

Installation Instructions—PHOTOSWITCH® Series 5000 Green Line

All Sensors		Retroreflective	Polarized Retroreflective	Standard/Long-Range Diffuse	Transmitted Beam		Glass Fiber Optic	Plastic Fiber Optic	Fixed Focus Diffuse	Wide Angle Diffuse
1	Sensor Type				Receiver	Light Source				
2	Sensing Distance	10m (33ft)	6m (20ft)	3m (10ft)/4.8m (16ft)	117mm (560ft)	—	Depends on fiber optic cable		(IR) 127mm (5in) (VR) 101.6mm (4in)	(IR) 508mm (20in) (VR) 177.8mm (7in)
3	Transmitting LED	Infrared 880nm	Visible red 660nm	Infrared 880nm			Visible red 660nm			
4	Indicators	Red: Output								
5	Field of View	2.5°		3.0°		Depends on fiber optic cable		—	—	
6	Sensitivity Adjustment	Yes								
7	Operating Temperature	EM Relay: -40°C to +65°C (-40°F to +150°F) SS Relay: -40°C to +52°C (-40°F to +125°F)								
8	Relative Humidity	90% maximum								
9	Housing/Lens Material	Valox®/Acrylic (Polarized Retroreflective = Valox/Glass)								
10	Cover Gasket Material	Nitrile								
11	Operating Environment	NEMA 3, 4, 12, 13, and IP66 (IEC 529), corrosion resistant, high-impact housing								
12	Approvals	UL listed, CSA certified (except cable style power base), and CE marked for all applicable directives								
13	Protections	Power on False Pulse protection								
14	Vibration	10-55 Hz, 1 mm amplitude, Meets or exceeds IEC 947-5-2								
15	Shock	30G, Meets or exceeds IEC 947-5-2								
Photohead										
16	Catalog Number	42MRU-5000	42MRU-5200	42MRP-5000	42MRR-5000	42MRL-5000	42MRA-5000-FO	42MRF-5000-FO	42MRA-5000-FF	42MRA-5000-WA
				42MRP-5000P					42MRF-5000-FF	42MRF-5000-WA
17	Output Energized	LO/DO Selectable								
18	Load Current	See specifications for plug-in output module								
19	Leakage Current	See specifications for plug-in output module								
20	Response Time	1ms + module	2.5ms + module		5ms + module	—	2.5ms + module			
Base										
		120V AC	240V AC	24V AC	24V DC					
21	Catalog Number: Terminal	42MTB-5000	42MTB-5001	42MTB-5003	42MTB-5004			42MTB-5002		
22	Catalog Number: Mini Quick-Disconnect	42MTB-5000QD5-1	—	—	42MTB-5004QD4-1					
23	Supply Voltage	102-132V AC	204-254V AC	20-30V AC	20-30V DC			40-54V AC/DC		
24	Power Consumption	2VA	4VA	1VA	1VA			1VA		
Plug-In Output Module										
		8-590	8-594 (5004 only)	8-591	8-592	8-593 (5004 only)				
25	Output Type	SPDT EM Relay		SP-NO FET SS	SP-NO AC TRIAC	NPN and PNP				
26	Output Rating	2A @ 120V AC		30mA @ 0-120V AC/DC	0.75A @ 24-240V AC	100mA @ 30V DC				
		1A @ 240V AC								
19	Leakage Current	—	—	10µA	1mA	1µA				
20	Response Time	ON: 10ms—OFF: 15ms		1ms	8ms	1ms				
Plug-In Function Module										
		60-1790	60-1791	60-1798	60-1792	60-1793	60-1794	60-1795	60-1796	60-1797
27	Function	ON/OFF delay			ONE SHOT		Delayed ONE SHOT		Motion Detector	
28	ON Delay Adjustment	0.05-1.0	0.5-10	0.5-15	—	—	0.1-1.5	1.0-15	—	—

