Photoelectric sensors

14.01.2020 / Version 1.0
11700760

O200

Xpert Mode
Transparent Object Detection

EN
DE
FR
IT
ES
CN

O200.GR
K365.10.X
Baumer
swiss made
O200.GP

qTarget ®
qTeach ®

www.baumer.com

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Models with IO-Link

IO-Link

IO-Link Process Data Input									
16	8								0
IntegerT(16)	IntegerT(8)	8 bit							
Measurement Data Channel (MDC)	Scale	Baumer specific							
		7	6	5	4	3	2	1	0
				SSC4		Alarm	Quality		SSC1

SSC1/4:	Switching Signal Channels
MDC:	Attenuation value, excess gain or switch counts (selectable)
Quality:	The quality bit signals a weak signal
Alarm:	The alarm bit signals a problem with the configuration or the functionality of the sensor
Scale:	Factor by power of ten, applicable to the value of the Measurement Data Channel (MDC)

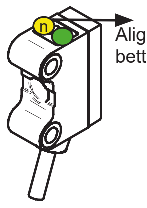
Available Commands:
Teach-In commands, light emission on/off, Find Me (locating sensor) and more

Available Parameters:
Switching point, output function, time filters, operation modes, qTeach lock time, teach-mode, LED status indicators, Teach-In method, tracking settings and more

Available Additional Data:
Switch counter, temperature

Alignment Aid

Retro-reflective sensors and SmartReflect Light barriers (O200.R, O200.S) are equipped with an alignment aid, which is integrated in Teach Level 1 and indicates the strength of the received signal.

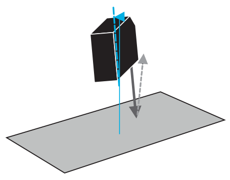


Align sensor, faster flashing, better reception

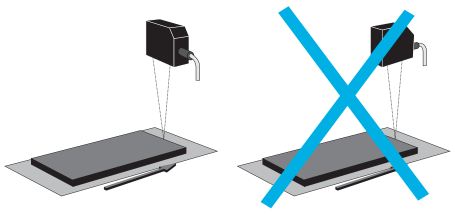
***qTarget*®**
The Baumer design aligns the sensor's light beam to the fixing holes (*qTarget*®) This allows a fast and easy installation without fine-tuning as well as fast exchange.

Mounting Instructions

SmartReflect light barriers for transparent object detection (O200.S)



Reference Background
In case a shiny object/metal plate is used as background reference, it is recommended to tilt the sensor slightly (3 ... 5°) to avoid any influence due to direct reflections on the receiver.



Object
It is recommended that the object to be detected approaches the active area of the sensor from the side, which avoids malfunctions caused by deflection of the light beam at edges.
Exception: Sensors with line beam

Related Models

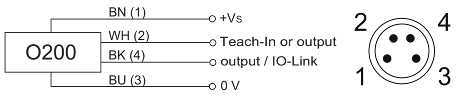
O200 Models with Xpert Teach:
O200.Rx.T (Retro-reflective sensors)
O200.Sx.T* (SmartReflect light barriers)

*Equipped with
ALINE®
The innovative, high performance CMOS Opto-ASIC for fast and temperature-stable sensors with high ambient light immunity

More Information related to these products can be found on our website
(CAD, Beamcharts, CoC, Drawings, IODDs …)

www.baumer.com

Connection Diagrams



	Push-Pull & Teach-In / IO-Link*	PNP Complementary	NPN Complementary
1 - Brown BN	+Vs		
2 - White WH	Teach-In*	PNP Inverted	NPN Inverted
3 - Blue BU	0 V		
4 - Black BK	Push-Pull / IO-Link*	PNP	NPN

*Only for models with IO-Link and/or Teach-In by wire

See packaging label for the specific wiring of your product

- Disconnect power before connecting the sensor.
- Voltage supply according UL 1310, Class 2
or device shall be protected by an external R/C or listed fuse, rated max. 30 VAC/3A or 24 VDC/4A

General Information for Transparent Object Detection

This sensor is optimized to detect reliabily transparent objects such as foils, bottles and more.

To be able to detect all different kind of objects but to be also robust to any variations in temperature or changes of the background reference/reflector (dust as example), the sensor has a compensation/tracking algorithm implemented.

Still it is recommended to evaluate carefully the most robust sensitivity setting to reliable detect the objects by avoiding a setting too sensitive respecting the enviroment conditions.

Sensitivity 10%	Most sensitive setting
Sensitivity 20%	Detection of almost any objects
Sensitivity 30%	Robust on reference against dust, tilting

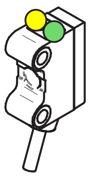
Please check the product packaging for the pre-configured sensitivity setting.

Object	Typically Sensitivity Settings
Foils	10% or 20%
Flow pack	20%
Trays	20%
Colored bottles, filled or empty	30% or higher
Transparent bottles, filled or empty	20%

IO-Link
Models with IO-Link can be adjusted manually down to detect an attenuation of 5%.

In addition a variety of parameters and additional data are available to set up the application as reliable as possible.
- Measured attenuation/variation (Relative value)
- Sensitivity settings
- Tracking settings
- Autoteach settings
- Delay filters
- Hysteresis settings

LED Indication



Legend

● LED on
① LED flashing 1 Hz
② LED flashing 2 Hz
④ LED flashing 4 Hz
⑧ LED flashing 8 Hz

Operating Mode

EN

LED Indicators	Green	Yellow
Power on	●	
Short circuit	①	
Output 1 active		●
Output 1 signal close to threshold		⑧
Teach-In mode	see Teach-In Instruction	

