

Fotocellule miniaturizzate con elevate prestazioni – serie QM

Miniaturized photoelectric sensors with high performance – QM series

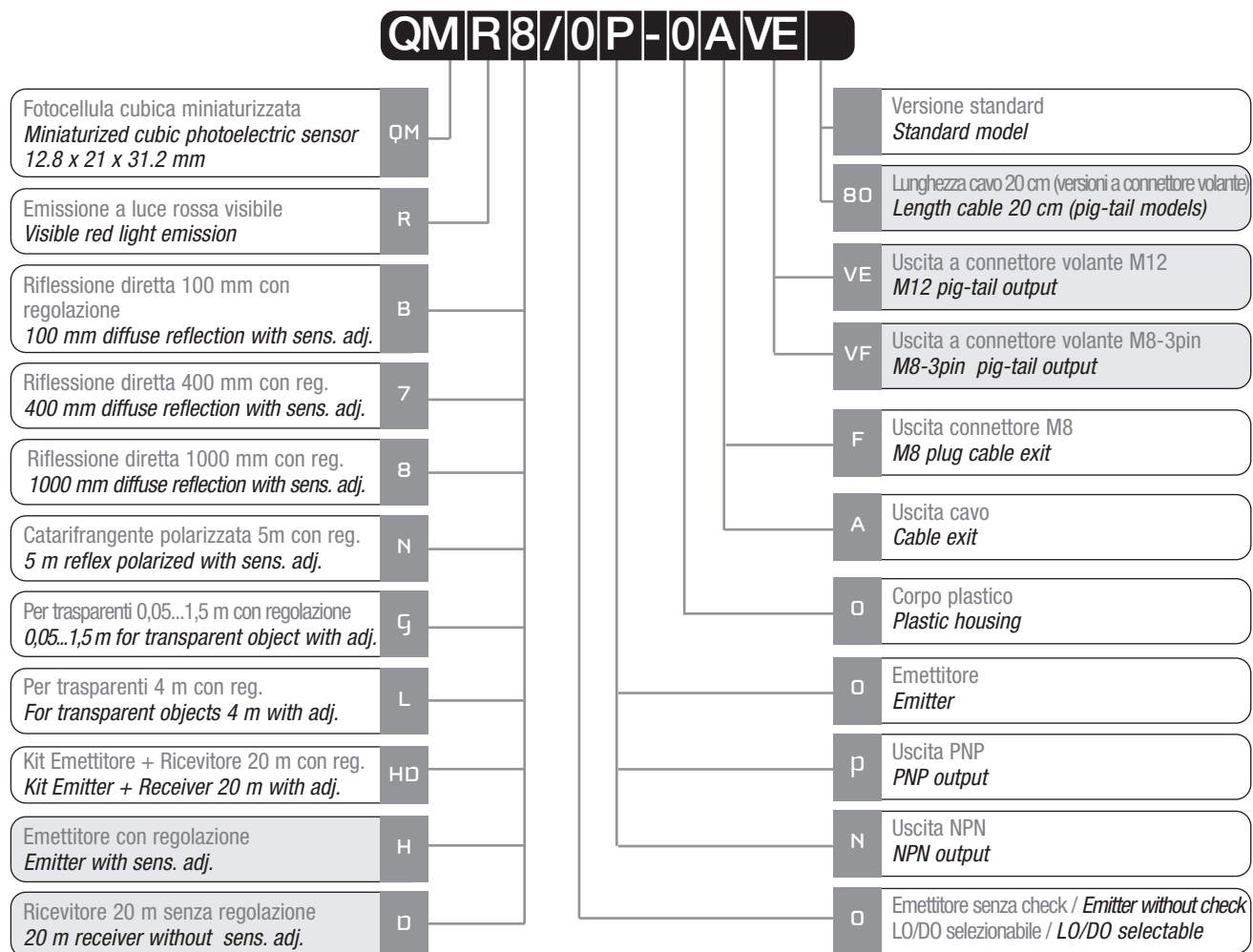


CE

Caratteristiche principali Main features

- > Completamente resinare
> *Completely filled with resin*
- > Frequenza di commutazione 2 kHz
> *2 kHz switching frequency*
- > Disponibili uscite a cavo e a connettore M8 o uscite a connettore volante M8-M12
> *Available with cable and M8 plug exit or M8-M12 pig-tail*
- > Vasta gamma di modelli: riflessione diretta corta e lunga distanza, polarizzati, reflex per trasparenti ed a barriera
> *Wide range of models: diffuse reflection with short and long sensing distance, polarized, reflex for transparent objects and through beam*
- > Stato dell'uscita LO/DO selezionabile
> *LO/DO selectable output*
- > Grado di protezione IP67
> *IP67 protection degree*
- > Totalmente protetti contro danneggiamenti di tipo elettrico
> *Complete protection against electrical damages*
- > Approvazioni: CE
> *Approvals: CE*

Descrizione del codice - Code structure



Questi prodotti possono presentare limitazioni nei termini di consegna o sui quantitativi ordinabili
 These products may be subject to delays in delivery terms or limits for the quantities to be ordered

Modelli disponibili - Available models

