

Sensori fotoelettrici M18 con corpo corto serie FQ M18 photoelectric sensors with short body FQ series



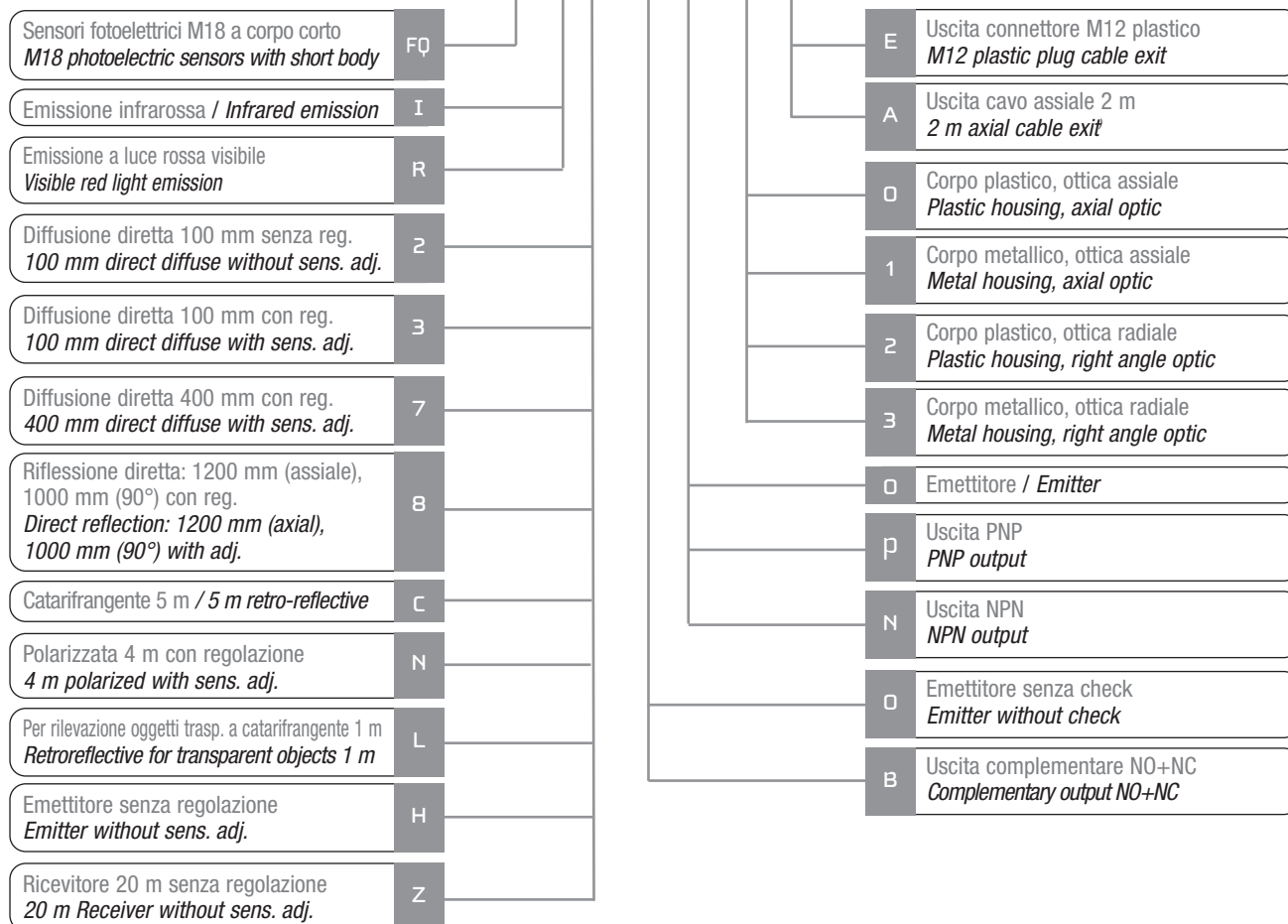
Caratteristiche principali

Main features

- > Vasta gamma di modelli: riflessione diretta, catarifrangente, polarizzata e focalizzata
- > *Wide range of models: direct diffuse, retro-reflective, polarized and fixed-focus*
- > Modelli a diffusione diretta a corta e lunga distanza, polarizzati e a barriera
- > *Direct diffuse models with short and long sensing distance, polarized and through beam*
- > Corpo in ottone nichelato oppure plastico
- > *Nickel brass or plastic housing*
- > Grado di protezione IP67
- > *IP67 protection degree*
- > Totalmente protetti contro danneggiamenti di tipo elettrico
- > *Complete protection against electrical damages*
- > Uscita complementare NO+NC
- > *NO+NC complementary output*
- > Approvazioni: CE
- > *Approvals: CE*

