

# S45



## HIGH PERFORMANCE EUROPEAN STYLE MINIATURE SENSOR ALL-IN-ONE FAMILY



- Red LED and Laser emissions
- Precise risk free laser class 1 emission
- Diffused LED proximity 800mm
- Background Suppression 400mm
- Retroreflective Class 1 Laser 15m/Red LED 7m
- Through beam Class 1 Laser 20m/Red LED 15m
- IP69K housing
- 2m Cable or metal M8 4 pole version
- PNP or NPN output with remote teach in input
- High speed RGB and white emission contrast sensor
- High precision distance sensor up to 200 mm



### APPLICATIONS

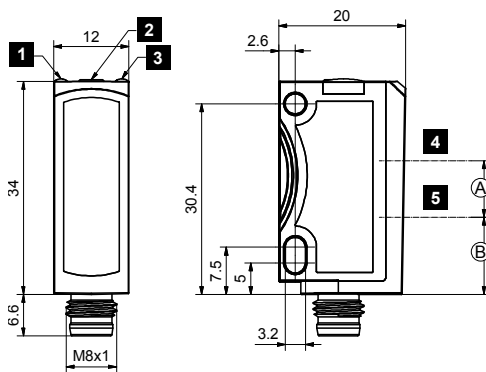
- Processing and Packaging machinery
- Cosmetic and Pharmaceutical industry
- Electronics assembling
- Conveyor lines, material handling
- Automotive industry
- Print and paper industry
- Small part detection with maximum accuracy

S45		
<b>Through beam</b>	20m. (Laser Class1) 15m. (Red Led)	
<b>Polarized Retroreflective</b>	15m. (Laser Class1) 7m. (Red Led)	
<b>Autocollimated Retroreflective for Transparent objects</b>	2m. (Red Led)	
<b>Autocollimated Retroreflective</b>	2m. (Red Led)	
<b>Diffused proximity</b>	250mm. (Laser Class1) 800mm. (Red Led)	
<b>Background suppressor</b>	120mm. (Laser Class 1) 200mm. (Red Led) 400mm. (Red Led)	
<b>Distance sensor</b>	80mm. (Red Led) 200mm. (Red Led)	
<b>Contrast Sensor</b>	12mm. (White) 12mm. (RGB)	
<b>Power Supply</b>	Vdc	10...30Vdc
	Vac	(13...30Vdc Y models)
	Vac/Vdc	
<b>Output</b>	PNP	•
	NPN	•
	NPN/PNP	
	relay	
	other	Push Pull (Wxx, Yxx), Analog 0...10 V (Yxx)
<b>Connection</b>	cable	•
	connector	•
	pig-tail	
<b>Approximate dimensions (mm)</b>	34mm. x 20mm. X 12mm.	
<b>Housing material</b>	ABS(Housing), PMMA (Optics)	
<b>Mechanical protection</b>	IP67 & IP69K	

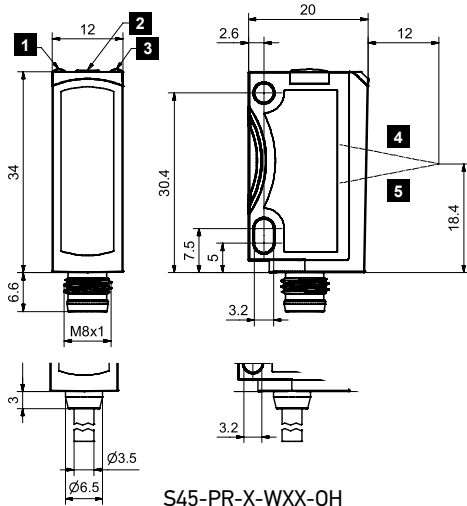
# TECHNICAL DATA

<b>Power supply</b>	10...30Vdc (13...30Vdc Y models)
<b>Ripple</b>	10% max.
<b>Consumption (Load current excluded)</b>	≤ 30 mA
<b>Light emission</b>	Red LED 632 nm, Red Laser 650 nm
<b>Setting</b>	Push Button TEACH-IN
<b>Indicators</b>	LED Green Operating Volatage LED Yellow Output Status
<b>Output</b>	NPN, PNP, Push Pull (Wxx, Yxx), Analog 0...10 V (Yxx)
<b>Output current</b>	100 mA
<b>Saturation voltage</b>	2 V max
<b>Response time</b>	500 μs 333 μs (C03 Laser) 250 μs (F/G Laser) 50 μs (W03, W33) 20 μs (W13, W43)
<b>Switching frequency</b>	≤ 1000Hz ≤ 1500Hz (C03 Laser) ≤ 2000 Hz (F/G Laser) ≤ 10 kHz (W03, W33) ≤ 25 kHz (W13, W43)
<b>Connection</b>	Plastic M8 4-pole connector, Metal M8 4-pole connector 2 m cable
<b>Dielectric strength</b>	500 Vac, 1min between electronic and housing
<b>Insulating resistance</b>	>20M OHM, 500 Vdc between electronic and housing
<b>Electrical protection</b>	class 2
<b>Mechanical protection</b>	IP67 & IP69K
<b>Ambient light rejection</b>	according to EN 60947-5-2
<b>Vibrations</b>	0,5mm amplitude, 10...55Hz frequency , for every axis (EN60068-2-6)
<b>Shock resistance</b>	11 ms (30G) 6 shock for every axis (EN60068-2-27)
<b>Housing material</b>	ABS
<b>Lens material</b>	PMMA
<b>Operating temperature</b>	-20...+60 °C
<b>Storage temperature</b>	-20...+80 °C
<b>Weight</b>	10g. with connector, 40g. with cable

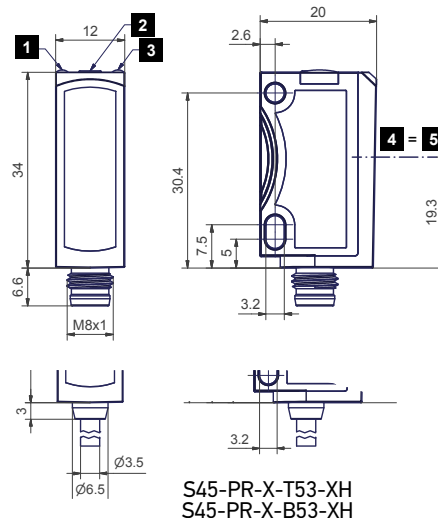
# DIMENSIONS



	S45-PR-2(5)-M03 S45-PR-5-Y03	S45-PR-2(5)-M13 S45-PR-5-Y13	S45-PR-2(5)-C03 S45-PR-B03	S45-PH-5-M03	S45-PH-5-C03 S45-PH-B03	S45-PR-G00	S45-PH-G00	S45-PR(PH)-F03
<b>A</b>	9	11.75	10.8	8.8	8.8	11.5	13.5	
<b>B</b>	12.3	11	11.5	12.5	13.5			22.3



S45-PR-X-WXX-OH



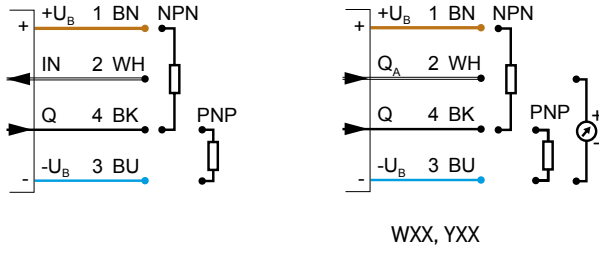
S45-PR-X-T53-XH  
S45-PR-X-B53-XH

<b>1</b>	Yellow LED 1)
<b>2</b>	Button
<b>3</b>	Green LED 2)
<b>4</b>	Receiver axis
<b>5</b>	Emitter axis

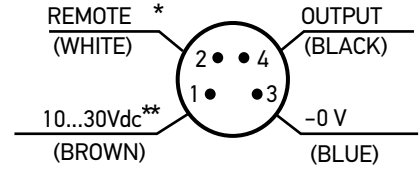
- 1) switching output indicator
- 2) operating voltage indicator