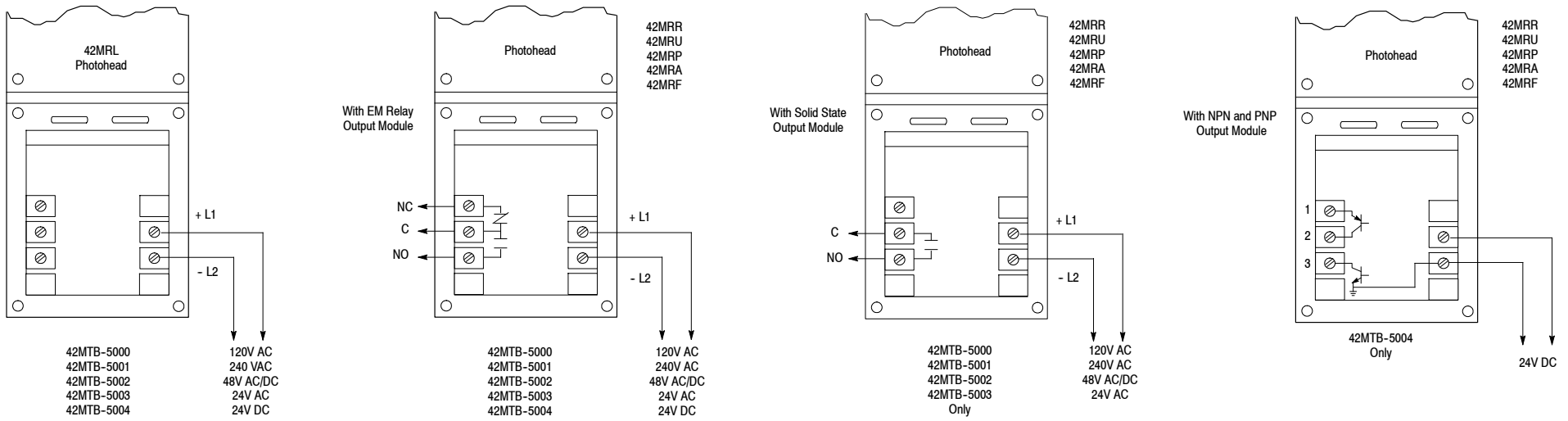
29	OFF Delay Adjustment	0.05-1.5	2-4	2-6	—	—	—	—	0.05-1.5	0.5-15
30	Adjustable Dwell	ON/OFF delay			0.005-0.5	0.5-15	0.02-0.2		—	—

