

# Ultrasonic sensors

01.2025/ Version 2.0  
11722623

UR18

EN  
DE  
FR  
IT  
ES  
CN



NexSonic®  
qTarget®  
qTeach®

www.baumer.com

**Baumer**

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# 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

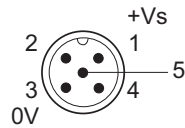
# Related Models

- UR18 Models:**  
UR18.D (Analog output)  
UR18.P (1-Point switch output)  
UR18.P (2-Point switch output)  
UR18.D (Analog output retro fit version)

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

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# Connection Diagrams



	1-Point switch	2-Point switch	Analog measurement out	Analog measurement out
	.P	.P	.D	.D (retro)
1 - Brown BN	+Vs			
2 - White WH	n.c.	Push-Pull out 2	U or I / Teach-In	Teach-in
3 - Blue BU	0 V			
4 - Black BK	IO-Link / Push-Pull out 1			U or I
5 - Gray GY	Teach-in / Sync / Mux selectable 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

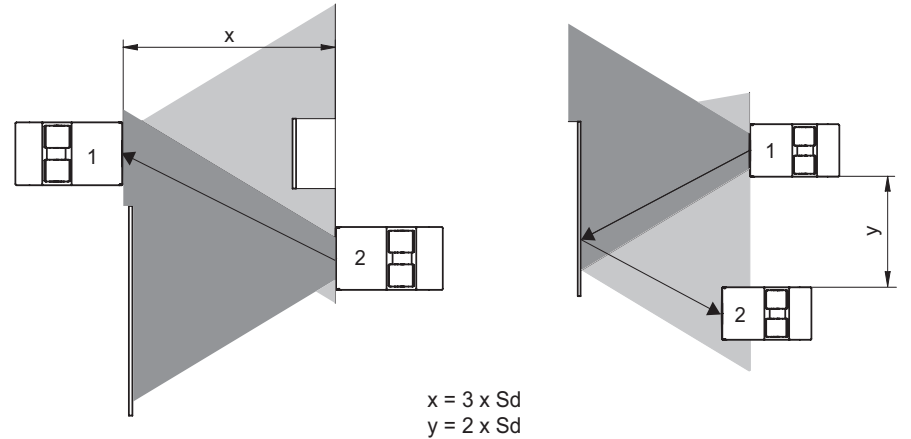
Minimal distance between two sensors

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

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

# Operating Mode

EN

LED Indicators	Green	Yellow	Red	Blue
Power on	●			
Short circuit	● (1)			
Output 1 active		● (8)		
Output 1 signal close to threshold		● (8)		
Output 2 active			● (8)	
Output 2 signal close to threshold			● (8)	
qTeach not locked				●
Teach-in mode				●

● 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

# Betriebsmodus

DE

LED Indikatoren	Grün	Gelb	Rot	Blau
Betriebsanzeige	●			
Kurzschluss	● (1)			
Ausgang 1 aktiv		● (8)		
Ausgang 1 Signal nahe der Schwelle		● (8)		
Ausgang 2 aktiv			● (8)	
Ausgang 2 Signal nahe der Schwelle			● (8)	
qTeach verwendbar				●
Teach-in Modus				●

