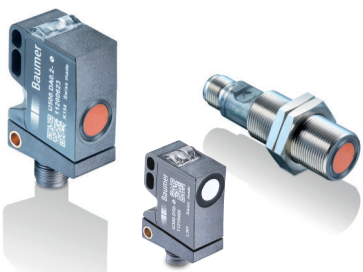


Ultrasonic sensors

27.02.2020 / Version 1.3
11701360

U500 / UR18 / U300 Barriers

EN
DE
FR
IT
ES
CN



IO-Link

www.baumer.com

qTarget®
qTeach®

Baumer

Baumer Electric AG - CH-8501 Frauenfeld
Phone +41 (0)52 728 1122 - Fax +41 (0)63 739 1144

Models with IO-Link

IO-Link Process Data Input									
IntegerT(32)	IntegerT(8)	8 bit							
Measurement Data Channel (MDC)	Scale	Baumer specific							
		7	6	5	4	3	2	1	0
		SSC4			Alarm	Quality	SSC2	SSC1	

SSC1/2/4: Switching Signal Channels
MDC: Distance Value or Switch Counter (selectable)
Quality: The quality bit signals a weak echo 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, sensor element on/off, Find Me (Locating sensor) and more

Available Parameters:
Switching point, switching hysteresis, output function, time filters, beam forming, measured value filtering, analog output characteristic, function of Pin 5, LED status indicators and more

Available Additional Data:
Switch counter, boot cycles, operation hours, device temperature, operating voltage, histograms

Alignment Aid

Retro-reflektive Sensoren und Einwegschränken (.R und .E/.T) verfügen über eine Ausrichthilfe. Diese ist im Teach Level 1 integriert und zeigt die Stärke des empfangenen Signals an.

Retro-reflective and through beam version (.R and .E/.T) are equipped with alignment aid, which is integrated in Teach Level 1. The Alignment aid indicates the strength of the received signal.

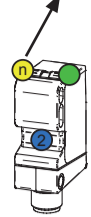
Les versions barrières réflex et barrières simples (R et E/R) sont équipées d'un outil d'aide à l'alignement, qui est intégré au niveau 1 de la procédure de teach. L'aide à l'alignement indique la force du signal reçu.

Le version a retroriflessione e sbarramento (.R e .E/.T) sono dotate di indicazione di corretto allineamento integrata nel Teach-in al livello 1. Questa funzione indica l'intensità del segnale ricevuto.

Las versiones retrorreflektiva y de barrera (.R y .E/.T) están equipadas con una ayuda de alineado integrada en el Nivel 1 de Teach. La ayuda de alineado indica la potencia de señal recibida.

鏡反射和对射版本 (.R和.E/.T) 的传感器配备了对准辅助功能。集成在设定级别1中。对准辅助表明了接收信号的强度。

Faster flashing
→ stronger signal



Sensor ausrichten, schnelles Blinken, besserer Empfang

Align sensor, faster flashing, better reception

Aligner le capteur, clignotement plus rapide, meilleure est la réception

Allineamento del sensore: Più è veloce il lampeggiamento tanto più è forte il segnale

Sensor alineado, parpadeo más rápido, mejor recepción

对准传感器，闪烁越快，接收得更好

Related Models

U500 Models:
U500.R (Retro reflective version)
U500.T/E (Through beam sensor (E-Receiver)(T-Emitter))

UR18 Models:
UR18.R (Retro reflective version)
UR18.T/E (Through beam sensor (E-Receiver)(T-Emitter))

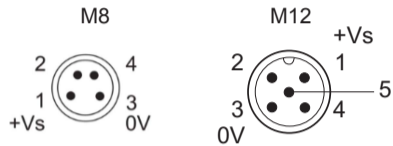
U300 Models:
U300.R (Retro reflective version)
U300.T/E (Through beam sensor (E-Receiver)(T-Emitter))

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



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Connection Diagrams



	Retro reflective version	Through beam version (E-Receiver)	Through beam version (T-Emitter)
	.R	.E	.T
1 - Brown BN		+Vs	
2 - White WH	n.c.	Push-Pull out 2	n.c.
3 - Blue BU		0 V	
4 - Black BK	IO-Link / Push-Pull out 1		n.c.
5 - Grey GY	Teach-in /Sync/ Mux via IO-Link		n.c.