# CONNECTIONS

## CABLE



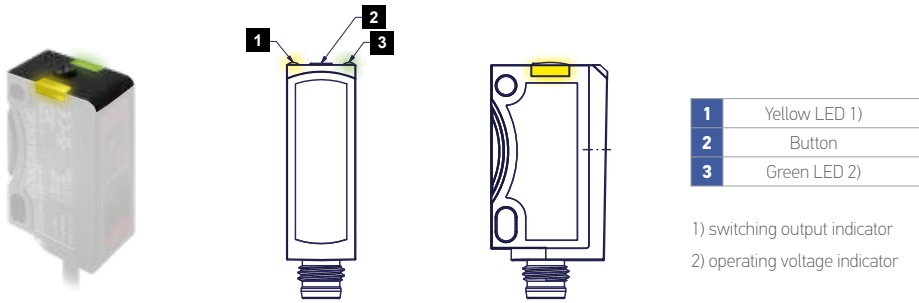
## M8 CONNECTOR



\* Analog out YXX

\*\* 13...30Vdc Y models

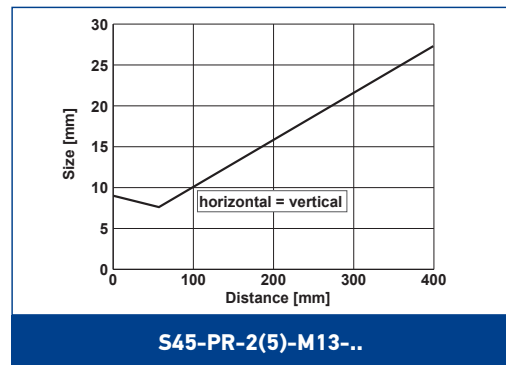
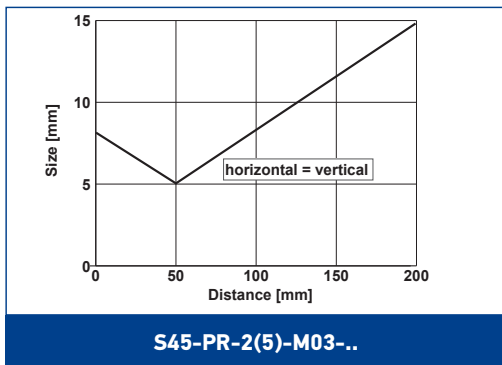
# INDICATORS AND SETTINGS



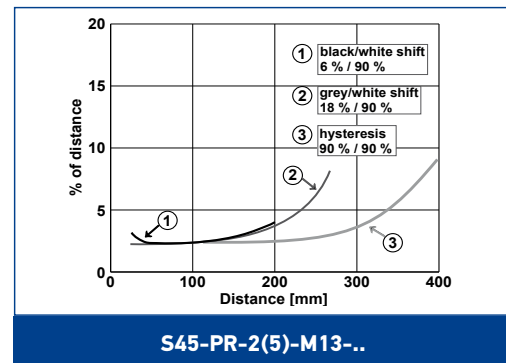
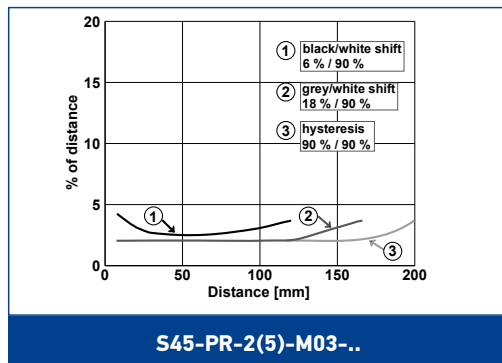
# DETECTION DIAGRAMS

