

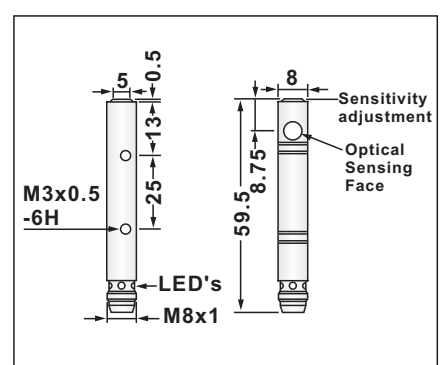
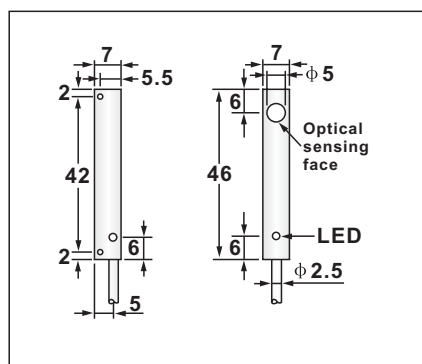
- Totally self-contained units, no separate amplifier
- Miniature housing is sealed to IP65 standards.
- Protected against short-circuit and polarity reversal.
- Background suppression model uses V-shape beam to ignore highly reflective backgrounds.



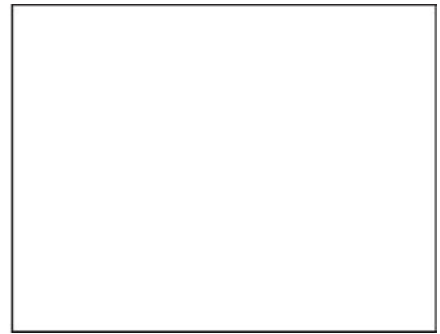
Sensing type	Diffuse	Diffuse
Sensing distance	50mm	50mm
Model description		
PNP 50mm	R7-D0050P-LX9C3U2	R8-D0050P-LX9Q3UP
NPN 50mm	R7-D0050N-LX9C3U2	R8-D0050N-LX9Q3UP
Voltage supply	10 to 30V DC	10 to 30V DC
Voltage supply ripple	<15% peak-to-peak	<15% peak-to-peak
Voltage drop, output	<2.0V at 100mA	<2.0V at 100mA
Rated output current	100ma	100ma
Supply current(no load)	30ma	30ma
Protections	Short circuit, polarity reversal	Short circuit, polarity reversal
On/Off delay	1 ms	1 ms
Switching frequency	500 Hz	500 Hz
Output type	PNP/NPN	PNP/NPN
Output function	Normally open(NO)	Normally open(NO)
Sensitivity/Range adjustment	None	1-turn potentiometer
LED indicators	Red output indication	Red output indication
Ambient light detection	Per EN 60947-5-2	Per EN 60947-5-2
Emitter light source	Infrared 880 nm	Infrared 880 nm
Ambient operating temperature	-10°C to +55°C(+14°F to + 131°F)	-10°C to +55°C(+14°F to + 131°F)
Storage temperature	30°C to +70°C(-22°F to 158°F)	30°C to +70°C(-22°F to 158°F)
Degree of protection	IP 65	IP 65
Relative humidity	90% at 20°C	90% at 20°C
Hosing material	Nickel-plated brass	Nickel-plated brass
Sensing face material	PMMA	PMMA

## Dimensions

All dimensions in mm



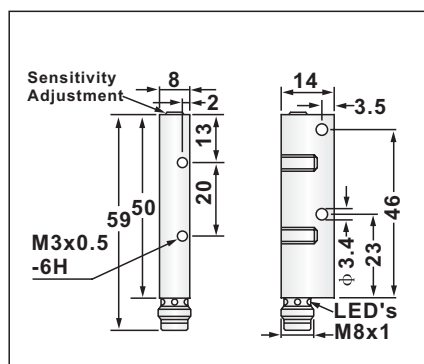
- Totally self-contained units, no separate amplifier
- Miniature housing is sealed to IP65 standards.
- Protected against short-circuit and polarity reversal.
- Background suppression model uses V-shape beam to ignore highly reflective backgrounds.