Teach-In Description Level 1

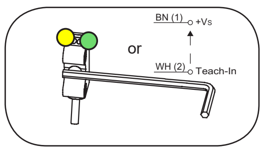
	Transparent object detection	Foil ruptures/break detection (Foil mode*, only O200.R)	Foil ruptures/break detection (only O200.S)
Level 1	1-Point Teach	1-Point Teach	1-Point Teach
	If teached to a reference or a reflector, the sensor is able to detect the smallest variations. A tracking algorithm* compensates any variations of the background reference or reflector. The sensitivity can be adjusted in Teach level 2. The sensitivity describes how much the received signal needs to be damped before switching on. Higher = More robust on variations (dirt, dust, vibrations) of the background reference/reflector Lower = More sensitive on transparent objects	By choosing a sensitivity setting described as foil mode, the sensor can be set up to detect more reliable clear or colored foils. This mode is recommended if the background can be rarely seen (only in case of an error, a.e. foil rupture detection). **Clear and colored foils** Perform the teach on a clear part of the foil - The foil must be stretched and smooth and clean - It is recommended to mount the sensor 3 ...5° slanted in relation to the foil to avoid any direct reflections. If set up in foil mode, the sensor tracks small variations of the foil including of variations of the reflector*	In case of a foil rupture/break detection, the background can be rarely seen (only in case of error). **Clear foil** It is recommended to perform a teach with a foil between sensor and reference to detect any variation to the foil. Note, that the output is inverted. - The foil must be stretched and smooth, clean and clear - It is recommended to mount the sensor 3 ...5° slanted in relation to the foil to avoid any direct reflections. **Colored foil** Perform the teach without the target/foil between sensor and reference.

*This parameter is adjustable by IO-Link. Please check the IO-Link manual available on www.baumer.com

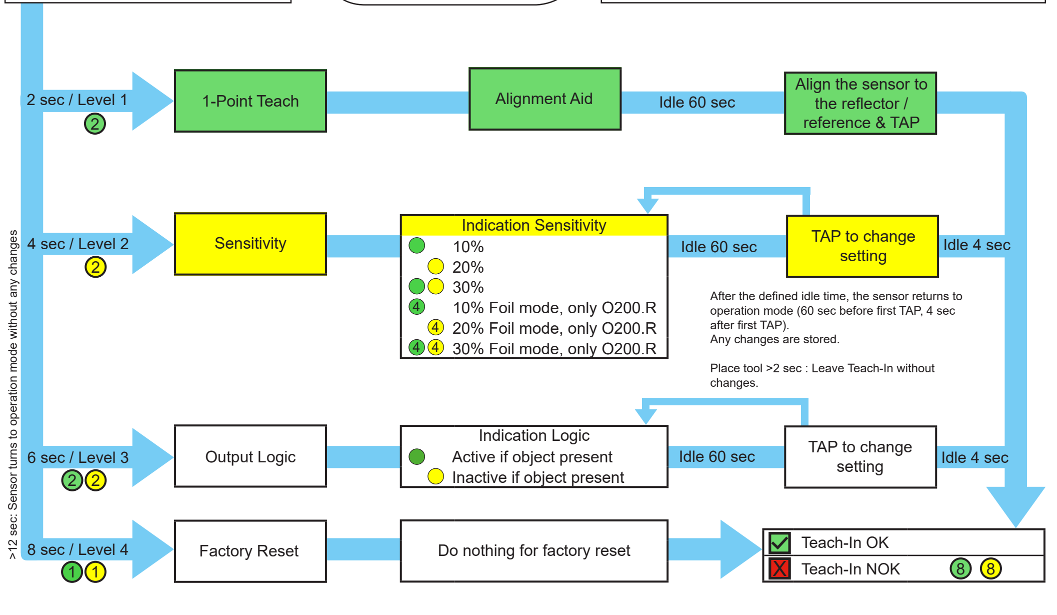
Teach-In Instruction

Enter Teach Level
- Place ferromagnetic tool as shown right to activate *qTeach*® or connect Teach-In wire to +Vs
- Green and yellow LED light up if tool / Teach-In is recognized properly
- Remove after n sec for desired level

A TAP is a short touch (>100 ms) of the tool as shown right



General Information
- *qTeach*® locks 5 min after power up*
- If locked, *qTeach*® can be reactivated by re-apply-power or by connecting the Teach-In wire for >15 sec. to +Vs
- External teach-in is always possible (no locking)
- In teach mode the output changes to 0V
- During operation the teach wire should be connected to 0V
- For external Teach-In connect Teach-In to +Vs



2 sec / Level 1 ②
1-Point Teach
Alignment Aid
Idle 60 sec
Align the sensor to the reflector / reference & TAP

4 sec / Level 2 ②
Sensitivity
Indication Sensitivity
● 10%
● 20%
●● 30%
④ 10% Foil mode, only O200.R
④ 20% Foil mode, only O200.R
④④ 30% Foil mode, only O200.R
Idle 60 sec
TAP to change setting
Idle 4 sec

After the defined idle time, the sensor returns to operation mode (60 sec before first TAP, 4 sec after first TAP).
Any changes are stored.

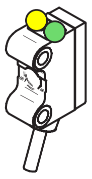
Place tool >2 sec : Leave Teach-In without changes.