## BACKGROUND SUPPRESSOR

### DETECTION SPOT SIZE

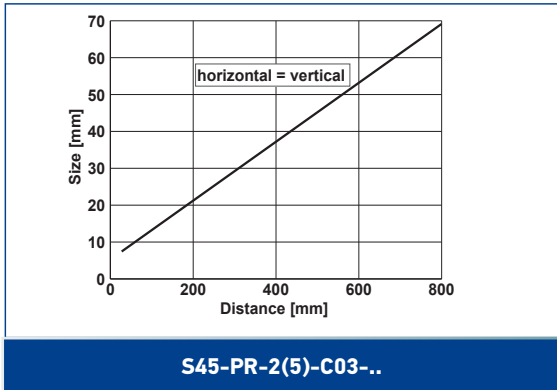


### B/W SHIFT

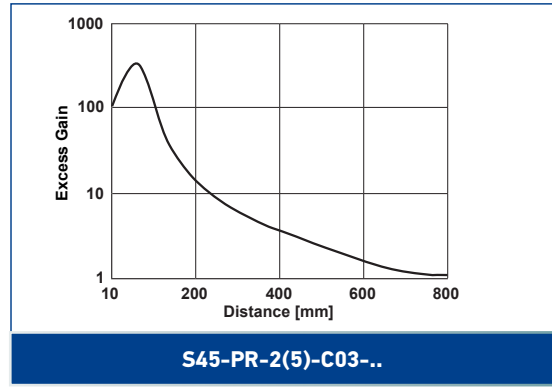


## ENERGETIC DIFFUSED

DETECTION SPOT SIZE

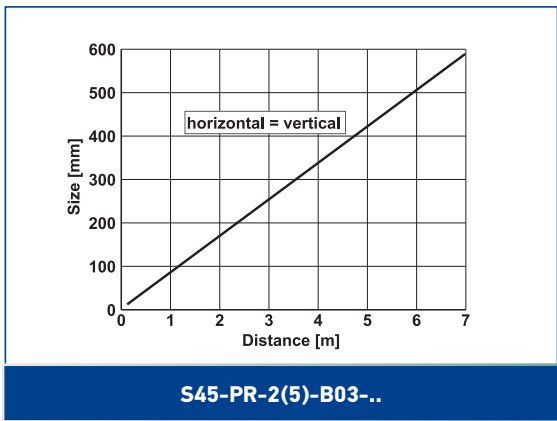


EXCESS GAIN

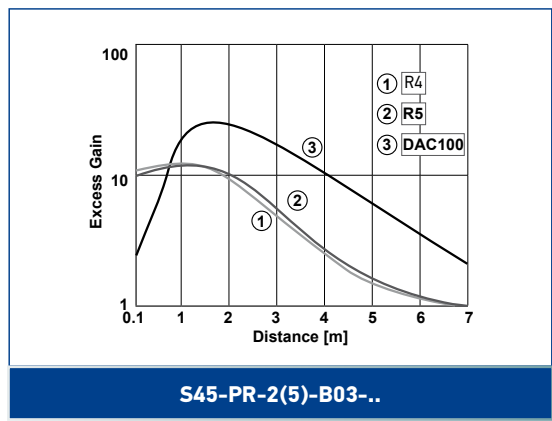


## RETROREFLECTIVE POLARIZED

DETECTION SPOT SIZE

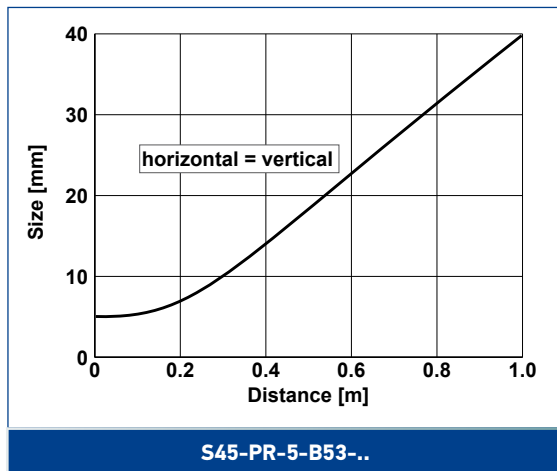


EXCESS GAIN



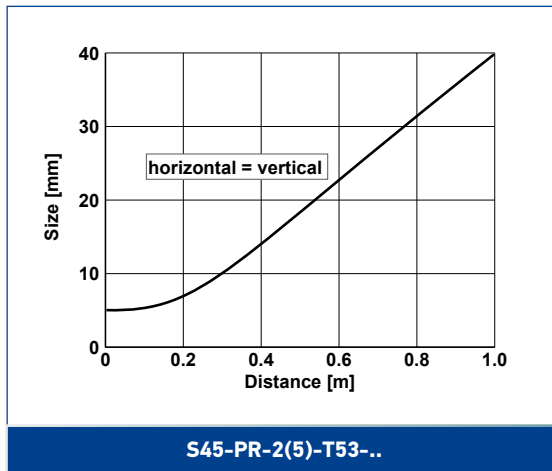
## COAXIAL RETROREFLECTIVE POLARIZED

DETECTION SPOT SIZE



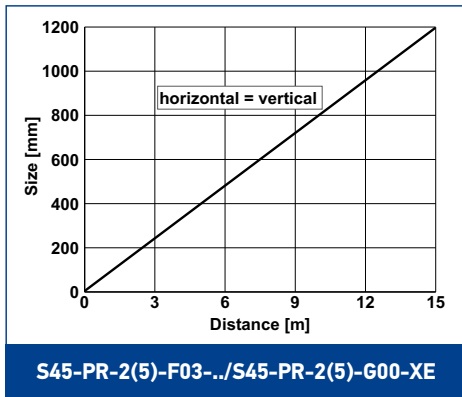
## RETROREFLECTIVE FOR TRANSPARENT

DETECTION SPOT SIZE

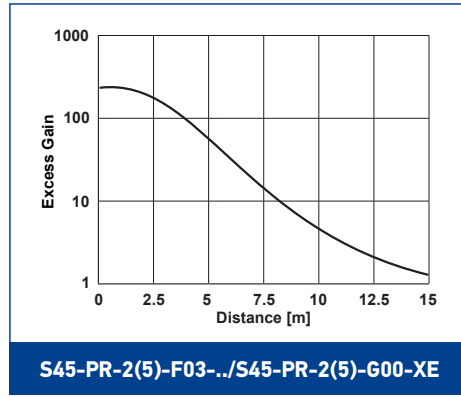


## THROUGH BEAM

DETECTION SPOT SIZE

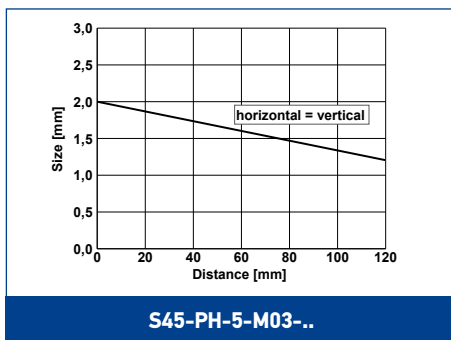


EXCESS GAIN

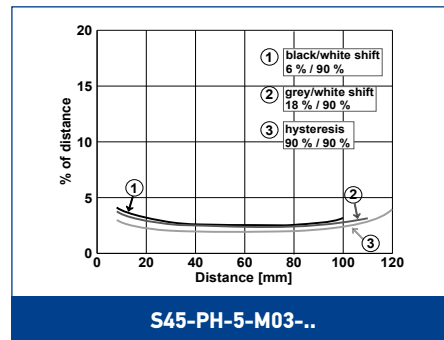


## LASER BACKGROUND SUPPRESSOR

DETECTION SPOT SIZE

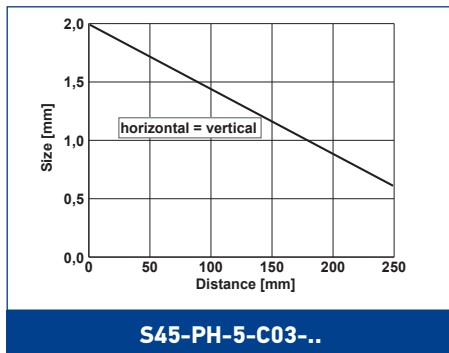


B/W SHIFT

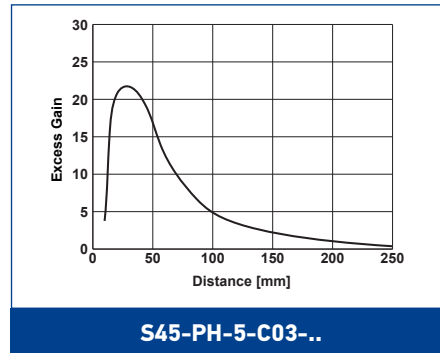


## LASER ENERGETIC DIFFUSED

DETECTION SPOT SIZE

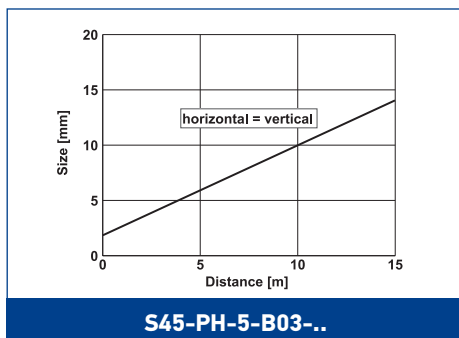


EXCESS GAIN

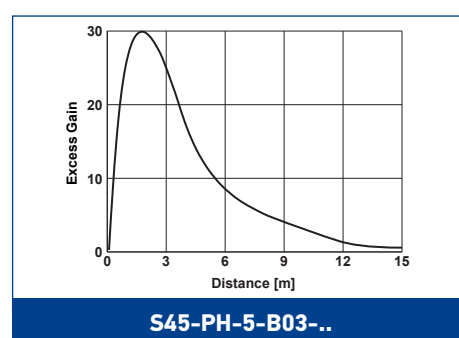


## LASER RETROREFLECTIVE POLARIZED

DETECTION SPOT SIZE

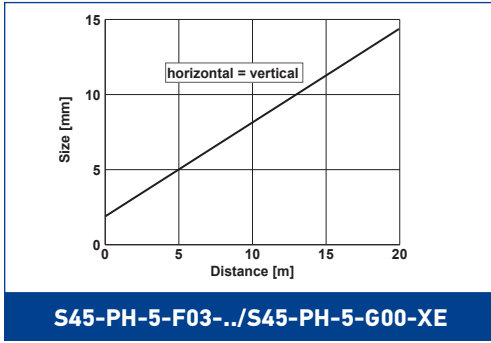


EXCESS GAIN

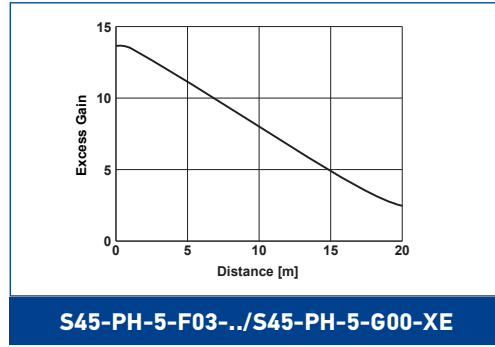


## LASER THROUGH BEAM

### DETECTION SPOT SIZE

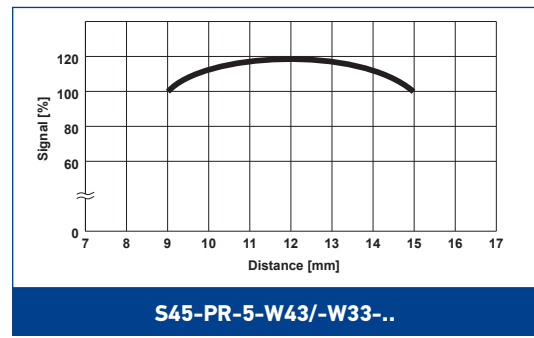
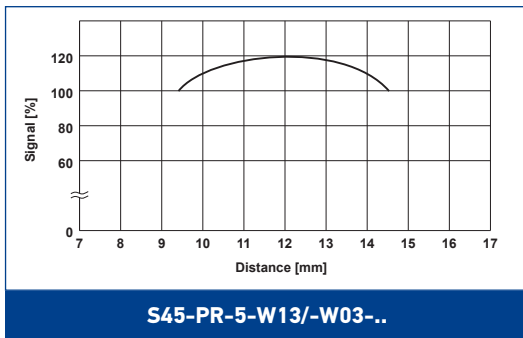