- 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

Mounting Instructions

Mindestabstand zwischen zwei Sensoren

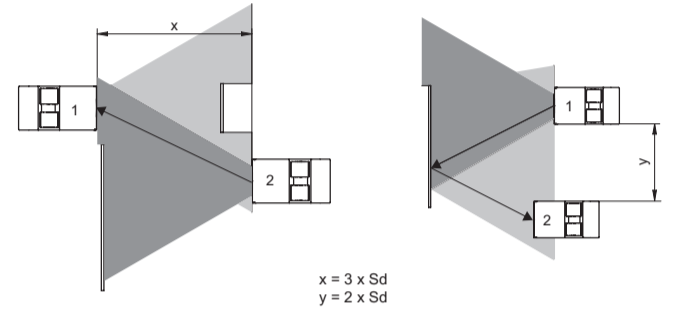
Minimal distance between two sensors

Distance minimale entre deux capteurs

Distanza minima tra due sensori

Distancia mínima entre dos sensores

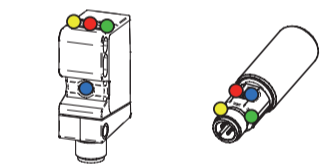
传感器之间最小安装距离



LED Indication

Legend

Operating Mode



- LED on
- LED flashing 1 Hz
- LED flashing 2 Hz
- LED flashing 8 Hz

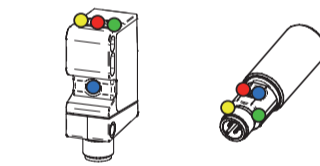
LED Indicators	Green	Yellow	Blue
Power on	●		
Short circuit	●		
Output 1 active		●	
Output 1 signal close to threshold		●	
Output 2 active		●	
Output 2 signal close to threshold		●	
qTeach not locked			●

Teach-in mode see Teach-in Instruction

Only sensors with 2 outputs do have a red LED

LED Anzeige

Legende



- LED leuchtet
- LED blinkt 1 Hz
- LED blinkt 2 Hz
- LED blinkt 8 Hz

Nur Sensoren mit 2 Ausgängen verfügen über eine rote LED

Betriebsmodus

LED Indikatoren	Grün	Gelb	Blau
Betriebsanzeige	●		
Kurzschluss	●		
Ausgang 1 aktiv		●	
Ausgang 1 Signal nahe der Schwelle		●	
Ausgang 2 aktiv		●	
Ausgang 2 Signal nahe der Schwelle		●	
qTeach verwendbar			●

