SMART SENSOR BUSINESS

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the sensor people





Part no.: 53800240 RSL440-XL/CU429-10 Safety laser scanner



Figure can vary

Contents

- Technical data
- Dimensioned drawings
- Electrical connection
- · Operation and display
- Notes
- Accessories

Part no.: 53800240 – RSL440-XL/CU429-10 – Safety laser scanner

Technical data

Basic data	
Series	RSL 400
Application	Mobile danger zone guarding Mobile side guarding Stationary access guarding Stationary danger zone guarding
Functions	
Functions	Data output, configurable Dynamic contactor monitoring (EDM), selectable E-stop linkage Four-field mode Resolution, selectable Safe time delay, internal
Characteristic parameters	
Туре	3 , IEC/EN 61496
SIL	2, IEC 61508
SILCL	2 , IEC/EN 62061
Performance Level (PL)	d , EN ISO 13849-1
PFH _D	9E-08 per hour
Mission time T _M	20 years , EN ISO 13849-1
Category	3 , EN ISO 13849
Protective field data	
Scanning angle	270 °
Minimum adjustable range	50 mm
Number of field pairs, reversible	Up to 100
Number of quads, reversible	50
Number of protective functions	2 Piece(s)
Number of independent sensor configurations	Up to 10
Diffuse reflection, min.	1.8 %
Operating range	0 8.25 m
Warning field data	
Number of field pairs	Up to 100
Operating range	0 20 m
Object size	150 mm x 150 mm
Diffuse reflection, min.	10 %
Optical data	
Light source	Laser, Infrared
Laser light wavelength	905 nm
Laser class	1 , IEC/EN 60825-1:2007
Transmitted-signal shape	Pulsed
Repetition frequency	90 kHz
Measurement data	
Distance resolution	1 mm
Detection range	0 50 m

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Diffuse reflection	20 %		
Angular resolution	0.1 °		
Electrical data	Overveltage protection		
Protective circuit	Overvoltage protection		
Performance data	24.1/ DC 20 20.0/		
Supply voltage UB	24 V , DC , -30 20 %		
Current consumption (without load), max.	700 mA , (use power supply unit with 3 A)		
Power consumption, max.	17 W , For 24 V, plus output load		
Outputs			
Number of safety-related switching outputs (OSSDs)	4 Piece(s)		
Safety-related switching outputs			
Туре	Safety-related switching output OSSD		
Switching voltage high, min.	20.8 V		
Switching voltage low, max.	2 V		
Voltage type	DC		
Safety-related switching output 1			
Assignment	Connection 1, gray wire		
Switching element	Transistor , PNP		
Safety-related switching output 2			
Assignment	Connection 1, pink wire		
Switching element	Transistor , PNP		
Safety-related switching output 3			
Assignment	Connection 1, yellow/gray wire		
Switching element	Transistor, PNP		
Safety-related switching output 4			
Assignment	Connection 1, pink/green wire		
Switching element	Transistor, PNP		
Service interface			
уре	Bluetooth		
Bluetooth			
Function	Configuration/parametering		
Frequency band	2,400 2,483.5 MHz		
Radiated transmitting power	Max. 4.5 dBm (2.82 mW), class 2		
Гуре	USB		
USB			
Function	Configuration/parametering		
Connection	USB 2.0 mini-B, socket		
Transmission speed, max.	12 Mbit/s		
Cable length	≤ 5m Longer cable lengths are possible using active cables.		
Connection			

Number of connections

2 Piece(s)

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Type of connection Cable Function Machine interface Cable length 10.000 mm Sheathing material PVC Cable cold Black Number of conductors 23 wife Wire cross section supply 1 mm² Connector Connector Connector Connector Function Data Interface Thread size M12 Type of connector Connector Function Data Interface Thread size M12 Type of connector Cable resistance, max. Encoding D-coded Cable resistance, max. 15 Ω Techanical data Metal imension (W x H x L) 140 mm x 149 mm x 140 mm ousing material Plastic/PC et weight 3.000 g ousing color Yellow, RAL 1021 weight Solog g ousing color Yellow, RAL 1021 Weight Solog g ousing color Yellow, RAL 1021 w	Connection 1	
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EN 60068-2-6

Test procedure for oscillation in accordance with standard

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Test procedure for continuous shock in accordance with standard	IEC 60068-2-29
US patents	US 10,304,307B
	US 7,656,917 B
	US 7,696,468 B
	US 8,520,221 B
Classification	
Customs tariff number	85365019
eCl@ss 8.0	27272705
eCl@ss 9.0	27272705
•	

EC002550

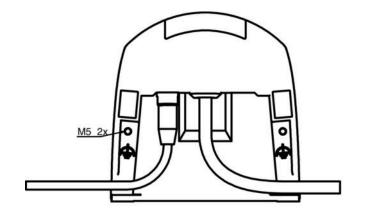
Dimensioned drawings

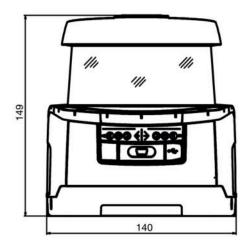
All dimensions in millimeters

ETIM 6.0

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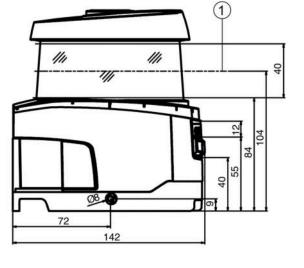
Dimensions safety laser scanner with connection unit