### EXCESS GAIN



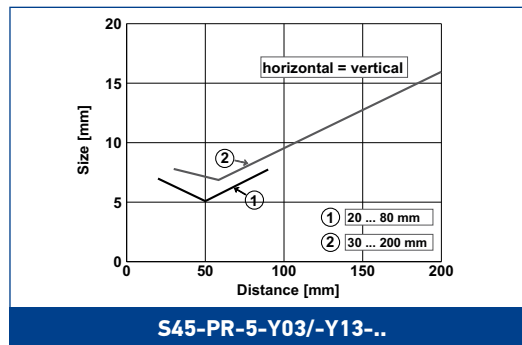
## CONTRAST SENSOR

### READING DIAGRAM

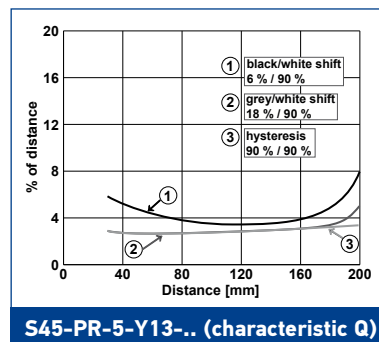
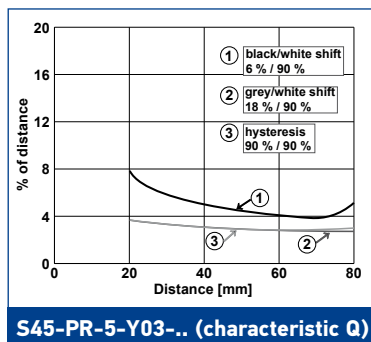


## DISTANCE SENSOR

### DETECTION SPOT SIZE



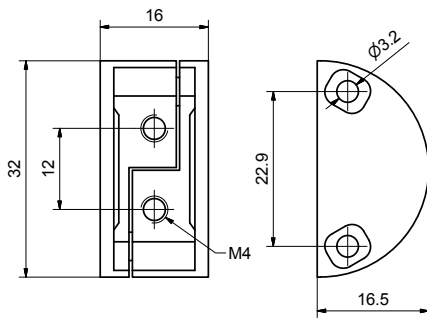
### READING DIAGRAM



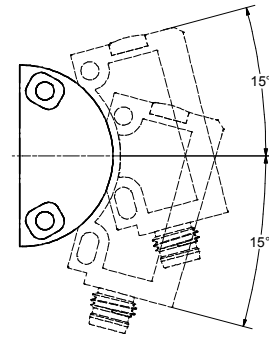
# MODEL SELECTION AND ORDER INFORMATION

OPTIC FUNCTION	EMISSION	CONNECTION	OUTPUT	MODEL	ORDER NO.
Diffused proximity	LED	2m Cable	PNP	S45-PR-2-C03-PH	950411220
			NPN	S45-PR-2-C03-NH	950411210
		M8	PNP	S45-PR-5-C03-PH	950411240
			NPN	S45-PR-5-C03-NH	950411230
	LASER	M8	PNP	S45-PH-5-C03-PH	950411260
			NPN	S45-PH-5-C03-NH	950411250
Polarized Retroreflective	LED	2m Cable	PNP	S45-PR-2-B03-PH	950411100
			NPN	S45-PR-2-B03-NH	950411090
		M8	PNP	S45-PR-5-B03-PH	950411120
			NPN	S45-PR-5-B03-NH	950411110
	LASER	M8	PNP	S45-PH-5-B03-PH	950411140
			NPN	S45-PH-5-B03-NH	950411130
Polarized retroreflective autocollimated for transparent	LED	2m Cable	PNP	S45-PR-2-T53-PH	950411160
			NPN	S45-PR-2-T53-NH	950411150
		M8	PNP	S45-PR-5-T53-PH	950411180
			NPN	S45-PR-5-T53-NH	950411170
Polarized retroreflective autocollimated	LED	M8	PNP	S45-PR-5-B53-PH	950411200
			NPN	S45-PR-5-B53-NH	950411190
Through beam	LED	2m Cable	-	S45-PR-2-G00-XE	950411000
			PNP	S45-PR-2-F03-PH	950411020
			NPN	S45-PR-2-F03-NH	950411010
		M8	-	S45-PR-5-G00-XE	950411030
			PNP	S45-PR-5-F03-PH	950411050
			NPN	S45-PR-5-F03-NH	950411040
	LASER	M8	-	S45-PH-5-G00-XE	950411060
			PNP	S45-PH-5-F03-PH	950411080
			NPN	S45-PH-5-F03-NH	950411070
			PNP	S45-PR-2-M03-PH	950411280
Background suppressor 200mm	LED	2m Cable	NPN	S45-PR-2-M03-NH	950411270
			PNP	S45-PR-5-M03-PH	950411300
		M8	NPN	S45-PR-5-M03-NH	950411290
Background suppressor 400mm	LED	2m Cable	PNP	S45-PR-2-M13-PH	950411320
			NPN	S45-PR-2-M13-NH	950411310
		M8	PNP	S45-PR-5-M13-PH	950411340
			NPN	S45-PR-5-M13-NH	950411330
Background suppressor laser	LASER	M8	PNP	S45-PH-5-M03-PH	950411360
			NPN	S45-PH-5-M03-NH	950411350
Distance sensor	LED	M8	PNP	S45-PR-5-Y03-PV	950411380
			NPN	S45-PR-5-Y03-NV	950411370
Distance sensor	LED	M8	PNP	S45-PR-5-Y13-PV	950411400
			NPN	S45-PR-5-Y13-NV	950411390
Contrast Sensor 10kHz	WHITE	M8	PUSH-PULL	S45-PR-5-W03-OH	950411420
	RGB		PUSH-PULL	S45-PR-5-W13-OH	950411410
Contrast Sensor 25kHz	WHITE	M8	PUSH-PULL	S45-PR-5-W33-OH	950411440
	RGB		PUSH-PULL	S45-PR-5-W43-OH	950411430

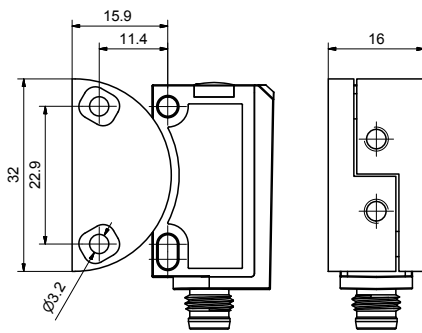
# ACCESSORIES



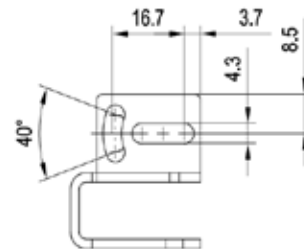
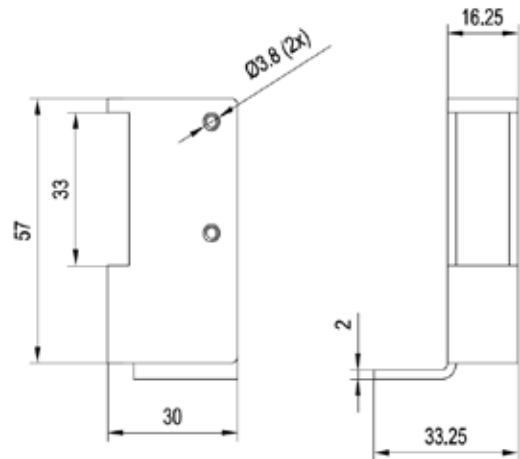
ST-S45-DVT