Teach-in Modus siehe Teach-in Anweisung

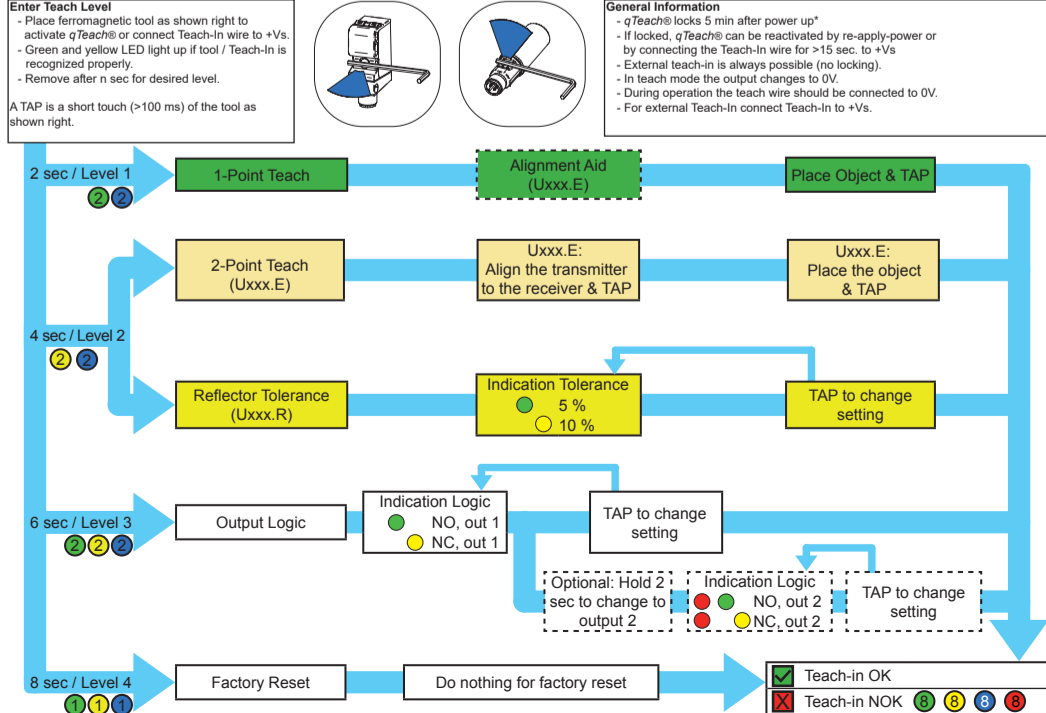
Teach-In Description Level 1 & 2

	U500.E / UR18.E	U500.R / UR18.R
Level 1	1-Point Teach Sets the threshold as close to the measured value as possible 	1-Point Teach Output 1 Teach-In the position of the Reflector (Distance)
Level 2	2-Point Teach Sets the switching point in the middle of the teach points 	Reflector Tolerance Set the tolerance of the reflector position The reflector tolerance states the relative allowable variance of the reflector position. Example: Reflector Position of 500 mm ± 5 % means the reflector position ranges from 475 mm to 525 mm.

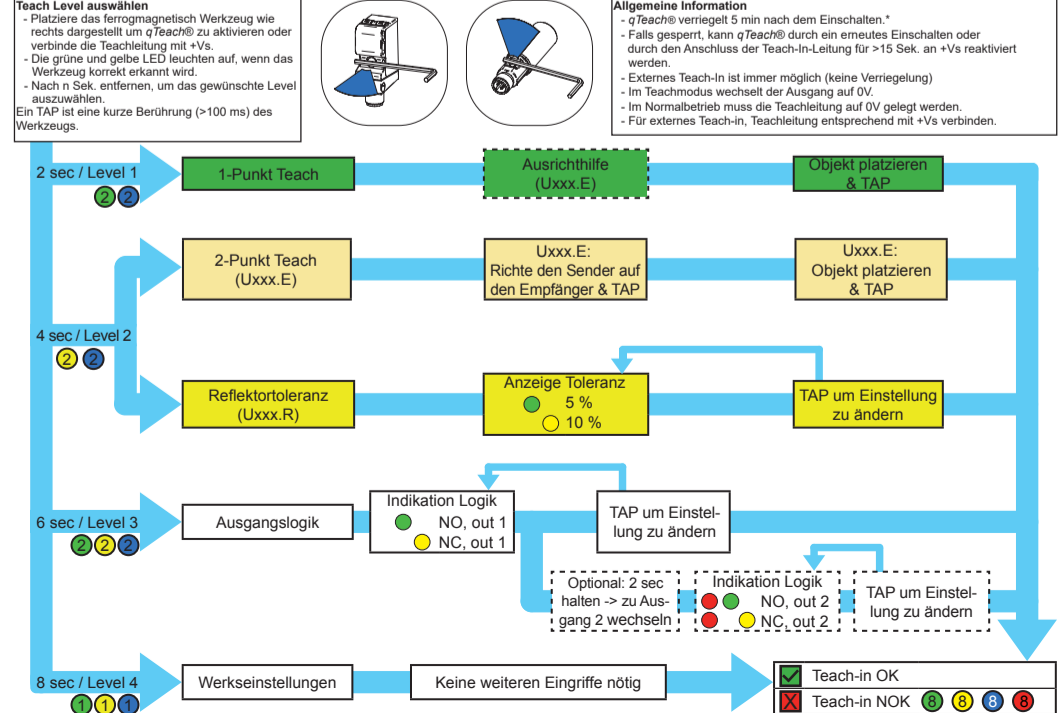
Teach-In Beschreibung Level 1 & 2

	U500.E / UR18.E	U500.R / UR18.R
Level 1	1-Punkt Teach Setzt die Schaltschwelle so nah ans eingelernte Signal wie möglich. 	1-Punkt Teach Ausgang 1 Einlernen der Reflektordistanz
Level 2	2-Punkt Teach Setzt den Schalterpunkt in die Mitte der eingelernten Teachpunkte 	Reflektortoleranz Einstellung der Reflektortoleranz Die Reflektortoleranz beschreibt die relative, zulässige Varianz der Reflektorposition Beispiel: Bei einer Reflektorposition von 500 mm und einer Toleranz von ± 5% wird der Reflektor von 475 bis 525 mm erkannt.