● Nur Sensoren mit 2 Ausgängen verfügen über eine rote LED

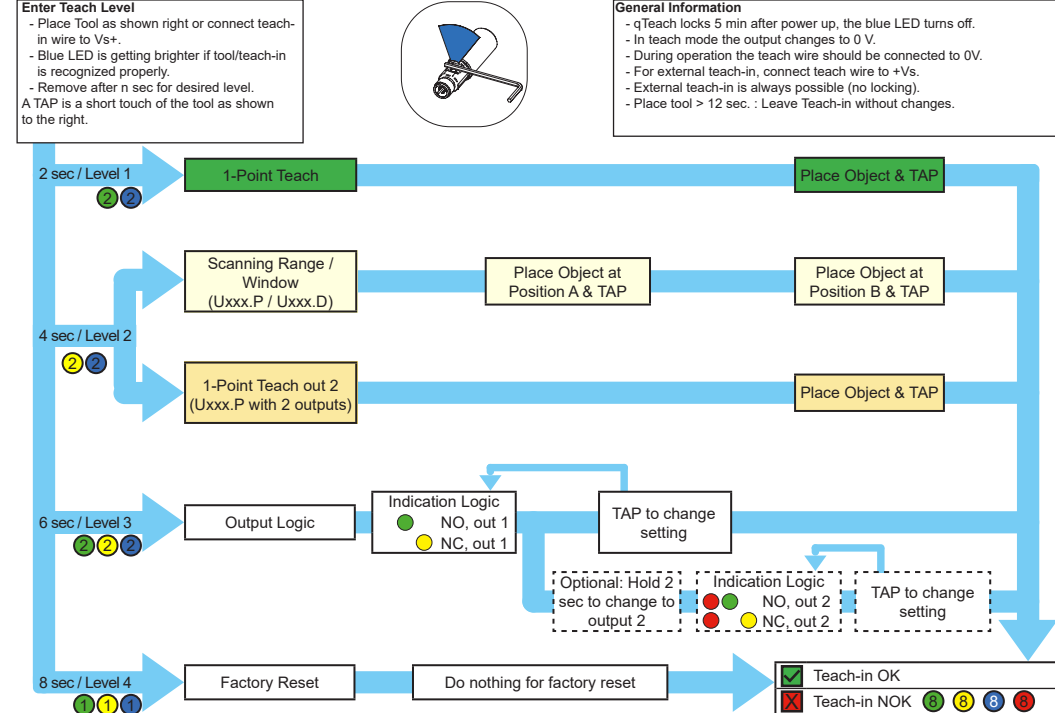
# Teach-In Description Level 1 & 2

	Uxxx.P with 1 output	Uxxx.D; for Uxxx.D (retro) Level 1 = Level 2	Uxxx.P with 2 outputs
<b>Level 1</b>	<b>1-Point Teach Output 1</b> Set the switchpoint SP of output 1 at the position of the object	<b>1-Point Teach Output 1</b> Set the switchpoint SP of output 1 at the position of the object	<b>1-Point Teach Output 1</b> Set the switchpoint SP of output 1 at the position of the object
<b>Level 2</b>	<b>Window Teach</b> set a window in which an object should be detected	<b>Scanning Range / Window</b> Set the scanning range related to the analogue value. Output 1 is active if an object is within the scanning range	<b>1-point Teach Output 2</b> Set the switchpoint of output 2 at the position of the object

