



LINHA TM18

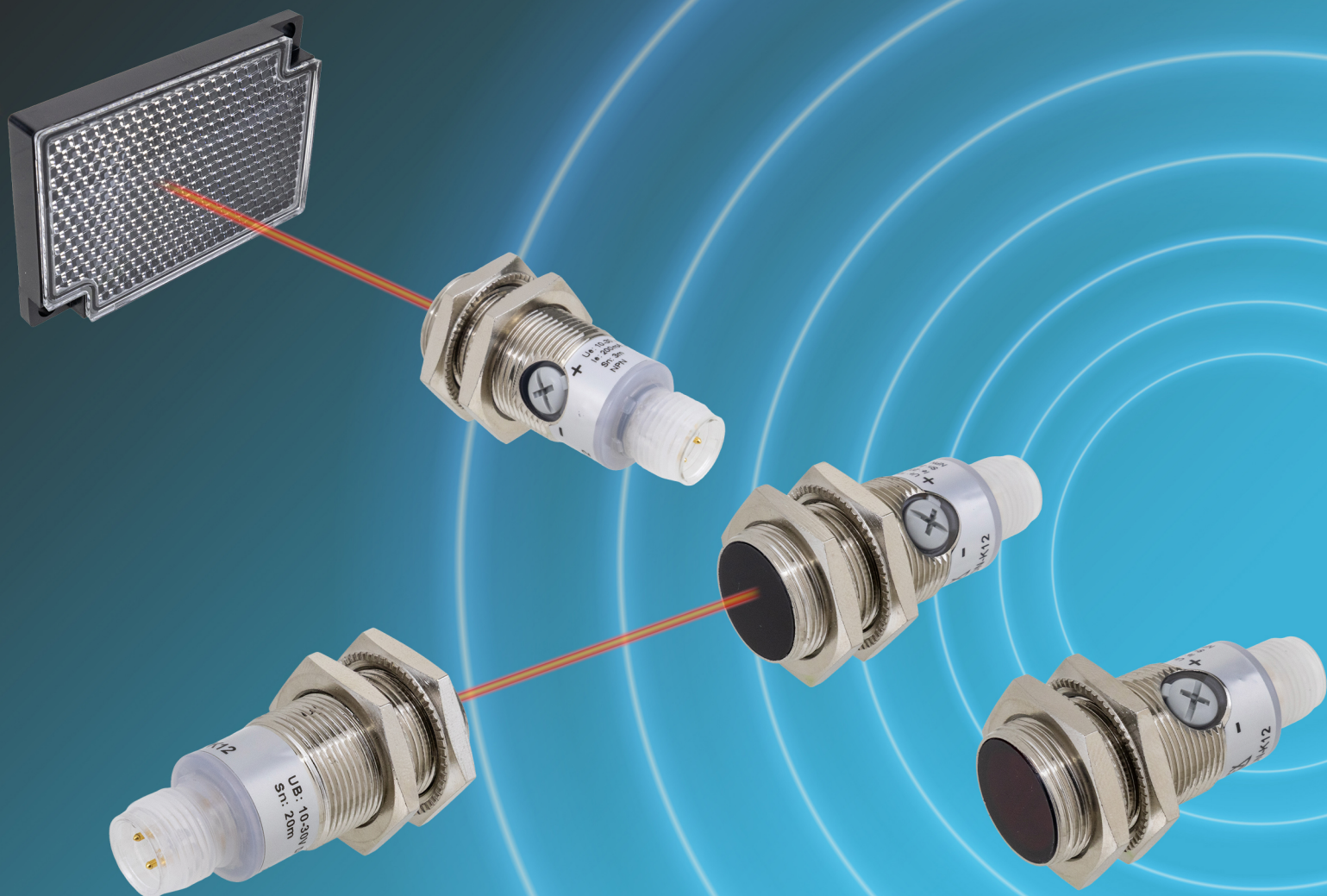
TM18 SERIES/ LÍNEA TM18

SENSOR FOTOELÉTRICO TUBULAR METÁLICO - CORPO CURTO

SHORT-BODY METALLIC TUBULAR PHOTOELECTRIC SENSOR/ SENSOR FOTOELÉCTRICO TUBULAR METÁLICO - CUERPO CORTO

ESPECIFICAÇÕES TÉCNICAS

TECHNICAL SPECIFICATIONS/ ESPECIFICACIONES TÉCNICAS



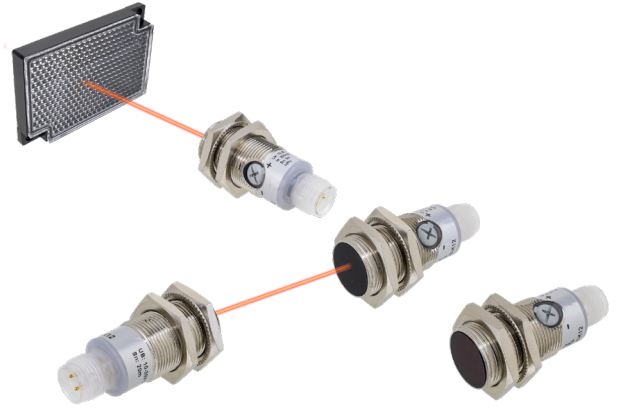
PT

EN

ES

PRINCIPAIS CARACTERÍSTICAS

- Sensor cilíndrico M18 com corpo metálico;
- Corpo curto para espaços de instalação pequenos;
- Ângulo amplo, longo alcance, fácil de instalar e configurar;
- Com indicador de status LED brilhante;
- Excelente resistência à interferência luminosa e alta estabilidade;
- Grau de proteção IP67.