English		Français	Italiano	Deutsch	Español	Português
Operating Distance Selection The maximum operating distance is based on installing the sensor in a relatively clean environment. Normal industrial environments actually range from moderately dusty to extremely dirty. Greater operating margin may be required which can be obtained by reducing the operating distance of the control.		Choix de la Distance de Fonctionnement La distance maximale de fonctionnement dépend de la propreté relative de l'environnement d'installation de la cellule. À vrai dire, les environnements industriels normaux vont de modérément poussiéreux à extrêmement sales. Une marge d'opération plus grande peut être nécessaire et s'obtient en réduisant la distance opérationnelle du contrôle.	Selezione Distanza Operative La massima distanza di funzionamento si basa sull'installazione del sensore in un ambiente relativamente pulito. Gli ambienti industriali normali vanno in verità da moderatamente polverosi a estremamente sporchi. Potrebbe essere necessario un margine di funzionamento superiore che si può ottenere riducendo la distanza operativa del controllo.	Wahl der Reichweite Die maximale Reichweite basiert auf einer Installation des Sensors in einer relativ sauberen Umgebung. Normale industrielle Umgebungen sind zumeist jedoch relativ staubig bis äußerst verschmutzt. In diesem Fall ist eine größere Betriebsmarge erforderlich, die durch einen geringeren Abstand erzielt werden kann.	Selección de Distancia de Operación La distancia máxima de operación se basa en la instalación del sensor en un ambiente relativamente limpio. Los ambientes industriales normales fluctúan entre moderadamente polvorosos a extremadamente sucios. Es posible que se requiera un margen de operación mayor, el cual puede obtenerse reduciendo la distancia operativa del control.	Seleção do Alcance O alcance máximo é baseado na instalação do detector em ambiente relativamente limpo. Os ambientes industriais normais efetivamente apresentam condições entre moderadamente empoeirados e extremamente sujos. Poderá ser exigida uma maior margem de operação, que pode ser obtida pela redução do alcance do controle.
Retroreflective		Réflex	A Riflessione	Reflexions-Lichtschranke	Retrorreflexivo	Retro-reflexivo
Polarized Retroreflective		Réflexe polarisé	Retroriflessivo polarizzato	Reflexionslichtschranke, polarisiert	Retrorreflexivo polarizado	Feixe Retro-Refletido, Luz Polarizada
Standard/Long Range Diffuse		Standard/Proximité longue portée	Standard/Taster per lunghe distanze	Standard/Lichttaster mit grosser Tastweite	Normal/Difuso de Margen Largo	Padrão/Feixe Difuso-Reflexivo de Longo Alcance
Transmitted Beam		Barrage	Barriera	Einweg-Lichtschranke	Haz Transmitido	Feixe transmitido
Glass Fiber Optic		Fibre optique de verre	Fibre Ottiche in Vetro	Glas-Lichtleiter	Fibra de Vidrio Optica	Fibra óptica de vidro
Plastic Fiber Optic		Fibres optiques plastique	Fibre Ottiche in Plastica	Kunststoff-Lichtleiter	Fibra de Plástico Optica	Fibra óptica de plástica
Fixed Focus Diffuse		Proximité à focale fixe	Taster focalizzato	Lichttaster mit fester Fokussierung	Difusa de Foco Fijo	Feixe Difuso-Reflexivo, com Foco Fixo
Wide Angle Diffuse		Proximité grand angle	Taster a Grand'Angolo	Weitwinkel-Lichttaster	Difusa Gran Angular	Feixe difuso-reflexivo, com grande abertura
Light Source		Emetteur	Emettore	Lichtquelle	Fuente de Luz	Emissor
Receiver		Récepteur	Ricevitore	Empfänger	Receptor	Receptor
Depends on fiber optic cable		Dépend de la fibre optique	Dipende dalla Fibra Ottica	Hängt vom Lichtleiter-Kabel ab	Depende do cable de Fibra Optica	Depende do cabo de fibra óptica escolhido
Infrared		Infrarouge	Infrarosso	Infrarot	Infrarrojo	Infravermelho
Visible Red		Rouge visible	Fibre ottiche ad emisione Rosso Visibile	Sichtbares Rotlicht	Rojo Visible	Luz vermelha visível
Red: Output		Rouge: Sortie	Rosso: Uscita	Rot: Schaltausgang	Rojo: Salida	Vermelho: Saída
EM Relay		Relais EM	Relè EM	EM Relais	Relé EM	Relé EM
UL listed, CSA certified, and CE marked for all applicable directives		Listés UL, Certifiés CSA, et marqués CE en conformité avec toutes les directives applicables	Elencato UL, certificato CSA, e marcato CE per tutte le direttive applicabili	UL-Eintragung, CSA-Zertifikat und CE-Kennzeichnung für alle anwendbaren Richtlinien	Certificado CSA, listado UL, y marca CE	Certificado por CSA, listado por UL, e marcado com CE segundo diretrizes aplicáveis