6 sec / Level 3 ②②
Output Logic
Indication Logic
● Active if object present
● Inactive if object present
Idle 60 sec
TAP to change setting
Idle 4 sec

8 sec / Level 4 ①①
Factory Reset
Do nothing for factory reset
☑ Teach-In OK
☒ Teach-In NOK ⑧ ⑧

>12 sec: Sensor turns to operation mode without any changes

LED Anzeige



Legende

● LED leuchtet
① LED blinkt 1 Hz
② LED blinkt 2 Hz
④ LED blinkt 4 Hz
⑧ LED blinkt 8 Hz

Betriebsmodus

DE

LED Indikatoren	Grün	Gelb
Betriebsanzeige	●	
Kurzschluss	①	
Ausgang 1 aktiv		●
Ausgang 1 Signal nahe der Schwelle		⑧
Teach-In Modus	siehe Teach-In Anweisung	

Teach-In Beschreibung Level 1

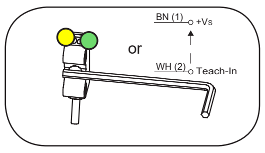
	Erkennung transparenter Objekte	Folienriss- oder Brucherkennung (Folienmode*, nur O200.R)	Folienriss- oder Brucherkennung (nur O200.S)
Level 1	1-Punkt Teach	1-Punkt Teach	1-Punkt Teach
	Wenn der Sensor auf eine Hintergrundreferenz oder einen Reflektor eingelernt wird, ist er in der Lage, kleinste Abweichungen zu erkennen. Ein Tracking-Algorithmus* kompensiert alle Variationen der Hintergrundreferenz oder des Reflektors. Die Empfindlichkeit kann im Teach-Level 2 eingestellt werden. Diese beschreibt, wie stark das empfangene Signal gedämpft werden muss, um einen Schaltvorgang auszlösen. Höher = Robuster gegenüber Variationen (Schmutz, Staub, Vibrationen) der Hintergrundreferenz/des Reflektors. Niedriger = Empfindlicher auf transparente Objekte	Durch die Wahl einer Empfindlichkeitseinstellung, die als Folienmode bezeichnet wird, kann der Sensor so eingestellt werden, dass er zuverlässiger klare oder farbige Folien erkennt. Dieser Modus wird empfohlen, wenn der Hintergrund nur selten zu sehen ist (nur im Falle eines Fehlers, z.B. Folienbruch). **Klare und farbige Folien** Führe den Teachvorgang auf einen transparenten Teil der Folie durch - Die Folie muss gedehnt und glatt und sauber sein - Es wird empfohlen, den Sensor 3 ...5° schräg zur Folie zu montieren, um direkte Reflexionen zu vermeiden. Im Folienmodus trackt* der Sensor Veränderungen der Folie inklusive der Variationen des Reflektors.	Im Falle einer Folienbrucherkennung ist der Hintergrund nur selten zu sehen (nur im Fehlerfall). **Klare Folie** Es wird empfohlen, einen Teach mit einer Folie zwischen Sensor und Referenz durchzuführen, um jegliche Abweichungen zur Folie zu erkennen. Beachte, dass der Ausgang invertiert ist. - Die Folie muss gedehnt und glatt, sauber und klar sein. - Es wird empfohlen, den Sensor 3 ...5° schräg zur Folie zu montieren, um direkte Reflexionen zu vermeiden. **Farbige Folie** Führe den Teachvorgang ohne die Folie zwischen Sensor und Referenz durch. Das Hintergrundtracking* funktioniert in diesem Fall nur sehr eingeschränkt.

*Dieser Parameter kann per IO-Link verändert werden. Weitere Details finden Sie im IO-Link Manual verfügbar auf www.baumer.com

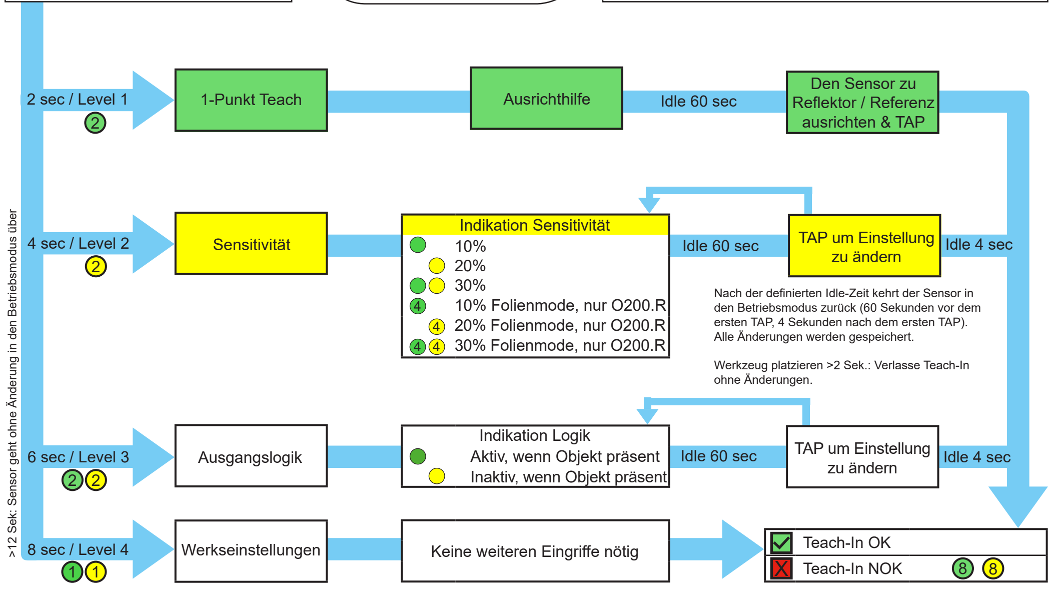
Teach-in Anleitung

Teach Level auswählen
- Platziere das ferromagnetische Werkzeug wie rechts dargestellt um *qTeach*® zu aktivieren oder verbinde die Teachleitung mit +Vs
- Die grüne und gelbe LED leuchten auf, wenn das Werkzeug korrekt erkannt wird
- Nach n Sek. entfernen, um das gewünschte Level auszuwählen

Ein TAP ist eine kurze Berührung (>100 ms) des Werkzeugs



Allgemeine Information
- *qTeach*® verriegelt 5 min nach dem Einschalten*
- Falls gesperrt, kann *qTeach*® durch ein erneutes Einschalten oder durch den Anschluss der Teach-In-Leitung für >15 Sek. an +Vs reaktiviert werden
- Externes Teach-In ist immer möglich (keine Verriegelung)
- Im Teachmodus wechselt der Ausgang auf 0V
- Im Normalbetrieb muss die Teachleitung auf 0V gelegt werden
- Für externes Teach-in, Teachleitung entsprechend mit +Vs verbinden



2 sec / Level 1 ②
1-Punkt Teach
Ausrichthilfe
Idle 60 sec
Den Sensor zu Reflektor / Referenz ausrichten & TAP

4 sec / Level 2 ②
Sensitivität
Indikation Sensitivität
● 10%
● 20%
●● 30%
④ 10% Folienmode, nur O200.R
④ 20% Folienmode, nur O200.R
④④ 30% Folienmode, nur O200.R
Idle 60 sec
TAP um Einstellung zu ändern
Idle 4 sec

Nach der definierten Idle-Zeit kehrt der Sensor in den Betriebsmodus zurück (60 Sekunden vor dem ersten TAP, 4 Sekunden nach dem ersten TAP).
Alle Änderungen werden gespeichert.