Funzione / Function	Portata Distance	Regolaz. Adjust.	Uscita Output	Corpo Housing	Modelli assiali / Axial models	
					PNP + NO/NC	NPN + NO/NC
Riflessione diretta / Diffuse reflection	100 mm	Sì / Yes	Cavo / Cable	Plastico / Plastic	QMRB/OP-0A	QMRB/ON-0A
			Connettore M8 M8 plug		QMRB/OP-0F	QMRB/ON-0F
	400 mm	Sì / Yes	Cavo / Cable	Plastico / Plastic	QMR7/OP-0A	QMR7/ON-0A
			Connettore M8 M8 plug		QMR7/OP-0F	QMR7/ON-0F
	1000 mm	Sì / Yes	Cavo / Cable	Plastico / Plastic	QMR8/OP-0A	QMR8/ON-0A
			Connettore M8 M8 plug		QMR8/OP-0F	QMR8/ON-0F
Polarizzata / Polarized	5 m	Sì / Yes	Cavo / Cable	Plastico / Plastic	QMRN/OP-0A	QMRN/ON-0A
			Connettore M8 M8 plug		QMRN/OP-0F	QMRN/ON-0F
Per oggetti trasparenti For transparent objects	0,05-1,5 m	Sì / Yes	Cavo / Cable	Plastico / Plastic	QMRG/OP-0A	QMRG/ON-0A
			Connettore M8 M8 plug		QMRG/OP-0F	QMRG/ON-0F
	0,4-4 m	Sì / Yes	Cavo / Cable	Plastico / Plastic	QMRL/OP-0A	QMRL/ON-0A
			Connettore M8 M8 plug		QMRL/OP-0F	QMRL/ON-0F
Emettitore + Ricevitore (Kit) Emitter + Receiver (Kit)	20 m	Sì / Yes	Cavo / Cable	Plastico / Plastic	QMRHD/OP-0A	QMRHD/ON-0A
			Connettore M8 M8 plug		QMRHD/OP-0F	QMRHD/ON-0F
Emettitore / Emitter	20 m	Sì / Yes	Cavo / Cable	Plastico / Plastic	QMRH/00-0A	
			Connettore M8 M8 plug		QMRH/00-0F	
Ricevitore / Receiver	20 m	NO	Cavo / Cable	Plastico / Plastic	QMRD/OP-0A	QMRD/ON-0A
			Connettore M8 M8 plug		QMRD/OP-0F	QMRD/ON-0F