10-55Hz, 1mm amplitude, meets or exceeds IEC 947-5-2		10-55Hz, 1mm amplitude, erfüllt oder übertrifft IEC 947-5-2	10-55Hz, amplitude 1mm, conforme ou superiore à la norme CEI 947-5-2	10-55Hz, 1mm di ampiezza, soddisfa o supera la IEC 947-5-2	10-55Hz, 1mm de amplitud, satisface o supera IEC 947-5-2	10-55Hz, 1mm de amplitude, atende ou excede a norma IEC 947-5-2
Power on false pulse protection		Protection l'impulsion à la mise sous tension	Protezione falsi impulsi in accensione	Einschaltimpuls-Unterdrückung	Protecciones contra pulsos en falso en el encendido	Proteção contra pulso falso ao alimentar
Wiring Diagrams		Schémas de câblage	Schema Collegamenti	Anschluss-Schema	Diagramas de Cableado	Diagramas de Conexão
Typical Response Curve		Courbe de réponse	Curva di risposta	Diagramm. Relative Empfangs-Lichtstärke / Reich-/Tastweite	Curva de Respuesta Típica	Curva de resposta típica
Dimensions		Encombrements	Dimensioni	Abmessungen	Dimensiones	Dimensões
Accessories		Accessoires	Accessori	Zubehör	Accesorios	Accessórios
1	Sensor Type	Type de détecteur	Tipo del sensore	Sensor-Ausführung	Tipo del sensor	Tipo do detector
2	Sensing Distance	Distance de Détection	Distanza di Rilevamento	Reichweite	Dispositivo Sensor	Alcance
3	Transmitting (LED)	LED de Transmission	LED di Trasmissione	Lichtquelle (LED)	LED de Transmisión	LED de Transmissão
4	Indicators	Indicateurs	Indicatori	Anzeigen	Indicadores	Indicadores
5	Field of View	Angle de Visée	Campo di Visione	Sichtbereich	Campo de Visión	Campo de Visão
6	Sensitivity Adjustment	Réglage de Sensibilité	Regolazione della Sensibilità	Empfindlichkeits-Einstellung	Ajuste de Sensibilidad	Ajuste de sensibilidade
7	Operating Temperature	Température de Fonctionnement	Temperatura di Funzionamento	Betriebstemperatur	Temperatura de Operación	Temperatura de Operação
8	Relative Humidity	Humidité Relative	Umidità Relativa	Relative Luftfeuchtigkeit	Humedad Relativa	Umidade Relativa
9	Housing/Lens Material	Matériaux du Boîtier/du Couvercle/des Lentilles	Materiale dell'Involucro/per la Copertura/delle Lenti	Gehäusematerial/Werkstoff der Abdeckung/Linsenmaterial	Material del Alojamiento/de la Cubierta/del Lente	Material da Caixa/Tampa/Lente
10	Cover Gasket Material	Matériau du joint de capot	Materiale Guarnizioni della Copertura	Dichtungsmaterial für Abdeckung	Material de la Junta de la Tapa	Material da tampa da junta
11	Operating Environment	Environnement Opérationnel	Ambiente Operativo	Betriebsumgebung	Ambiente de Operación	Ambiente de Operação
12	Approvals	Homologations	Approvazioni	Approbation	Aprobaciones	Aprovações
13	Protections	Protections	Protezioni	Schutzart	Protecciones	Proteções
14	Vibration	Vibration	Vibrazione	Vibration	Vibración	Vibração
15	Shock	Choc	Urto	Schock	Impacto	Choque
16	Catalog Number	Référence de Commande	Numero di Catalogo	Bestellnummer	Número de Catálogo	Número do Catálogo
17	Output Energized	Sortie activée	Uscita	Ausgang aktiviert	Salida Activada	Saída comutada
18	Load Current	Courant de charge	Corrente di Carico	Laststrom	Corriente de Carga	Corrente de carga
19	Leakage Current	Courant de Fuite	Corrente di Dispersione	Ruhestrom	Corriente de Fuga	Corrente de Fuga
20	Response Time	Temps de Réponse	Tempo di Risposta	Ansprechzeit	Tiempo de Respuesta	Tempo de Resposta
21	Catalog Number: Terminal	Référence de Commande: Base à bornes	Numero di Catalogo: Morsetti	Bestellnummer: Klemmen	Número de Catálogo: Terminal	Número do Catálogo: Terminal
22	Catalog Number: Mini Quick-Disconnect	Référence de Commande: Connecteur mini	Numero di Catalogo: Connettore Mini 7/8"	Bestellnummer: Mini-Steckverbinder	Número de Catálogo: Conector Mini	Número do Catálogo: Mini Desconexão Rápida
23	Supply Voltage	Tension d'Alimentation	Tensione di Alimentazione	Versorgungsspannung	Voltaje de Alimentación	Tensão de Alimentação
24	Power Consumption	Consommation	Consumo Potenza	Leistungsaufnahme	Consumo de Alimentación eléctrica	Consumo de Energia
25	Output Type	Type de sortie	Tipo di Uscita	Art des Schaltausgangs	Tipo de Salida	Tipo de Saída
26	Output Rating	Caractéristique de sortie	Categorie di uscita	AusgabeBewertung	Características de salida	Especificações de saída
27	Function	Fonction	Funzione	Funktion	Función	Função
28	ON Delay Adjustment	Réglage front montant	Regolazione Ritardo all'inserzione	Einstellung der Anzugsverzögerung	Ajuste de Temporización a la Conexión	Ajuste de retardo de comutação

