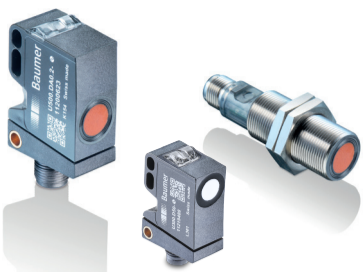


Ultrasonic sensors

27.02.2020 / Version 1.3
11209436

U500 / UR18 / U300

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)	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

U500 / U300 Models:

- UX00.D (Analog output)
- UX00.P (1-Point switch output)
- UX00.P (2-Point switch output)
- UX00.D (Analog output retro fit version)

UR18 Models:

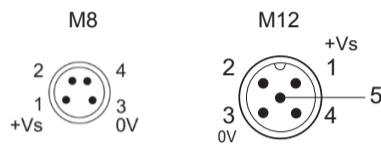
- UR18.D (Analog output)
- UR18.P (1-Point switch output)
- UR18.P (2-Point switch output)
- UR18.D (Analog output retro fit version)

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



www.baumer.com

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
3 - Blue BU	0 V			
4 - Black BK	IO-Link / Push-Pull out 1		U or I	
5 - Grey 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

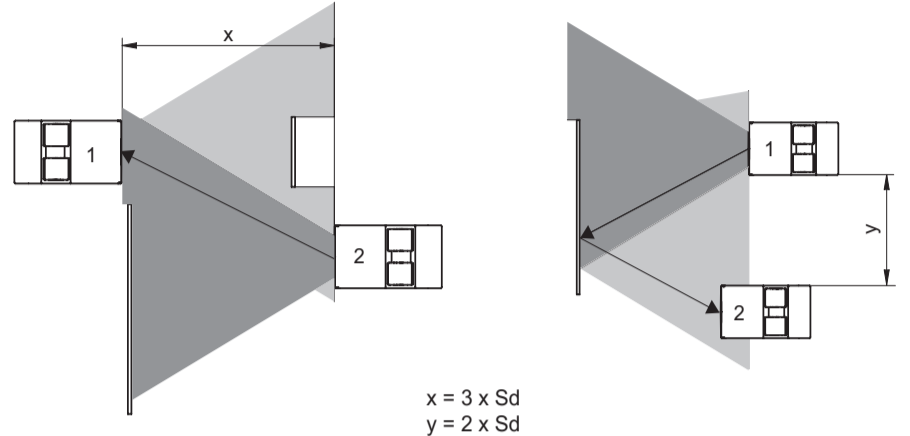
Minimal distance between two sensors

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

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				●

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

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				●

Nur Sensoren mit 2 Ausgängen verfügen über eine rote LED

Teach-In Description Level 1 & 2

	U500.P / UR18.P mit 1 Ausgang	U500.D / UR18.D	U500.P / UR18.P mit 2 Ausgängen
Level 1	1-Point Teach Output 1 Set the switchpoint SP of output 1 at the position of the object	1-Point Teach Output 1 Set the switchpoint SP of output 1 at the position of the object	1-Point Teach Output 1 Set the switchpoint SP of output 1 at the position of the object
Level 2	Window Teach set a window in which an object should be detected	Scanning Range / Window Teach Set the scanning range related to the analogue value. Output 1 is active if an object is within the scanning range	1-point Teach Output 2 Set the switchpoint of output 2 at the position of the object

Teach-In Beschreibung Level 1 & 2

	U500.P / UR18.P mit 1 Ausgang	U500.D / UR18.D	U500.P / UR18.P mit 2 Ausgängen
Level 1	1-Punkt Teach Ausgang 1 Setzt den Schalterpunkt SP des Ausgang 1 an der Position des Objektes	1-Punkt Teach Ausgang 1 Setzt den Schalterpunkt SP des Ausgang 1 an der Position des Objektes	1-Punkt Teach Ausgang 1 Setzt den Schalterpunkt SP des Ausgang 1 an der Position des Objektes
Level 2	Fenster Teach Definiert ein Schalterfenster, innerhalb welches ein Objekt erkannt werden soll	Messbereich / Fenster Teach Definiert den mit dem analogen Ausgang verknüpften Messbereich. Ausgang 1 ist aktiv, wenn sich ein Objekt innerhalb des Messbereichs befindet	1-Punkt Teach Ausgang 2 Setzt den Schalterpunkt SP des Ausgang 2 an der Position des Objektes