CÓDIGO DE COMPRA

TM18 D - 40 D N - K12


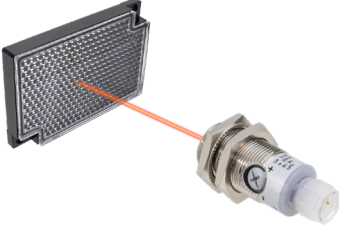
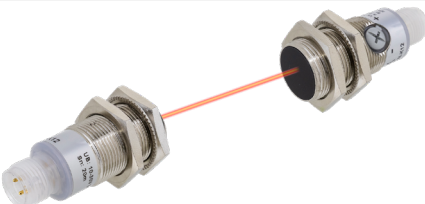
Tipo	
D	Difuso
R	Retroreflectivo polarizado
B	Barreira

Distância sensora	
40	40 centímetros
3M	3 metros
20M	20 metros

Conexão	
K12	Conector M12 4 pinos

Tipo de saída	
N	NPN
P	PNP

MODELOS

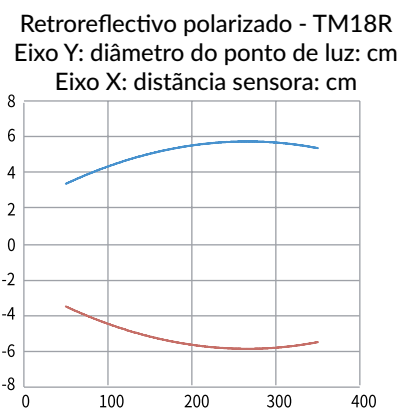
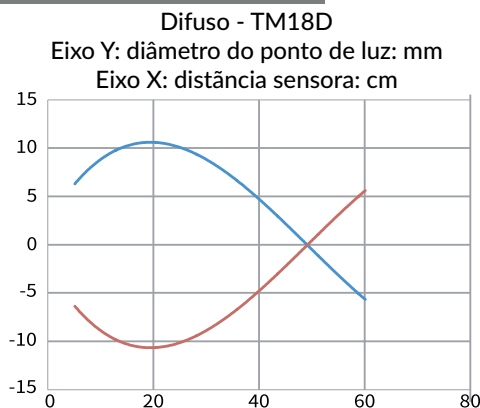
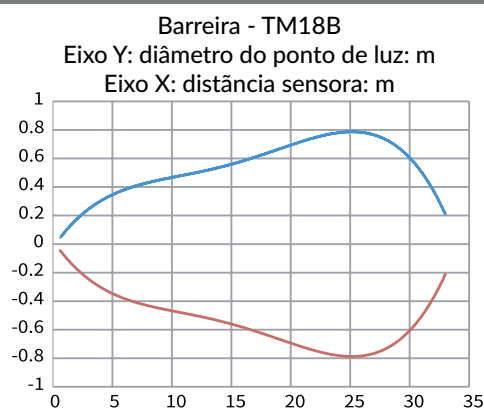
Modelos	Conexão	Fonte de luz	Distância sensora	Sinal de Saída	Código
 Difuso	M12-4P	Luz vermelha visível	40 centímetros	PNP	TM18D-40DP-K12
				NPN	TM18D-40DN-K12
 Retroreflectivo polarizado			3 metros	PNP	TM18R-3MDP-K12
				NPN	TM18R-3MDN-K12
 Barreira		20 metros	Infravermelho	PNP	TM18B-20MDP-K12
				NPN	TM18B-20MDN-K12

ESPECIFICAÇÕES GERAIS

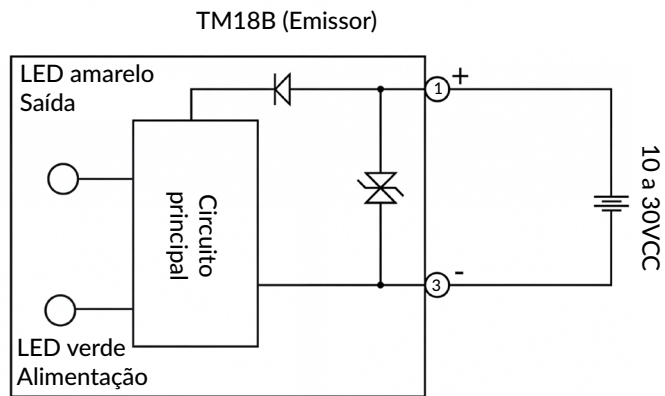
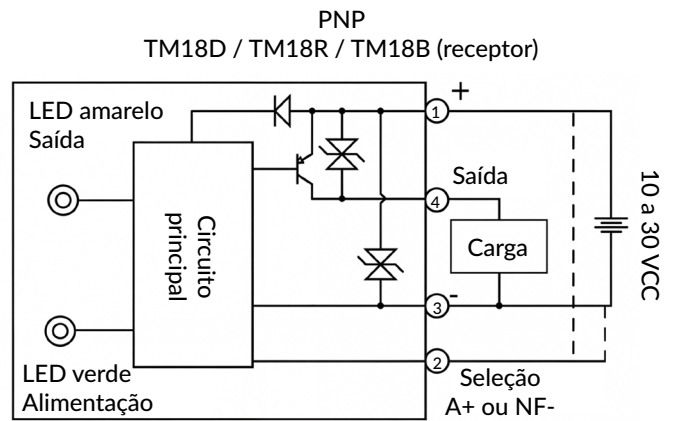
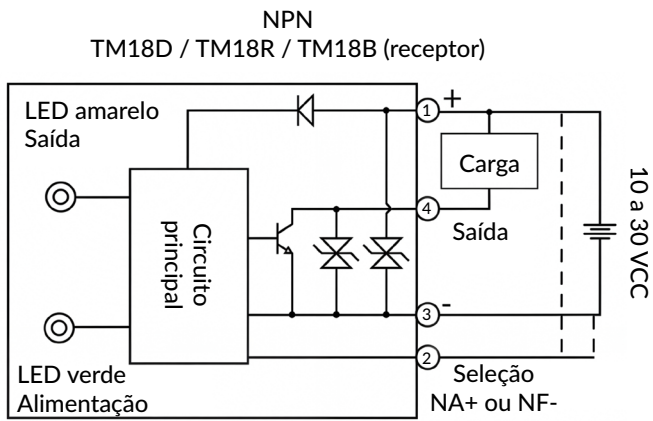
Modelo	Difuso		Retroreflectivo Polarizado		Barreira	
	PNP	NPN	PNP	NPN	PNP	NPN
Sinal de saída						
Distância sensora	40 centímetros		3 metros		20 metros	
Alimentação	10 a 30 VCC ±10%					
Fonte de luz	Luz vermelha visível				Infravermelho	
Tamanho do alvo padrão	*15 x 15 mm @40 cm		*45 x 45 mm @100 cm		Ø15 mm objeto opaco	
Tempo de resposta	≤ 0,5 ms				≤ 1 ms	
Corrente de carga	≤ 200 mA					
Corrente de consumo	≤ 20 mA				Emissor: ≤ 20 mA Receptor: ≤ 20 mA	
Proteções de circuito	Curto-circuito, sobrecarga e inversão de polaridade					
Grau de proteção	IP67					
Imunidade à luz ambiente	Interferência da luz solar ≤ 10.000 lux e interferência da luz incandescente ≤ 3.000 lux					
Lógica de saída	NA ou NF (selecionável por fio) Pino 2 - conectado ao polo positivo, modo NA ativado Pino 2 - conectado ao polo negativo, modo NF ativado					
Conexão	Conector M12 com 4 pinos					
Temperatura de operação	-25 a 55 °C					
Temperatura de armazenamento	-35 a 70 °C					
Material do corpo	Liga de níquel-cobre					
Ajuste de distância	Potenciômetro de ajuste de volta única					
Itens inclusos	Porca M18 (2 unidades)		Porca M18 (2 unidades) e espelho refletor		Porca M18 (4 unidades)	
Umidade relativa	35 a 95% sem condensação					