29	OFF Delay Adjustment	Réglage temporisation front descendant	Regolazione Ritardo alla disinserzione	Einstellung der Abfallverzögerung	Ajuste de Temporización a la Desconexión	Ajuste de retardo de descomutação
30	Adjustable Dwell	Réglable angle de saturation	Regolabile abitazione	Justierbarer Halt	Ajustable detención	Ajustável interrupção

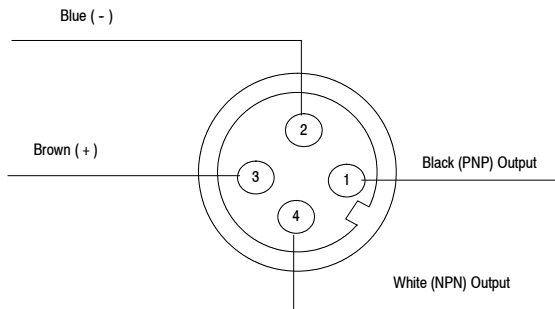
Wiring Diagrams

With Terminal Style Power Base

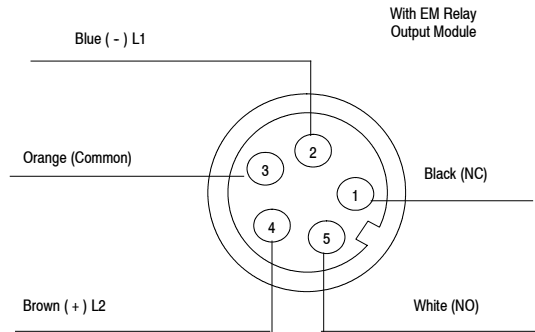


With Mini Quick-Disconnect Style Power Base

42MTB-5004QD4-1



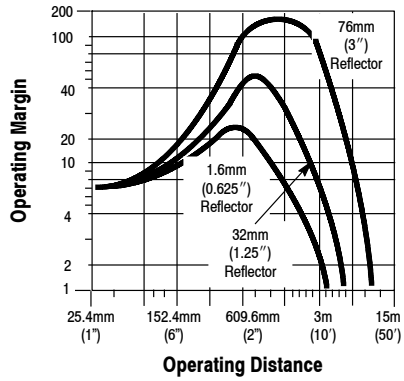
42MTB-5000QD5-1



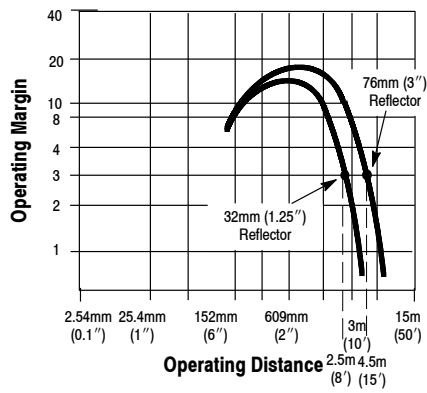
Note: Details of connection of Allen-Bradley Series 5000 photoelectric sensors to Allen-Bradley Programmable Controllers can be found in Publication 42MR-4.0.