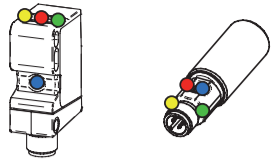
Teach-in Instruction



Teach-in Anleitung



Indication LED



Légende

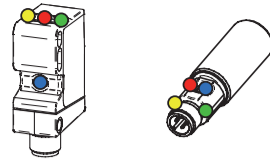
- LED ON
- LED clignotante 1 Hz
- LED clignotante 2 Hz
- LED clignotante 8 Hz

Mode de fonctionnement (FR)

Indicateurs LED	Vert	Jaune	Bleu
Power On	●		
Court-circuit	①		
Sortie 1 activée		●	
Sortie 1 signal proche du seuil		⑧	
Sortie 2 activée		●	
Sortie 2 signal proche du seuil		⑧	
qTeach disponible			●

Mode Teach-In Voir Instructions Teach-In

Indicazioni LED



Legenda

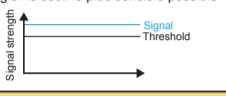
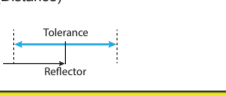

- LED on
- Lampeggiamento LED a 1 Hz
- Lampeggiamento LED a 2 Hz
- Lampeggiamento LED a 8 Hz

Modalità operativa (IT)




Indicazioni LED	Verde	Giallo	Blu
Power On	●		
Corto circuito	①		
Uscita 1 attiva		●	
Uscita 1 prossima alla soglia		⑧	
Uscita 2 attiva		●	
Uscita 2 prossima alla soglia		⑧	
qTeach utilizzabile			●

Modalità di Teach-In see Teach-In Instruction

Description Teach-In Niveau 1 & 2

	U500.E / UR18.E	U500.R / UR18.R
Niveau 1	Teach 1-point Apprendre le signal et régler le seuil le plus sensible possible. 	Sortie 1: Teach 1 Point Apprendre la position du réflecteur (Distance). 
Niveau 2	Teach 2-point Régler le point de commutation au milieu des points d'apprentissage. 	Tolérance de réflecteur Régler la sensibilité. La tolérance du réflecteur indique la variation de position relative admissible du réflecteur. Exemple : 500 mm +/- 5%

Descrizione livelli di Teach-in 1 e 2

	U500.E / UR18.E	U500.R / UR18.R
Livello 1	Teach a 1 punto Impostazione automatica della soglia di commutazione in funzione dell'intensità restituita (massima sensibilità). 	Uscita 1 - teach ad 1 punto Teach-In della posizione del riflettore. 
Livello 2	Teach a 2 punti Impostazione della soglia di commutazione a un valore medio tra l'intensità restituita dei segnali appresi. 	Impostazioni di sensibilità Impostare la sensibilità. La sensibilità regola la tolleranza sul posizionamento del riflettore. Esempio: 500mm +/-5%

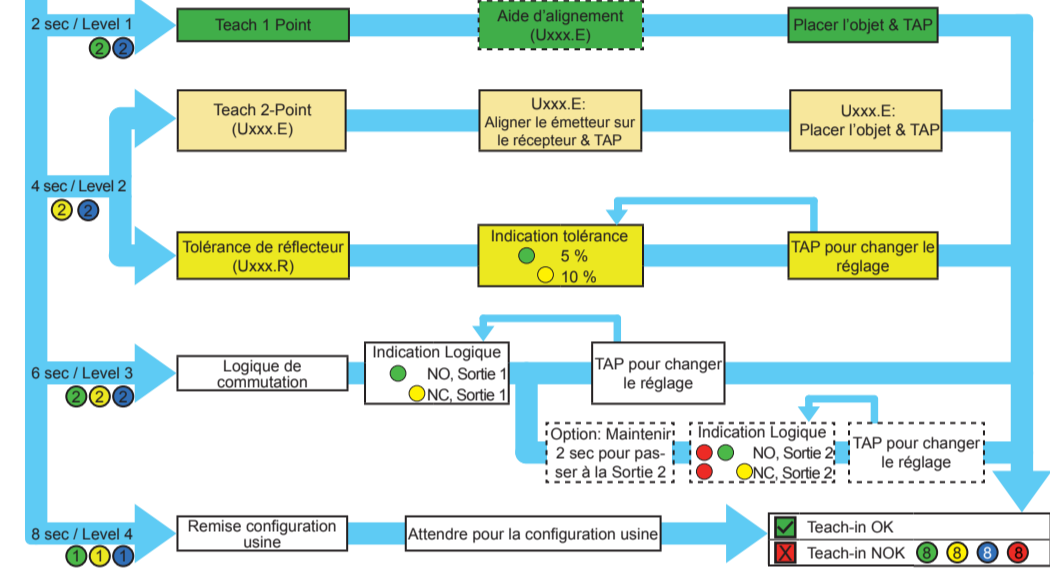
Instructions Teach-In

Entrée en mode Teach:

- Placer l'outil ferromagnétique comme indiqué ci-contre de 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.

Information Générale

- qTeach® se verrouille 5 min après la mise tension.*
- Si il est verrouillé, qTeach® peut être réactivé en réappliquant la puissance 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



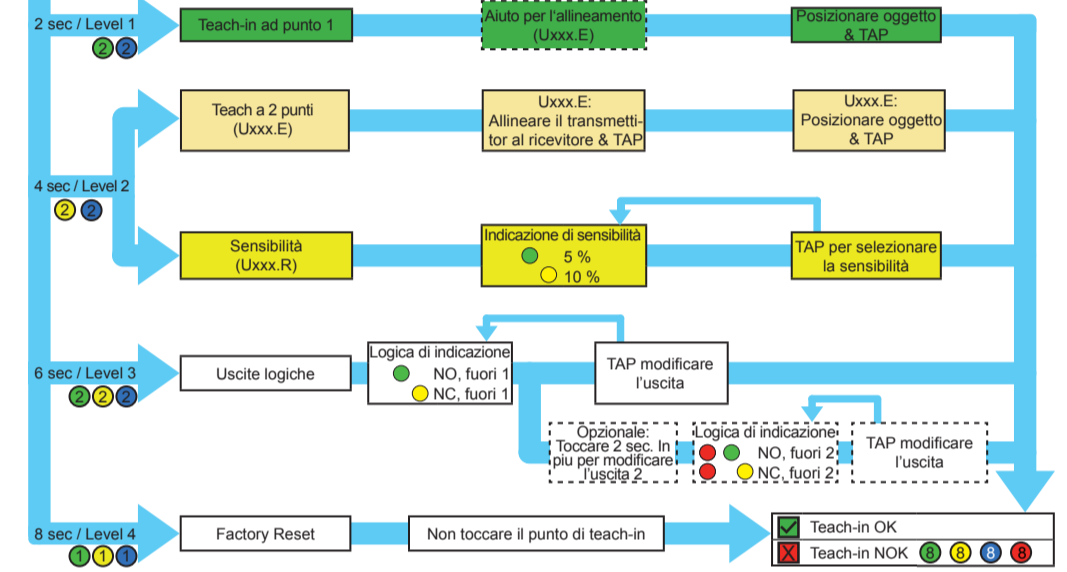
Istruzioni Teach-In

Selezionare il livello di Teach-In

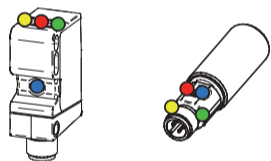
- Posizionare l'utensile ferromagnetico come mostrato a destra di attivare qTeach® o collegare il cavo Teach-In a +Vs.
- Se l'utensile viene riconosciuto correttamente, entrambi i LED si accendono.
- Rimuovere dopo n sec. per il livello desiderato.
- En mode normal l'entrée Teach est à 0V
- Pour un Teach externe, connecter l'entrée Teach correspondant au +Vs

Informazione generali

- La funzione di qTeach® si disattiva dopo 5min dall'accensione del sensore.*
- Se disabilitato, qTeach® può essere riattivato mediante riapplicazione della potenza 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.



