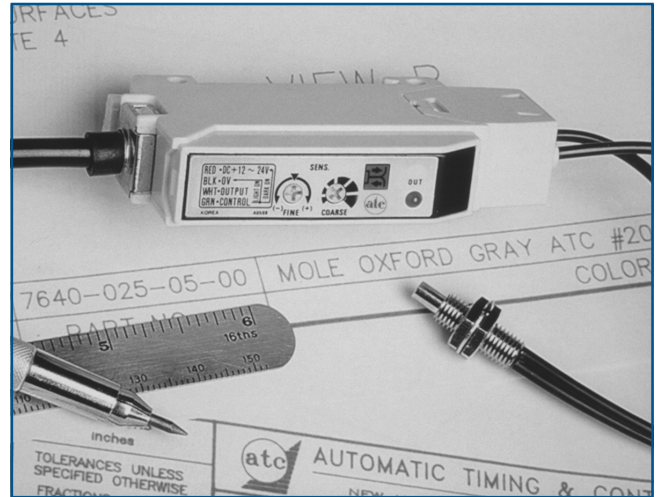




Narrow housing and DIN rail mounting allows many units to be installed where space is at a premium. With the variety of fiber optic cables available, customers are able to tailor this photo system to their exact requirements. Extremely small object detection provides strong capabilities for applications requiring high precision.

PRODUCT HIGHLIGHTS:

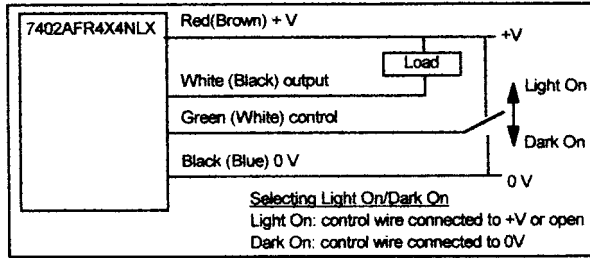
- Precise .001" Detection (.03mm)
- Compact, Quick, DIN Rail Mount
- High Speed 1ms Response
- Short Circuit and Reverse Polarity Protection
- LO/DO Selectable by Control Wire (Can be Remotely Changed)
- 12-24VDC Supply, NPN Output
- Sensitivity Adjustment with Both Fine and Course for Precise Applications
- Wide variety of Fiber Optic Cables Available



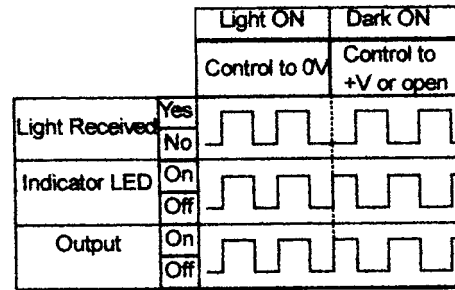
Specifications

Model	7402AFR4X4NLX
Optical	
Range	7.8" (200mm W/7402-271-01-00 Fiber Cable)
Target Size	0.01 (0.3mm)
Light Type	Red LED
Supply Voltage	12-24VDC ±10% (Peak to Peak Ripple 10% Max.)
Output	
Type	NPN Open Collector
Voltage	30VDC Max.
Load	200mA Max.
Response Time	1 ms
Voltage Drop	1V Max.
Protection	Reverse Polarity & Short Circuit Protection
Features	
Adjustment	Potentiometers (2), Course & Fine
Mode	Selectable Light On or Dark On, by control wire
Indicators	Operating Indicator, Red LED
Connection	Cable, 4-Conductor, 6' 7" (2m). 0.19" Dia. (4.8mm)
Housing	
Style	DIN Rail Mount
Weight	4.2 oz. (120g)
Material	ABS
Dielectric	1000VAC 50/60Hz
Temperature	Operating: 14 to 140°F (-10 to 60°C) Storage: -13 to 158°F (-25 to 70°C)
Humidity	35-85 RH, Operating & Storage
Shock & Vibration	50G X, Y, Z, 10 59 55Hz 1.5mm amplitude, 2H
Light Immunity	Sunlight 10,000 Lux, Incandescent 300 Lux Max.
Electrical Noise Immunity	±240V, 1µs