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Specifiche - Specifications

Modelli / Models	Riflessione diretta Diffuse reflection			Polarizzata Polarized	Per oggetti trasparenti For transparent objects		Barriera Through-beam	
	QMRB/0*-0*	QMR7/0*-0*	QMR8/0*-0*	QMRN/0*-0*	QMRG/0*-0*	QMRL/0*-0*	QMRD/0*-0*	QMRH/0*-0*
Distanza di rilevazione nominale Normal sensing distance	100 mm ⁽¹⁾	400 mm ⁽¹⁾	1000 mm ⁽²⁾	5 m ⁽³⁾	0,05 – 1,5 m ⁽³⁾	0,4 – 4 m ⁽⁴⁾	20 m	
Emissione / Emission	Rossa / Red (630 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	≤ 100 mA							
Corrente di perdita / Leakage current	≤ 10 µA							
Caduta di tensione in uscita Output voltage drop	2 V _{max} @ I _L = 100 mA							
Tipo uscita / Output type	NPN/PNP NO o / or NC						-	
Frequenza di commutazione Switching frequency	1 kHz	2 kHz	1 kHz	2 kHz				
Ritardo alla disponibilità Time delay before availability	≤100 ms							
Protezione elettriche alimentazione Supply electrical protections	Inversione di polarità, sovratensioni impulsive Polarity reversal, impulsive overvoltage							
Protezione elettriche uscita Protection electrical output	Cortocircuito (autoripristinante), sovratensioni Short circuit (autoreset), overvoltage						-	
Regolazione di sensibilità Sensitivity adjustment	Si / Yes						No	Si / Yes
Temperatura operativa Operative Temperature range	-25 ... +70°C (senza condensa / without freeze)							
Temperatura di immagazzinamento Storage temperature	-30 ... +80°C							
Deriva termica / temperature drift	≤10%							
Compatibilità elettromagnetica EMC	Conforme ai requisiti della Direttiva CE 2004/108/CE in accordo a EN 60947-5-2 Conforming to the EC Directive 2004/108/EC requirements according to EN 60947-5-2							
Interferenza alla luce esterna Interference external light	3000 lux (lampada ad incandescenza) - 10000 lux (luce solare) 3000 lux (incandescence lamp) - 10000 lux (sun light)							
Grado di protezione Protection degree	IP67 (EN60529) ⁽⁵⁾							
Indicatori LED LED indicators	Giallo (stato dell'uscita LO/DO) / Yellow (output status LO/DO) Verde (eccesso di guadagno) / Green: (operative reserve) ⁽⁷⁾							
Materiale contenitore Housing material	PBT							
Materiale ottica / Optic material	PMMA							
Coppia serraggio / Tightening torque	1 Nm ⁽⁶⁾							
Peso (appros.) / Weight (approx)	10 gr (out M8) / 52 gr (cavo/cable)							

⁽¹⁾ Con ostacolo bianco kodak 90% 200 x 200 mm / White target kodak 90% refletcion 200 x 200 mm

⁽²⁾ Con ostacolo bianco kodak 90% 400 x 400 mm / White target kodak 90% refletcion 400 x 400 mm

⁽³⁾ Con riflettore RL 110 EG= 2 / With RL 110 reflector EG=2

⁽⁴⁾ Con riflettore RL 110 EG= 2 utilizzare riflettore RL113G e RL116 / With RL 110 reflector EG=2, to use RL113G and RL116

⁽⁵⁾ Protezione garantita solo con il cavo a connettore correttamente montato / Protection guaranteed only with plug cable well mounted

⁽⁶⁾ Viti, dadi e staffe non sono incluse con il sensore (accessori) / Screws, nuts and mounting brackets are not included with the sensor (accessories)

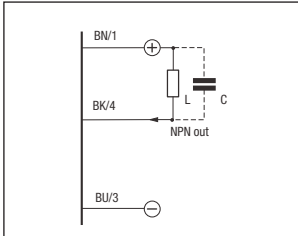
⁽⁷⁾ Non presente sul modello QMRG/**-** / Not included in the model QMRG/**-**