Descrizione del codice - Code structure

FQI7/BP-0E



Modelli disponibili - Available models

Funzione <i>Function</i>	Portata <i>Distance</i>	Regolaz. <i>Adjust.</i>	Uscita <i>Output</i>	Corpo <i>Housing</i>	Modelli assiali <i>Axial models</i>		Modelli radiali <i>Right angle models</i>	
					PNP NO + NC	NPN NO + NC	PNP NO + NC	NPN NO + NC
Diffusione diretta <i>Direct diffuse</i>	100 mm	No	Cavo assiale <i>Axial cable</i>	Plastico / Plastic	FQR2/BP-0A	FQR2/BN-0A	FQR2/BP-2A	FQR2/BN-2A
			Connettore M12 <i>M12 plug</i>	Metallico / Metal	FQR2/BP-1A	FQR2/BN-1A	FQR2/BP-3A	FQR2/BN-3A
				Plastico / Plastic	FQR2/BP-0E	FQR2/BN-0E	FQR2/BP-2E	FQR2/BN-2E
		Si / Yes	Cavo assiale <i>Axial cable</i>	Plastico / Plastic	FQR3/BP-0A	FQR3/BN-0A	FQR3/BP-2A	FQR3/BN-2A
			Connettore M12 <i>M12 plug</i>	Metallico / Metal	FQR3/BP-1A	FQR3/BN-1A	FQR3/BP-3A	FQR3/BN-3A
				Plastico / Plastic	FQR3/BP-0E	FQR3/BN-0E	FQR3/BP-2E	FQR3/BN-2E
	400 mm	Si / Yes	Cavo assiale <i>Axial cable</i>	Plastico / Plastic	FQI7/BP-0A	FQI7/BN-0A	FQI7/BP-2A	FQI7/BN-2A
			Connettore M12 <i>M12 plug</i>	Metallico / Metal	FQI7/BP-1A	FQI7/BN-1A	FQI7/BP-3A	FQI7/BN-3A
				Plastico / Plastic	FQI7/BP-0E	FQI7/BN-0E	FQI7/BP-2E	FQI7/BN-2E
		Si / Yes	Cavo assiale <i>Axial cable</i>	Plastico / Plastic	FQI8/BP-0A	FQI8/BN-0A	FQI8/BP-2A	FQI8/BN-2A
			Connettore M12 <i>M12 plug</i>	Metallico / Metal	FQI8/BP-1A	FQI8/BN-1A	FQI8/BP-3A	FQI8/BN-3A
				Plastico / Plastic	FQI8/BP-0E	FQI8/BN-0E	FQI8/BP-2E	FQI8/BN-2E
1200 mm (assiale/axial) 1000 mm (90°)	Si / Yes	Cavo assiale <i>Axial cable</i>	Plastico / Plastic	FQI8/BP-0A	FQI8/BN-0A	FQI8/BP-2A	FQI8/BN-2A	
		Connettore M12 <i>M12 plug</i>	Metallico / Metal	FQI8/BP-1A	FQI8/BN-1A	FQI8/BP-3A	FQI8/BN-3A	
			Plastico / Plastic	FQI8/BP-0E	FQI8/BN-0E	FQI8/BP-2E	FQI8/BN-2E	
	5 m (assiale/axial) 4 m (90°)	No	Cavo assiale <i>Axial cable</i>	Plastico / Plastic	FQIC/BP-0A	FQIC/BN-0A	FQIC/BP-2A	FQIC/BN-2A
			Connettore M12 <i>M12 plug</i>	Metallico / Metal	FQIC/BP-1A	FQIC/BN-1A	FQIC/BP-3A	FQIC/BN-3A
				Plastico / Plastic	FQIC/BP-0E	FQIC/BN-0E	FQIC/BP-2E	FQIC/BN-2E
Si / Yes		Cavo assiale <i>Axial cable</i>	Plastico / Plastic	FQIC/BP-1E	FQIC/BN-1E	FQIC/BP-3E	FQIC/BN-3E	
		Connettore M12 <i>M12 plug</i>	Metallico / Metal	FQIC/BP-1E	FQIC/BN-1E	FQIC/BP-3E	FQIC/BN-3E	