Teach-in Instruction

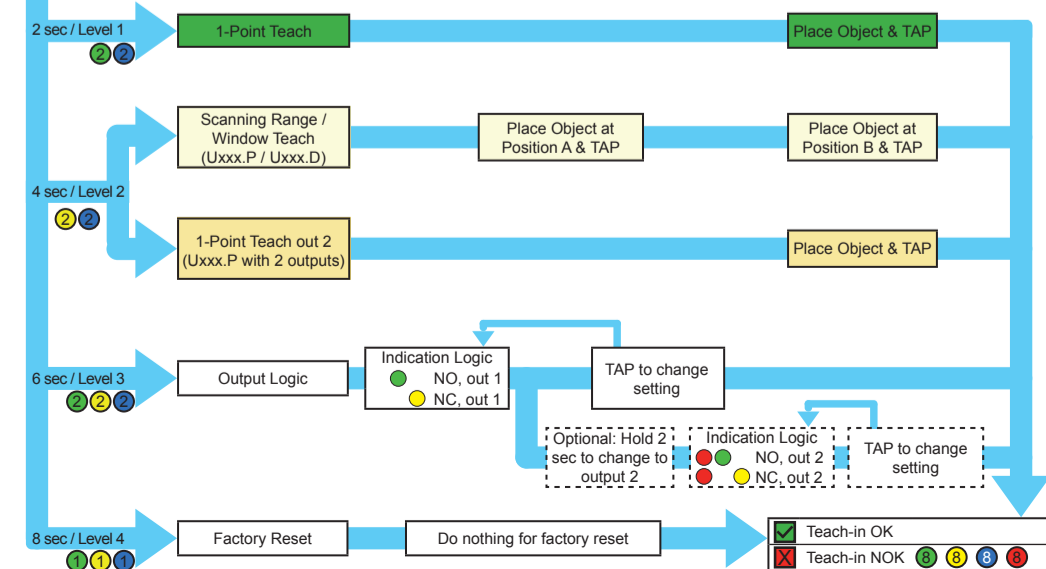
Enter Teach Level

- 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-applying power or by connecting the Teach-In wire 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.



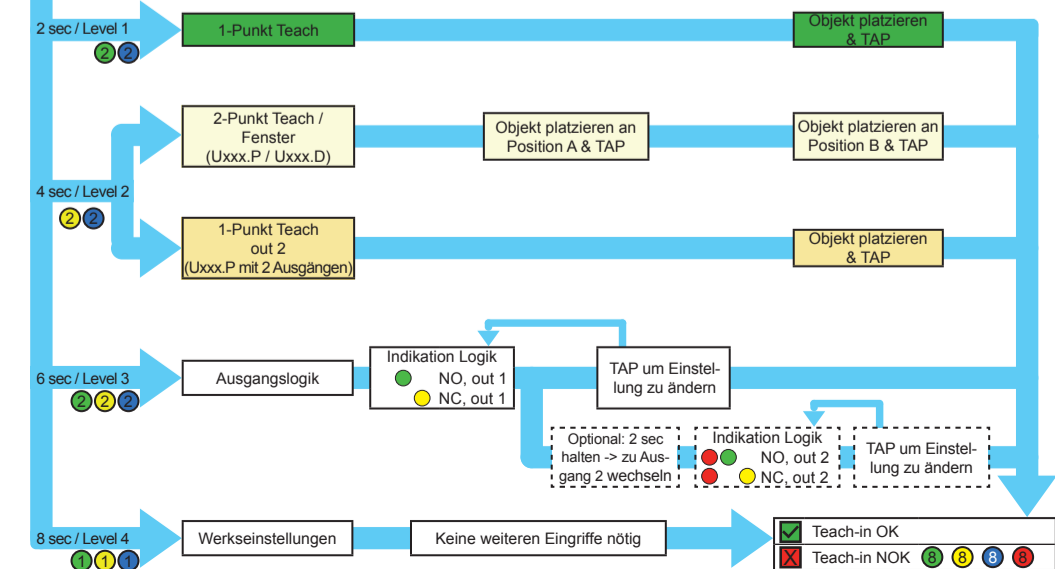
Teach-in Anleitung

Teach Level auswählen

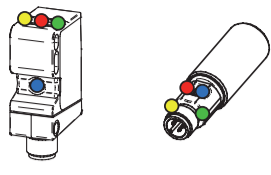
- Platziere das ferromagnetisch Werkzeug wie rechts dargestellt um qTeach® zu aktivieren oder verbinde die Teachleitung mit +Vs.
- Die grüne und gelbe LED leuchten auf, wenn das Werkzeug korrekt erkannt wird.
- Nach n Sek. entfernen, um das gewünschte Level auszuwählen.
- Ein TAP ist eine kurze Berührung (>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.