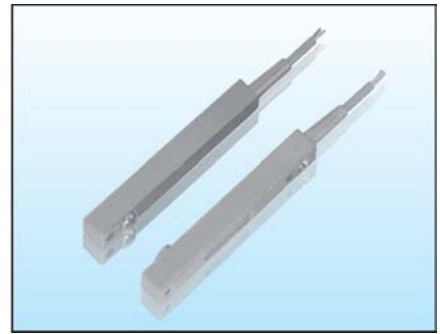
<b>Sensing type</b>	<b>Diffuse with Fixed focus</b>	
<b>Sensing distance</b>	<b>10mm</b>	
<b>Model description</b>		
PNP 10mm	R14-D0010P-LX9Q3UP	
NPN 10mm	R14-D0010N-LX9Q3UP	
<b>Voltage supply</b>	<b>10 to 30V DC</b>	
<b>Voltage supply ripple</b>	<b>&lt;15% peak-to-peak</b>	
<b>Voltage drop, output</b>	<b>&lt;2.0V at 100mA</b>	
<b>Rated output current</b>	<b>100ma</b>	
<b>Supply current(no load)</b>	<b>30ma</b>	
<b>Protections</b>	<b>Short circuit, polarity reversal</b>	
<b>On/Off delay</b>	<b>1 ms</b>	
<b>Switching frequency</b>	<b>500 Hz</b>	
<b>Output type</b>	<b>PNP/NPN</b>	
<b>Output function</b>	<b>Normally open(NO)</b>	
<b>Sensitivity/Range adjustment</b>	<b>1-turn potentiometer</b>	
<b>LED indicators</b>	<b>Red output indication</b>	
<b>Ambient light detection</b>	<b>Per EN 60947-5-2</b>	
<b>Emitter light source</b>	<b>Infrared 880 nm</b>	
<b>Ambient operating temperature</b>	<b>-10°C to +55°C(+14°F to + 131°F)</b>	
<b>Storage temperature</b>	<b>30°C to +70°C(-22°F to 158°F)</b>	
<b>Degree of protection</b>	<b>IP 65</b>	
<b>Relative humidity</b>	<b>90% at 20°C</b>	
<b>Hosing material</b>	<b>Nickel-plated brass</b>	
<b>Sensing face material</b>	<b>PMMA</b>	

## Dimensions

All dimensions in mm



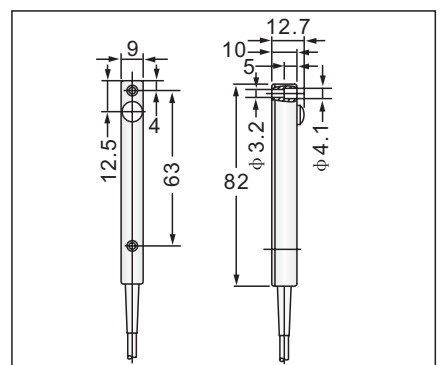
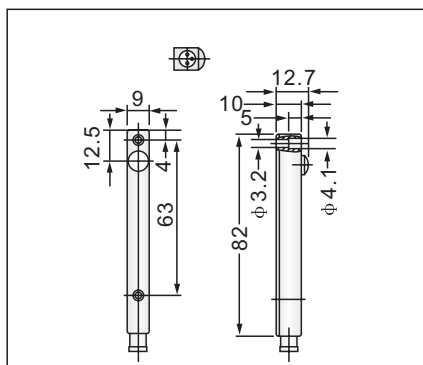
- Long sensing distance; the light beam needs only to travel in one direction from the transmitter to the receiver
- High operational safety, interference reflections rarely trigger the receiver.
- Detection of very small objects, possible by the additional use of lenses or filters.



<b>Sensing type</b>	Through-beam sensors		Through-beam sensors	
<b>Sensing distance</b>	6m		6m	
<b>Model description</b>				
<b>PNP 6m</b>	R10-T6000P-DX9Q3UP		R10-T6000P-DX9C3U2	
<b>Transmitter</b>	R10-T6000D-EX9Q3LP		R10-T6000D-EX9C3L2	
<b>Voltage range</b>	10-30VDC		10-30VDC	
<b>Short-circuit protection</b>	-	●	-	●
<b>Output circuit (max)</b>	-	200 mA	-	200 mA
<b>Switching frequency (max)</b>	-	>100 Hz	-	>100 Hz
<b>LED for output function</b>	-	-	-	-
<b>LED for supply voltage</b>	-	-	-	-
<b>LED for diagnostic</b>	-	-	-	-
<b>Adjustable sensitivity</b>	-	-	-	-
<b>Timer function</b>	-	-	-	-
<b>Diagnostic function</b>	●	-	●	-
<b>Temperature range</b>	-5°C to +70°C (+23°F to +158°F)		-5°C to +70°C (+23°F to +158°F)	
<b>Protection type</b>	IP67/NEMA 4		IP67/NEMA 4	