			Plastico / Plastic	FQIC/BP-1E	FQIC/BN-1E	FQIC/BP-3E	FQIC/BN-3E	
Polarizzata <i>Polarized</i>	4 m (assiale/axial) 3 m (90°)	Si / Yes	Cavo assiale <i>Axial cable</i>	Plastico / Plastic	FQRN/BP-0A	FQRN/BN-0A	FQRN/BP-2A	FQRN/BN-2A
			Connettore M12 <i>M12 plug</i>	Metallico / Metal	FQRN/BP-1A	FQRN/BN-1A	FQRN/BP-3A	FQRN/BN-3A
				Plastico / Plastic	FQRN/BP-0E	FQRN/BN-0E	FQRN/BP-2E	FQRN/BN-2E
	1 m	Si / Yes	Cavo assiale <i>Axial cable</i>	Plastico / Plastic	FQRN/BP-1E	FQRN/BN-1E	FQRN/BP-3E	FQRN/BN-3E
			Connettore M12 <i>M12 plug</i>	Metallico / Metal	FQRN/BP-1E	FQRN/BN-1E	FQRN/BP-3E	FQRN/BN-3E
				Plastico / Plastic	FQRN/BP-1E	FQRN/BN-1E	FQRN/BP-3E	FQRN/BN-3E
Per oggetti trasparenti <i>For transparent objects detection</i>	1 m	Si / Yes	Cavo assiale <i>Axial cable</i>	Plastico / Plastic	FQRL/BP-0A	FQRL/BN-0A	FQRL/BP-2A	FQRL/BN-2A
			Connettore M12 <i>M12 plug</i>	Metallico / Metal	FQRL/BP-1A	FQRL/BN-1A	FQRL/BP-3A	FQRL/BN-3A
				Plastico / Plastic	FQRL/BP-0E	FQRL/BN-0E	FQRL/BP-2E	FQRL/BN-2E
	20 m	No	Cavo assiale <i>Axial cable</i>	Plastico / Plastic	FQRL/BP-1E	FQRL/BN-1E	FQRL/BP-3E	FQRL/BN-3E
			Connettore M12 <i>M12 plug</i>	Metallico / Metal	FQRL/BP-1E	FQRL/BN-1E	FQRL/BP-3E	FQRL/BN-3E
				Plastico / Plastic	FQRL/BP-1E	FQRL/BN-1E	FQRL/BP-3E	FQRL/BN-3E
Ricevitore <i>Receiver</i>	20 m	No	Cavo assiale <i>Axial cable</i>	Plastico / Plastic	FQIZ/BP-0A	FQIZ/BN-0A	FQIZ/BP-2A	FQIZ/BN-2A
			Connettore M12 <i>M12 plug</i>	Metallico / Metal	FQIZ/BP-1A	FQIZ/BN-1A	FQIZ/BP-3A	FQIZ/BN-3A
				Plastico / Plastic	FQIZ/BP-0E	FQIZ/BN-0E	FQIZ/BP-2E	FQIZ/BN-2E
	20 m	No	Cavo assiale <i>Axial cable</i>	Plastico / Plastic	FQIZ/BP-1E	FQIZ/BN-1E	FQIZ/BP-3E	FQIZ/BN-3E
			Connettore M12 <i>M12 plug</i>	Metallico / Metal	FQIZ/BP-1E	FQIZ/BN-1E	FQIZ/BP-3E	FQIZ/BN-3E
				Plastico / Plastic	FQIZ/BP-1E	FQIZ/BN-1E	FQIZ/BP-3E	FQIZ/BN-3E
Emettitore <i>Emitter</i>	20 m	No	Cavo assiale <i>Axial cable</i>	Plastico / Plastic	FQIH/00-0A		FQIH/00-2A	
			Connettore M12 <i>M12 plug</i>	Metallico / Metal	FQIH/00-1A		FQIH/00-3A	
				Plastico / Plastic	FQIH/00-0E		FQIH/00-2E	
	20 m	No	Cavo assiale <i>Axial cable</i>	Plastico / Plastic	FQIH/00-1E		FQIH/00-3E	
			Connettore M12 <i>M12 plug</i>	Metallico / Metal	FQIH/00-1E		FQIH/00-3E	
				Plastico / Plastic	FQIH/00-1E		FQIH/00-3E	

