

## 42KA

### Subminiature Flat Pack Style



#### Description

The 42KA family of photoelectric sensor offers high performance sensing capability in a subminiature package. Intended for use in applications where small size is the key criteria, the 42KA is a practical alternative to using separate sensors and fiber optic cables.

Two basic package styles are offered—face view and side view. As seen in the illustrations above, the placement of the sensor optics determines the view. For the thinnest possible solution, the face view should be selected. Side view models have optics and connecting cable located on adjacent sides.

For ease of selection, the 42KA is available in three sensing modes to cover most basic applications. Models are available with or without a sensitivity adjustment. Those models with this feature contain a cable mounted module to allow for the smallest possible sensor size.

#### General Specifications

<b>Unit Protection</b>	Reverse polarity (standard diffuse without sense adjustment only), transient noise
<b>Supply Voltage</b>	12-24V DC
<b>Current Consumption</b>	30mA maximum
<b>Output Type</b>	NPN or PNP by model
<b>Output Mode</b>	See Product Selection
<b>Output Rating</b>	80mA@24V DC
<b>Response Time</b>	500µs
<b>Housing Material</b>	Polyester
<b>Lens Material</b>	Polycarbonate
<b>LED Indicators</b>	See User Interface on page 1-161
<b>Connection Types</b>	2m 500V cable
<b>Supplied Accessories</b>	Mounting bracket
<b>Optional Accessories</b>	Cordsets, mounting brackets (see page 7-1)
<b>Operating Environment</b>	NEMA 1; IP40 (IEC529)
<b>Vibration</b>	10-55Hz, 1mm amplitude, Meets or exceeds IEC 60947-5-2
<b>Shock</b>	30g with 1ms pulse duration, Meets or exceeds IEC 60947-5-2
<b>Operating Temperature</b>	-25°C to +55°C (-13°F to +131°F)
<b>Relative Humidity</b>	5...85%
<b>Approvals</b>	UL listed, CSA certified, CE marked for all applicable directives

#### Features

- Subminiature package style
- Three sensing modes
- Models with and without sensitivity adjustment
- Highly visible LED Indicators
- NPN or PNP output models
- 2m cable connection

#### General Information

Wiring Diagrams . . . . . page 1-161  
 Dimensions . . . . . page 1-161 and 1-162

#### Sensing Modes

Standard Diffuse . . . . . page 1-163  
 Sharp Cutoff Diffuse . . . . . page 1-164  
 Transmitted Beam . . . . . page 1-165

#### Accessories

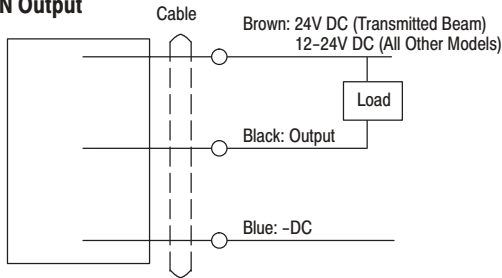
Quick-Disconnect Cables . . . . . page 7-1

User Interface Panel

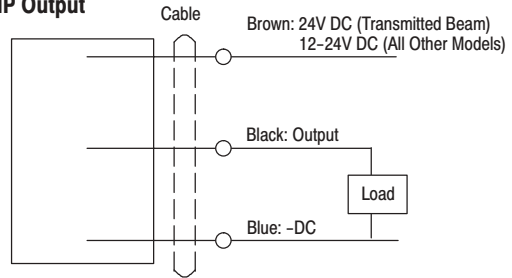
Label	Color	State	Status
STB	Green	OFF	0.8<math><1.2</math>
		ON	0.8>math>>1.2</math>
OUT	Red	OFF	Output not activated
		ON	Output activated