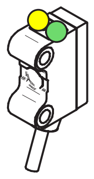
Werkzeug platzieren >2 Sek.: Verlasse Teach-In ohne Änderungen.

6 sec / Level 3 ②②
Ausgangslogik
Indikation Logik
● Aktiv, wenn Objekt präsent
● Inaktiv, wenn Objekt präsent
Idle 60 sec
TAP um Einstellung zu ändern
Idle 4 sec

8 sec / Level 4 ①①
Werkseinstellungen
Keine weiteren Eingriffe nötig
☑ Teach-In OK
☒ Teach-In NOK ⑧ ⑧

>12 Sek: Sensor geht ohne Änderung in den Betriebsmodus über

Indication LED



Légende

- ● LED ON
- ① LED clignotante 1 Hz
- ② LED clignotante 2 Hz
- ④ LED clignotante 4 Hz
- ⑧ LED clignotante 8 Hz

Mode de fonctionnement

FR

Indicateurs LED	Vert	Jaune
Power On	●	
Court-circuit	①	
Sortie 1 activée		●
Sortie 1 signal proche du seuil		⑧
Mode Teach-In	Voir Instructions Teach-In	

Description Teach-In Niveau 1

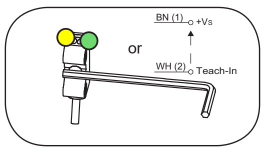
	Détection d'objets transparents	Ruptures de film/détection de rupture (Mode foil*, seulement O200.R)	Ruptures de film/détection de rupture (seulement O200.S)
Niveau 1	Teach 1-point	Teach 1-point	Teach 1-point
	Lorsqu'on apprend une référence ou un réflecteur, le capteur est capable de détecter les plus petites variations. Un algorithme de suivi* compense les variations de la référence d'arrière-plan ou du réflecteur. La sensibilité peut être réglée au niveau d'apprentissage 2. La sensibilité décrit de combien le signal reçu doit être amorti avant commutation. Plus élevée = Plus robuste aux variations (saleté, poussière, vibrations) de la référence d'arrière-plan/réflecteur Plus bas = plus sensible sur les objets transparents	En choisissant un réglage de sensibilité décrit comme le mode film, le capteur peut être configuré pour détecter des films transparents ou colorés plus fiables. Ce mode est recommandé si l'arrière-plan est rarement visible (uniquement en cas d'erreur, par exemple en cas de détection de rupture de la feuille). **Feuilles transparentes et colorées** Effectuer l'apprentissage sur une partie claire du film - Le film doit être étiré, lisse et propre - Il est recommandé de monter le capteur avec une inclinaison de 3 ... 5° par rapport au film pour éviter toute réflexion directe. En mode film, le capteur suit les petites variations du film, y compris les variations du réflecteur*.	En cas de détection de rupture/rupture de film, l'arrière-plan est rarement visible (seulement en cas d'erreur). **Feuille transparente** Il est recommandé d'effectuer un apprentissage avec une feuille entre le capteur et la référence pour détecter toute variation du film. Notez que la sortie est inversée. - Le film doit être étiré et lisse, propre et clair - Il est recommandé de monter le capteur avec une inclinaison de 3 ... 5° par rapport au film pour éviter toute réflexion directe. **Feuille colorée** Effectuez l'apprentissage sans la cible/le profil entre le capteur et la référence.

* Cette valeur est ajustable via IO-Link. Consultez le manuel IO-Link disponible sur www.baumer.com

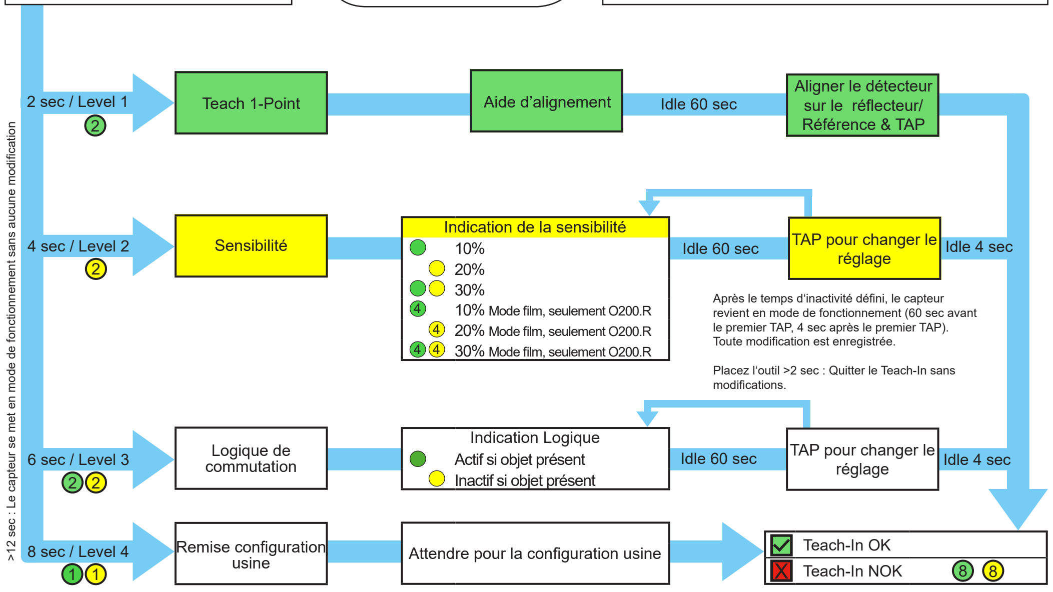
Instructions Teach-In

Entrée en mode Teach:
- Placer l'outil ferromagnétique comme indiqué ci-contre pour activer *qTeach*® ou connecter le fil Teach-In au +Vs
- Si le Teach est activé correctement, les LED jaune et verte sont allumées
- Enlever après n sec pour le niveau souhaité