Typical Response Curves

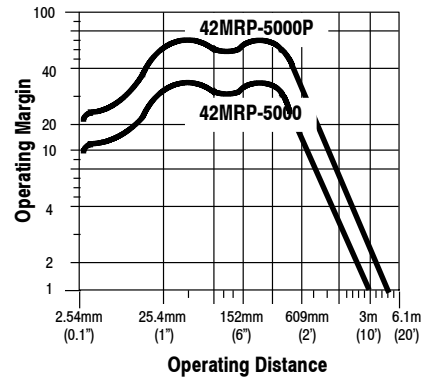
Retroreflective



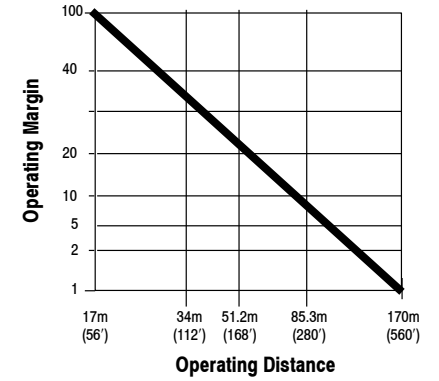
Polarized Retroreflective



Standard Diffuse

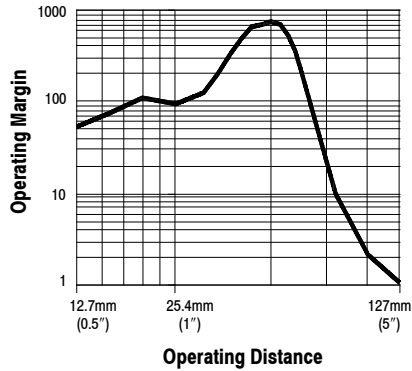


Transmitted Beam

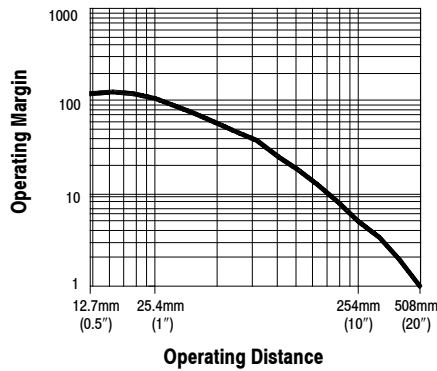


Infrared Glass Fiber Optic/Fixed Focus/Wide Angle Diffuse

Fixed Focus Lens

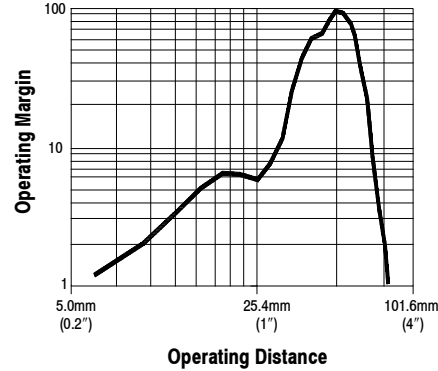


Wide Angle Lens

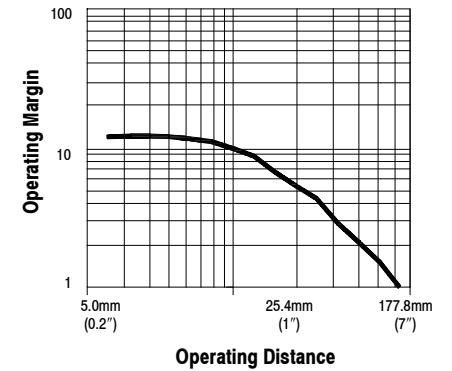


Visible Red Plastic Fiber Optic/Fixed Focus/Wide Angle Diffuse