Indication LED



Légende

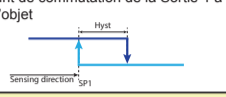
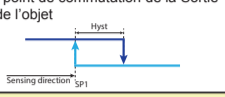
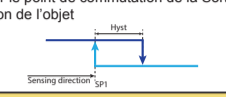
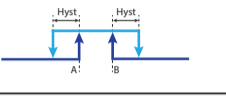
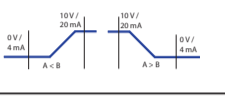
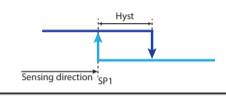
- LED ON
- LED clignotante 1 Hz
- LED clignotante 2 Hz
- LED clignotante 8 Hz

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

	U500.P / UR18.P avec 1 Sortie	U500.D / UR18.D	U500.P / UR18.P avec 2 Sortie
Niveau 1	Sortie 1: Teach 1 Point Régler le point de commutation de la Sortie 1 à la position de l'objet 	Sortie 1: Teach 1 Point Régler le point de commutation de la Sortie 1 à la position de l'objet 	Sortie 1: Teach 1 Point Régler le point de commutation de la Sortie 1 à la position de l'objet 
Niveau 2	Teach fenêtre Régler une fenêtre dans laquelle un objet doit être détecté 	Teach 2 Points / Fenêtre Régler la zone de mesure correspondante à la sortie analogique. La Sortie 1 est active si l'objet est dans la zone définie. 	Teach 1 Point Sortie 2 Régler le point de commutation de la Sortie 2 à la position de l'objet 

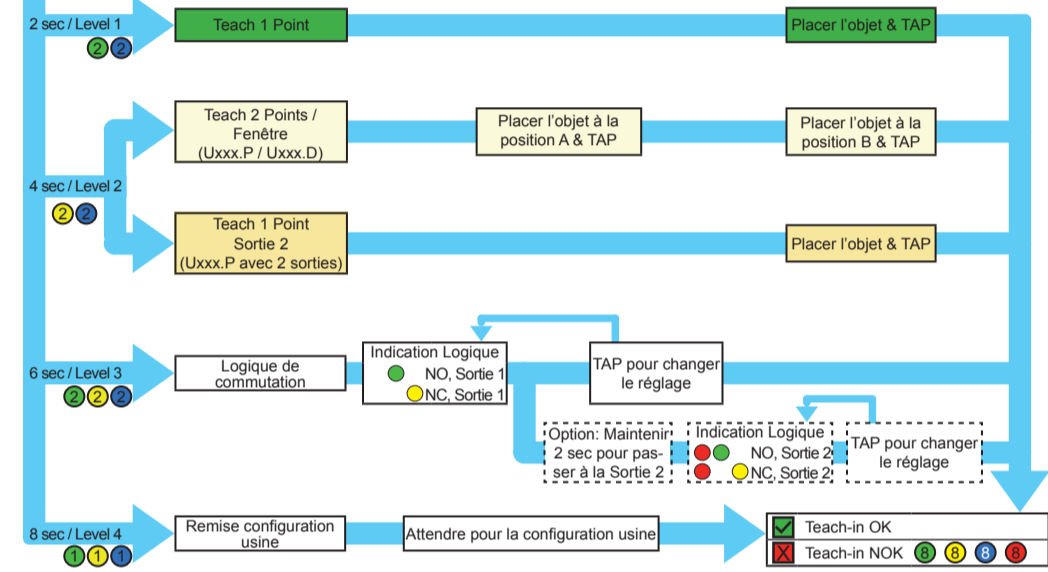
Instructions Teach-In

Entrée en mode Teach:

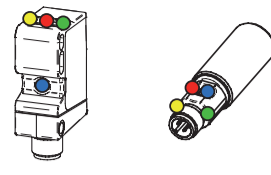
- Placer l'outil ferromagnétique comme indiqué ci-contre de activer qTeach® ou connecter le fil Teach-In au +Vs.
- Si le Teach est activé correctement, les LED jaune et verte sont allumées.
- Enlever après n sec pour le niveau souhaité.
- Un TAP est une courte touche (>100 ms) de l'outil comme présenté 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