Información LED



Leyenda

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

Operating Mode (ES)

LED Indicators	green	yellow	blue
Power On	●		
Cortocircuito	①		
Salida 1 activa		●	
Salida 1 señal dentro del intervalo		⑧	
Salida 2 activa		●	
Salida 2 señal dentro del intervalo		⑧	
qTeach disponible			●

Modo Teach-In Ver instrucciones Teach-In

LED 指示灯



图例

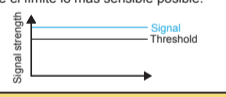
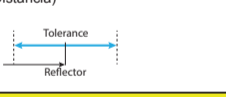
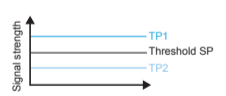
- LED 亮
- LED 闪烁 1 Hz
- LED 闪烁 2 Hz
- LED 闪烁 8 Hz

操作模式 (CN)

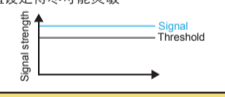
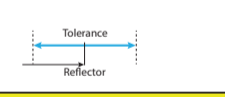

LED 指示灯	绿	黄	蓝
通电	●		
短路	①		
输出 1 激活		●	
输出 1 信号接近阈值		⑧	
输出 2 激活		●	
输出 2 信号接近阈值		⑧	
qTeach 可使用			●

Teach-in 模式 详见 Teach-in 说明

Descripción Teach-In Nivel 1 & 2

	U500.E / UR18.E	U500.R / UR18.R
Nivel 1	1-Point Teach Aprende la señal y define el límite lo más sensible posible. 	1 punto de enseñanza de salida 1 Aprender la posición del reflector (Distancia). 
Nivel 2	2-Point Teach Define el punto de conmutación en la posición media de los puntos de enseñanza. 	Tolerancia del reflector Define el nivel de sensibilidad. La tolerancia del reflector se refiere a la variación máxima en la posición del reflector. Ejemplo: 500 mm +/-5%

Teach-In 说明 1 级 & 2 级

	U500.E / UR18.E	U500.R / UR18.R
1级	1点设定 设定反光板并将阈值设定得尽可能灵敏。 	1点设定 输出 1 设定反光板的位置(距离). 
2级	2点设定 设置TP1和TP2之间的阈。 	反光板公差 设定灵敏度。 反光板公差表示相对允许的反光板位置的变化量。 示例: 500 mm ± 5%

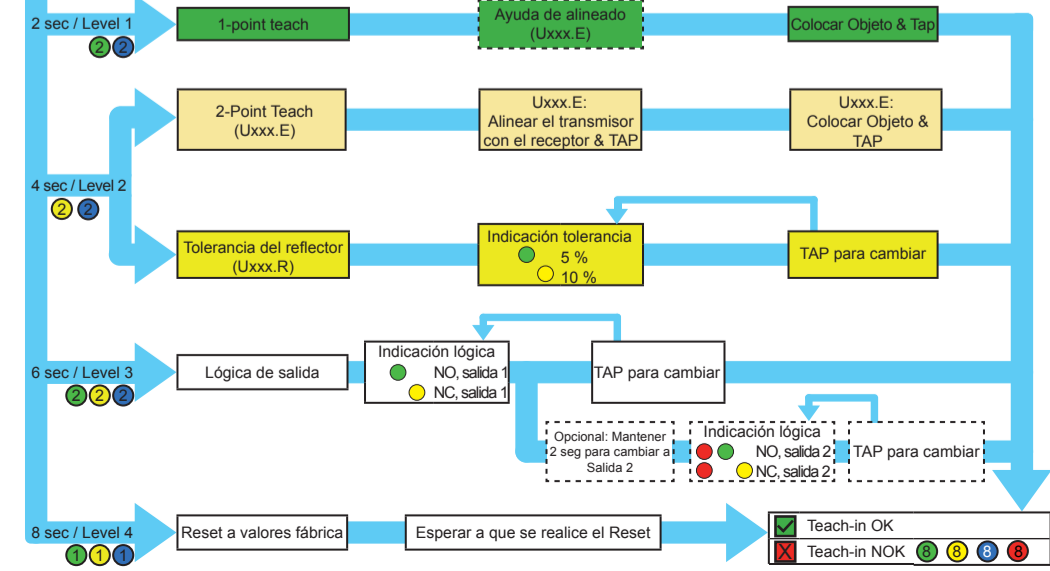
Instrucciones Teach-In

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.

Información general

- qTeach® se bloquea 5 min después de la alimentación.*
- Si está bloqueado, qTeach® puede ser reactivado mediante la aplicación de energía o conectando el cable de Teach-In para >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 detach se pone a 0V.
- Para teach-in externo, conectar el cable teach a +Vs.



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秒后按指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

总览:

- qTeach 开启5分钟后自行锁定, 蓝色LED 熄灭。
- 在设定模式下输出变至 0 V.
- 在通常情况设定先接至 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)
- 放置工具 > 12 秒.: 在等级设定过程中而不做任何更改。