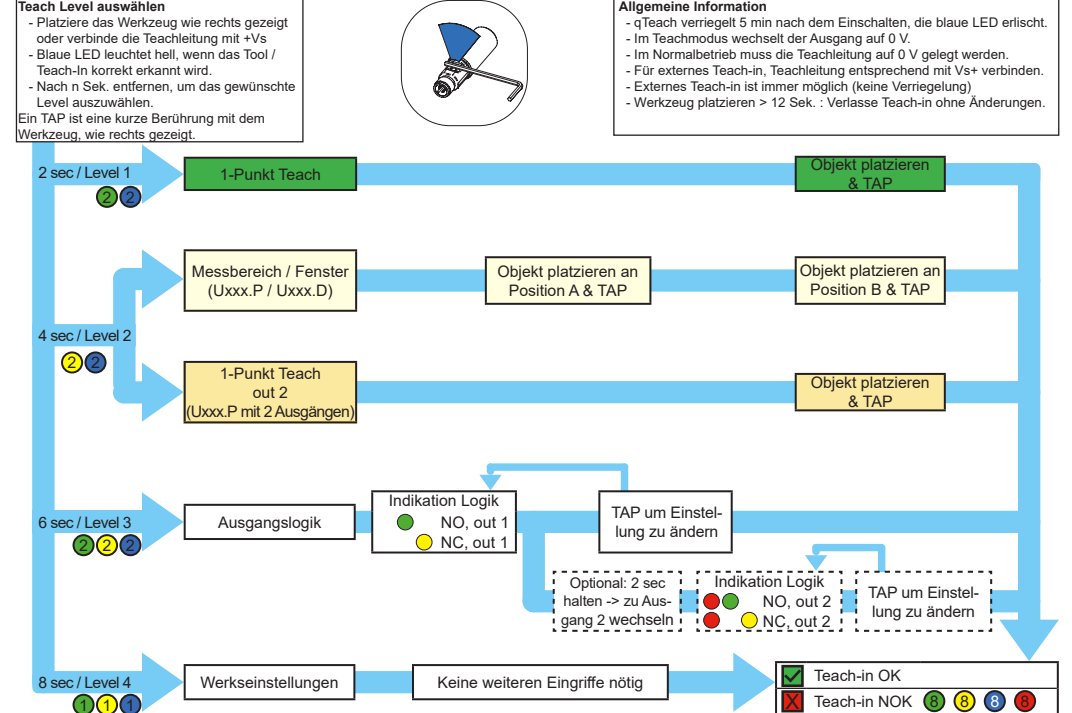
# Teach-In Beschreibung Level 1 & 2

	Uxxx.P mit 1 Ausgang	Uxxx.D; bei Uxxx.D (retro) Level 1 = Level 2	Uxxx.P mit 2 Ausgängen
<b>Level 1</b>	<b>1-Punkt Teach Ausgang 1</b> Setzt den Schaltpunkt SP des Ausgang 1 an der Position des Objektes	<b>1-Punkt Teach Ausgang 1</b> Setzt den Schaltpunkt SP des Ausgang 1 an der Position des Objektes	<b>1-Punkt Teach Ausgang 1</b> Setzt den Schaltpunkt SP des Ausgang 1 an der Position des Objektes
<b>Level 2</b>	<b>Fenster Teach</b> Definiert ein Schaltfenster, innerhalb welches ein Objekt erkannt werden soll	<b>Messbereich / Fenster</b> Definiert den mit dem analogen Ausgang verknüpften Messbereich. Ausgang 1 ist aktiv, wenn sich ein Objekt innerhalb des Messbereichs befindet	<b>1-Punkt Teach Ausgang 2</b> Setzt den Schaltpunkt SP des Ausgang 2 an der Position des Objektes


# Teach-In Instruction



# Teach-In Anleitung



### Indication LED



### Légende

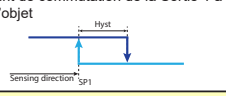
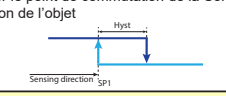
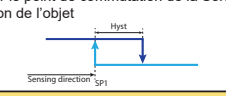
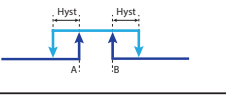
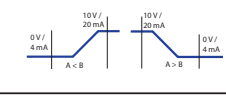
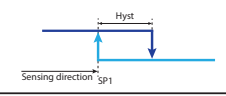
- LED ON
- LED clignotante 1 Hz
- LED clignotante 2 Hz
- LED clignotante 8 Hz

### Mode de fonctionnement

Indicateurs LED	Vert	Jaune	Rouge	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

### Description Teach-In Niveau 1 & 2

	Uxxx.P avec 1 Sortie	Uxxx.D; pour Uxxx.D (retro) Niveau 1 = Niveau 2	Uxxx.P avec 2 Sortie
<b>Niveau 1</b>	<b>Sortie 1: Teach 1 Point</b> Régler le point de commutation de la Sortie 1 à la position de l'objet 	<b>Sortie 1: Teach 1 Point</b> Régler le point de commutation de la Sortie 1 à la position de l'objet 	<b>Sortie 1: Teach 1 Point</b> Régler le point de commutation de la Sortie 1 à la position de l'objet 
<b>Niveau 2</b>	<b>Teach fenêtre</b> Régler une fenêtre dans laquelle un objet doit être détecté 	<b>Plage de mesure / Fenêtre</b> Régler la zone de mesure correspondante à la sortie analogique. La Sortie 1 est active si l'objet est dans la zone définie. 	<b>Teach 1 Point Sortie 2</b> Régler le point de commutation de la Sortie 2 à la position de l'objet 

