

Elektrischer Anschluss

Option:

1

+UB

2

Q2

3

0 V

4

Q1

5

n.c.

Option:

1

+UB

2

Q2

3

0 V

4

Q1

5

n.c.

○ = Hellschaltung

● = Dunkelschaltung

1

5

4

2

3

○ = Light on

● = Dark on

Electrical connection

Option:

1

+UB

2

Q2

3

0 V

4

Q1

5

n.c.

Option:

1

+UB

2

Q2

3

0 V

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Q1

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n.c.

○ = Light on

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○ = Light on

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Company Registration No. 199003130E

Reflexionslichttaster, energetisch

mit Gerätestecker M12 x 1, 5-polig

Diffuse mode sensor

with 5-pin, M12 x 1 connector

WTS10-12/20/105

CE

UL

US

Part. 200958

Date: 02/20/2018

Doc. 45-2389G

DIN A3 -> A7

PEPPERL+FUCHS

SENSING YOUR NEEDS

www.pepperl-fuchs.com

Technische Daten					
Allgemeine Daten					
Tastbereich	2 ... 12 mm				
Referenzobjekt	Kupfer-Schweißelektrode, Durchmesser: 16 mm , Stirnfläche: 6 mm				
Lichtsender	LED				
Lichtart	rot, Wechsellicht , 640 nm				
Fremdlichtgrenze	Gleichlicht 40000 Lux , Wechsellicht 5000 Lux				
Kippwinkel	± 1,5 °				
Lagetoleranz	± 2 mm				
Anzeigen/Bedienelemente					
Betriebsanzeige	LED grün: Power on				
Funktionsanzeige	LED gelb: Schaltzustand LED rot: Vorausfallanzeige				
Teach-In-Anzeige	LED, grün/gelb blinkend (ca. 4 Hz) Teach Fehler: LEDs gelb/grün; gegenphasiges Blinken; 8,0 Hz				
Bedienelemente	Teach-In-Taste				
Elektrische Daten					
Betriebsspannung	U _B	10 ... 30 V DC			
Leerlaufstrom	I ₀	≤ 70 mA			
Ausgang					
Schaltungsart	hellschaltend				
Signalausgang	2 Schaltausgänge pnp, Schließer kurzschlussfest verpolgeschützt				
Schaltstrom	max. 100 mA				
Schaltfrequenz	f	100 Hz			
Ansprechzeit	5 ms				
Umgebungsbedingungen					
Umgebungstemperatur	0 ... 50 °C (32 ... 122 °F) Die Schaltgenauigkeit bleibt erhalten, wenn die Umgebungstemperatur nach dem Teach-In nicht mehr als ±7 °C abweicht.				
Lagertemperatur	-20 ... 70 °C (-4 ... 158 °F)				
Mechanische Daten					
Schutzart	IP67				
Anschluss	Gerätestecker M12 x 1, 5-polig				
Material	Gehäuse	PC + ABS			
	Lichtaustritt	kratzfeste Mineralglasscheibe			
Masse	80 g				
Normen- und Richtlinienkonformität					
Normenkonformität	Produktnorm	EN 60947-5-2:2007 IEC 60947-5-2:2007			
	Schock- und Stoßfestigkeit	IEC / EN 60068, Halb-Sinus, 50 g je X, Y und Z Richtung			
Vibrationsfestigkeit		IEC / EN 60068-2-6, Sinus, 10 - 150 Hz, 5 g je X, Y und Z Richtung			
Zulassungen und Zertifikate					
Schutzklasse	II, Bemessungsspannung ≤ 250 V AC bei Verschmutzungsgrad 1-2 nach IEC 60664-1				
UL-Zulassung	cULus Listed				
CCC-Zulassung	Produkte, deren max. Betriebsspannung ≤36 V ist, sind nicht zulassungspflichtig und daher nicht mit einer CCC-Kennzeichnung versehen.				

Technical data					
General specifications					
Detection range	2 ... 12 mm				
Reference target	Copper welding-electrode Diameter: 16 mm , Front end: 6 mm				
Light source	LED				
Light type	modulated visible red light , 640 nm				
Ambient light limit	continuous light 40000 Lux , Modulated light 5000 Lux				
Tilting angle	± 1.5 °				
Position tolerance	± 2 mm				
Indicators/operating means					
Operation indicator	LED green: Power on				
Function indicator	LED yellow: switching state LED red: Pre-fault indication				
Teach-In indicator	LED, green/yellow flashing (approx. 4 Hz) Teach Error:LED green/yellow non equiphase flashing; 8.0 Hz				
Control elements	Teach-In key				
Electrical specifications					
Operating voltage	U _B	10 ... 30 V DC			
No-load supply current	I ₀	≤ 70 mA			
Output					
Switching type	light on				
Signal output	2 switch outputs PNP, NO short-circuit protected reverse polarity protected				
Switching current	max. 100 mA				
Switching frequency	f	100 Hz			
Response time	5 ms				
Ambient conditions					
Ambient temperature	0 ... 50 °C (32 ... 122 °F) The switching accuracy will remain, if the temperature after Teach-In does not varies more than ±7 °C				
Storage temperature	-20 ... 70 °C (-4 ... 158 °F)				
Mechanical specifications					
Degree of protection	IP67				
Connection	5-pin, M12 x 1 connector				
Material	Housing	PC + ABS			
	Optical face	Scratch resistant mineral glass lens			
Mass	80 g				
Compliance with standards and directives					
Standard conformity	Product standard	EN 60947-5-2:2007 IEC 60947-5-2:2007			
	Shock and impact resistance	IEC / EN 60068, half-sine, 50 g in each X, Y and Z directions			
Vibration resistance		IEC / EN 60068-2-6. Sinus. 10 -150 Hz, 5 g in each X, Y and Z directions			
Approvals and certificates					
Protection class	II, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1				
UL approval	cULus Listed				
CCC approval	CCC approval / marking not required for products rated ≤36 V				