Un TAP est une courte touche (>100 ms) de l'outil comme présenté ci-contre


BN (1) +Vs
or
WH (2) Teach-In

Information Générale
- *qTeach*® se verrouille 5 min après la mise sous tension.
- S'il est verrouillé, *qTeach*® peut être réactivé en réappliquant l'alimentation ou en connectant le fil de Teach-In pendant >15 sec. à +Vs
- Le Teach externe est toujours disponible (Pas de verrouillage)
- En mode Teach la sortie est à 0V
- En mode normal l'entrée Teach est à 0V
- Pour un Teach externe, connecter l'entrée Teach correspondant au +Vs

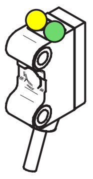

2 sec / Level 1
②
Teach 1-Point
Aide d'alignement
Idle 60 sec
Aligner le détecteur sur le réflecteur/ Référence & TAP
4 sec / Level 2
②
Sensibilité
Indication de la sensibilité
● 10%
● 20%
●● 30%
④ 10% Mode film, seulement O200.R
④ 20% Mode film, seulement O200.R
④④ 30% Mode film, seulement O200.R
Idle 60 sec
TAP pour changer le réglage
Idle 4 sec
6 sec / Level 3
②②
Logique de commutation
Indication Logique
● Actif si objet présent
● Inactif si objet présent
Idle 60 sec
TAP pour changer le réglage
Idle 4 sec
8 sec / Level 4
①①
Remise configuration usine
Attendre pour la configuration usine
Teach-In OK
Teach-In NOK ⑧ ⑧

>12 sec : Le capteur se met en mode de fonctionnement sans aucune modification

Après le temps d'inactivité défini, le capteur revient en mode de fonctionnement (60 sec avant le premier TAP, 4 sec après le premier TAP). Toute modification est enregistrée.

Placez l'outil >2 sec : Quitter le Teach-In sans modifications.

Indicazioni LED



Legenda

- ● LED acceso
- ① LED lampeggia a 1 Hz
- ② LED lampeggia a 2 Hz
- ④ LED lampeggia a 4 Hz
- ⑧ LED lampeggia a 8 Hz

Modalità operativa

IT

Indicazioni LED	Verde	Giallo
Power On	●	
Corto circuito	①	
Uscita 1 attiva		●
Uscita 1 prossima alla soglia		⑧
Modalità di Teach-In	vedi istruzioni Teach-In	

Descrizione livello 1 di Teach-In

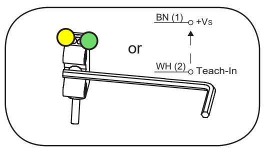
	Rilevamento di oggetti trasparenti	Rilevamento di rottura della pellicola (Modalità pellicola*, solo O200.R)	Rilevamento di rottura della pellicola (solo O200.S)
Livello 1	Teach a 1 punto	Teach a 1 punto	Teach a 1 punto
	Se viene effettuato il teach un riferimento o su un riflettore, il sensore è in grado di rilevare le più piccole variazioni. Un algoritmo di tracciamento* compensa le variazioni del riferimento o del riflettore. La sensibilità può essere regolata nel livello 2. Esso descrive quanto il segnale ricevuto deve essere ridotto prima della commutazione. Più alto = più robusto sulle variazioni (polvere, vibrazioni) del riferimento/riflettore di fondo Più basso = più sensibile su oggetti trasparenti	Scegliendo un'impostazione di sensibilità descritta come modalità pellicola, il sensore può essere impostato per rilevare pellicole trasparenti o colorate più affidabili. Questa modalità è raccomandata se lo sfondo può essere visto raramente (solo in caso di errore, ad esempio per il rilevamento della rottura della pellicola). **Pellicole chiare e colorate** Eseguire l'insegnamento su una parte chiara del foglio - Il foglio deve essere teso, liscio e pulito - Si raccomanda di montare il sensore 3 ...5° inclinato rispetto alla pellicola per evitare riflessioni dirette Se impostato in modalità pellicola, il sensore segue le piccole variazioni della pellicola, comprese le variazioni del riflettore*.	In caso di rilevamento di rottura/rottura della pellicola, lo sfondo può essere visto raramente (solo in caso di errore). **Pellicole chiare** Si raccomanda di eseguire un autoapprendimento con una pellicola tra sensore e riferimento per rilevare eventuali variazioni della pellicola. Si noti che l'uscita è invertita. - La pellicola deve essere tesa, liscia e pulita - Si raccomanda di montare il sensore 3 ...5° inclinato rispetto alla lamina per evitare riflessioni dirette **Pellicole colorate** Eseguire l'autoapprendimento senza il target/foglio tra sensore e riferimento.