Schemi elettrici delle connessioni - Electrical diagrams of the connections

> Uscita LO/DO selezionabile - LO/DO selectable output

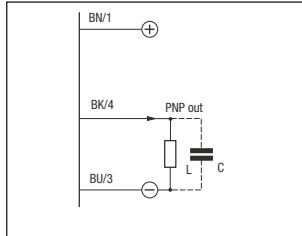
Uscita NPN

NPN output*

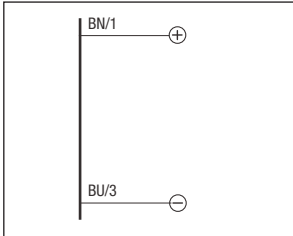


Uscita PNP

PNP output*



Emettitore / Emitter

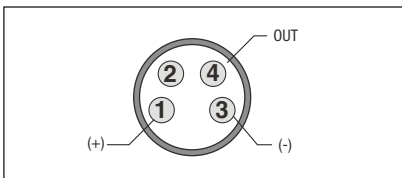


Legenda Key

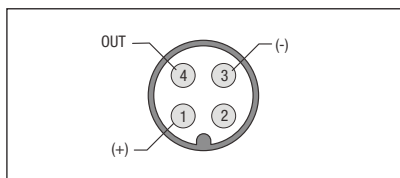
BN → marrone/brown
BK → nero/black
BU → blu/blue

Connettore - Plug

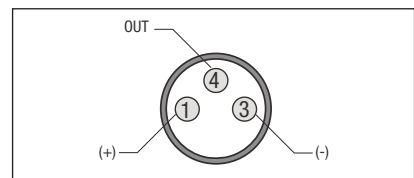
M8 - 4 pin



M12 - pig-tail

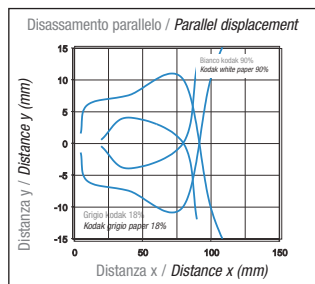
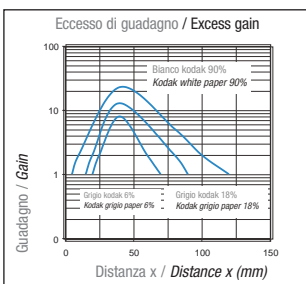


M8 - 3 pin - pig-tail

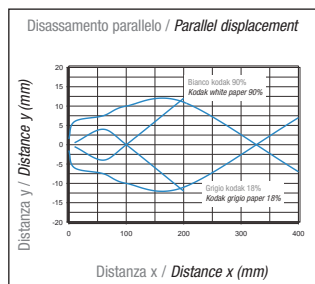
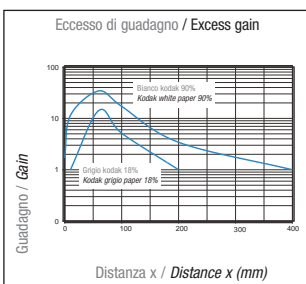


Curva di risposta - Response diagram

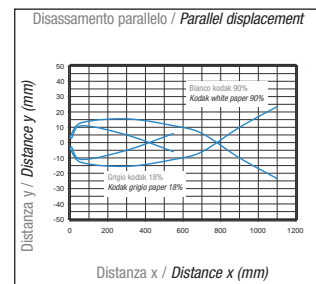
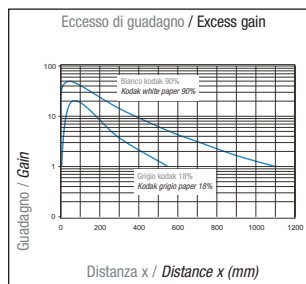
QMRB/0*-0***



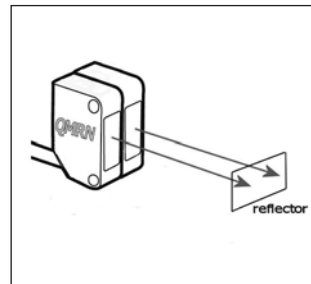
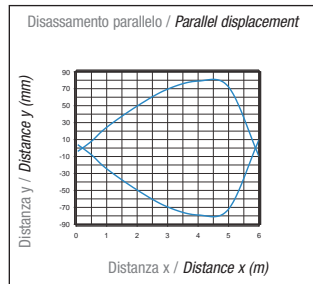
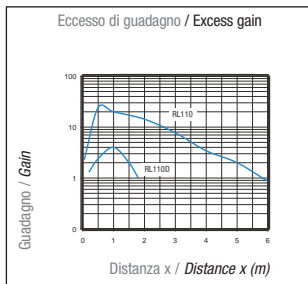
QMR7/0*-0***