* Medido utilizando um papel branco de 20 x 20 cm com refletividade de 90%

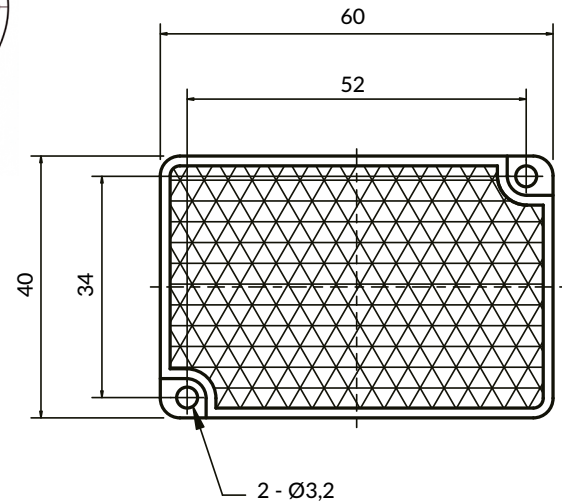
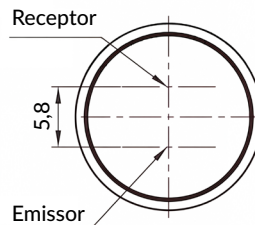
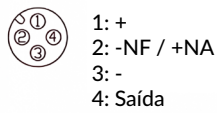
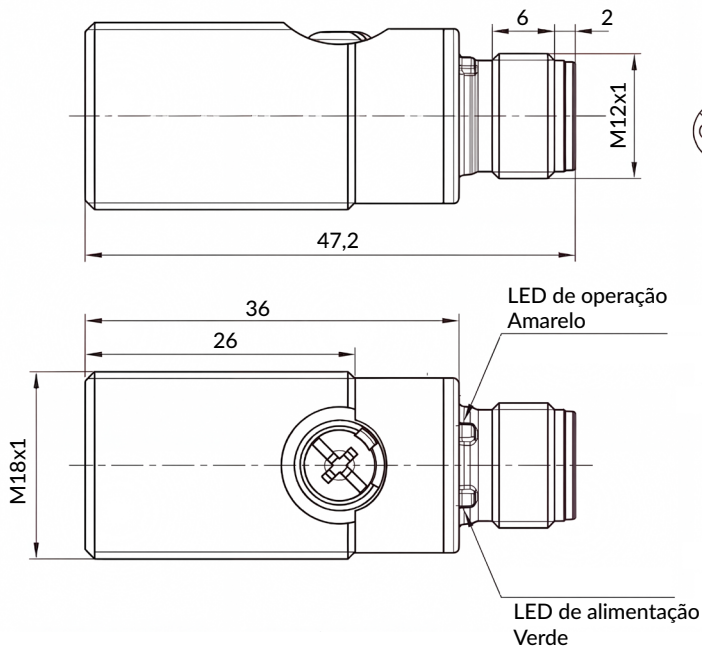
CARACTERÍSTICA SENSORIAL TÍPICA



ESQUEMA DE LIGAÇÃO


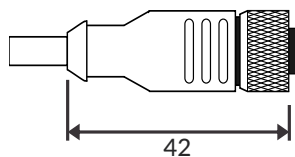
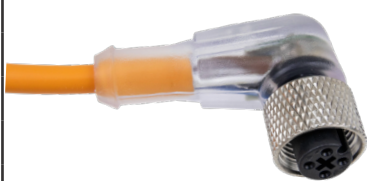
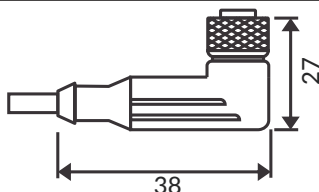
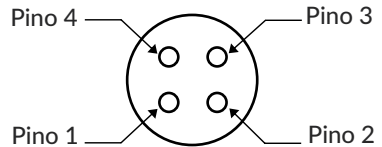


DIMENSÕES (mm)