## Dimensions

All dimensions in mm



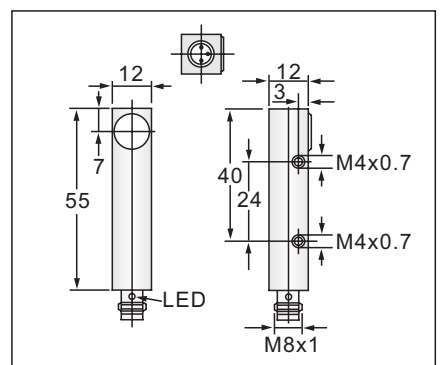
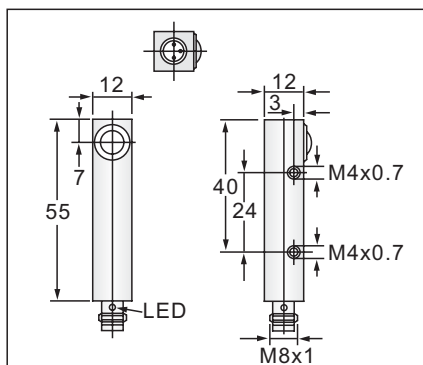
- Long sensing distance; the light beam needs only to travel in one direction from the transmitter to the receiver
- High operational safety, interference reflections rarely trigger the receiver.
- Detection of very small objects, possible by the additional use of lenses or filters.



Sensing type	Through-beam sensors		Through-beam sensors	
Sensing distance	6m		1m	
Model description				
PNP (Light ON)	R12-T6000P-LX9Q3UP		R12-T1000P-LX9Q3UP	
PNP (Dark ON)	R12-T6000P-DX9Q3UP		R12-T1000P-DX9Q3UP	
NPN (Dark ON)	R12-T6000N-DX9Q3UP		R12-T1000N-DX9Q3UP	
Transmitter	R12-T6000D-EX9Q3LP		R12-T1000D-EX9Q3LP	
Voltage range	10-30VDC		10-30VDC	
Short-circuit protection	-	●	-	●
Output circuit (max)	-	200 mA	-	200 mA
Switching frequency (max)	-	>100 Hz	-	>100 Hz
LED for output function	-	●	-	●
LED for supply voltage	●	-	●	-
LED for diagnostic	-	-	-	-
Adjustable sensitivity	-	-	-	-
Timer function	-	-	-	-
Diagnostic function	●	-	●	-
Temperature range	-5°C to +70°C (+23°F to +158°F)		-5°C to +70°C (+23°F to +158°F)	
Protection type	IP65/NEMA 12		IP65/NEMA 12	

## Dimensions

All dimensions in mm

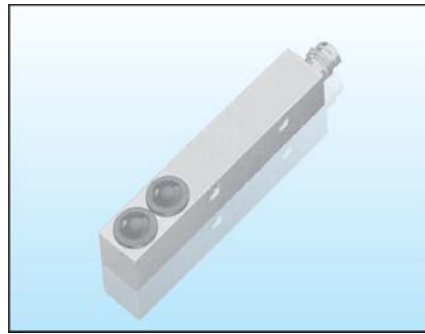


### Retroreflective sensors

- Easy installation of sensor head and reflector.
- Reflector can be fixed to a moving target, e.g. Conveyor belt installations.

### Diffuse reflective sensors

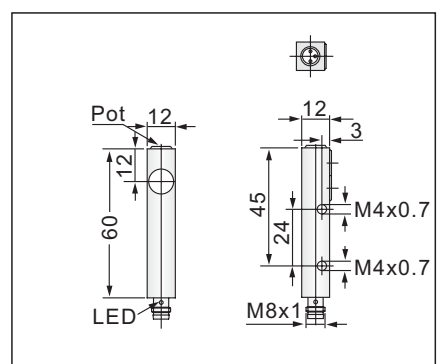
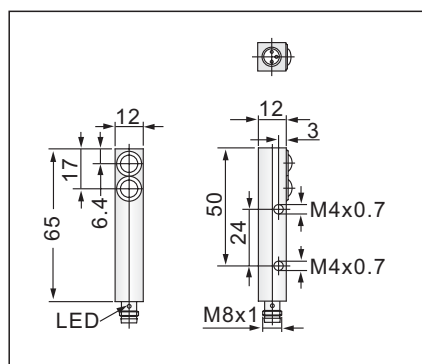
- Easiest installation
- No reflector necessary



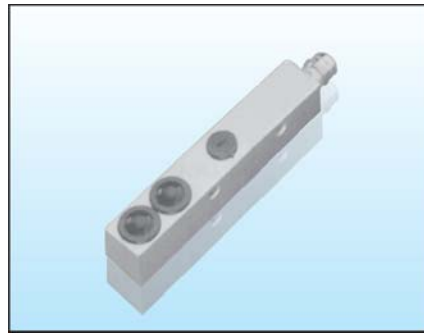
Sensing type	Retroreflective sensors	Diffuse reflective sensors
Sensing distance	4m	200mm
Model description		
PNP (Light ON)	R12-L4000P-LX9Q3UP	R12-D0200P-LX9Q3UP
PNP (Dark ON)	R12-L4000P-DX9Q3UP	R12-D0200P-DX9Q3UP
NPN (Light ON)	R12-L4000N-LX9Q3UP	R12-D0200N-LX9Q3UP
NPN (Dark ON)	R12-L4000N-DX9Q3UP	R12-D0200N-DX9Q3UP
Voltage range	10-30VDC	10-30VDC
Short-circuit protection	●	●
Output circuit (max)	200 mA	200 mA
Switching frequency (max)	>100 Hz	>100 Hz
LED for output function	●	●
LED for supply voltage	-	-
LED for diagnostic	-	-
Adjustable sensitivity	-	●
Timer function	-	-
Diagnostic function	-	-
Temperature range	-5°C to +70°C (+23°F to +158°F)	-5°C to +70°C (+23°F to +158°F)
Protection type	IP65/NEMA 12	IP65/NEMA 12