Specifiche (In accordo con IEC EN 60947-5-2) - Specifications (According to IEC EN 60947-5-2)

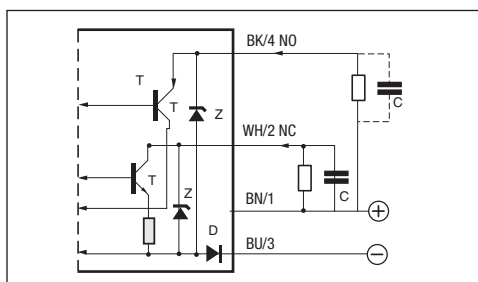
Modelli / Models	Diffusione diretta Direct diffuse				Catarifrangente Retroreflective	Polarizzata Polarised	Per oggetti trasparenti For transparent objects	Barriera Through beam		
	FQR2	FQR3	FQI7	FQI8	FQIC	FQRN	FQRL	FQIZ	FQIH	
Distanza di rilevazione nominale Nominal sensing distance	100 mm	400 mm	1,2 m 1 m (90°)	1,2 m 4 m (90°)	5 m 4 m (90°)	4 m 3 m (90°)	0,1 ... 1 m	20 m 16 m (90°)	-	
Emissione Emission	Rossa / Red (660 nm)		Infrarossa / Infrared (880 nm)			Rossa / Red (660 nm)		Infrarossa / Infrared (880 nm)		
Corsa differenziale / Differential travel	≤ 10%									
Ripetibilità / Repeat accuracy	≤ 5%									
Tensione alimentazione Operating voltage	10 ... 30 V cc / dc									
Ondulazione residua / Ripple	≤ 10%									
Corrente assorbita No load supply current	≤ 30 mA									
Corrente di uscita / Load current	≤ 50 mA									
Corrente di perdita Leakage current	≤ 10 µA									
Caduta di tensione in uscita Output voltage drop	2 V _{max} @ I _L = 50 mA									
Tipo uscita / Output type					NPN o / or PNP		NO + NC		-	
Frequenza di commutazione Switching frequency	250 Hz									
Ritardo alla disponibilità Time delay before availability	≤ 200 ms									
Protezione elettriche alimentazione Supply electrical protections	Inversione di polarità, sovratensioni impulsive Polarity reversal, impulsive overvoltage									
Protezione elettriche uscita Output electrical protection	Cortocircuito (autoripristinante), sovratensioni Short circuit (autoreset), overvoltage									
Regolazione di sensibilità Sensitivity adjustment	No	Si / Yes			No	Si / Yes		No	No	
Temperatura operativa Operative Temperature range	-25°C ... +70°C (senza condensa / without freeze)									
Deriva termica / Temperature drift	≤ 10%									
Compatibilità elettromagnetica EMC	Secondo / According to EN50082-2; 1995; EN60947-5-2; 1999; EN50081-1; 1993									
Interferenza alla luce esterna Interference by external light	5000 lux (lampada ad incandescenza) - 10000 lux (luce solare) 5000 lux (incandescence lamp) - 10000 lux (sun light)									
Grado di protezione Protection degree	IP67 (EN60529) ⁽¹⁾									
Indicatori LED / LED indicators	Giallo (Stato luce) / Yellow (Light status)									
Materiale contenitore Housing material	PBT (modelli plastici / plastic model) Ottone nichelato / Nicked plated brass (modelli metallici / metallic model) - PC (passacavo / cable exit)									
Materiale ottica / Optic material	PC									
Coppia serraggio / Tightening torque	1 Nm (plastico / plastic)				35 Nm (metallico / metallic)					
Peso (appros.) / Weight (approx)	100 g (plastico / plastic)				120 g (metallico / metallic)					

⁽¹⁾ Protezione garantita solo con il cavo a connettore correttamente montato / Protection guaranteed only with plug cable well mounted

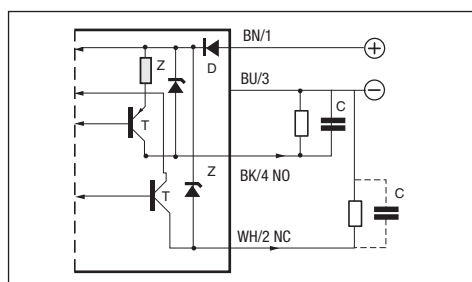
Schemi elettrici delle connessioni - Electrical diagrams of the connections

> Uscita complementare NP + NC - NO + NC Complementary output

Uscita NPN / NPN output



Uscita PNP / PNP output

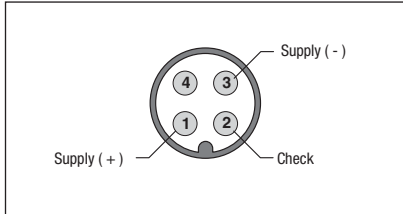


Legenda Key

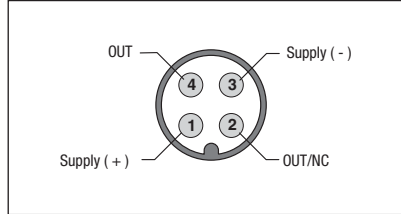
BN → marrone/brown
BK → nero/black
PK → rosa/pink
BU → blu/blue
WH → bianco/white
GY → grigio/gray

Connettore - Plug

Emittitore
Emitter



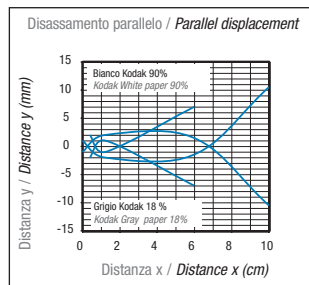
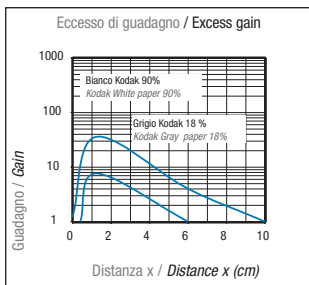
Uscita complementare
Complementary output