*Questo valore è modificabile via IO-Link. Consultare il manuale IO-Link disponibile sul sito www.baumer.com

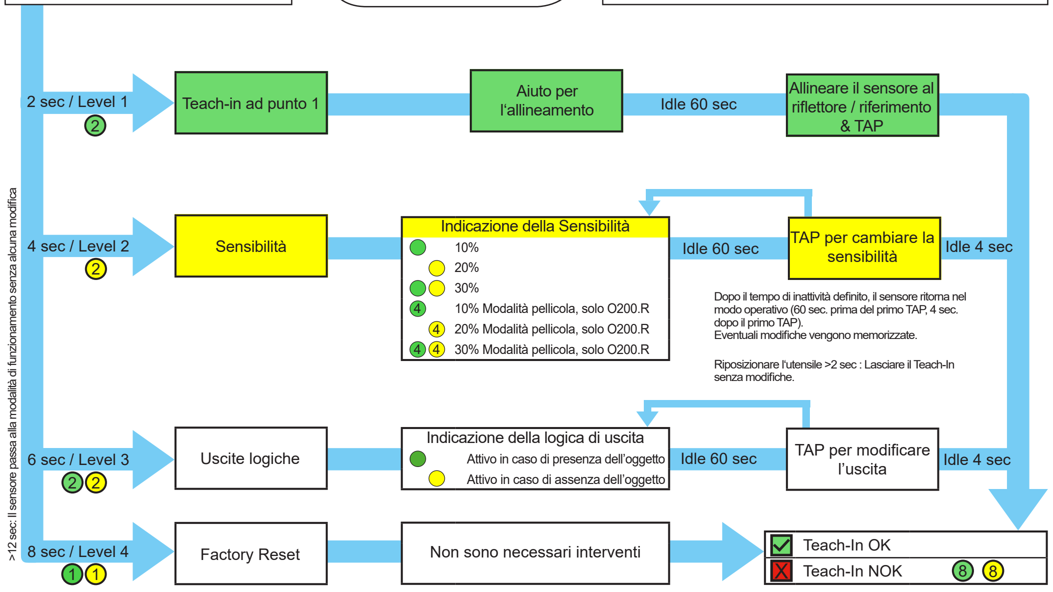
Istruzioni Teach-In

Selezionare il livello di Teach-In
- Posizionare l'utensile ferromagnetico come mostrato a destra di attivare qTeach® o collegare il cavo Teach-In a +Vs.
- Se l'utensile viene riconosciuto correttamente, entrambi i LED si accendono
- Rimuovere dopo n sec. per il livello desiderato

TAP indica un breve tocco con l'utensile sul punto di teach.


BN (1) +Vs
or
WH (2) Teach-In

Informazione generali
- La funzione di q*Teach* ® si disattiva dopo 5min dall'accensione del sensore*
- Se disabilitato *qTeach*® può essere riattivato mediante riapplicazione dell'alimentazione o collegando il filo Teach-In per >15 sec. a +Vs
- In modalità Teach-In l'output assume un valore pari a 0V
- Il Teach-In da remoto è sempre possibile (non si disattiva dopo 5 min)
- Durante il normale funzionamento del sensore il cavo Teach-In va messo a 0V
- Per il Teach-In da remoto, connettere il cavo di teach a +Vs

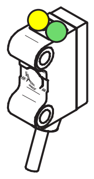

2 sec / Level 1
②
Teach-in ad punto 1
Aiuto per l'allineamento
Idle 60 sec
Allineare il sensore al riflettore / riferimento & TAP
4 sec / Level 2
②
Sensibilità
Indicazione della Sensibilità
● 10%
● 20%
●● 30%
④ 10% Modalità pellicola, solo O200.R
④ 20% Modalità pellicola, solo O200.R
④④ 30% Modalità pellicola, solo O200.R
Idle 60 sec
TAP per cambiare la sensibilità
Idle 4 sec
6 sec / Level 3
②②
Uscite logiche
Indicazione della logica di uscita
● Attivo in caso di presenza dell'oggetto
● Attivo in caso di assenza dell'oggetto
Idle 60 sec
TAP per modificare l'uscita
Idle 4 sec
8 sec / Level 4
①①
Factory Reset
Non sono necessari interventi
Teach-In OK
Teach-In NOK ⑧ ⑧

>12 sec: Il sensore passa alla modalità di funzionamento senza alcuna modifica

Dopo il tempo di inattività definito, il sensore ritorna nel modo operativo (60 sec. prima del primo TAP, 4 sec. dopo il primo TAP). Eventuali modifiche vengono memorizzate.

Riposizionare l'utensile >2 sec : Lasciare il Teach-In senza modifiche.

Información LED



Leyenda

- ● LED ON
- ① LED parpadeo 1 Hz
- ② LED parpadeo 2 Hz
- ④ LED parpadeo 4 Hz
- ⑧ LED parpadeo 8 Hz

Modo operativo

ES

Información LED	Verde	Amarillo
Power On	●	
Cortocircuito	①	
Salida 1 activa		●
Salida 1 señal dentro del intervalo		⑧
Modo Teach-In	Ver instrucciones Teach-In	

Descripción Teach-In Nivel 1

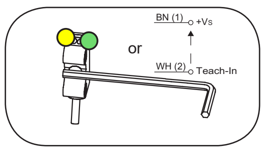
	Detección de objetos transparentes	Roturas de film/detección de rotura (Modo Foil, únicamente O200.R)	Roturas de film/detección de rotura (sólamente O200.S)
Nivel 1	1-Point Teach	1-Point Teach	1-Point Teach
	Si se enseña a una referencia o a un reflector, el sensor es capaz de detectar las variaciones más pequeñas. Un algoritmo de rastreo* compensa cualquier variación de la referencia o el reflector de fondo. La sensibilidad se puede ajustar en el nivel de Teach 2. La sensibilidad describe cuánto se debe amortiguar la señal recibida antes de la conexión. Mayor = Más robusto ante variaciones (suciedad, polvo, vibraciones) de la referencia de fondo/reflector Más bajo = Más sensible en objetos transparentes	Al elegir un ajuste de sensibilidad descrito como modo foil, el sensor puede ser configurado para detectar más fiablemente láminas claras o de color. Este modo se recomienda si el fondo no se puede ver con frecuencia (sólo en caso de error, por ejemplo, en la detección de rotura de láminas). **Láminas claras y de color** Realizar un Teach en una parte clara del film - La lámina debe estar estirada y lisa y limpia - Se recomienda montar el sensor 3 ...5° inclinado con respecto a la lámina para evitar cualquier reflejo directo. En el caso de montaje en modo de film, el sensor sigue las pequeñas variaciones de la lámina incluyendo las variaciones del reflector*.	En el caso de una detección de rotura de lámina/rotura, el fondo no suele verse (sólo en caso de error). **Lámina claras** Se recomienda realizar un Teach con una lámina entre el sensor y la referencia para detectar cualquier variación de la lámina. Tenga en cuenta que la salida está invertida. - La lámina debe estar estirada y lisa, limpia y transparente. - Se recomienda montar el sensor 3 ...5° inclinado con respecto a la lámina para evitar cualquier reflejo directo. **Lámina de color** Realizar el Teach sin el target/foil entre el sensor y la referencia.