Sicherheitshinweise:

• Vor der Inbetriebnahme Betriebsanleitung lesen

• Anschluss, Montage und Einstellung nur durch Fachpersonal

• Kein Sicherheitsbauteil gemäß EU-Maschinenrichtlinie

Abmessungen

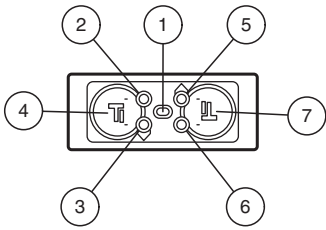
alle Maße in mm

Technical drawing of the WTS10-12/20/105 sensor. The side view shows a cylindrical body with an M12 connector at the bottom. Dimensions include a diameter of 20 ± 0.3 mm for the top section, a total height of 90 mm, and a mounting flange diameter of 40 mm. The front view shows the sensor's footprint with a 50 mm width and 19 mm height for the top section. It also shows the positions of the optical axes (I and II) and the mounting holes (4x 4.2 mm). A bottom view shows the internal LED layout.

all dimensions in mm

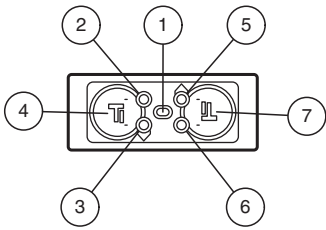
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Anzeigen/Bedienelemente



1	LED Power On	grün
2	LED Kanal I	rot
3	LED Kanal I	gelb
4	Teach-In Kanal I	
5	LED Kanal II	gelb
6	LED Kanal II	rot
7	Teach-In Kanal II	

Indicators/operating means



1	LED Power On	green
2	LED channel I	red
3	LED channel I	yellow
4	Teach-In channel I	
5	LED channel II	yellow
6	LED channel II	red
7	Teach-In channel II	

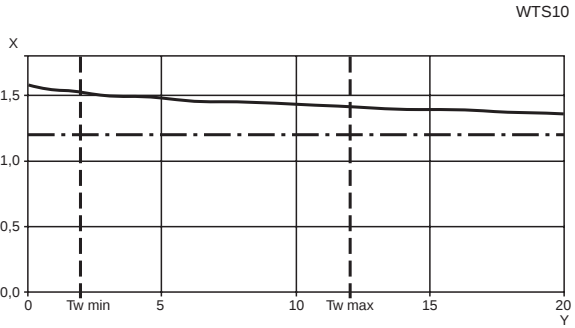
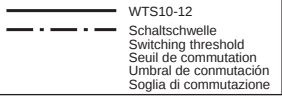
Signalamplitude
Signal amplitude
Amplitude du signal

Amplitud de señal
Ampiezza del segnale

(Target orthogonal = 0°)
(target orthogonal = 0°)
(cible orthogonale = 0°)
(objetivo ortogonal = 0°)
(target ortogonale = 0°)

X: Signalamplitude [V]
Signal amplitude [V]
Amplitude du signal [V]
Amplitud de señal [V]
Ampiezza del segnale [V]

Y: Tastweite [mm]
Detection range [mm]
Largeur de marquage [mm]
Rango de detección [mm]
Profondità di scansionamento [mm]



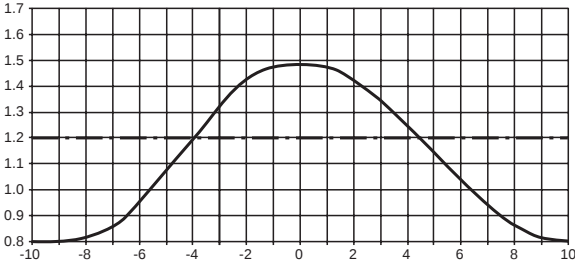
Signalamplitude
Signal amplitude
Amplitude du signal

Amplitud de señal
Ampiezza del segnale

bei Verschiebung des Targets
for displacement of the target
en cas de déplacement de la cible
en caso de desplazamiento del objetivo
con spostamento del target

X: Signalamplitude [V]
Signal amplitude [V]
Amplitude du signal [V]
Amplitud de señal [V]
Ampiezza del segnale [V]

Y: Verschiebeweg X [mm]
Displacement X [mm]
Déplacement X [mm]
Camino de desplazamiento X [mm]
Percorso di spostamento X [mm]



Signalamplitude
Signal amplitude
Amplitude du signal

Amplitud de señal
Ampiezza del segnale

bei Verkipfung des Targets
for tilting of the target
en cas d'inclinaison de la cible
en caso de inclinación del objetivo
con ribaltamento del target

X: Signalamplitude [V]
Signal amplitude [V]
Amplitude du signal [V]
Amplitud de señal [V]
Ampiezza del segnale [V]

Y: Kippwinkel [Grad]
Tilt angle [degrees]
Ange d'inclinaison [degré]
Ángulo de inclinación [grados]
Angolo di ribaltamento [gradi]