QMR8/0*-0***

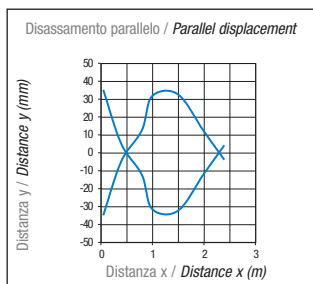
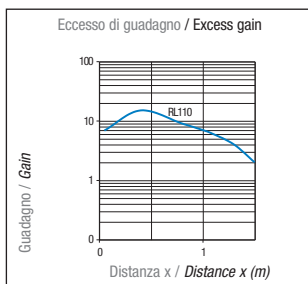


QMRN/0*-0***

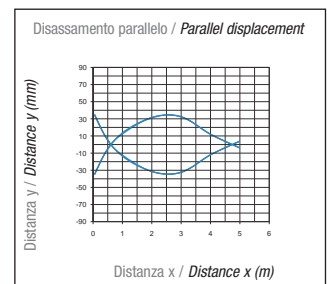
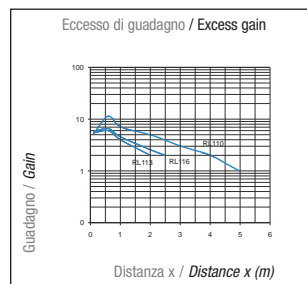


I modelli QMRN possono lavorare affiancati / The QMRN models could work side by side

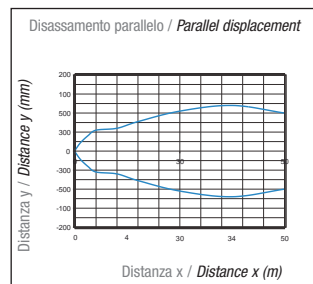
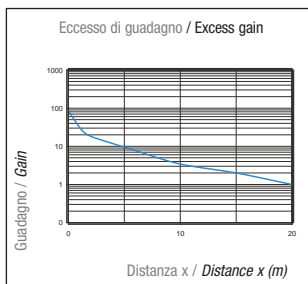
QMRG/0*-0***