Wiring Diagrams

NPN Output



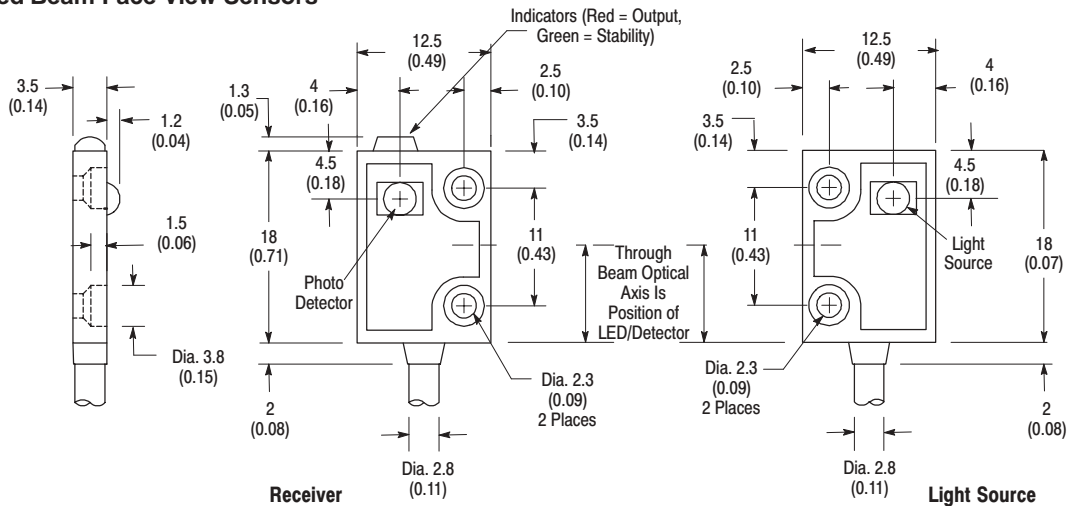
PNP Output



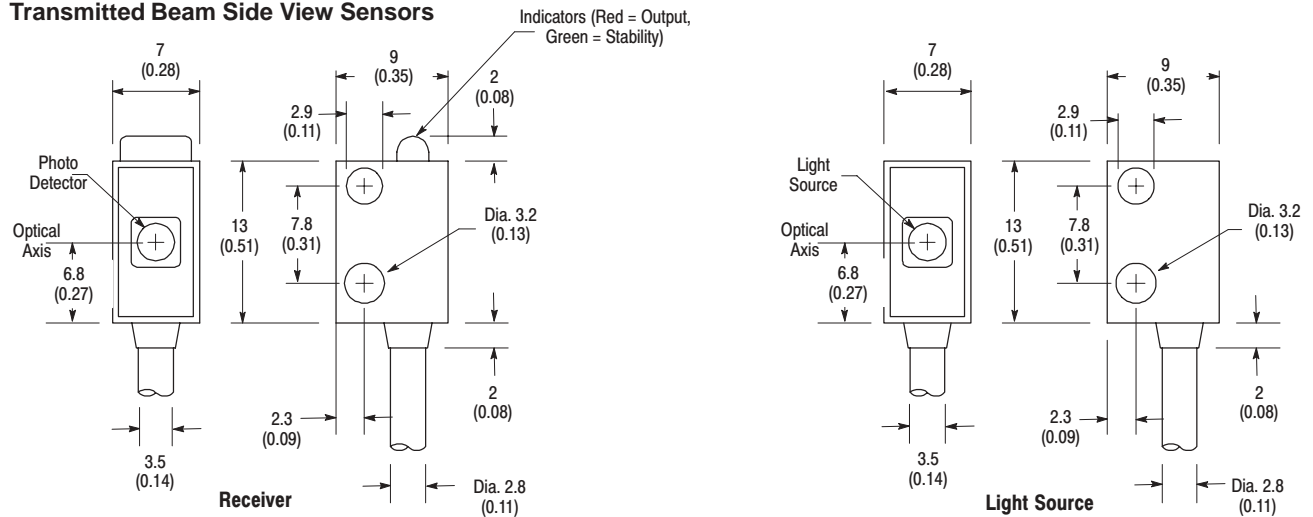
Note: Details regarding connection of Allen-Bradley Bulletin 42KA photoelectric sensors to Allen-Bradley Programmable Controllers can be found in publication 42-2.0.