Fixed Focus Lens

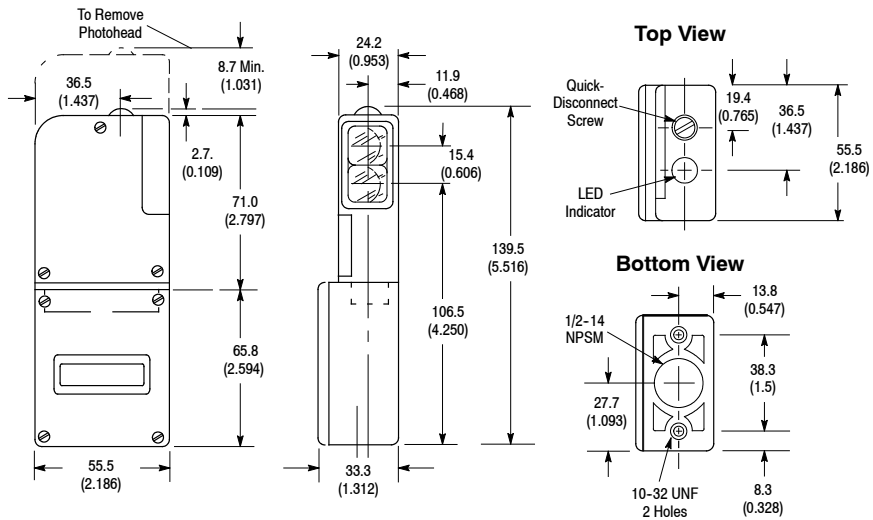


Wide Angle Lens

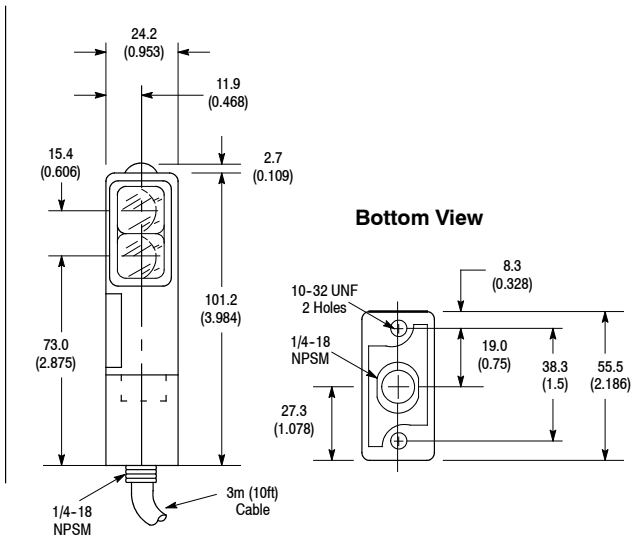


Dimensions—mm (inches)

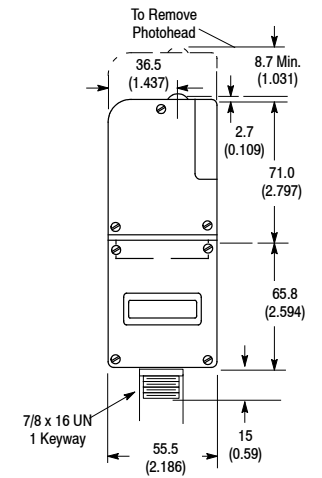
Terminal Style Power Base



Cable Style Power Base



Quick-Disconnect Style Power Base



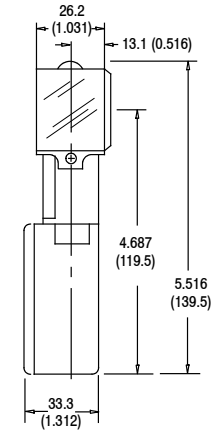
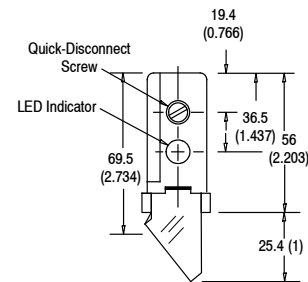
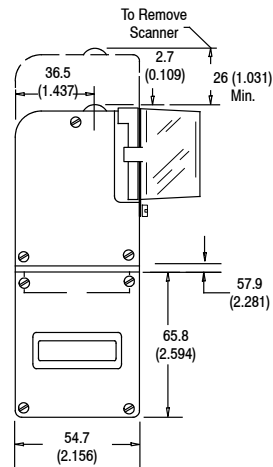
Note: Hardware included with sensor: two (2) nickel plated 10-32 mounting screws.