QMRL /0*-0***

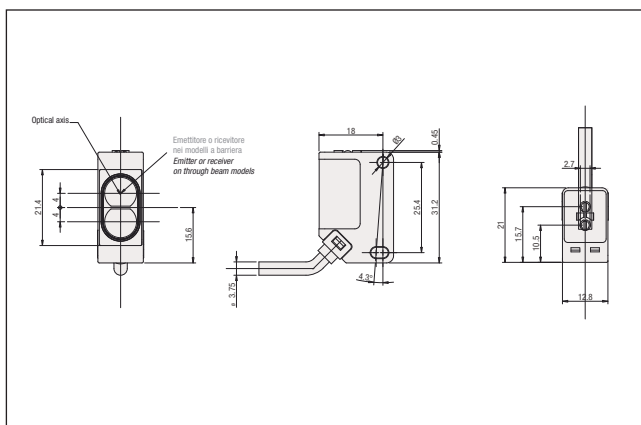


QMRHD/0*-0*

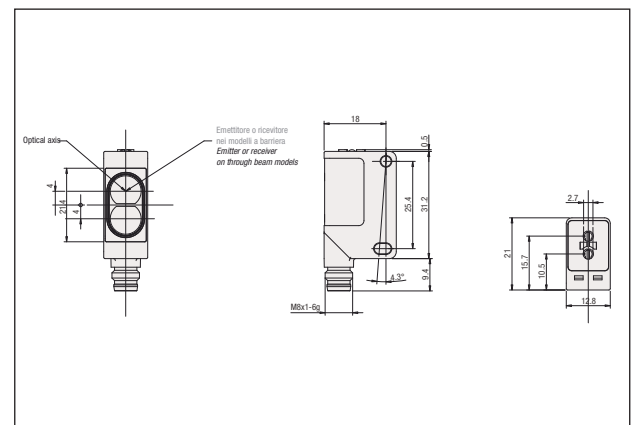


Dimensioni - Dimensions

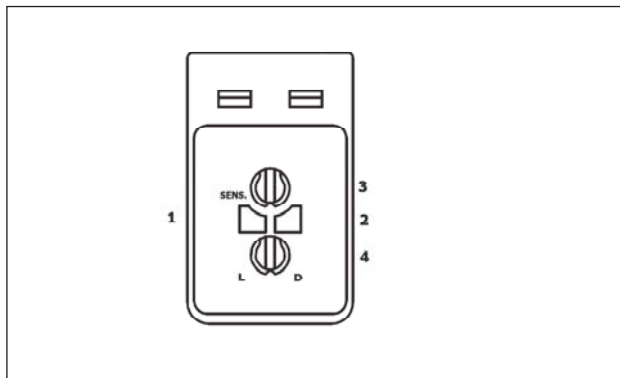
Uscita a cavo / Cable exit



Uscita a connettore M8 / M8 plug cable exit



Indicatori LED e regolazioni - LED indicators and adjustments



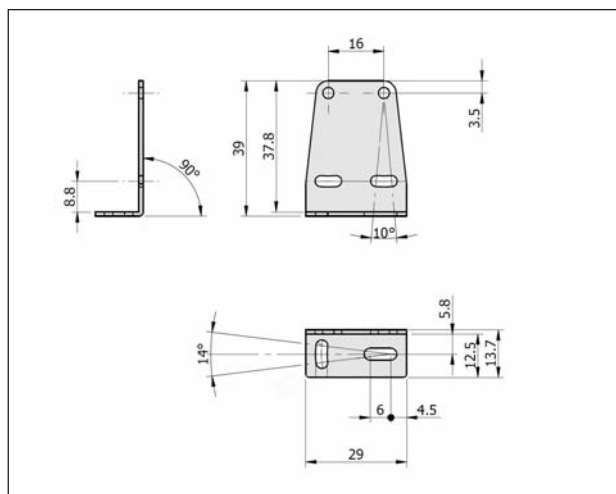
- LED verde: riserva di segnale >1,1
(non presente modello QMRG)
*Green LED indicator: light reception with operation reserve >1,1
(not present QMRG model)*
- LED giallo: stato dell'uscita; per i modelli ricevitore è presente anche un led di segnalazione all'interno dell'ottica
Yellow LED indicator: output active (status); there is a led inside the optical head for the receiver models
- Regolazione di sensibilità distanza (270°)
Sensitivity scanning setting (270°)
- Commutatore impulso luce – impulso buio
Light / dark switch

Accessori - Dimensions

ST 101

Staffa di fissaggio verticale a L
L shape vertical mounting bracket

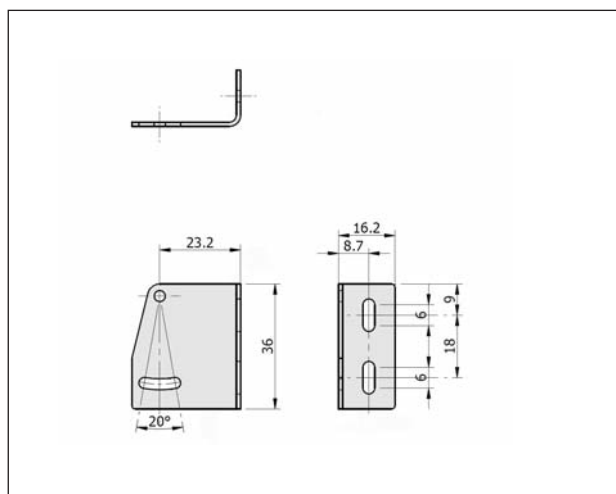
- Inclinazione $\pm 5^\circ$ / $\pm 5^\circ$ tip
- Rotazione $\pm 7^\circ$ / $\pm 7^\circ$ swivel
- Acciaio / Stainless steel