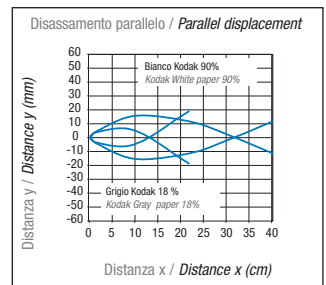
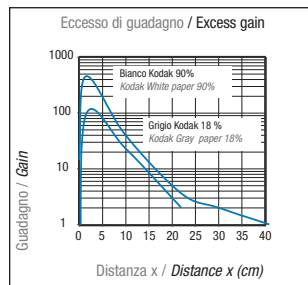
Curva di risposta - Response diagram

> Modelli assiali - Axial models

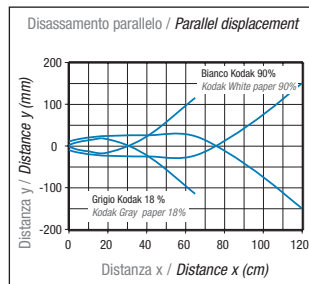
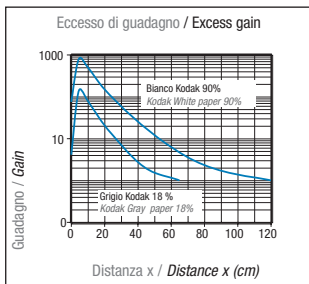
FQR2/B* - ** FQR3/B* - **



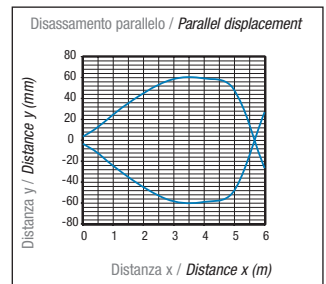
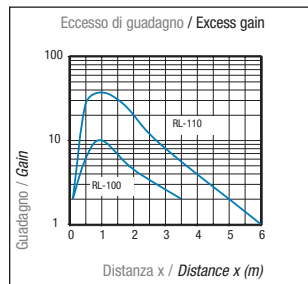
FQI7/B* - **



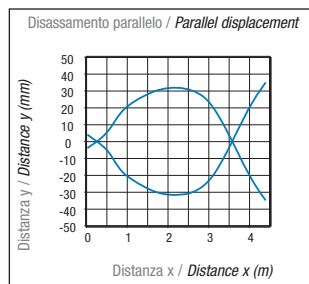
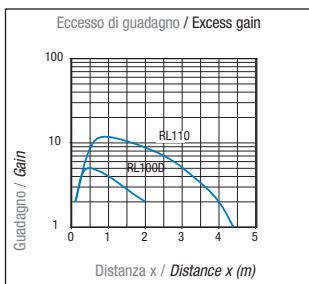
FQI8/B* - **



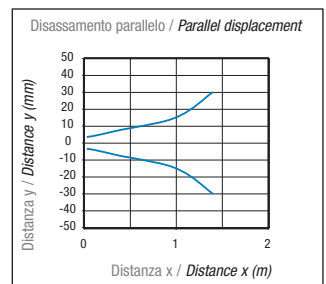
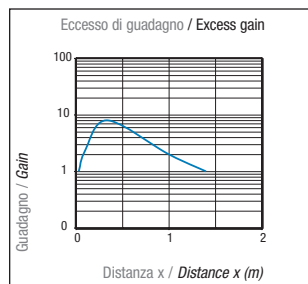
FQIC/B* - **



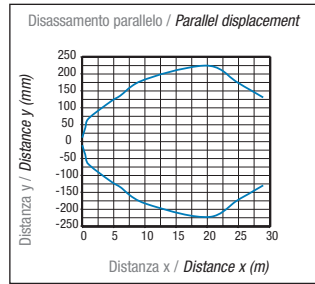
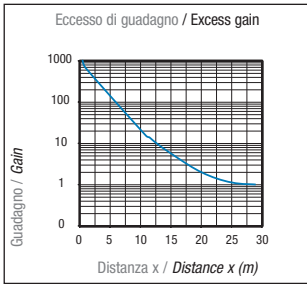
FQRN/B* - **



FQRL/B* - **

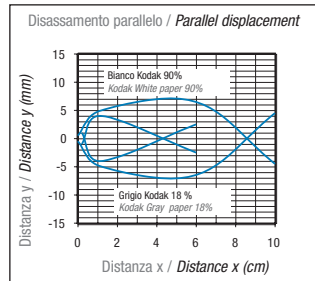
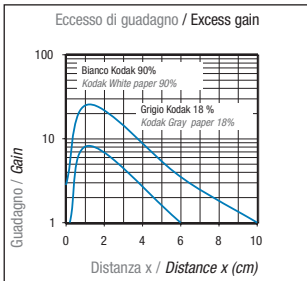