Accessories—mm (inches)

Lens Assembly

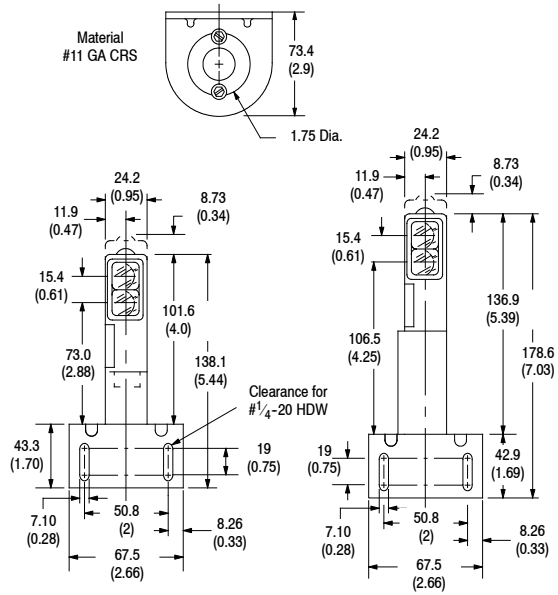
61-5550	Glass Fiber Optic
61-5551	Fixed Focus
61-5611	Wide Angle
61-6310	Plastic Fiber Optic

Right Angle Mirror Adaptor #60-1840



Accessories—mm (inches) (continued)

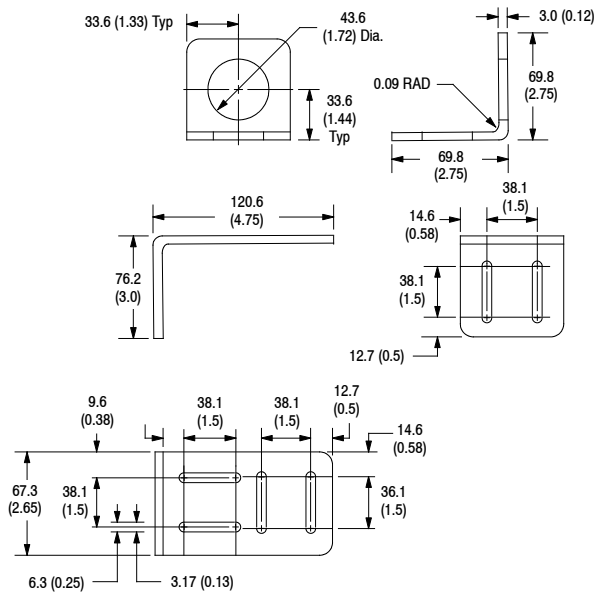
General Purpose Mounting Assembly #60-1785



Control with Cable Style Power Base

Control with Terminal Style Power Base

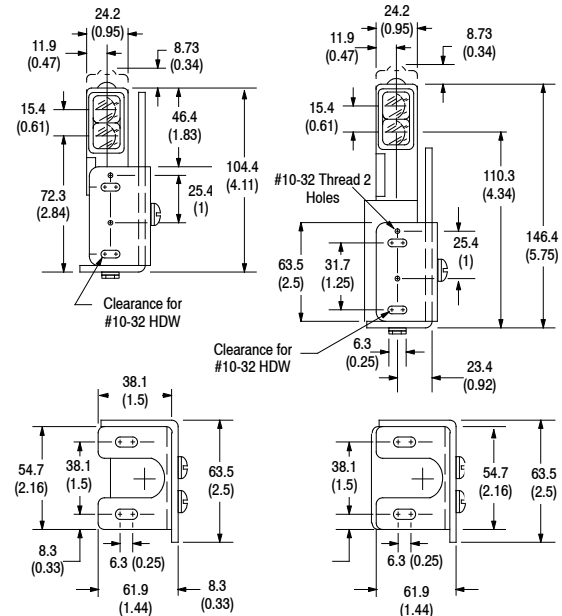
General Purpose Mounting Assembly #60-1785



Rockwell Automation

Publication PA-9807(A)
February 1999

Heavy Duty Mounting Assembly #60-1748



Control with Cable Style Power Base

Control with Terminal Style Power Base

Heavy Duty Mounting Assembly #60-1748