### Dimensions

All dimensions in mm



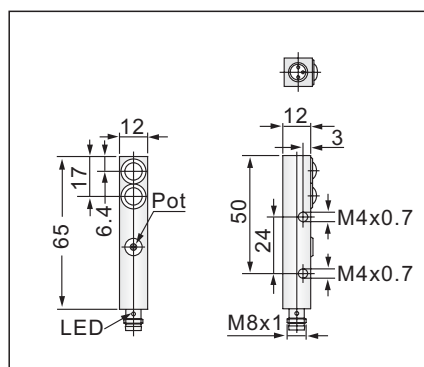
Diffuse reflective sensors  
 ---Easiest installation  
 ---No reflector necessary



<b>Sensing type</b>	Diffuse reflective sensors	
<b>Sensing distance</b>	1.2m	
<b>Model description</b>		
PNP (Light ON)	R12-D1200P-LX9Q3UP	
PNP (Dark ON)	R12-D1200P-DX9Q3UP	
NPN (Light ON)	R12-D1200N-LX9Q3UP	
NPN (Dark ON)	R12-D1200N-DX9Q3UP	
<b>Voltage range</b>	10-30VDC	
<b>Short-circuit protection</b>	●	
<b>Output circuit (max)</b>	200 mA	
<b>Switching frequency (max)</b>	>100 Hz	
<b>LED for output function</b>	●	
<b>LED for supply voltage</b>	-	
<b>LED for diagnostic</b>	-	
<b>Adjustable sensitivity</b>	-	
<b>Timer function</b>	-	
<b>Diagnostic function</b>	-	
<b>Temperature range</b>	-5°C to +70°C (+23°F to +158°F)	
<b>Protection type</b>	IP65/NEMA 12	

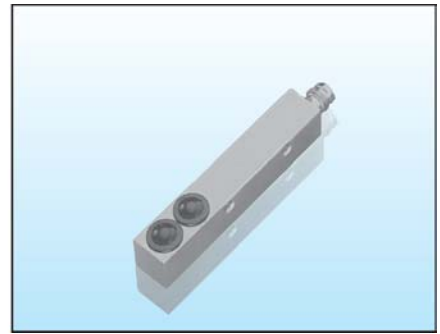
## Dimensions

All dimensions in mm



### Through-beam sensors

- High operational safety, interference reflections rarely trigger the receiver.
  - Detection of very small objects, possible by the additional use of lenses or filters.
- ### Convergent beam sensors
- Background/foreground suppression.
  - Defined active zone.



<b>Sensing type</b>	<b>Through-beam sensors</b>		<b>Convergent beam sensors</b>
<b>Sensing distance</b>	<b>60m</b>		<b>50mm</b>
<b>Model description</b>			<b>R12-C0050P-LX9Q3UP</b>
<b>PNP (Light ON)</b>			
<b>PNP (Dark ON)</b>	<b>R12-T60MP-DX9Q3UP</b>		
<b>Transmitter</b>	<b>R12-T60MD-EX9Q3LP</b>		
<b>Voltage range</b>	<b>10-30VDC</b>		<b>10-30VDC</b>
<b>Short-circuit protection</b>	-	●	●
<b>Output circuit (max)</b>	-	<b>200 mA</b>	<b>200 mA</b>
<b>Switching frequency (max)</b>	-	<b>&gt;100 Hz</b>	<b>&gt;100 Hz</b>
<b>LED for output function</b>	-	●	●
<b>LED for supply voltage</b>	●	-	-
<b>LED for diagnostic</b>	-	-	-
<b>Adjustable sensitivity</b>	-	-	●
<b>Timer function</b>	-	-	-
<b>Diagnostic function</b>	●	-	-
<b>Temperature range</b>	<b>-5°C to +70°C(+23°F to +158°F)</b>		<b>-5°C to +70°C(+23°F to +158°F)</b>
<b>Protection type</b>	<b>IP65/NEMA 12</b>		<b>IP65/NEMA 12</b>

### Dimensions

All dimensions in mm