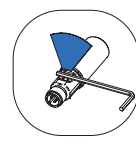
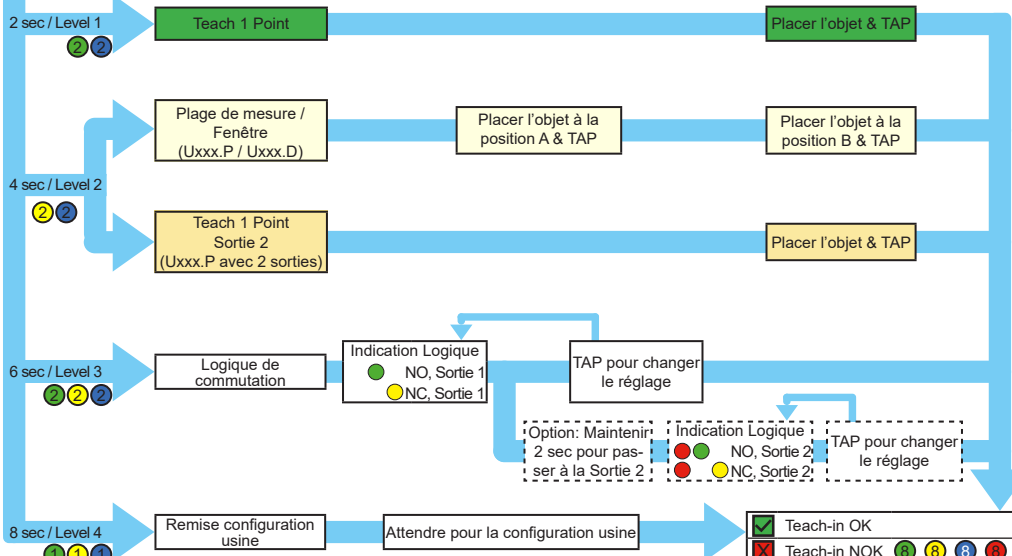
### Instructions Teach-In

**Entrée en mode Teach:**


- Placer l'outil comme indiqué ci-contre ou connecter le fil Teach-in au +Vs
- La LED bleue devient plus brillante si l'outil / Teach-in est reconnu correctement
- Enlever après n sec. en fonction du niveau de réglage souhaité
- Un TAP est une touche courte de l'outil comme présenté ci-contre

**Information Générale**

- qTeach se verrouille 5 min après la mise tension, la LED bleue s'éteint
- En mode Teach la sortie est à 0 V
- En mode normal l'entrée Teach est à 0 V
- Pour un Teach externe, connecter l'entrée Teach correspondant au +Vs
- Le Teach externe est toujours disponible (Pas de verrouillage)
- Placer l'outil > 12 sec.: quitter le mode Teach sans modification

### Indicazioni LED



### Legenda

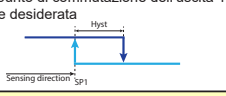
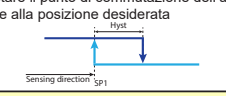
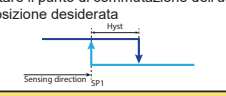
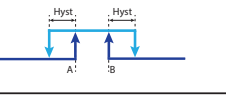
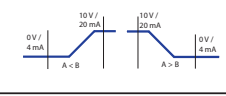
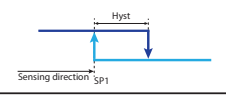
- LED on
- Lampeggiamento LED a 1 Hz
- Lampeggiamento LED a 2 Hz
- Lampeggiamento LED a 8 Hz

### Modalità operativa

Indicazioni LED	Verde	Giallo	Rosso	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

### Descrizione livelli di Teach-In 1 e 2

	Uxxx.P con 1 uscita	Uxxx.D; per Uxxx.D (retro) Livello 1 = Livello 2	Uxxx.P con 2 uscite
<b>Livello 1</b>	<b>Uscita digitale - teach ad 1 punto</b> Impostare il punto di commutazione dell'uscita 1 alla posizione desiderata 	<b>Uscita digitale - teach ad 1 punto</b> Impostare il punto di commutazione dell'uscita digitale alla posizione desiderata 	<b>Impostazione uscita 1</b> Impostare il punto di commutazione dell'uscita 1 alla posizione desiderata 
<b>Livello 2</b>	<b>Soglia di commutazione a finestra</b> Impostare una soglia di commutazione a finestra all'interno della quale rilevare l'oggetto 	<b>Campo di misura / Finestra</b> Impostare il range di misura relativo all'uscita analogica. Se l'uscita digitale non viene impostata nel livello 1 rimane sempre attiva all'interno del range di misura. 	<b>Impostazione uscita 2</b> Impostare il punto di commutazione dell'uscita 2 alla posizione desiderata 