ACESSÓRIOS

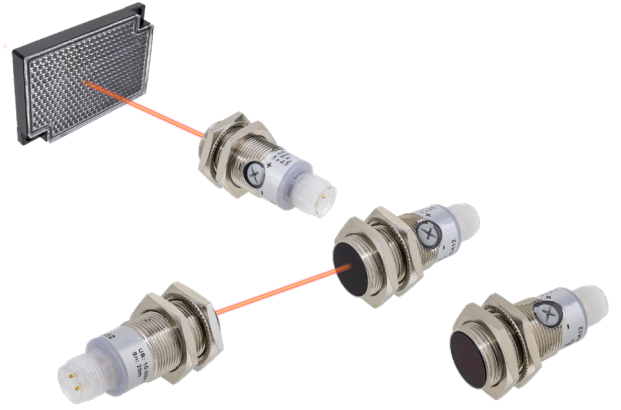
Especificação técnica	
Material de isolamento do cabo	PVC
Tensão de operação nominal (Ue)	250 V
Corrente nominal (In)	4 A
Composição de cabos	4 x 0,15 mm ² (24 AWG)
Resistência de isolamento	1 GΩ
Temperatura ambiente	-15 a 70 °C
Grau de proteção	IP67
Conector	M12 - 4 pinos

Cabo*					
Modelo	Dimensão (mm)	Ângulo	Cabo	Sinal de saída	Código
		180°	2 metros	-	K12-R-2M
			5 metros	-	K12-R-5M
		90°	2 metros	-	K12-A-2M
				PNP - LED	K12-A-2M-LP
			5 metros	NPN - LED	K12-A-2M-LN
				PNP - LED	K12-A-5M-LP
NPN - LED	K12-A-5M-LN				
Conexões		Diagrama			
		Conector	Cor do fio no cabo	Função	
		Pino 1	Marrom	Alimentação 10 a 30 VCC	
		Pino 2	Branco	Seleção NA (+) ou NF (-)	
		Pino 3	Azul	0 V	
Pino 4	Preto	Saída			

*Vendido separadamente.

MAIN CHARACTERISTICS

- M18 cylindrical sensor with metal body
- Short body for small installation spaces
- Big angle, long distance, easy to install and debug
- With a bright LED status indicator.
- Excellent anti-light interference, high stability
- IP67 Protection degree



HOW TO ORDER

TM18 D - 40 D N - K12


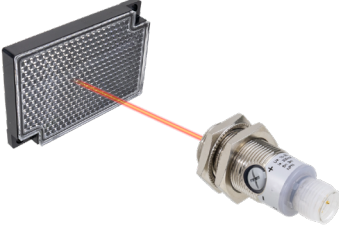
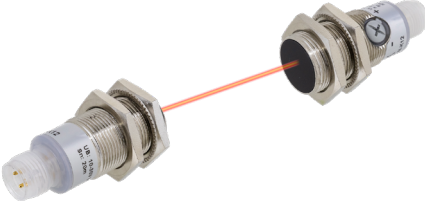
Type	
D	Diffuse
R	Polarized retroreflective
B	Through

Sensing distance	
40	40 centimeters
3M	3 meters
20M	20 meters

Connection	
K12	M12 4-pin connector

Output type	
N	NPN
P	PNP

MODELS

Models	Connection	Light Source	Sensing Distance	Sensing Distance	Code
 Diffuse	M12-4P	Visible Red Light	40 Centimeters	PNP	TM18D-40DP-K12
				NPN	TM18D-40DN-K12
 Polarized Retroreflective			3 Meters	PNP	TM18R-3MDP-K12
				NPN	TM18R-3MDN-K12
 Through		20 Meters	Infrared	PNP	TM18B-20MDP-K12
				NPN	TM18B-20MDN-K12

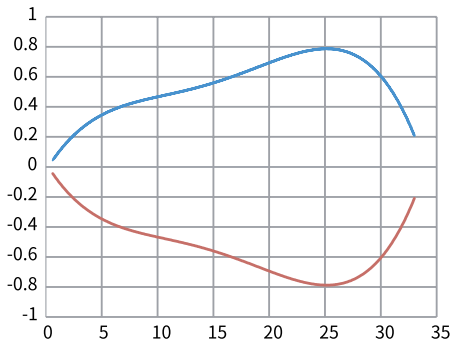
GENERAL SPECIFICATIONS

Model	Diffuse		Polarized Retroreflective		Through	
	PNP	NPN	PNP	NPN	PNP	NPN
Output signal						
Sensing distance	40 centimeters		3 meters		20 meters	
Power supply	10 a 30 VCC ±10%					
Light source	Visible red light				Infrared	
Standard Target Size	*15 x 15 mm @40 cm		*45 x 45 mm @100 cm		Ø15 mm Opaque Object	
Response time	≤ 0,5 ms				≤ 1 ms	
Load current	≤ 200 mA					
Current consumption	≤ 20 mA				Emitter: ≤ 20 mA Receiver: ≤ 20 mA	
Circuit protection	Short-circuit, overload, and reverse polarity protection					
Protection degree	IP67					
Ambient Light Immunity	Ambient Light Immunity: Sunlight ≤ 10,000 lux; Incandescent Light ≤ 3,000 lux.					
Output logic	NO or NC (wire-selectable) Pin 2 connected to positive supply: NO mode enabled Pin 2 connected to negative supply: NC mode enabled					
Connection	4-pin M12 Connector					
Operating temperature	-25 to 55 °C					
Storage Temperature	-35 to 70 °C					
Housing Material	Nickel-Copper Alloy					
Distance adjustment	Single-turn Adjustment Potentiometer					
Included items	M18 Nut (2 pcs.)		M18 Nuts (2 pcs.) and Reflector		M18 Nuts (4 pcs.)	
Relative Humidity	35 to 95%, non-condensing					

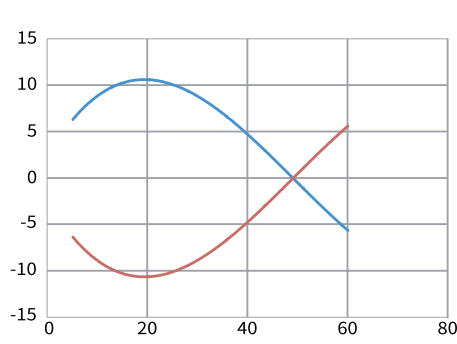
*Measured using a 20 × 20 cm white paper with 90% reflectivity.