FQIH/00-**- FQIZ/B*-**

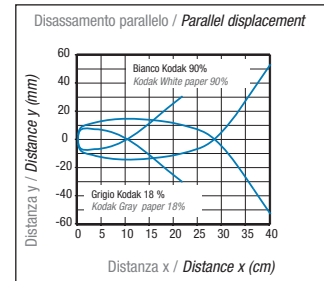
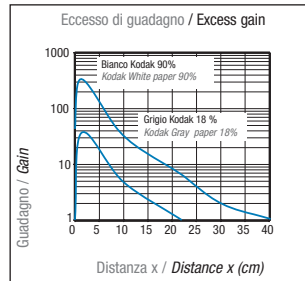


> Modelli radiali - Radial models

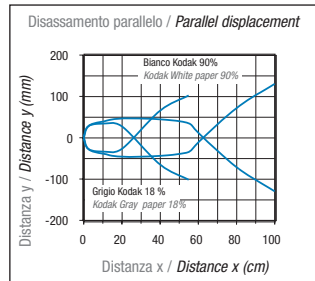
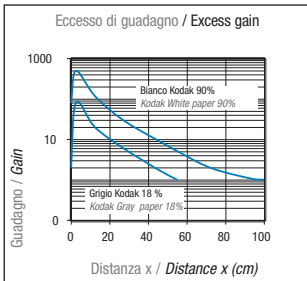
FQR2/B*-**- FQR3/B*-**



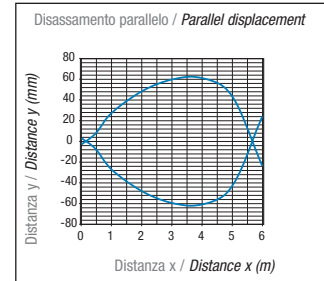
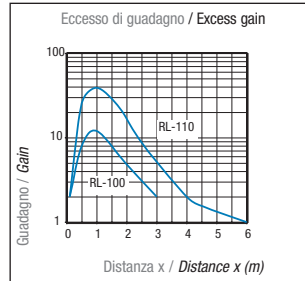
FQI7/B*-**



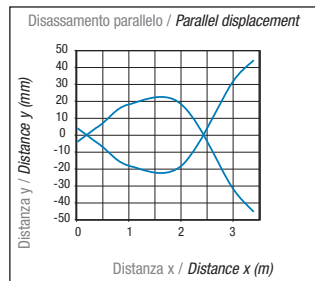
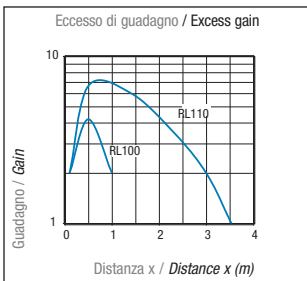
FQI8/B*-**



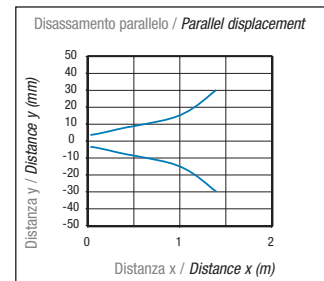
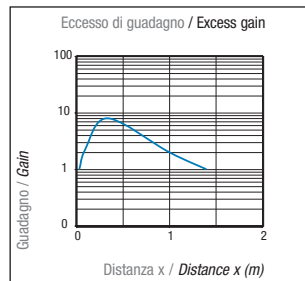
FQIC/B*-**



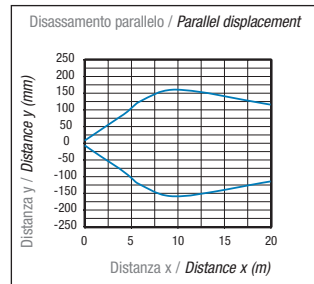
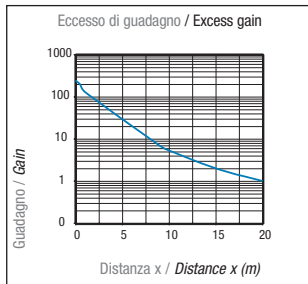
FQRN/B*-**