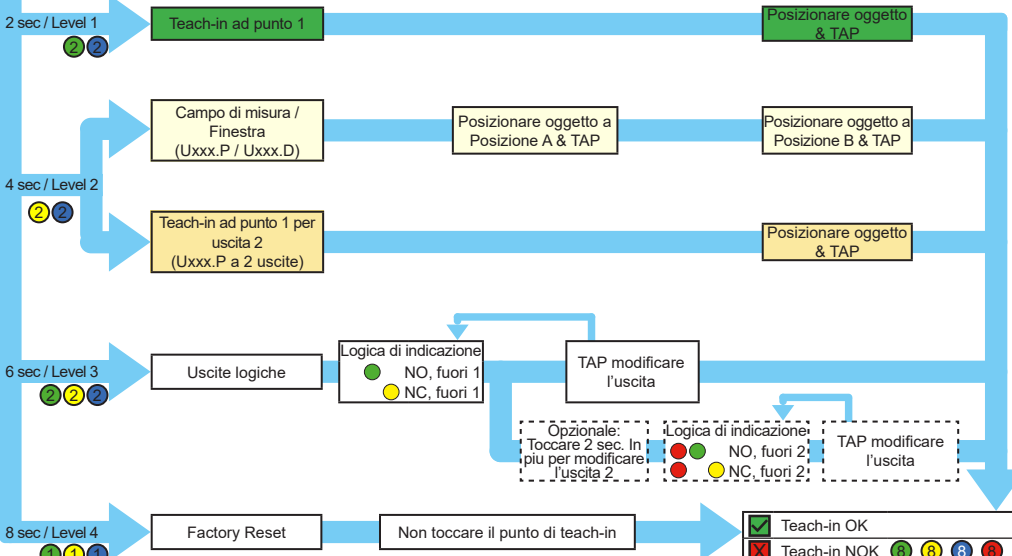
### Istruccionees Teach-In

**Inserisci il livello di conoscenza**

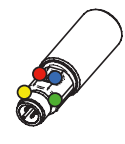
- Posizionare un utensile metallico sul punto di teach come mostrato a destra o collegare il cavo teach-in a +Vs
- L'illuminazione del LED blu aumenta di intensità se l'utensile/teach-in viene riconosciuto correttamente
- Rilasciare una volta trascorsi i secondi indicati nel disegno sottostante in funzione del livello di configurazione desiderato
- TAP indica un breve tocco con l'utensile sul punto di teach

**Informazione generali**

- La funzione di qTeach si disattiva dopo 5min dall'accessione del sensore. Il LED blu si spegne.
- Durante il teach l'output assume un valore pari a 0V.
- Durante il funzionamento standard del sensore il cavo del teach-in remoto è a 0V.
- Per il teach-in da remoto, connettere il cavo di teach a +Vs.
- Il teach-in da remoto è sempre possibile (non si disattiva dopo 5 min).
- Se l'utensile metallico rimane per più di 12 secondi, il Teach-in non subisce variazioni.

### Información LED



### Leyenda

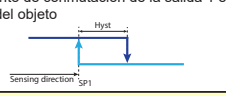
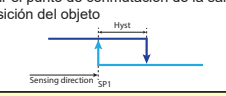
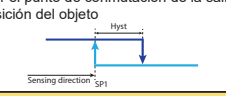
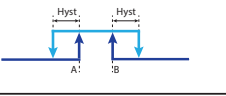
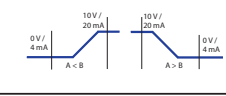
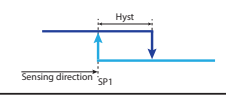
- LED ON
- LED parpadeo 1 Hz
- LED parpadeo 2 Hz
- LED parpadeo 8 Hz

### Operating Mode

LED Indicators	green	yellow	red	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

### Descripción Teach-In Nivel 1 & 2

	Uxxx.P con 1 salida	Uxxx.D; para Uxxx.D (retro) Nivel 1 = Nivel 2	Uxxx.P con 2 salida
<b>Nivel 1</b>	<b>1 punto de enseñanza de salida 1</b> Definir el punto de conmutación de la salida 1 en la posición del objeto 	<b>1 punto de enseñanza de salida 1</b> Definir el punto de conmutación de la salida 1 en la posición del objeto 	<b>1 punto de enseñanza de salida 1</b> Definir el punto de conmutación de la salida 1 en la posición del objeto 
<b>Nivel 2</b>	<b>Aprendizaje de ventana</b> Definir una ventana de detección del objeto 	<b>Rango de medición / Ventana</b> Definir el intervalo de medición respecto a la salida analógica. La salida 1 se activa si detecta un objeto dentro del intervalo. 	<b>1-Point Teach Salida 2</b> Definir el punto de conmutación de la salida 2 en la posición del objeto 