Indicazioni LED



Legenda

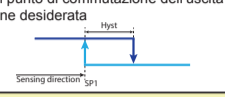

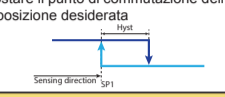
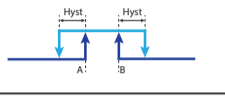
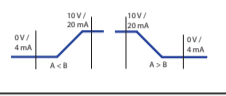
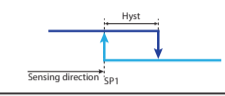
- LED on
- Lampeggiamento LED a 1 Hz
- Lampeggiamento LED a 2 Hz
- Lampeggiamento LED a 8 Hz

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

	U500.P / UR18.P con 1 uscita	U500.D / UR18.D	U500.P / UR18.P con 2 uscite
Livello 1	Uscita digitale - teach ad 1 punto Impostare il punto di commutazione dell'uscita 1 alla posizione desiderata 	Uscita digitale - teach ad 1 punto Impostare il punto di commutazione dell'uscita digitale alla posizione desiderata 	Impostazione uscita 1 Impostare il punto di commutazione dell'uscita 1 alla posizione desiderata 
Livello 2	Soglia di commutazione a finestra Impostare una soglia di commutazione a finestra all'interno della quale rilevare l'oggetto 	Teach del range di misura a 2 punti 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. 	Impostazione uscita 2 Impostare il punto di commutazione dell'uscita 2 alla posizione desiderata 

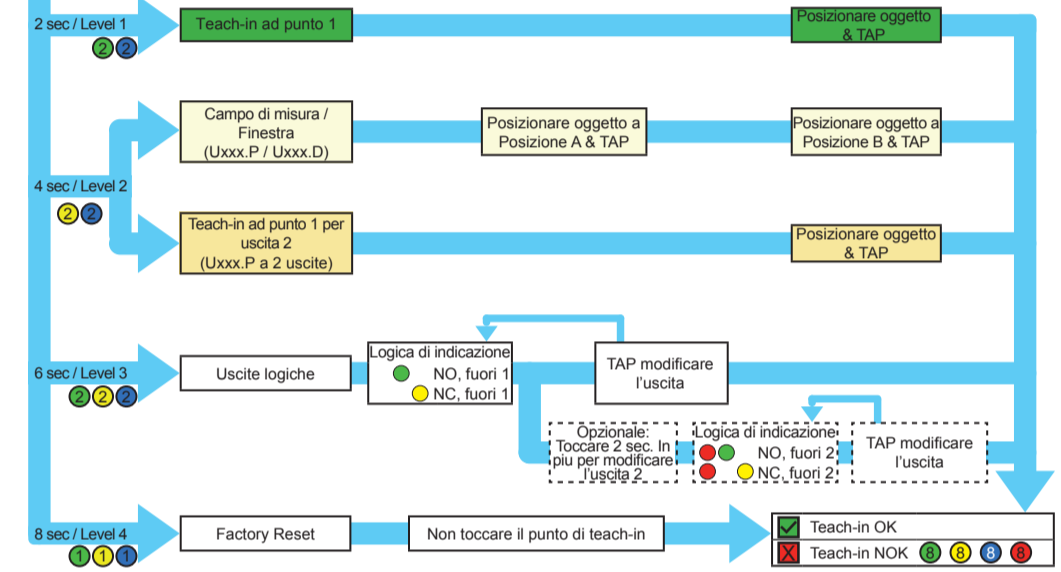
Istruzioni Teach-In

Selezionare il livello di Teach-In

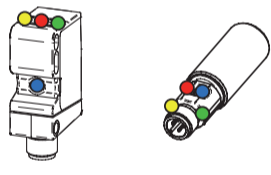
- Posizionare l'utensile ferromagnetico come mostrato a destra di attivare qTeach® o collegare il cavo Teach-In a +Vs.
- Se l'utensile viene riconosciuto correttamente, entrambi i LED si accendono.
- Rimuovere dopo n sec. per il livello desiderato.
- Un TAP è un breve tocco (>100 ms) dell'utensile come mostrato a destra.

