal	
Vibration resistance	10 to 55 Hz, 1.5 mm peak-to-peak amplitude, 2 hrs each in X, Y and Z directions	
Shock resistance	490 m/s^2 10 times each in X, Y and Z directions	
Protection	IP67 (IEC standard)	
Weight	Approx. 110 g (with 1 m cable)	
Circuit protection	Reverse connection protection, surge absorption, load short-circuit protection	

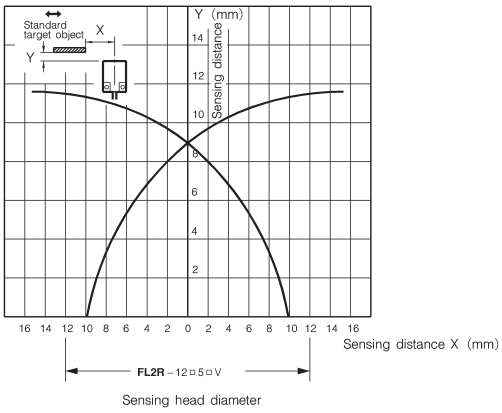
WIRING DIAGRAM



The load can be connected to either side of the power supply.

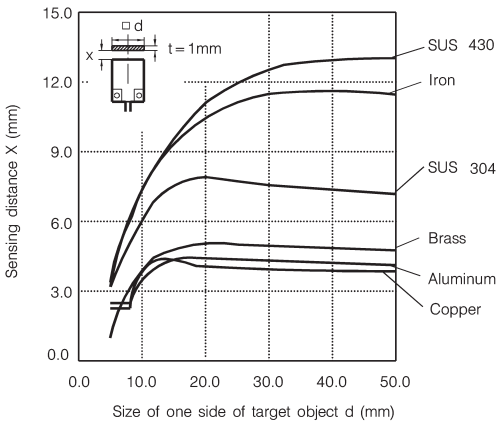
SENSING AREA (typical)

●**FL2R-12□□□V**



SENSING DISTANCE ACCORDING TO MATERIAL & SIZE OF OBJECT (typical)

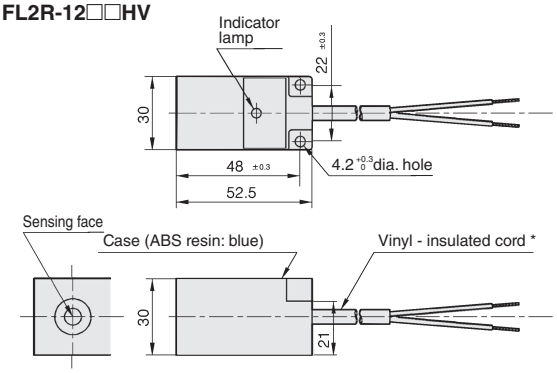
●**FL2R-12□□□V**



EXTERNAL DIMENSIONS

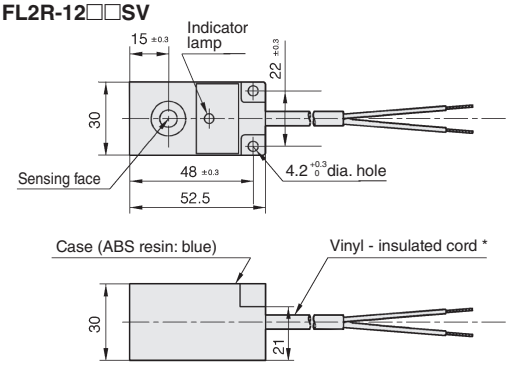
(unit: mm)

FL2R-12□□HV



Vinyl-insulated cord (oil-resistant: 0.5 mm^2, 20/0.18 dia., 3-core) 5.7 mm dia.

FL2R-12□□SV



Vinyl-insulated cord (oil-resistant: 0.5 mm^2, 20/0.18 dia., 3-core) 5.7 mm dia.

PRECAUTIONS

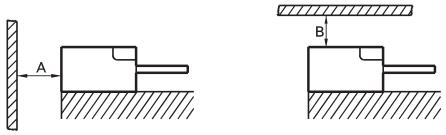
1. Mounting

Tighten the screws to the torque shown below.

Catalog listing	Allowable tightening torque (N-m)	Recommended screw diameter
FL2R-12□□□V	0.5	M4

2. Influence of surrounding metal

Metal other than the object surrounding the switch may influence operating characteristics. Maintain the following space between the switch and surrounding metal:



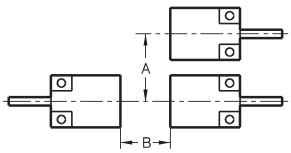
Note: Shaded areas indicate surrounding metal other than the target object.

Catalog listing	A (mm)	B (mm)
FL2R-12□□HV	50	25
FL2R-12□□SV	25	50

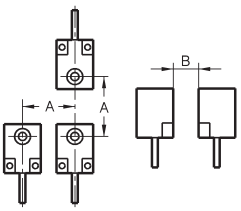
3. Mutual interference prevention

When mounting proximity switches in parallel or facing each other, mutual interference may cause the switch to malfunction. Maintain at least the spaces indicated in the figures above.

Top sensing type



Side sensing type



Catalog listing	A (mm)	B (mm)
FL2R-12□□□V	120	120

4. Operation at power ON

After the power is turned ON, it takes 40ms or less until the proximity switch is ready for sensing.
When the load and the proximity switch use different power supplies, be sure to turn the proximity switch ON before turning the load ON.

5. Minimum cord bending radius (R)

The minimum bending radius (R) of the cord is 3 times cord diameter, take care not to excessively bend the cord beyond this radius.
Also, do not excessively bend the cord within 30mm of the cord lead-in port.