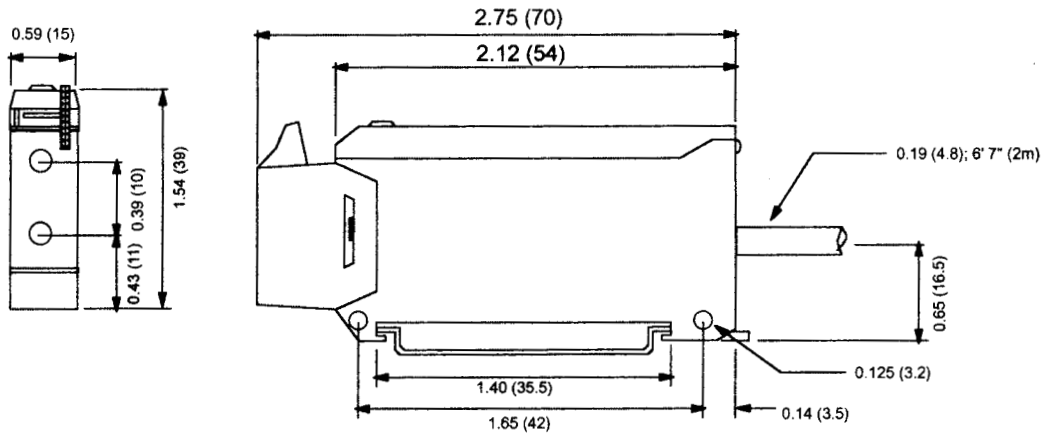
Wiring Diagram



Operating Mode Chart



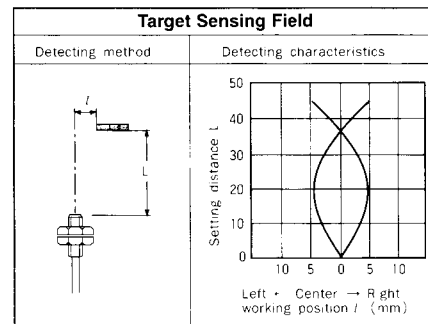
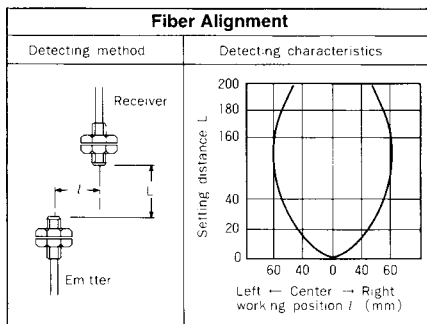
Dimensions



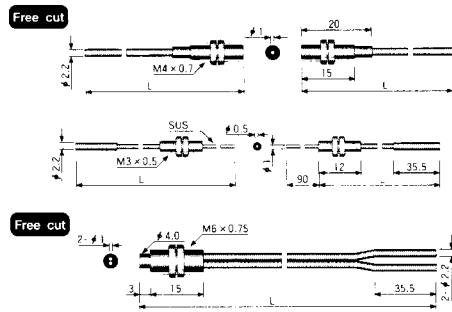
Detecting Characteristics

Through Type: • 7402-271-01-00
 • 7402-273-12-00 • 7402-273-12-01

Diffuse Type:
 • 7402-271-11-00



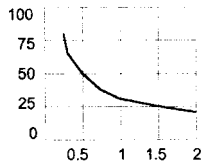
Plastic Fiber Optic Cable



Model	Cable Length	Sensing Range	Minimum Object Detectable	Allowable Bend Radius	Tightening Torque	Cable Tensile Strength	Operating Temp
7402-271-01-00	6' 7" (2m)	7.9" (200)	0.02" (0.5)	1.18" (30)	3Kg.f.cm	Max 1Kg.f	-22 F to +140 F
7402-273-12-00	3' 3" (1m)	2.75" (200)	0.04" (1.0)	1.18" (30)*	3Kg.f.cm	Max 1Kg.f	(-30 C to +60 C)
7402-273-12-01	6' 7" (2m)	2.75" (200)	0.02" (0.5)	1.18" (30)*	3Kg.f.cm	Max 1Kg.f	
7402-271-11-00	6' 7" (2m)	1.97" (50)	0.001" (0.03)	1.18" (30)	3Kg.f.cm	Max 1Kg.f	35 to 85% RH

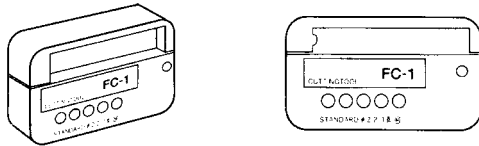
* Tip 11.81" (300mm)

Sensing Range vs Fiber Optic Length



Diffuse type fiber optic cables sensing distance is based on a Kodak White Card, 50mm x 50mm in size. Sensing distance may decrease as much as 20% due to quality of end cut. Care should be taken when cutting fiber to assure maximum performance. Sensing distance is also affected by overall length of fiber, as shown in chart #3.

Fiber Cutter



Ordering Code

7402A F R 4 X 4 N L X

BASIC MODEL _____

TYPE _____
F - Fiber Optic

SOURCE _____
R - Red LED

OPERATION _____
4 - Light/Dark Operate

DELAY _____
X - No Delay

NUMBER OF WIRES _____
4 - 4-wire

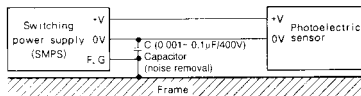
POWER REQUIREMENTS _____
N - 12-24VDC

OUTPUT _____
L - Logic

FEATURES _____
X - Standard

Caution

- Do not scar cut face surface of optical fiber cable.
- Do not mount optical fiber cable such that it will intercept a strong light such as sun light, or a spot light within the triangulation range (field of view) of the optical cable.
- Do not apply a strong tensile force (pull) to the optical fiber cable.
- If high voltage or power lines pass near the amplifier electrical cable, wire the amplifier cable through a metallic conduit to prevent malfunction due to electrical noises or surges.
- Avoid installation of the unit in areas where the following exist: Corrosive gases, oil, dust, strong flux, electrical noise, strong sun light, strong alkali, acid.
- When connected to an inductive load such as a DC relay, use a shielded cable, diode and varistor in order to remove electrical noise.
- Keep the amplifier electrical cable and wiring as short as possible to minimize the conduction of electrical noise.
- When the ends of the optical fiber cable become dirty, clean with a clean, dry cloth. Do not use organic materials such as alkali acid, chromic acid.
- If unit is powered from a switching power supply (SMPS), connect the frame ground (F.G.) terminal to earth ground and connect a capacitor between the 0V and F.G. terminals to remove electrical noise.



Before starting your design, read the safety statement on the inside back cover of the ATC catalog.