SENSING CHARACTERISTIC TYPICAL

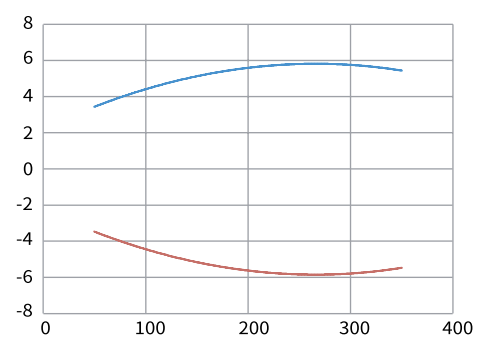
Through-beam Sensor - TM18B
Y-axis: Light Spot Diameter (m)
X-axis: Sensing Distance (m)



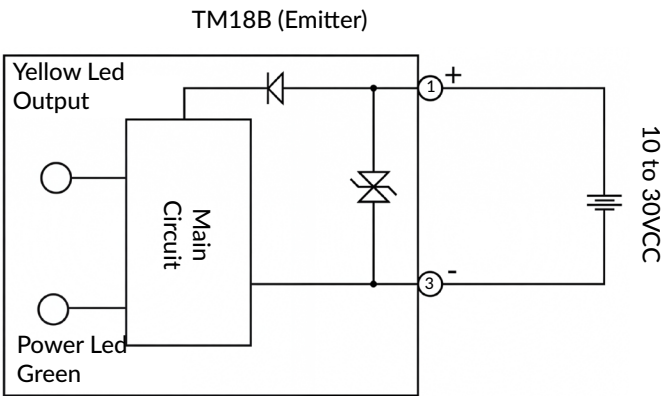
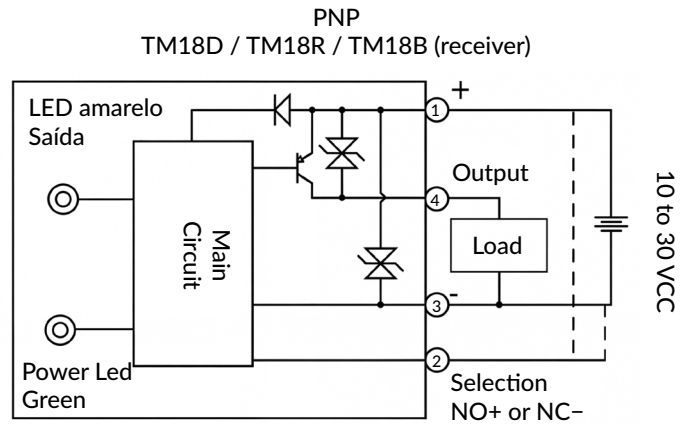
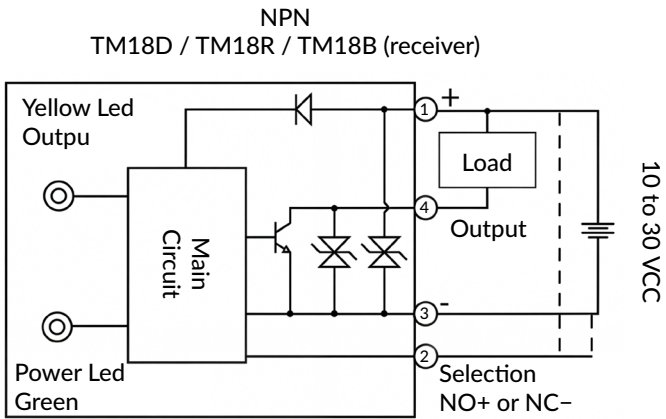
Diffuse Sensor - TM18D
Y-axis: Light Spot Diameter (mm)
X-axis: Sensing Distance (cm)