Dimensions—mm (inches)

Transmitted Beam Face View Sensors



Transmitted Beam Side View Sensors

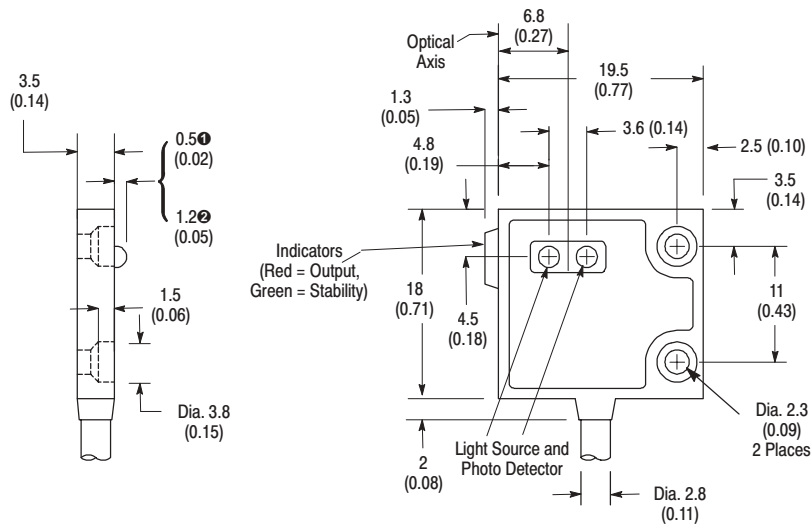


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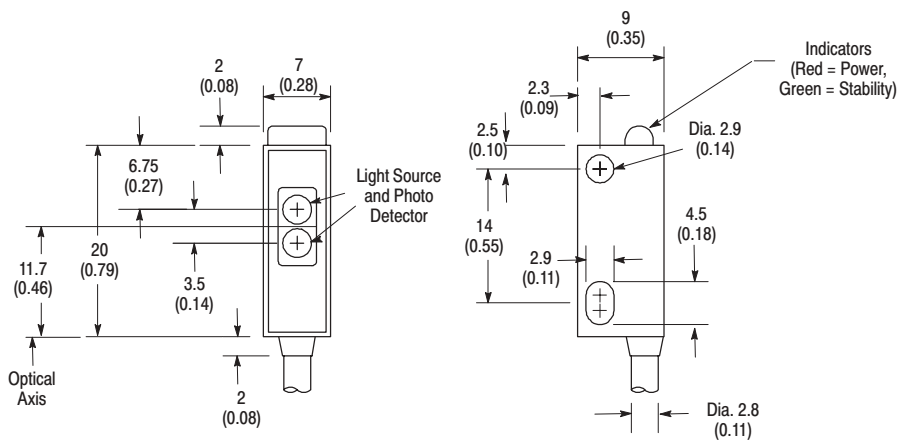
Subminiature Flat Pack Style

Dimensions—mm (inches) (continued)