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

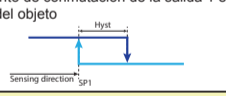
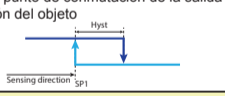
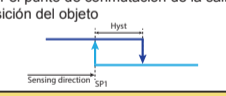
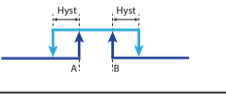
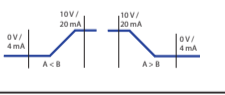
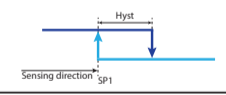
- LED ON
- LED parpadeo 1 Hz
- LED parpadeo 2 Hz
- LED parpadeo 8 Hz

Operating Mode

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

	U500.P / UR18.P con 1 salida	U500.D / UR18.D	U500.P / UR18.P con 2 salida
Nivel 1	1 punto de enseñanza de salida 1 Definir el punto de conmutación de la salida 1 en la posición del objeto 	1 punto de enseñanza de salida 1 Definir el punto de conmutación de la salida 1 en la posición del objeto 	1 punto de enseñanza de salida 1 Definir el punto de conmutación de la salida 1 en la posición del objeto 
Nivel 2	Aprendizaje de ventana Definir una ventana de detección del objeto 	2-Point Teach/Ventana Definir el intervalo de medición respecto a la salida analógica. La salida 1 se activa si detecta un objeto dentro del intervalo. 	1-Point Teach Salida 2 Definir el punto de conmutación de la salida 2 en la posición del objeto 

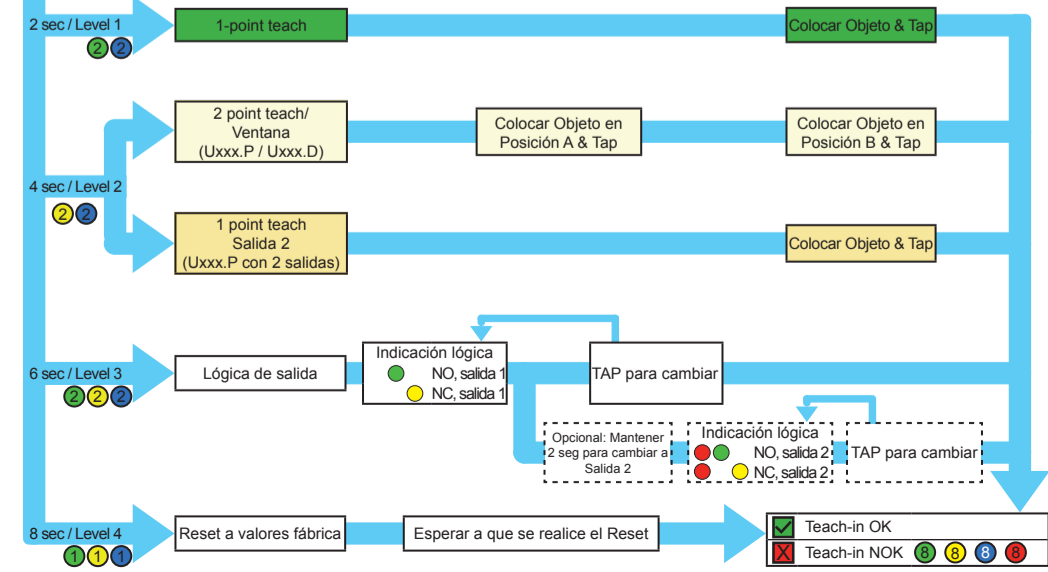
Instrucciones Teach-In

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.



LED 指示灯



图例

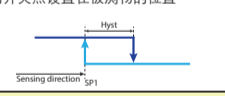
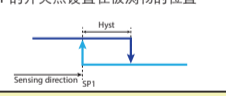
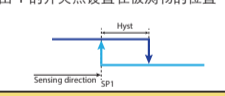
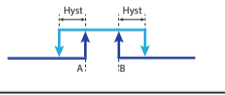
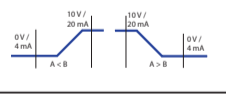
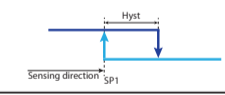
- LED 亮
- LED 闪烁 1 Hz
- LED 闪烁 2 Hz
- LED 闪烁 8 Hz

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

	U500.P / UR18.P 单输出	U500.D / UR18.D	U500.P / UR18.P 双输出
1级	1点设定 输出 1 将输出 1 的开关点设置在被测物的位置 	1点设定 输出 1 将输出 1 的开关点设置在被测物的位置 	1点设定 输出 1 将输出 1 的开关点设置在被测物的位置 
2级	窗口设定 设置一个被测物应被检测到的窗口 	2点设定/窗口设定 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 	1点设定 输出 2 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
- 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 秒后确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.