ST-S45-DVT



ST-S45-DVT



ST-MINI-PRO

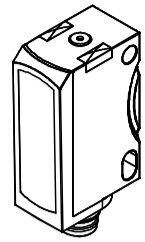
MODEL	DESCRIPTION	ORDER NO.
ST-S45-DVT	S45 DOVE TAIL BRACKET	95ACC7970
ST-MINI-PRO	MINI PROTECTIVE BRACKET	95ACC7980

# CABLES

TYPE	DESCRIPTION	LENGTH	MODEL	ORDER No.
Axial M8 Connector	4-pole, grey, P.V.C.	3 m	CS-B1-02-G-03	95A251420
		5 m	CS-B1-02-G-05	95A251430
		7 m	CS-B1-02-G-07	95A251440
		10 m	CS-B1-02-G-10	95A251480
	4-pole, P.U.R.	2 m	CS-B1-02-R-02	95A251620
		5 m	CS-B1-02-R-05	95A251640
Radial M8 Connector	4-pole, grey, P.V.C.	3 m	CS-B2-02-G-03	95A251450
		5 m	CS-B2-02-G-05	95A251460
		7 m	CS-B2-02-G-07	95A251470
		10 m	CS-B2-02-G-10	95A251530
	4-pole, P.U.R.	2 m	CS-B2-02-R-02	95A251630
		5 m	CS-B2-02-R-05	95A251650

Rev. 01, 07/2016





## S45--Y03 S45--Y13

Sensore di misura miniaturizzato  
Miniature distance sensor  
Capteur de distance miniature  
Miniatur-Abstandssensor



821003910 Rev.01 X1610  
www.datalogic.com

### DATI TECNICI | TECHNICAL DATA | DONNÉES TECHNIQUES | TECHNISCHE DATEN (TYP.)

S45				-PR-5-Y03-PV	-PR-5-Y03-NV	-PR-5-Y13-PV	-PR-5-Y13-NV
① Uscita di commutazione Q	Ⓔ Switching output Q	Ⓕ Sortie de commutation Q	Ⓖ Schaltausgang Q	PNP	NPN	PNP	NPN
Campo di misura <sup>2)</sup>	Measurement range <sup>2)</sup>	Étendue de mesure <sup>2)</sup>	Messbereich <sup>2)</sup>	20 ... 80 mm		30 ... 200 mm	
Distanza di regolazione	Adjustment range	Plage de réglage	Einstellbereich	vedere grafici sul retro   see back   voir verso   s. Rückseite			
Caratteristica di rilevazione Q	Scanning properties Q	Propriétés de détection Q	Tasteigenschaften Q	vedere grafici sul retro   see back   voir verso   s. Rückseite			
Risoluzione	Resolution	Résolution	Auflösung	0,12 mm (12-bit)		0,68 mm (12-bit)	
Linearità <sup>3)</sup>	Linearity <sup>3)</sup>	Linéarité <sup>3)</sup>	Linearität <sup>3)</sup>	± 0,4 mm		± 2 mm	
Ripetibilità <sup>2), 3)</sup>	Repeatability <sup>2), 3)</sup>	Précision de répétabilité <sup>2), 3)</sup>	Wiederholgenauigkeit <sup>2), 3)</sup>	< 0,4 mm		< 1 mm	
Drift in temperatura	Temperature drift	Dérive en température	Temperaturdrift	0,1 mm/K		0,2 mm/K	
Tipo di emissione	Used light	Type de lumière	Lichtart	632 nm, LED rosso   red   rouge   rot			
Dimensione dello spot	Size of light spot	Taille du spot de détection	Lichtfleckgröße	vedere grafici   see illustration   voir illustration   s. Grafik			
Tensione di alimentazione +V <sup>4)</sup>	Operating voltage +V <sup>4)</sup>	Tension d'alimentation +V <sup>4)</sup>	Betriebsspannung +V <sup>4)</sup>	13 ... 30V DC			
Corrente di assorbimento I <sub>0</sub>	No-load supply current I <sub>0</sub>	Courant hors charge I <sub>0</sub>	Leerlaufstrom I <sub>0</sub>	≤ 30 mA			
Uscita di commutazione Q	Switching output Q	Sortie de commutation Q	Schaltausgang Q	PNP o NPN come da tabella di selezione			
Corrente di uscita I <sub>0</sub> Q	Output current I <sub>0</sub> Q	Courant de sortie I <sub>0</sub> Q	Ausgangsstrom I <sub>0</sub> Q	≤ 100 mA			
Tensione Uscita Analogica Q <sub>A</sub>	Analog output Q <sub>A</sub>	Sortie analogique Q <sub>A</sub>	Analogausgang Q <sub>A</sub>	1 ... 10 V (max. 3 mA)			
Frequenza operativa (ti/tp 1:1)	Switching frequency (ti/tp 1:1)	Fréquence de commutation (ti/tp 1:1)	Schaltfrequenz (ti/tp 1:1)	≤ 1000 Hz			
Grado di protezione <sup>5)</sup>	Enclosure rating <sup>5)</sup>	Degré de protection <sup>5)</sup>	Schutzart <sup>5)</sup>	IP 67 / IP 69K			
Temperatura di funzionamento <sup>1)</sup>	Ambient air temperature: operation <sup>1)</sup>	Température ambiante : fonctionnement <sup>1)</sup>	Umgebungstemperatur: Betrieb <sup>1)</sup>	-20 ... +60 °C			
Temperatura di immagazzinamento	Ambient air temperature: storage	Température ambiante : stockage	Umgebungstemperatur: Lager	-20 ... +80 °C			
Peso con connettore / con cavo	Weight plug-/ cable device	Poids Capteur avec connecteur-/câble	Gewicht Stecker-/ Kabelgerät	10 g / 40 g			
Configurazione di fabbrica	Factory setting	Configuration d'origine	Werkseinstellung	Q <sub>A</sub> : 20 ... 80 mm Q: 20 ... 80 mm		Q <sub>A</sub> : 30 ... 200 mm Q: 30 ... 200 mm	

<sup>1)</sup> ① UL: -20 ... +50 °C

<sup>2)</sup> Grigio 18% di remissione

<sup>3)</sup> in condizione costante

<sup>4)</sup> massima variazione residua del 10% della tensione di alimentazione, ~50Hz/100Hz

<sup>5)</sup> con connettore inserito IP 67 / IP 69K

<sup>1)</sup> Ⓔ UL: -20 ... +50 °C

<sup>2)</sup> Reference material grey, 18% reflectance

<sup>3)</sup> at constant conditions

<sup>4)</sup> max. residual ripple 10%, within U<sub>B</sub>, approx. 50Hz/100Hz

<sup>5)</sup> with connected IP 67 / IP 69K plug

<sup>1)</sup> Ⓕ UL: -20 ... +50 °C

<sup>2)</sup> Matériau de référence gris, 18% réflexion

<sup>3)</sup> aux conditions environnementales constantes

<sup>4)</sup> Ondulation résiduelle maxi 10 % à l'intérieur de U<sub>B</sub>, env. 50Hz/100Hz

<sup>5)</sup> avec connecteur IP 67 / IP 69K raccordé

<sup>1)</sup> Ⓖ UL: -20 ... +50 °C

<sup>2)</sup> Bezugsmaterial Grau, 18% Remission

<sup>3)</sup> bei konstanten Umgebungsbedingungen

<sup>4)</sup> max. 10% Restwelligkeit, innerhalb U<sub>B</sub>, ~50Hz/100Hz

<sup>5)</sup> con enchufe conectado IP 67 / IP 69K

### ① INDICAZIONI SDI SICUREZZA

Leggere attentamente le istruzioni prima della messa in servizio del sensore.

Connessione, Montaggio e messa in servizio devono essere eseguite da personale qualificato.

Non è un dispositivo di sicurezza in accordo con la direttiva macchine EU (non deve essere utilizzato per la protezione delle persone).

Non utilizzare in ambiente esterno.

Per l'uso dei sensori con connettore: Connettore M8 metallico dritto o 90° Zoccolo di connessione R/C (CYJV2).