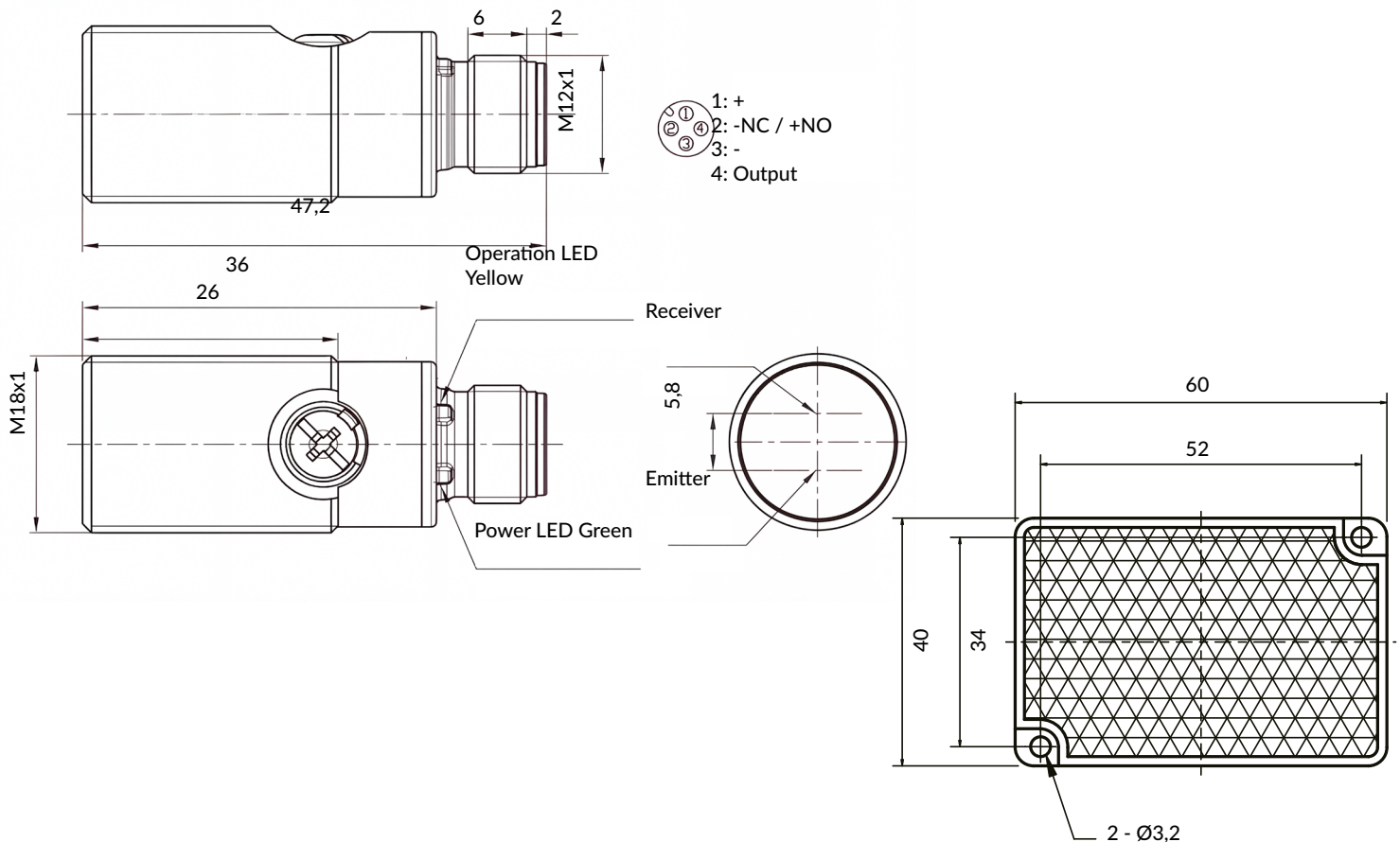
Polarized Retroreflective Sensor - TM18R
Y-axis: Light Spot Diameter (cm)
X-axis: Sensing Distance (cm)



WIRING DIAGRAM




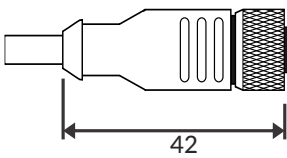

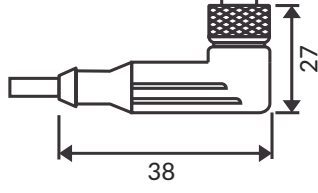
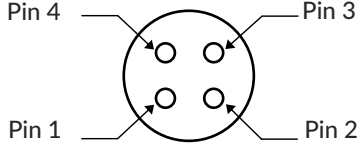
DIMENSIONS (mm)



ACCESSORIES

EN

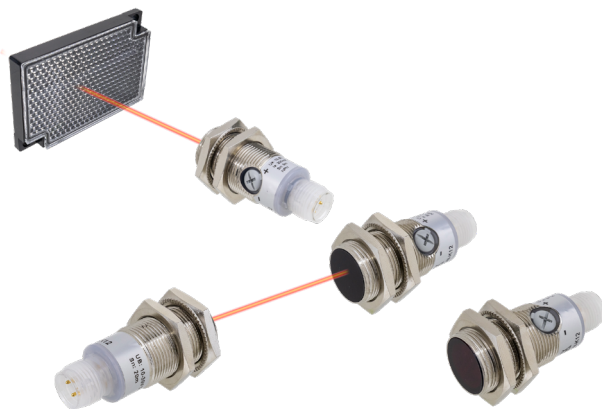
Technical Specification	
Cable Insulation Material	PVC
Rated Operational Voltage (Ue)	250 V
Rated Current (In)	4 A
Cable Configuration	4 x 0,15 mm ² (24 AWG)
Insulation Resistance	1 GΩ
Ambient Temperature	-15 to 70 °C
Degree of Protection	IP67
Connector	M12 - 4-pin

Cable*					
Model	Dimensions (mm)	Angle	Cable	Output Signal	Code
		180°	2 meters	-	K12-R-2M
			5 meters	-	K12-R-5M
		90°	2 meters	-	K12-A-2M
				PNP - LED	K12-A-2M-LP
			5 meters	NPN - LED	K12-A-2M-LN
				PNP - LED	K12-A-5M-LP
NPN - LED	K12-A-5M-LN				
Connections		Diagram			
		Connector	Wire Color in Cable	Function	
		Pin 1	Brown	Power 10 to 30 VCC	
		Pin 2	White	Selection NO (+) or NC(-)	
		Pin 3	Blue	0 V	
Pin 4	Black	Output			

*Sold separately.

PRINCIPALES CARACTERÍSTICAS

- Sensor cilíndrico M18 con cuerpo metálico;
- Diseño corto para espacios de instalación reducidos;
- Ángulo de visión amplio, largo alcance, fácil de instalar y configurar;
- Con LED indicador de estado con luz brillante;
- Excelente resistencia a la interferencia lumínica y alta estabilidad;
- Grado de protección IP67.