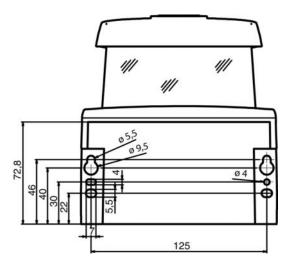




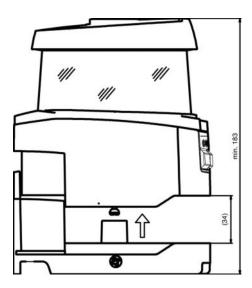


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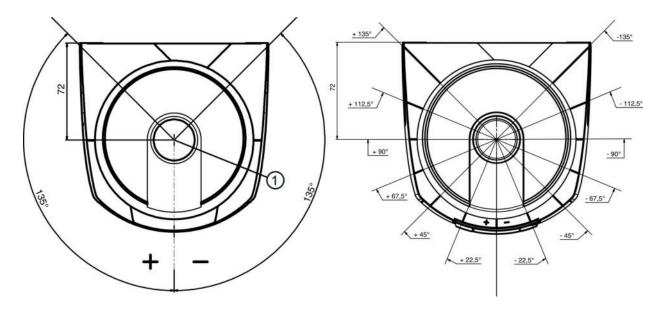
Mounting dimensions safety laser scanner with connection unit



Minimum space requirements for installation and replacement of scanner unit



Dimensions of scanning range



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1 Reference point for distance measurement and protective field radius

Electrical connection

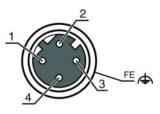
Connection 1		
Type of connection	Cable	
Function	Machine interface	
Cable length	10,000 mm	
Sheathing material	PVC	
Cable color	Black	
Number of conductors	29 -wire	
Wire cross section		
Wire cross section supply	1 mm ²	
Wire cross section signals	0.14 mm ²	

Conductor color	Conductor assignment	
White	RES1	
Brown	+24V	
Green	EA1	
Yellow	A1	
Gray	OSSDA1	
Pink	OSSDA2	
Blue	GND / Ground	
Red	MELD	
Black	F1	
Violet	F2	
Gray Pink	F3	
Blue Red	F4	
Green White	F5	
Brown Green	SE1	
White Yellow	SE2	
Brown Yellow	A2	
Gray White	A3	
Brown Gray	A4	
Pink White	EA2	

Connection 2	
Type of connection	Connector
Function	Data interface
Thread size	M12
Туре	Female
Material	Metal
No. of pins	4 -pin
Encoding	D-coded
Connector housing	FE/SHIELD

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Pin	Pin assignment	Conductor color
1	TD+	Yellow
2	RD+	White
3	TD-	Orange
4	RD-	Blue
5		



Operation and display

LEDs

LED	Display	Meaning
1	Off	Device switched off
	Red, continuous light	OSSD off
	Red, flashing	Error
	Green, continuous light	OSSD on
2	Off	RES deactivated or RES activated and released
	Yellow, flashing	Protective field occupied
	Yellow, continuous light	RES activated and blocked but ready to be unlocked - protective field free and linked sensor is enabled if applicable
3	Off	Free warning field
	Blue, continuous light	Warning field interrupted
4	Off	Free warning field
	Blue, continuous light	Warning field interrupted
5	Off	RES deactivated or RES activated and released
	Yellow, flashing	Protective field occupied
	Yellow, continuous light	RES activated and blocked but ready to be unlocked - protective field free and linked sensor is enabled if applicable
6	Off	Device switched off
	Red, continuous light	OSSD off
	Red, flashing	Error
	Green, continuous light	OSSD on

Notes

Observe intended use!

- The product may only be put into operation by competent persons.
- Only use the product in accordance with its intended use.

WARNING! INVISIBLE LASER RADIATION - LASER CLASS 1

The device satisfies the requirements of IEC 60825-1:2007 (EN 60825-1:2007) safety regulations for a product of **laser class 1** as well as the U.S. 21 CFR 1040.10 regulations with deviations corresponding to "Laser Notice No. 50" from June 24, 2007.

- Observe the applicable statutory and local laser protection regulations.
- The device must not be tampered with and must not be changed in any way.
 There are no user-serviceable parts inside the device.
 Repairs must only be performed by Leuze electronic GmbH + Co. KG.

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Accessories

Connection technology - Interconnection cables

Part no.	Designation	Article	Description
	KSS ET-M12-4A- RJ45-A-P7-050	Interconnection cable	Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: RJ45 Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR

Mounting technology - Mounting brackets

Part no.	Designation	Article	Description
53800134	BT840M	Mounting bracket	Application: Mounting on chamfered 90° corner Dimensions: 84.9 mm x 72 mm x 205.2 mm Color: Yellow, RAL 1021 Type of fastening, at system: Through-hole mounting Type of fastening, at device: Screw type Material: Metal

Mounting

	Part no.	Designation	Article	Description
P	53800131	BTP800M		Dimensions: 160 mm x 169 mm Color: Black Material: Metal

Services

	Part no.	Designation	Article	Description
()	S981051	CS40-I-141	Safety inspection "Safety laser scanners"	Details: Checking of a safety laser scanner application in accordance with current standards and guidelines. Inclusion of the device and machine data in a database, production of a test log per application. Conditions: It must be possible to stop the machine, support provided by customer's employees and access to the machine for Leuze employees must be ensured. Restrictions: Travel costs and accommodation expenses charged separately and according to expenditure.
	S981047	CS40-S-141	Start-up support	Details: For safety devices including stopping time measurement and initial inspection. Conditions: Devices and connection cables are already mounted, price not including travel costs and, if applicable, accommodation expenses. Restrictions: Max. 3 h., no mechanical (mounting) and electrical (wiring) work performed, no changes (attachments, wiring, programming) to third-party components in the nearby environment.

Note
A list with all available accessories can be found on the Leuze electronic website in the Download tab of the article detailed page.