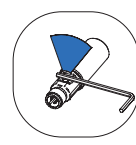
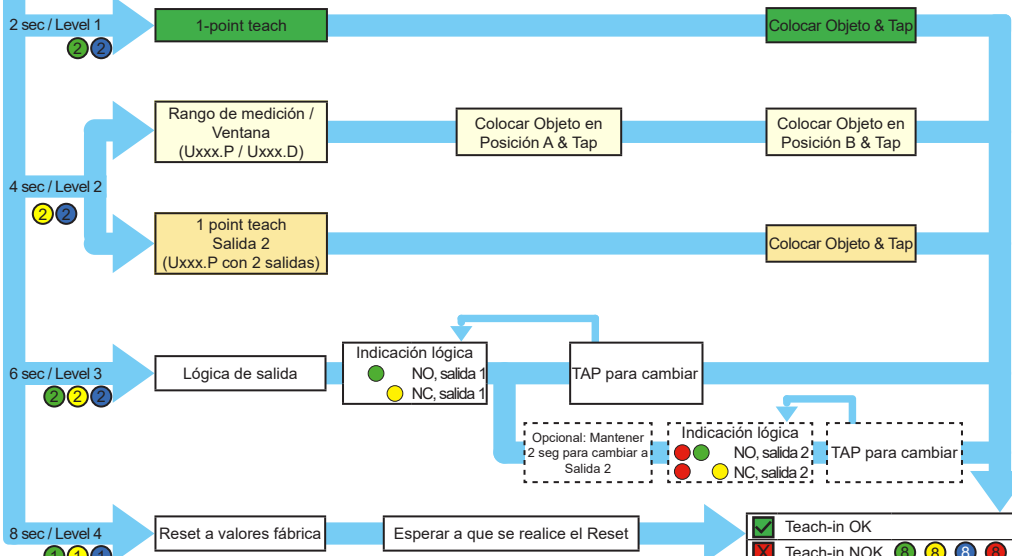
### Instrucciones Teach-In

**Entrar en modo Teach:**

- Colocar herramienta como indica la imagen o conectar el cable teach-in a +Vs
- El led azul se ilumina si la herramienta o señal teach-in se reconoce correctamente.
- Retirar tras n segundos para el nivel deseado
- TAP es un toque corto de la herramienta

**Información general**

- qTeach se bloquea 5 min después de la alimentación, el LED azul se apaga.
- En modo teach la salida cambia a 0 V.
- En modo normal el cable detach se pone a 0 V.
- Para teach-in externo, conectar el cable teach a +Vs
- El teach-in externo está siempre disponible (no se bloquea)
- Si se coloca la herramienta > 12 sec.: Deja el Teach-In sin cambios

### LED 指示灯



### 图例

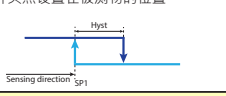
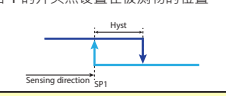
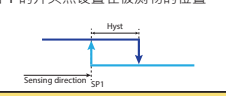
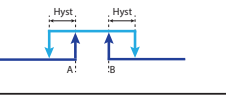
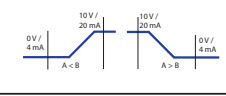
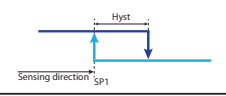
- LED 亮
- LED 闪烁 1 Hz
- LED 闪烁 2 Hz
- LED 闪烁 8 Hz

### 操作模式

LED 指示灯	绿	黄	红	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

### Teach-In 说明 1 级 & 2 级

	Uxxx.P 单输出	Uxxx.D; 用于 Uxxx.D (复古) 的 1 级=2 级	Uxxx.P 双输出
<b>1 级</b>	<b>1 点设定 输出 1</b> 将输出 1 的开关点设置在被测物的位置 	<b>1 点设定 输出 1</b> 将输出 1 的开关点设置在被测物的位置 	<b>1 点设定 输出 1</b> 将输出 1 的开关点设置在被测物的位置 
<b>2 级</b>	<b>窗口设定</b> 设置一个被测物应被检测到的窗口 	<b>测量范围/示教窗口</b> 设置与模拟值相对应的测量范围, 如果被测物处于测量范围内, 则输出 1 处于激活状态 	<b>1 点设定 输出 2</b> 将输出 2 的开关点设置在被测物的位置 

### 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
- 蓝色 LED 变得更亮, 如果工具或设定被正确识别
- 在 n 秒后档选定所需的等级是拿开触点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.
- 在通常情况下设定先接至 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.