FQRL/B*-**

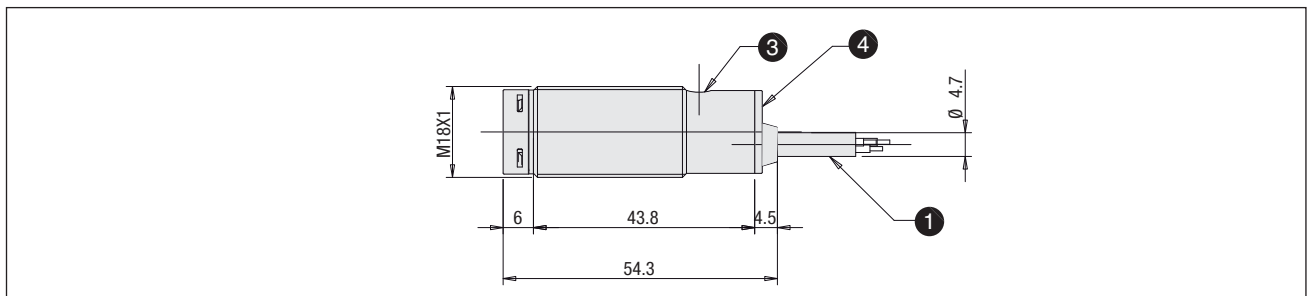


FQIH/00-** FQIZ/B*-**

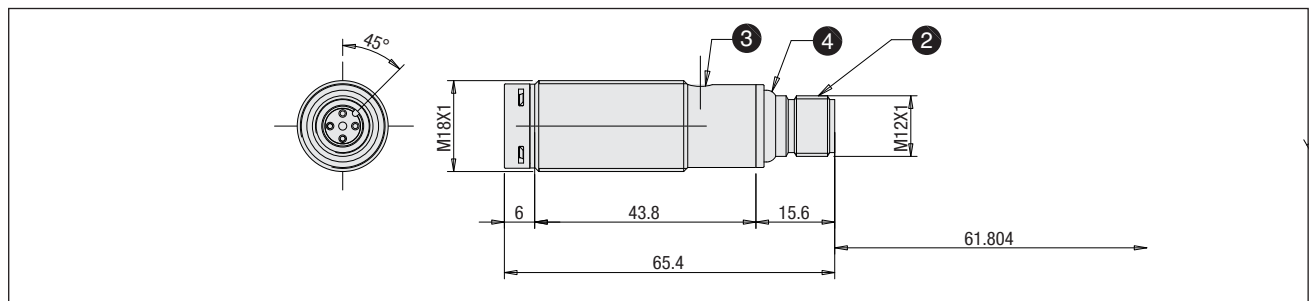


Dimensioni - Dimensions

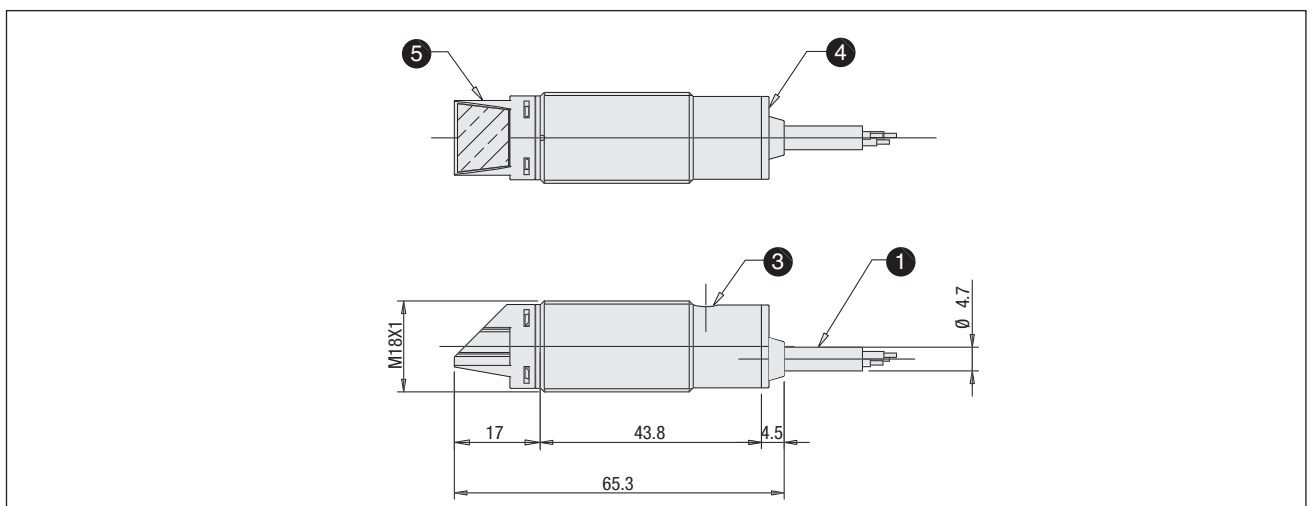
Ottica assiale, uscita a cavo - Axial optic, cable exit