*Éste valor es ajustable vía IO-Link. Por favor consulte el manual IO-Link disponible en www.baumer.com

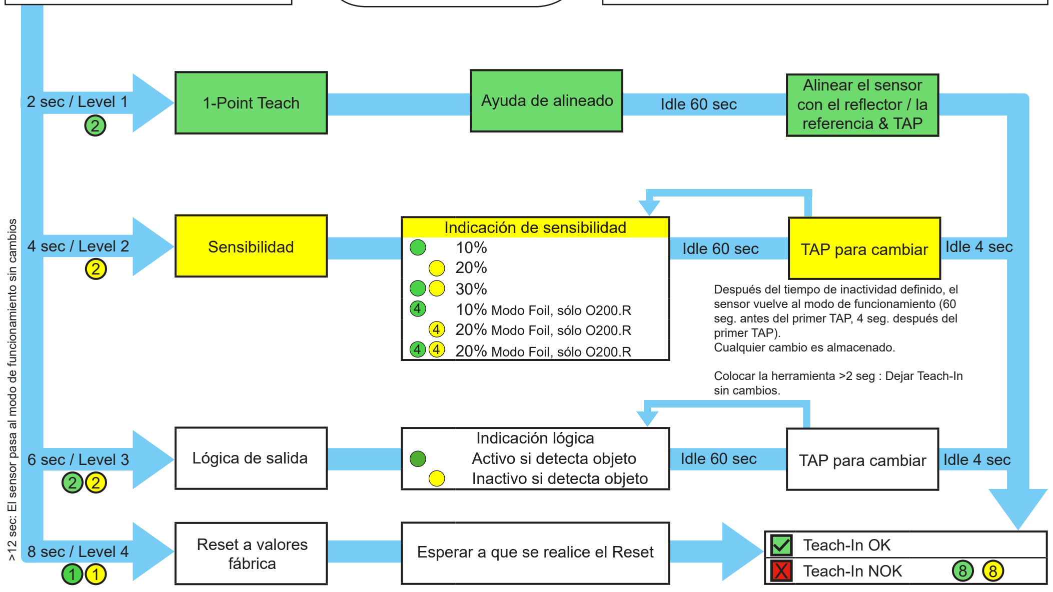
Instrucciones Teach-In

Entrar en modo Teach:
- Coloque la herramienta ferromagnética como indica la imagen para activar *qTeach*® o conectar el cable Teach-In a +Vs
- LEDs verde y amarillo encendidos si la herramienta o el teach-in se reconocen correctamente
- Retirar tras n segundos para el nivel deseado

Un TAP es un toque corto (>100 ms) de la herramienta


BN (1) +Vs
or
WH (2) Teach-In

Información general
- *qTeach*® se bloquea 5 min después de la alimentación*
- Si está bloqueado, *qTeach*® puede ser reactivado volviendo a dar alimentación o conectando el cable de Teach-In durante >15 seg. a +Vs
- El teach-in externo está siempre disponible (no se bloquea)
- En modo teach la salida cambia a 0V
- En modo normal el cable de teach se pone a 0V
- Para teach-in externo, conectar el cable teach a +Vs

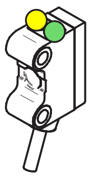

2 sec / Level 1
②
1-Point Teach
Ayuda de alineado
Idle 60 sec
Alinear el sensor con el reflector / la referencia & TAP
4 sec / Level 2
②
Sensibilidad
Indicación de sensibilidad
● 10%
● 20%
●● 30%
④ 10% Modo Foil, sólo O200.R
④ 20% Modo Foil, sólo O200.R
④④ 20% Modo Foil, sólo O200.R
Idle 60 sec
TAP para cambiar
Idle 4 sec
6 sec / Level 3
②②
Lógica de salida
Indicación lógica
● Activo si detecta objeto
● Inactivo si detecta objeto
Idle 60 sec
TAP para cambiar
Idle 4 sec
8 sec / Level 4
①①
Reset a valores fábrica
Esperar a que se realice el Reset
Teach-In OK
Teach-In NOK ⑧ ⑧

>12 sec: El sensor pasa al modo de funcionamiento sin cambios

Después del tiempo de inactividad definido, el sensor vuelve al modo de funcionamiento (60 seg. antes del primer TAP, 4 seg. después del primer TAP). Cualquier cambio es almacenado.

Colocar la herramienta >2 seg : Dejar Teach-In sin cambios.