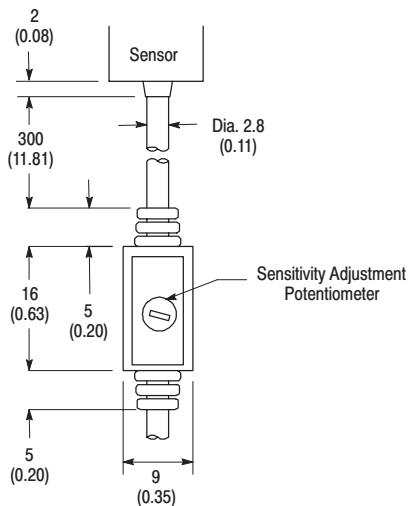
Face View Sensors



Side View Sensors

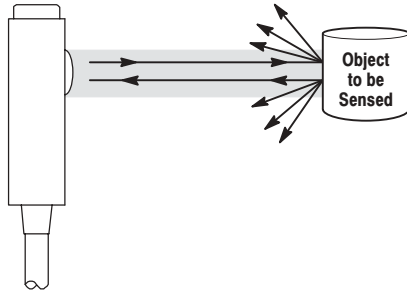


Sensitivity Adjustment Module



## 42KA Standard Diffuse

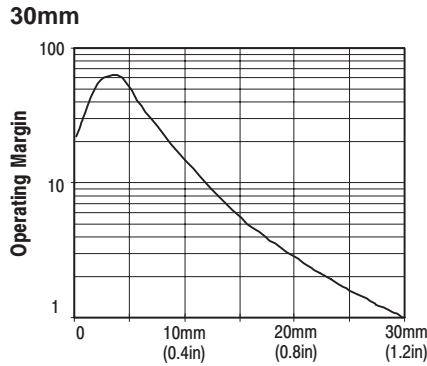
Subminiature Flat Pack Style



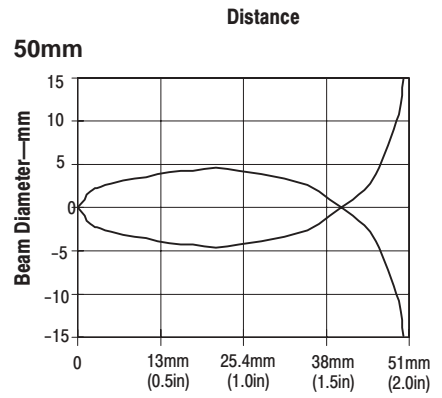
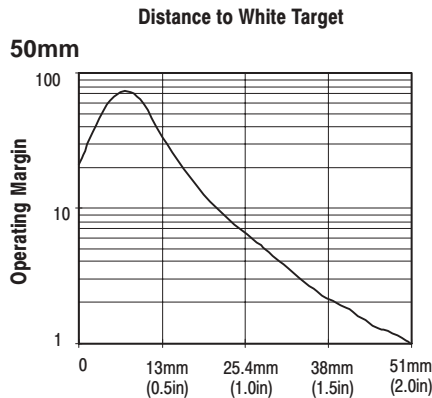
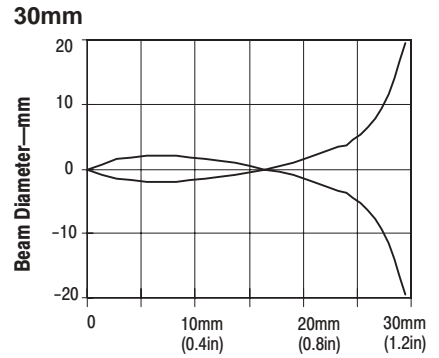
### Specifications

<b>Field of View</b>	See Product Selection
<b>Emitter LED</b>	Visible red 660nm

### Typical Response Curves



### Beam Patterns



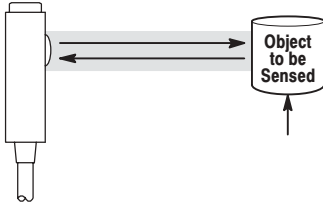
### Product Selection

Operating Voltage Supply Current	Sensing Distance	Field of View	Output Energized	Output Type Capacity Response Time	Max Leakage Current	Face View or Side View <sup>1</sup>	Sensitivity Adjustment	Connection Type	Catalog Number
12-24V DC ±10% 20mA	3mm (0.12in) to 30mm (1.2in)	30°	Light	NPN 80mA 0.5ms	0.5mA	Face View	No	2m 500V cable	42KA-D2JNHA-A2
12-24V DC ±10% 22mA				PNP 80mA 0.5ms					42KA-D2JPHA-A2
12-24V DC ±10% 27mA	3mm (0.12in) to 50mm (2.0in)	18°		NPN 80mA 0.5ms			Yes		42KA-D2JNFA-A2
12-24V DC ±10% 20mA				PNP 80mA 0.5ms			No		42KA-D2JNHC-A2
12-24V DC ±10% 29mA				NPN 80mA 0.5ms			Yes		42KA-D2JPHC-A2
12-24V DC ±10% 27mA				PNP 80mA 0.5ms					42KA-D2JNFC-A2
12-24V DC ±10% 29mA			PNP 80mA 0.5ms		42KA-D2JPFC-A2				

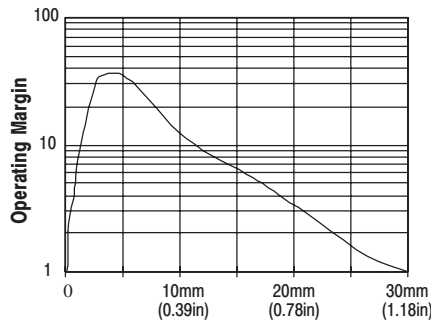
<sup>1</sup> See page 1-161 and 1-162 for detailed dimensions.