CÓDIGO DE COMPRA

TM18 D - 40 D N - K12



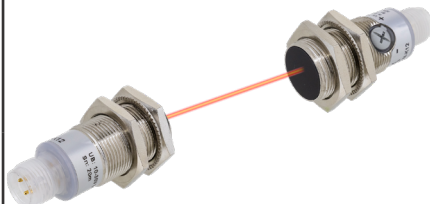
Tipo	
D	Difuso
R	Retroreflectivo polarizado
B	Barrera

Distancia sensora	
40	40 centímetros
3M	3 metros
20M	20 metros

Conexión	
K12	Conector M12 4 pines

Tipo de salida	
N	NPN
P	PNP

MODELOS

Modelos	Conexión	Fuente de luz	Distancia sensora	Tipo de salida	Código
 Difuso	M12-4P	Luz roja visible	40 centímetros	PNP	TM18D-40DP-K12
				NPN	TM18D-40DN-K12
 Retroreflectivo polarizado			3 metros	PNP	TM18R-3MDP-K12
				NPN	TM18R-3MDN-K12
 Barrera		Infrarrojo	20 metros	PNP	TM18B-20MDP-K12
				NPN	TM18B-20MDN-K12

ESPECIFICACIONES GENERALES

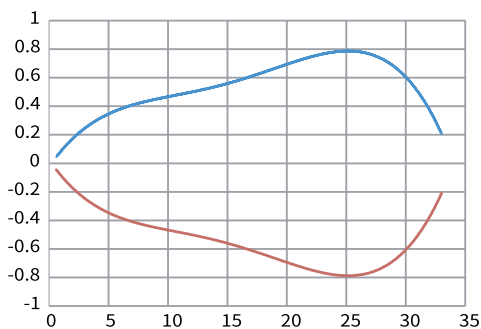
Modelo	Difuso		Retroreflectivo Polarizado		Barrera	
	PNP	NPN	PNP	NPN	PNP	NPN
Tipo de salida	40 centímetros		3 metros		20 metros	
Distancia sensora	40 centímetros		3 metros		20 metros	
Alimentación	10 a 30 VCC ±10%					
Fuente de luz	Luz roja visible				Infrarroja	
Tamaño del objeto estándar	*15 x 15 mm @40 cm		*45 x 45 mm @100 cm		Ø15 mm objeto opaco	
Tiempo de respuesta	≤ 0,5 ms				≤ 1 ms	
Corriente de carga	≤ 200 mA					
Corriente de consumo	≤ 20 mA				Emisor: ≤ 20 mA Receptor: ≤ 20 mA	
Protección eléctrica	Cortocircuito, sobrecarga e inversión de polaridad					
Grado de protección	IP67					
Inmunidad a la luz ambiente	Interferencia de la luz solar ≤ 10.000 lux e interferencia de la luz incandescente ≤ 3.000 lux					
Lógica de salida	NA o NC (seleccionable por cableado) Pin 2 - conectado al polo positivo, modo NA activado Pin 2 - conectado al polo negativo, modo NC activado					
Conexión	Conector M12 con 4 pines					
Temperatura de operación	-25 a 55 °C					
Temperatura de almacenamiento	-35 a 70 °C					
Material del cuerpo	Aleación de níquel-cobre					
Ajuste de distancia	Potenciómetro de ajuste de vuelta única					
Ítems incluidos	Tuerca M18 (2 unidades)		Tuerca M18 (2 unidades) y espejo reflector		Tuerca M18 (4 unidades)	
Humedad relativa	35 a 95% sin condensación					

*Medido utilizando un papel blanco de 20 x 20 cm con reflectividad del 90%

CARACTERÍSTICAS SENSORAS TÍPICAS

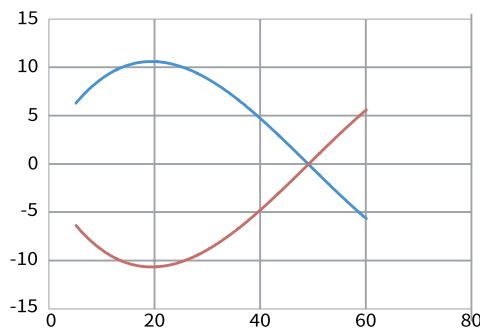
Barrera - TM18B

Eje Y: diámetro del punto de luz (m)
Eje X: distancia sensora (m)



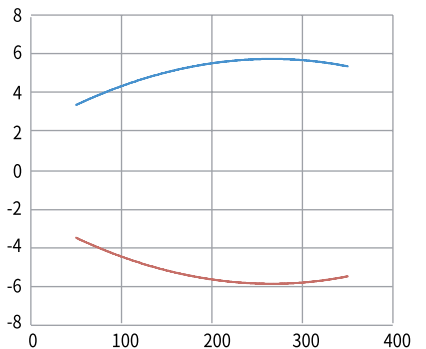
Difuso - TM18D

Eje Y: diámetro del punto de luz (mm)
Eje X: distancia sensora (cm)

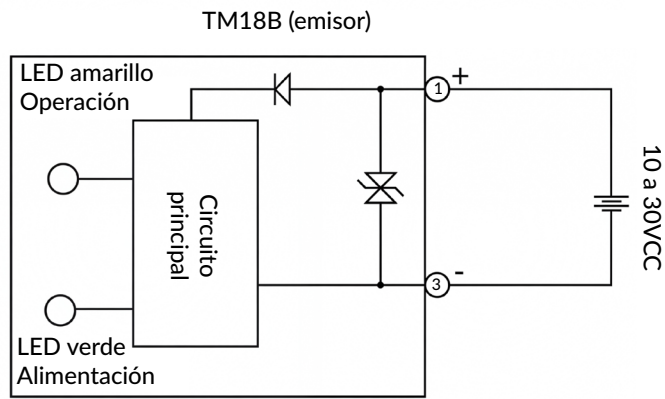
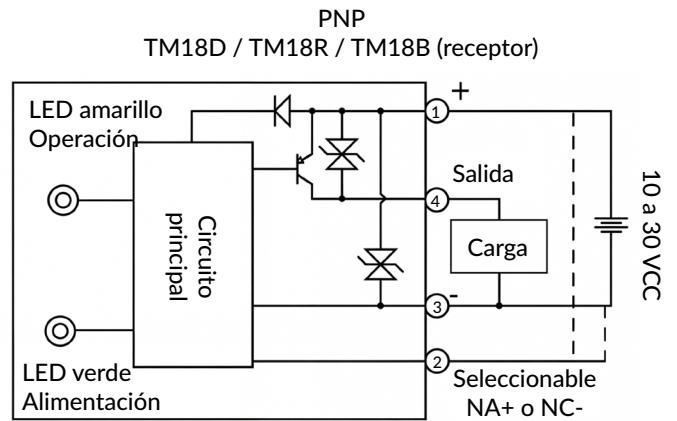
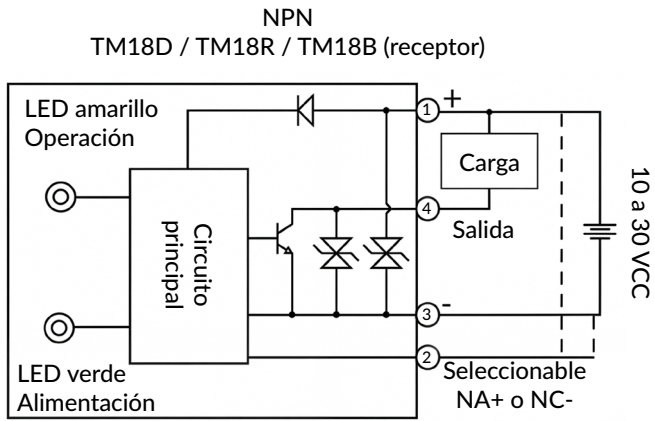