LED 指示灯



图例

- ● LED 亮
- ① LED 闪烁 1 Hz
- ② LED 闪烁 2 Hz
- ④ LED 闪烁 4 Hz
- ⑧ LED 闪烁 8 Hz

操作模式

CN

LED 指示灯	绿	黄
通电	●	
短路	①	
输出 1 激活		●
输出 1 信号接近阈值		⑧
Teach-In 模式	详见 Teach-In 说明	

Teach-In 说明 1 级

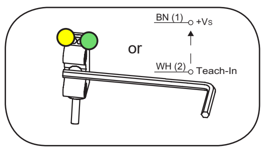
	透明物体检测	薄膜断裂/损毁检测（薄膜模式，仅针对于O200.R系列）	薄膜断裂/损毁检测（仅适用于O200.S系列）
1级	1点设定	1点设定	1点设定
	如果学习了反光板或者参考面，传感器可以识别最小的变化. 跟踪算法可以补偿反光板或者背景参考面的任何变化. 在示教2级程序中，可以调节传感器的灵敏度. 该值指的是传感器动作前接收到信号的衰减量. 值越高=在背景参考面/反光板变化时（污垢、灰尘、振动），传感器越稳定. 越低=对透明物的灵敏度越高.	通过把传感器灵敏度设置为薄膜模式，传感器可以用于稳定检测透明或彩色薄膜. 此模式推荐用于背景几乎看不到的时候.（只有在发生错误的时候，比如薄膜破裂） 透明及彩色薄膜 - 在薄膜的透明处进行示教 - 薄膜必须拉伸开且保持平滑干净 - 传感器安装时建议倾斜3 ...5°以避免直接反射 如果设置为薄膜模式，传感器会识别薄膜的微小变化.（并不识别反射板的微小变化）	如果检测到薄膜破裂 / 断裂，背景几乎看不到.（只有在出错时） 透明薄膜 推荐把薄膜放在传感器与参考面中间进行示教以此来识别薄膜的微小变化。注意，输出是相反的. - 薄膜必须拉伸开且保持平滑干净透明 - 传感器安装时建议倾斜3 ...5°以避免直接反射 彩色薄膜 在传感器与参考面中间无目标物/薄膜的时候进行示教.

*这个值是通过IO-Link来调整的。请在 www.baumer.com 上查询IOLink手册

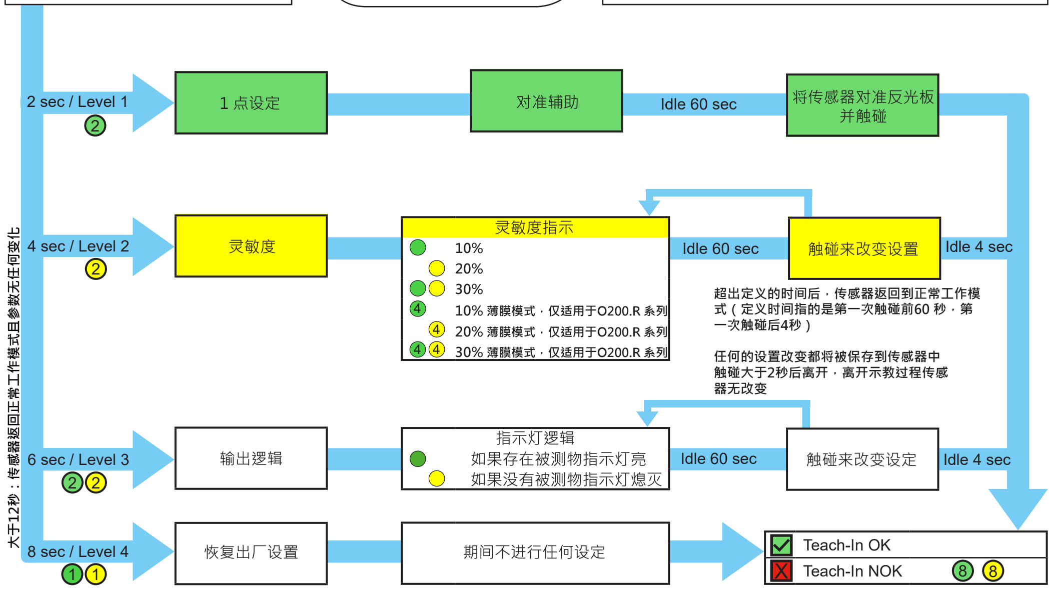
设定说明

进入设定等级:
- 如右图所示放置金属工具或连接设定线至 +Vs
- 如果工具或设定被恰当地识别到，绿色和黄色LED将亮起
- 在 n 秒后档选定所需的等级 是拿开

触碰是如右图所示用工具快速靠近感应区域


BN (1) +Vs
or
WH (2) Teach-In

总览:
- *qTeach*® 开启5分钟后自行锁定
- 锁定之后，*qTeach*® 可以通过重新上电或者把外部示教线连接到 +Vs上大于15秒后进行激活
- 在设定模式下输出变至 0 V
- 在通常情况西设定先接至 0 V
- 对于外部设定, 将设定线连接至 +Vs
- 外部设定线永久有效 (无自锁)


2 sec / Level 1
②
1 点设定
对准辅助
Idle 60 sec
将传感器对准反光板并触碰
4 sec / Level 2
②
灵敏度
灵敏度指示
● 10%
● 20%
●● 30%
④ 10% 薄膜模式，仅适用于O200.R 系列
④ 20% 薄膜模式，仅适用于O200.R 系列
④④ 30% 薄膜模式，仅适用于O200.R 系列
Idle 60 sec
触碰来改变设置
Idle 4 sec
6 sec / Level 3
②②
输出逻辑
指示灯逻辑
● 如果存在被测物指示灯亮
● 如果没有被测物指示灯熄灭
Idle 60 sec
触碰来改变设定
Idle 4 sec
8 sec / Level 4
①①
恢复出厂设置
期间不进行任何设定
Teach-In OK
Teach-In NOK ⑧ ⑧

大于12秒：传感器返回正常工作模式且参数无任何变化

超出定义的时间后，传感器返回到正常工作模式（定义时间指的是第一次触碰前60 秒，第一次触碰后4秒）

任何的设置改变都将被保存到传感器中
触碰大于2秒后离开，离开示教过程传感器无改变