ATTENZIONE - tutto ciò che riguarda l'utilizzo nel controllo o regolazione eseguito diversamente da quanto descritto in questo manuale può provocare una esposizione pericolosa alla radiazione del laser.

### USO CORRETTO

Questo sensore è utilizzato per la rilevazione ottica e non di contatto di oggetti.

### MONTAGGIO

Montare il sensore con accessori compatibili. (vedere il sito www.datalogic.com).

### CONNESSIONE

Inserire il connettore senza alimentazione ed avvitarlo fino in fondo.

Connettere il cavo come in figura B.

Vedere figura C per connessione PNP/NPN.

Tensione presente → LED Verde acceso.

Logica di uscita N.O. ↔ N.C. vedi figura H sul retro.

N.O. Normalmente Aperto; N.C. Normalmente Chiuso.

### POSIZIONAMENTO (VEDI FIGURA D)

Allineare bene il sensore di fronte all'oggetto da rilevare. Verificare che l'oggetto passi di fronte al sensore nel verso preferenziale di rilevazione.

### Ⓔ SAFETY INSTRUCTIONS

Read operating instructions before start-up.

Connection, assembly, setting and start-up only by trained personnel.

No safety component according to EU machinery directives (not suited for the protection of personnel).

Not for outdoor use.

For use with sensors with connector: Straight or L-shaped M8 metal connector, connector base is made of R/C (CYJV2).

CAUTION - Use of Controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

### INTENDED USE

Sensor is used for the optical non-contact detection of objects.

### ASSEMBLY

Fix sensor on suitable mounting component (bracket see www.datalogic.com).

### CONNECTION

Insert plug tension-free and screw it tightly.

Connect cable according to the connection diagram (see illustration B).

For PNP/NPN (see illustration C).

Apply voltage → green LED lights up.

Switching N.O. ↔ N.C. (see illustration H; back).

N.O. = normally open; N.C. = normally closed.

### ADJUSTMENT (SEE ILLUSTRATION D)

Align sensor to the target object.

Observe the preferential direction of proximity switches.

### Ⓕ INSTRUCTIONS DE SÉCURITÉ

Lire les instructions de service avant mise en service.

Raccordement, assemblage, réglage et mise en service ne doivent être effectués que par du personnel qualifié.

Il ne s'agit pas de pièces de sécurité selon les directives européennes en vigueur concernant les machines (inappropriées à la protection de personnes).

Nepas utiliser à l'extérieur.

Pour une utilisation avec capteurs avec connecteur : Connecteur métallique M8 droit ou en forme de " L ", socle de raccordement en R/C (CYJV2).

ATTENTION - L'utilisation de commandes, de réglages ou de consignes autres que ceux spécifiés présente un risque d'exposition dangereuse aux radiations.

### UTILISATION CONFORME

Le capteur est utilisé pour la détection optique des objets sans contact.

### MONTAGE

Monter le capteur sur une équerre de fixation appropriée (support voir www.datalogic.com).

### RACCORDEMENT

Insérer le connecteur hors tension et visser.

Connecter le câble selon le schéma de raccordement (voir illustration B).

Pour PNP/NPN (voir illustration C).

Mettre sous tension → LED verte est allumée.

Inversion N.O. ↔ N.C. (voir illustration H ; verso).

N.O. = ouverture ; N.C. = fermeture.

### AJUSTEMENT (VOIR ILLUSTRATION D)

Aligner le capteur sur l'objet à détecter.

Observer la direction préférentielle des capteurs optiques de proximité.

### Ⓖ SICHERHEITSHINWEISE

Vor Inbetriebnahme die Betriebsanleitung lesen.

Anschluss, Montage, Einstellung und Inbetriebnahme nur durch Fachpersonal.

Kein Sicherheitsbauteil gemäß EU-Maschinenrichtlinie (nicht zum Schutz von Personen geeignet).

Einsatz nicht im Aussenbereich.

Zur Verwendung mit Sensoren mit Stecker: Gerader oder L-förmiger M8 Metallstecker, Anschlusssockel aus R/C (CYJV2).

ACHTUNG - Durch Verwendung von Bedienelementen oder Einstellungen sowie Durchführung von Verfahren, die nicht hier angegeben sind, kann es zum Austritt gefährlicher Strahlung kommen.

### BESTIMMUNGSGEMÄSSE VERWENDUNG

Sensor wird zum optischen berührungslosen Erfassen von Objekten eingesetzt.

### MONTAGE

Sensor an geeignetem Halter befestigen (Halter s. www.datalogic.com).

### ANSCHLUSS

Stecker spannungsfrei aufstecken und festschrauben.

Leitung anschliessen. Es gilt das Anschlusschema (s. Grafik B).

Für PNP/NPN gilt (s. Grafik C).

Spannung anlegen → LED grün leuchtet.

Umschaltung N.O. ↔ N.C. (s. Grafik H; Rückseite).

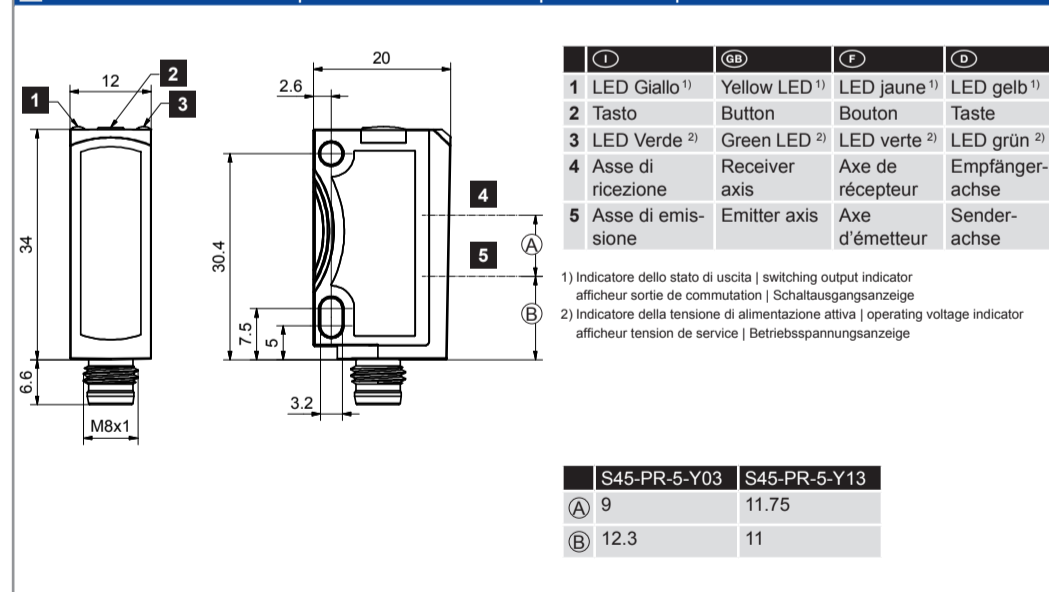
N.O. = Schließer; N.C. = Öffner.