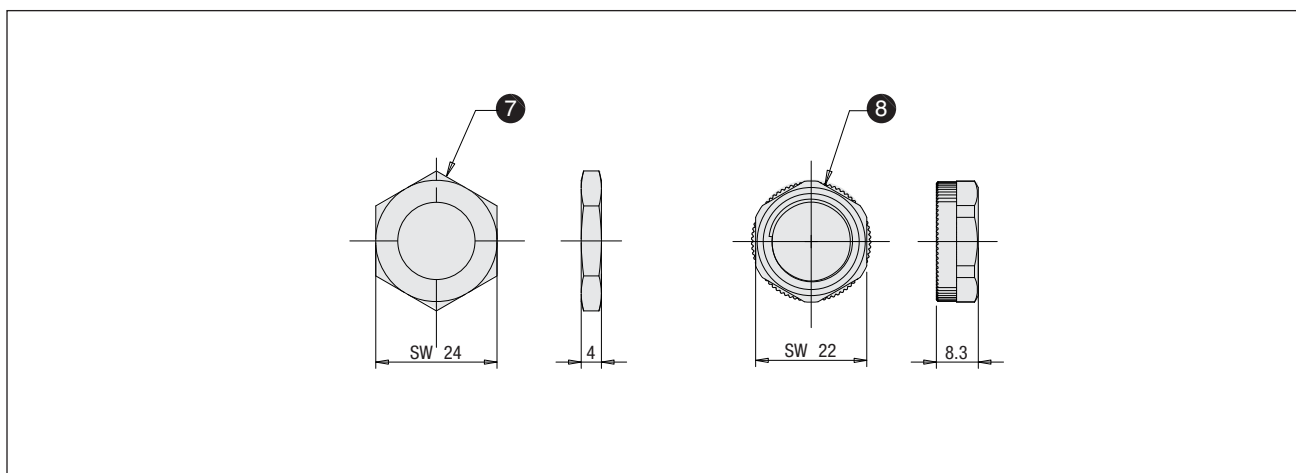
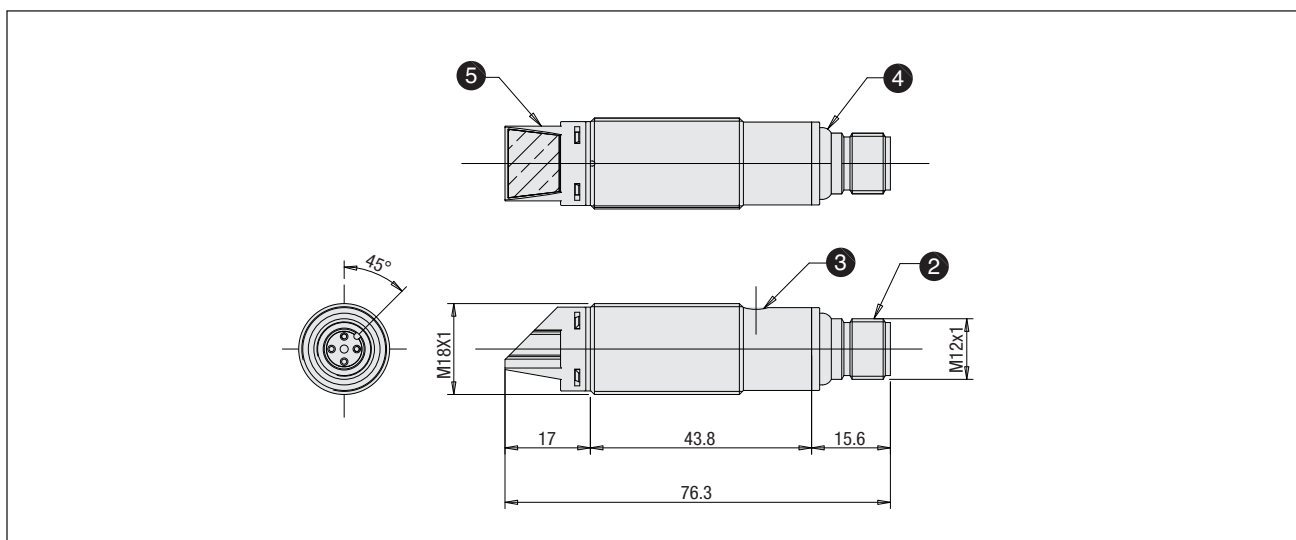
Ottica assiale, uscita a connettore M12 - Axial optic, M12 plug cable exit



Ottica radiale, uscita a cavo - Right angle optic, cable exit



Ottica radiale, uscita a connettore M12 - Right angle optic, M12 plug cable exit



Legenda / Key

- | | |
|--|--|
| ① Uscita a cavo assiale
<i>Axial cable exit</i> | ⑤ Asse ottica radiale
<i>Radial optics axis</i> |
| ② Uscita a connettore M12
<i>M12 plug cable exit</i> | ⑥ Ghiera metallica
<i>Metal tightening nut</i> |
| ③ Trimmer per la regolazione di sensibilità
<i>Trimmer for sensitivity adjustment</i> | ⑦ Ghiera plastica
<i>Plastic tightening nut</i> |
| ④ LED
<i>LED</i> | |