Retroreflectivo polarizado - TM18R

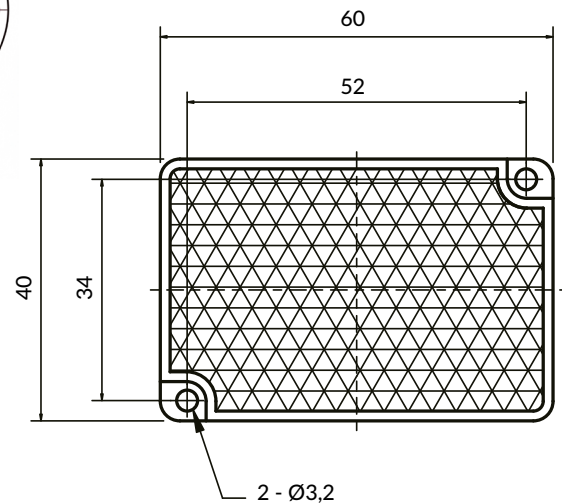
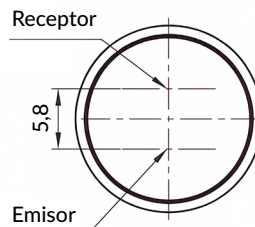
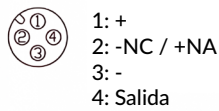
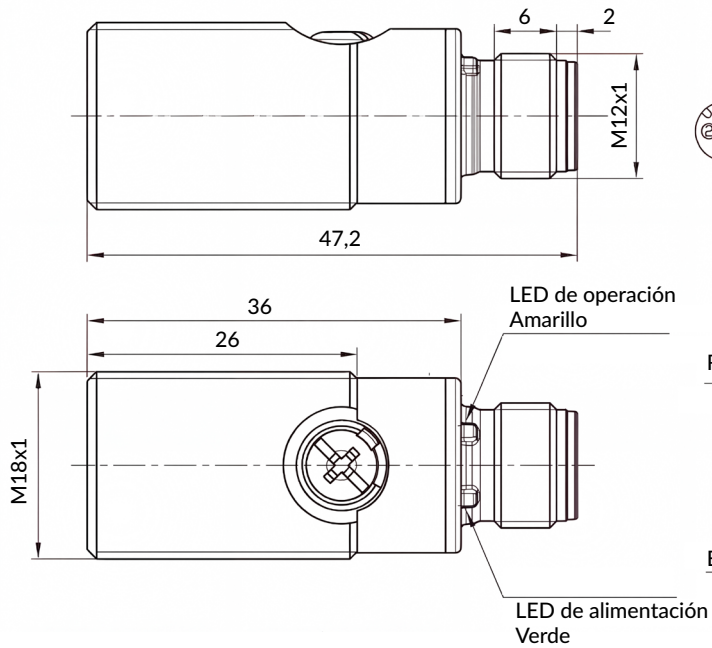
Eje Y: diámetro del punto de luz (cm)
Eje X: distancia sensora (cm)



ESQUEMA DE CONEXIÓN


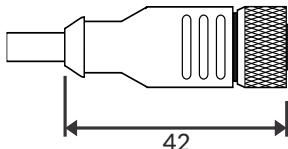

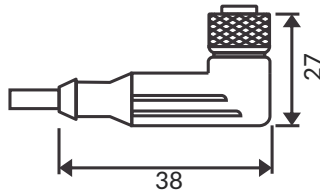
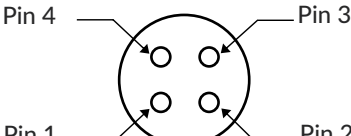


DIMENSIONES (mm)



ACCESORIOS

Especificación técnica	
Material del aislamiento del cable	PVC
Tensión de operación nominal (Ue)	250 V
Corriente nominal (In)	4 A
Composición de cables	4 x 0,15 mm ² (24 AWG)
Resistencia de aislamiento	1 GΩ
Temperatura ambiente	-15 a 70 °C
Grado de protección	IP67
Conector	M12 - 4 pines

Cable*					
Modelo	Dimensión (mm)	Ángulo	Cable	Tipo de salida	Código
		180°	2 metros	-	K12-R-2M
			5 metros	-	K12-R-5M
		90°	2 metros	-	K12-A-2M
				PNP - LED	K12-A-2M-LP
			5 metros	NPN - LED	K12-A-2M-LN
				PNP - LED	K12-A-5M-LP
NPN - LED	K12-A-5M-LN				
Conexiones		Diagrama			
		Conector	Color del hilo en el cable		Función
		Pin 1	Marrón		Alimentación 10 a 30 VCC
		Pin 2	Blanco		Seleccionable NA (+) o NC (-)
		Pin 3	Azul		0 V
Pin 4	Negro		Salida		

*Vendido por separado.