# 42KA Sharp Cutoff Diffuse

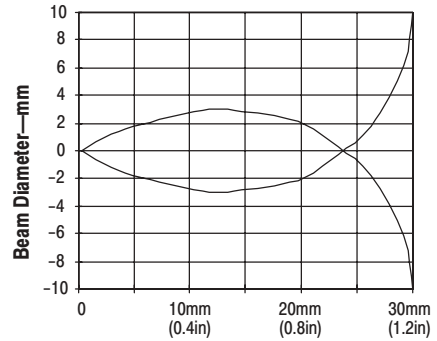
Subminiature Flat Pack Style



Typical Response Curve



Beam Pattern



## Specifications

Field of View	18°
Emitter LED	Red 660nm

Distance to White Target

Distance

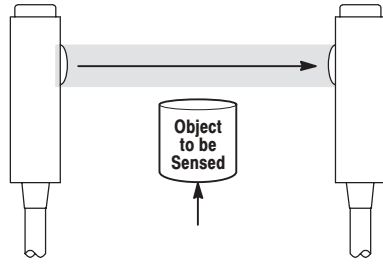
## Product Selection

Operating Voltage Supply Current	Sensing Distance	Output Energized	Output Type Capacity Response Time	Max Leakage Current	Face View or Side View①	Sensitivity Adjustment	Connection Type	Catalog Number
12-24V DC ±10% 27mA	3mm (0.12in) to 30mm (1.2in)	Light Operate	NPN 80mA 0.5ms	0.5mA	Side View	Yes	2m 500V cable	42KA-S2JNSA-A2
12-24V DC ±10% 29mA			PNP 80mA 0.5ms					42KA-S2JPSA-A2
12-24V DC ±10% 27mA			NPN 80mA 0.5ms			No		42KA-S2JNTA-A2②

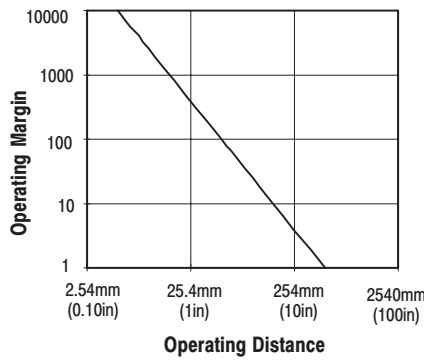
① See page 1-161 and 1-162 for detailed dimensions.

## 42KA Transmitted Beam

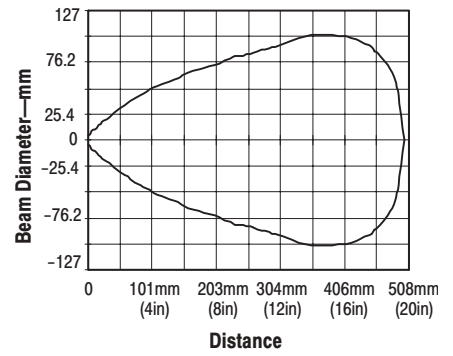
Subminiature Flat Pack Style



Typical Response Curve



Beam Pattern



### Specifications

Field of View	See Product Selection
Emitter LED	Red 660nm

### Product Selection

Operating Voltage Supply Current	Sensing Distance	Field of View	Output Energized	Output Type Capacity Response Time	Max Leakage Current	Face or Side View <sup>①</sup>	Sensitivity Adjustment	Connection Type	Catalog Number <sup>②</sup>			
24V DC ±10% Source: 15mA Receiver: 15mA	3mm (0.12in) to 500mm (19.7in)	40°	Dark	NPN 80mA 0.5ms	0.5mA	Face	No	2m 500V cable	42KA-T2KNHK-A2			
						Side			42KA-T2KNTK-A2			
50°		Face				Yes	42KA-T2KNFK-A2					
		40°				Face	No		42KA-T2KPHK-A2			
50°				Side		42KA-T2KPTK-A2						
		Face		Yes		42KA-T2KPFK-A2						
24V DC ±10% Source: 15mA Receiver: 17mA		40°		40°		PNP 80mA 0.5ms	0.5mA		Face	No	2m 500V cable	42KA-T2KPHK-A2
Side									42KA-T2KPTK-A2			
24V DC ±10% Source: 15mA Receiver: 24mA	50°	50°	PNP 80mA 0.5ms	0.5mA	Face	Yes	2m 500V cable	42KA-T2KPFK-A2				

① See page 1-161 and 1-162 for detailed dimensions.

② Both a Light Source (Emitter) and Receiver are included in the package. To identify the Light Source, replace the "T" in the catalog number with "E." To identify the receiver, replace the "T" in the catalog number with "R." Example: 42KA-T2KNHK-A2 contains one 42KA-E2KNHK-A2 Light Source and one 42KA-R2KNHK-A2 Receiver. Light Sources and Receivers are not available separately.