ST 102

Staffa di fissaggio laterale a L
L shape side mounting bracket

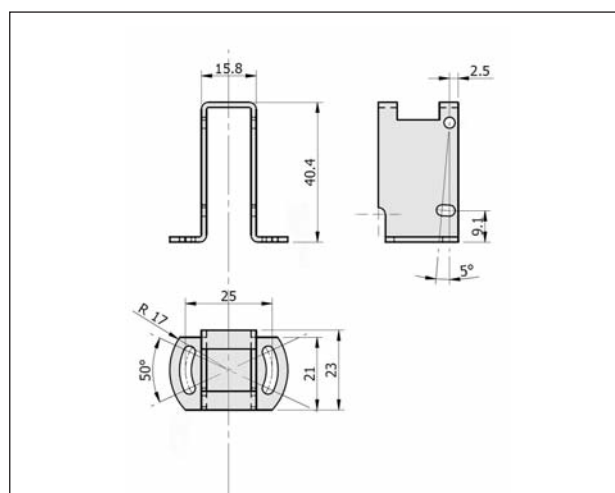
- Inclinazione $\pm 10^\circ$ / $\pm 10^\circ$ tip
- Acciaio / Stainless steel



ST 103⁽¹⁾

Staffa di fissaggio verticale con protezione
Vertical mounting bracket with protective cover

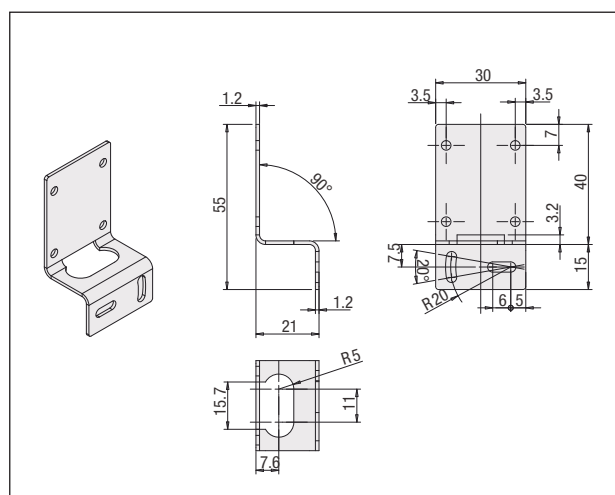
- Rotazione $\pm 25^\circ$ / $\pm 25^\circ$ swivel
- Acciaio / *Stainless steel*



ST 104⁽¹⁾

Staffa di fissaggio orizzontale con protezione
Horizontal mounting bracket with protective cover

- Rotazione $\pm 10^\circ$ / $\pm 10^\circ$ swivel
- Acciaio / *Stainless steel*



STQMO

Diaframmi verticali e orizzontali (0,5-1-2)
 Confezione da 2 pezzi
Vertical and horizontal diaphragms (0,5-1-2)
Packing units 2

Dia.	0,5	1	2
Sn (EG=1)	1,5 m	2 m	4,5 m
Sn (EG=2)	1 m	1,5 m	4 m
Min Ø	0,8 mm	1,5 mm	2,5 mm



STQMS⁽²⁾

20 Viti taglio a croce / *Cross-slotted screws M3x20*

20 Dadi esagonali / *Hexagon nuts M3*

20 Rondelle dentellate / *Lockwashers Ø3*



⁽¹⁾ Possono essere utilizzate solo nei modelli a cavo o a connettore volante

⁽¹⁾ *Can be used only for cable or pig-tail exit models*

⁽²⁾ Componenti non presenti nella confezione standard dei sensori

⁽²⁾ *Components not present in standard sensors packaging*

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