### JUSTAGE (S. GRAFIK D)

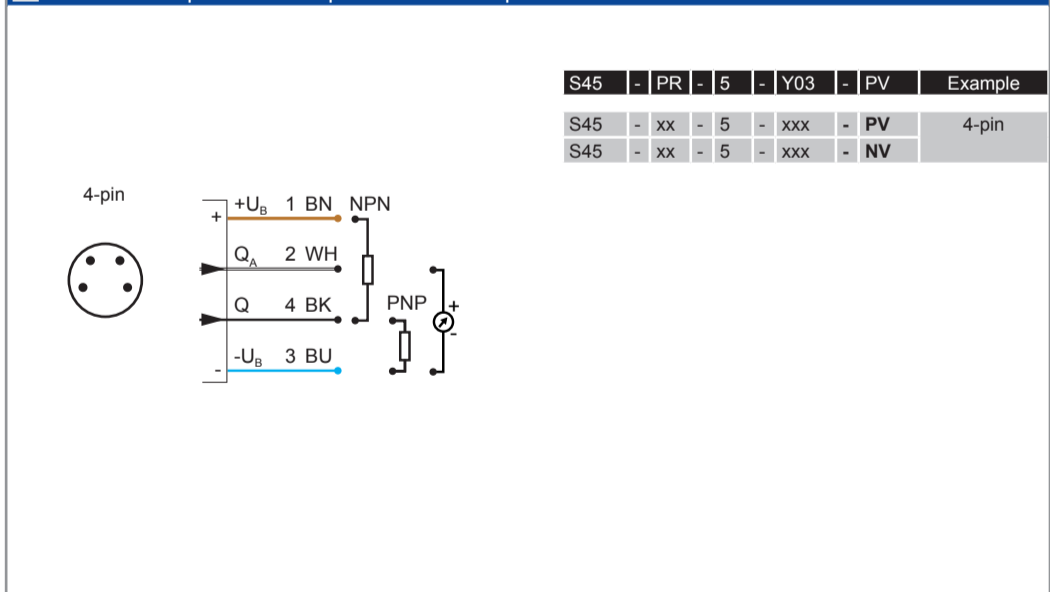
Sensor auf das zu erfassende Objekt ausrichten.

Vorzugsrichtung bei Tastern beachten.

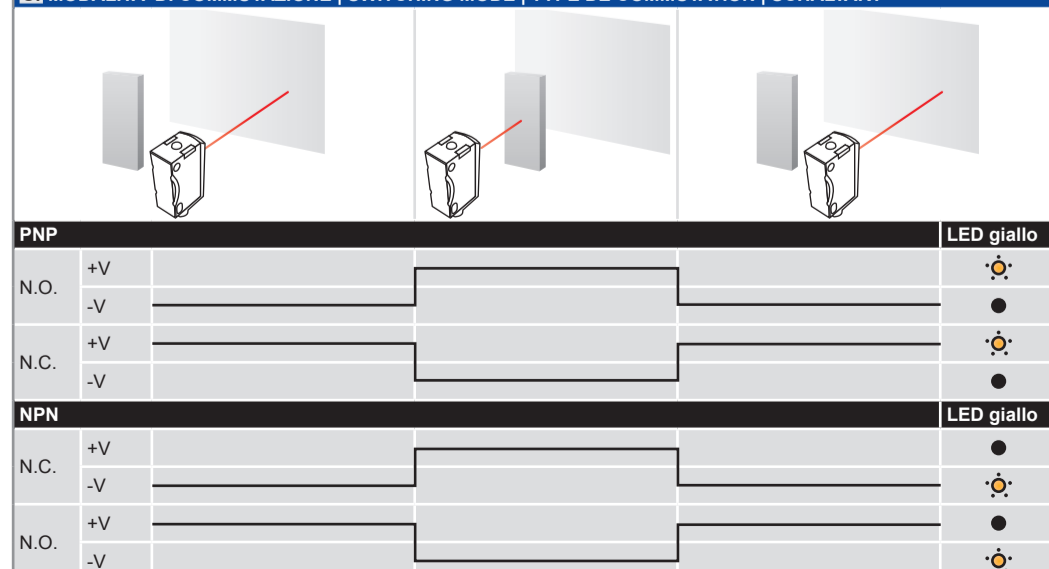
### A. DIMENSIONI DI INGOMBRO | DIMENSIONAL DRAWING | PLAN COTES | MASSBILD



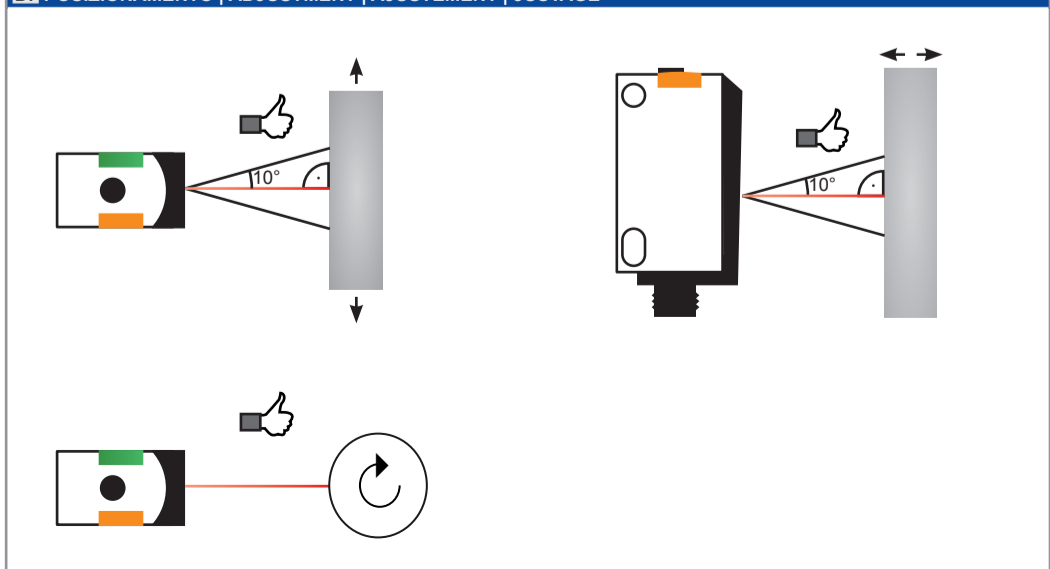
### B. CONNESSIONE | CONNECTION | RACCORDEMENT | ANSCHLUSS



### C. MODALITA' DI COMMUTAZIONE | SWITCHING MODE | TYPE DE COMMUTATION | SCHALTART



### D. POSIZIONAMENTO | ADJUSTMENT | AJUSTEMENT | JUSTAGE



### I CONFIGURAZIONE

Il sensore è dotato di di una uscita analogica ed una uscita in commutazione che possono essere regolate indipendentemente una dall'altra.

**Uscita Analogica** (vedere grafico E): i due punti di apprendimento delimitano l'inizio e la fine dell'area di misura e possono scalare il valore dell'uscita analogica.

Teach point 1 (TP1 [mm]) = 1 V.

Teach point 2 (TP2 [mm]) = 10 V.

Eseguendo un secondo apprendimento fuori dall'area di misura l'uscita analogica del sensore torna alla sua impostazione di fabbrica.

**Commutazione dell'uscita** (vedere grafico F): i due punti appresi identificano rispettivamente l'inizio e la fine della finestra di commutazione dell'uscita.

Attraverso una seconda fase di apprendimento al di fuori della finestra di misura, la commutazione dell'uscita viene regolata come da parametri di fabbrica.

**Modo di regolazione** (vedi grafico G): la sequenza di apprendimento e la distanza dell'oggetto determinano la caratteristica della uscita analogica  $Q_A$  e l'ampiezza della finestra di commutazione Q.

### MANUTENZIONE

Il sensore è libero da manutenzione.

### GB SETTING

The sensor has an analog and a switching output, which can be set independent of each other.

**Analog output** (see graphic E): The two teach points identify the beginning and end of the measuring area and scale the analog output.

Teach point 1 (TP1 [mm]) = 1 V.

Teach point 2 (TP2 [mm]) = 10 V.

Through a second teaching outside of the measuring area, the analog output is set to its factory settings.

**Switching output** (see graphic F): The two teaching points identify the beginning and end of the switching window.

Through a second teaching outside of the measuring area, the switching output is set to its factory settings.

**Setting mode** (see graphic G): The teach sequence and object distance determine the characteristics of the analog output  $Q_A$  and the window width of the switching output Q.

### MAINTENANCE

Sensors are maintenance-free. We recommend to cyclically clean the optical surfaces and check the screw connections and plug connections.

### F RÉGLAGE

Le capteur dispose d'une sortie analogique et d'une sortie à seuil qui peuvent être réglées indépendamment l'une de l'autre.

**Sortie analogique** (voir graphique E) : Les deux points d'apprentissage marquent le début et la fin de l'étendue de mesure et ils mettent la sortie analogique à l'échelle.

Point d'apprentissage 1 (TP1 [mm]) = 1 V.

Point d'apprentissage 2 (TP2 [mm]) = 10 V.

Un double apprentissage à l'extérieur de l'étendue de mesure met la sortie analogique sur son réglage d'usine.

**Sortie à seuil** (voir graphique F) : Les deux points d'apprentissage marquent le début et la fin de la fenêtre de commutation.

Un double apprentissage à l'extérieur de l'étendue de mesure met la sortie à seuil sur son réglage d'usine.

**Modes de réglage** (voir graphique G) : L'ordre d'apprentissage et la distance de l'objet déterminent la ligne caractéristique de la sortie analogique  $Q_A$  et la largeur de la fenêtre de la sortie à seuil Q.

### ENTRETIEN

Les capteurs ne demandent aucun entretien. Nous recommandons de nettoyer les surfaces optiques et vérifier les raccordements et les fixations régulièrement.

### D EINSTELLUNG

Der Sensor verfügt über einen Analog- und einen Schaltausgang, die unabhängig voneinander eingestellt werden können.

**Analogausgang** (siehe Grafik E): Die beiden Teachpunkte kennzeichnen Anfang und Ende des Messbereichs und skalieren den Analogausgang.

Teachpunkt 1 (TP1 [mm]) = 1 V.

Teachpunkt 2 (TP2 [mm]) = 10 V.

Durch zweimaliges Teachen ausserhalb des Messbereichs wird der Analogausgang auf seine Werkseinstellung gesetzt.

**Schaltausgang** (siehe Grafik F): Die zwei Teachpunkte TP1 und TP2 kennzeichnen Anfang und Ende des Schaltfensters.

Durch zweimaliges Teachen ausserhalb des Messbereichs wird der Schaltausgang auf seine Werkseinstellung gesetzt.

**Einstell-Modi** (siehe Grafik G): Teachreihenfolge und Objektstand bestimmen die Kennlinie des Analogausgangs  $Q_A$  und die Fensterbreite des Schaltausgangs Q.

### WARTUNG

Sensoren sind wartungsfrei. Es wird empfohlen in regelmäßigen Intervallen die optischen Flächen zu reinigen und Verschraubungen und Steckverbindungen zu überprüfen.

### E USCITA ANALOGICA | ANALOG OUTPUT | SORTIE ANALOGIQUE | ANALOGAUSGANG

Step 1: Object Position 1 (TP1) / Apprendimento posizione 1 dell'oggetto

Step 2: Object Position 2 (TP2) / Apprendimento posizione 2 dell'oggetto

press  $Q_A > 3$  s  
until yellow LED flashes

press  $Q_A > 1$  s

ok

### F USCITA DI COMMUTAZIONE | SWITCHING OUTPUT | SORTIE DE COMMUTATION | SCHALTAUSGANG

Step 1: Object Position 1 (TP1) / Posizione 1 dell'oggetto

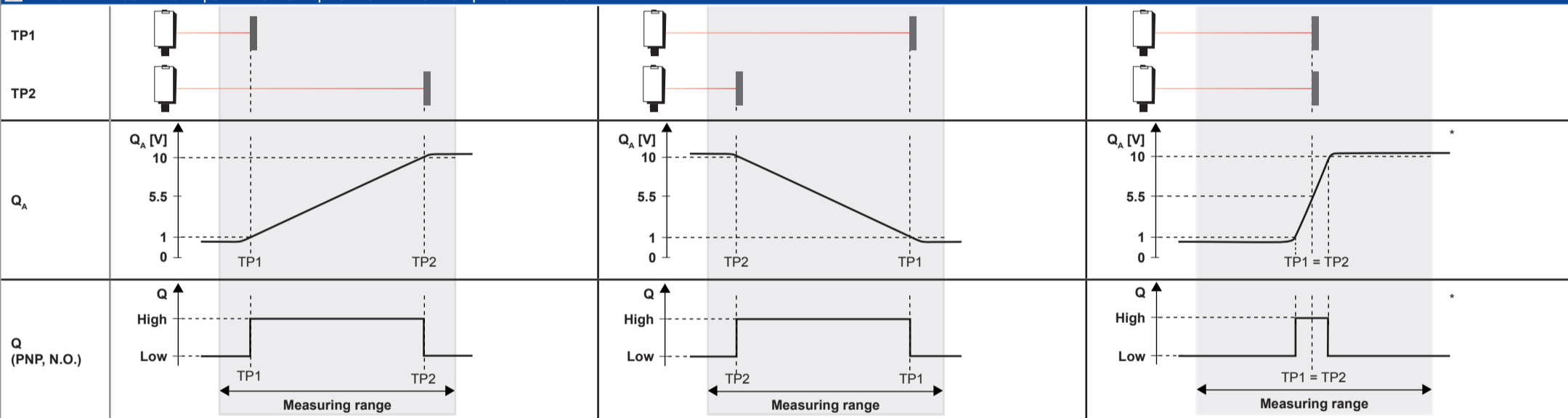
Step 2: Object Position 2 (TP2) / Posizione 2 dell'oggetto

press  $Q > 6$  s  
until green & yellow LED flash at the same time /  
fino a che il LED verde e giallo non lampeggiano assieme

press  $Q > 1$  s

ok

### G. METODI DI REGOLAZIONE | SETTING MODE | MODES DE RÉGLAGE | EINSTELL-MODI



\* S45-PR-5-Y03 = 2 ... 6 mm / S45-PR-5-Y13 = 5 ... 35 mm (grigio / grey / gris / grau 18 %)

la finestra di misura minima è dipendente dalla distanza dell'oggetto da rilevare / minimal measuring window depending on the object distance / fenêtre de mesure minimale en fonction de la distance de l'objet / minimales Messfenster in Abhängigkeit des Objekt- abstands

### H. SELEZIONE N.O. / N.C. | SWITCHING N.O. / N.C. | INVERSION N.O. / N.C. | UMSCHALTUNG N.O. / N.C.

press  $Q > 13$  s → N.O. → press  $Q$  → N.C. → press  $Q$  → N.O. ...

until green & yellow LED flash alternately / fino a che il LED verde e giallo lampeggiano alternativamente

green LED flashes yellow LED ON / LED verde lampeggia LED giallo ON

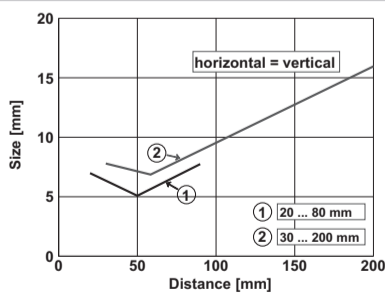
wait 10 s

green LED flashes yellow LED OFF / LED verde lampeggia LED giallo OFF

wait 10 s

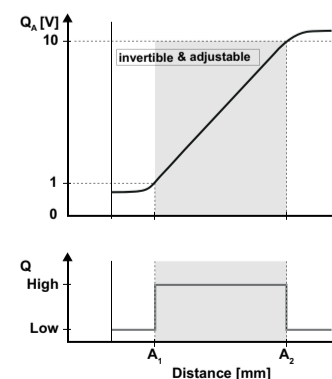
### DIMENSIONE DELLO SPOT | SIZE OF LIGHT SPOT | TAILLE DU SPOT DE DÉTECTION | LICHTFLECKGRÖSSE (TYP.)

S45-PR-5-Y03/-Y13-..



### CARATTERISTICHE $Q_A$ / Q | CHARACTERISTIC $Q_A$ / Q | CARACTÉRISTIQUE $Q_A$ / Q | KENNLINIE $Q_A$ / Q (TYP.)

S45-PR-5-Y03-.. /-Y13-..



### CARATTERISTICHE DI RILEVAZIONE | SCANNING PROPERTIES | PROPRIÉTÉS DE DÉTECTION | TASTEIGENSCHAFTEN (TYP.)

S45-PR-5-Y03-.. (characteristic Q)

S45-PR-5-Y13-.. (characteristic Q)

