



the sensor people





Part no.: 53800201 RSL410-S/CU408-M12 Safety laser scanner

















Contents

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



Technical data

Pagin data	
Basic data	DOI 400
Series	RSL 400
Application	Mobile danger zone guarding Mobile side guarding
	Stationary access guarding
	Stationary danger zone guarding
Functions	
Functions	Dynamic contactor monitoring (EDM), selectable
	Four-field mode Resolution, selectable
	resolution, selectable
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	1
Number of quads, reversible	1
Number of protective functions	1 Piece(s)
Number of independent sensor configurations	1
Diffuse reflection, min.	1.8 %
Operating range	0 3 m
Manager Sint data	
Warning field data Number of field pairs	1
Operating range	0 20 m
Object size	150 mm x 150 mm
Diffuse reflection, min.	10 %
Dilude Tellection, Timi.	10 70
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
Massurement data	
Measurement data Distance resolution	1 mm
Detection range	0 50 m
Diffuse reflection	20 %
Angular resolution	0.1 °
7 mgarar 1000ration	V. 1



Electrical data	
Protective circuit	Overvoltage protection
Performance data	
Supply voltage U _B	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)	2 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, pin 5
Switching element	Transistor , PNP
Safety-related switching output 2	
Assignment	Connection 1, pin 6
Switching element	Transistor , PNP
Service interface	
Туре	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
Connection	
Number of connections	2 Piece(s)
Connection 1	
Type of connection	Connector
Function	Machine interface
Thread size	M12
Туре	Male
Material	Metal
No. of pins	8 -pin
Encoding	A-coded
Connection 2	
Type of connection	Connector
Function	Data interface
Thread size	M12
Туре	Female
Material	Metal
No. of pins	4 -pin
Encoding	D-coded
Cable properties	
Cable resistance, max.	15 Ω

Mechanical data



140.2 mm x 148.6 mm x 140.3 mm	
Metal Plastic , Diecast zinc ,	
Plastic/PC	
3,000 g	
Yellow, RAL 1021	
Mounting plate Through-hole mounting Via optional mounting device	
	Metal Plastic , Diecast zinc , Plastic/PC 3,000 g Yellow, RAL 1021 Mounting plate Through-hole mounting

Operation and display		
Type of display	Alphanumerical display LED indicator	
Number of LEDs	3 Piece(s)	
Type of configuration	Software Sensor Studio	
Operational controls	Software Sensor Studio	

Environmental data		
Ambient temperature, operation	0 50 °C	
Ambient temperature, storage	-20 60 °C	
Relative humidity (non-condensing)	15 95 %	

Certifications	
Degree of protection	IP 65
Protection class	III , EN 61140
Certifications	c TÜV Süd US c UL US TÜV Süd
Test procedure for EMC in accordance with standard	DIN 40839-1/3 EN 61496-1
Test procedure for oscillation in accordance with standard	EN 60068-2-6
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

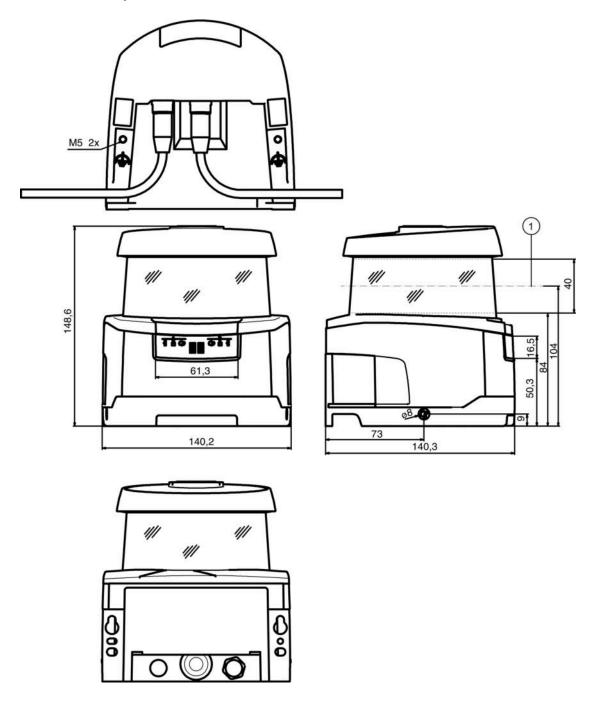
Classification		
Customs tariff number	85365019	
eCl@ss 8.0	27272705	
eCl@ss 9.0	27272705	
ETIM 5.0	EC002550	
ETIM 6.0	EC002550	

Dimensioned drawings

All dimensions in millimeters



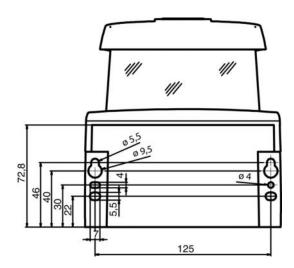
Dimensions safety laser scanner with connection unit



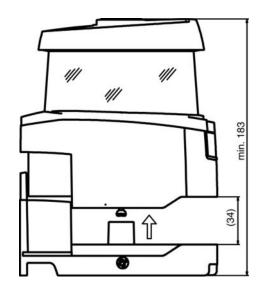
1 Scan level



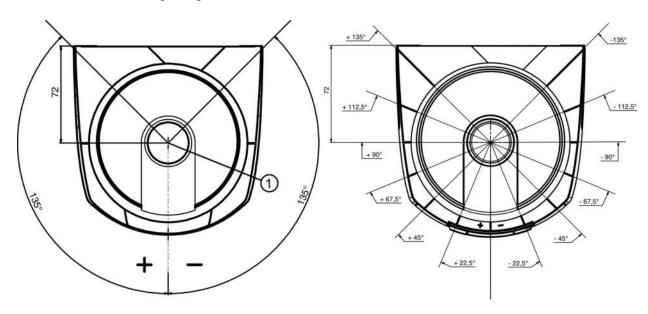
Mounting dimensions safety laser scanner with connection unit



Minimum space requirements for installation and replacement of scanner unit



Dimensions of scanning range



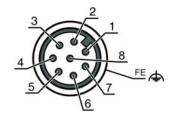


1 Reference point for distance measurement and protective field radius

Electrical connection

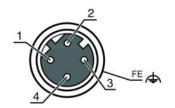
Connection 1	
Type of connection	Connector
Function	Machine interface
Thread size	M12
Туре	Male
Material	Metal
No. of pins	8 -pin
Encoding	A-coded
Connector housing	FE/SHIELD

Pin	Pin assignment	Conductor color
1	RES1	White
2	UB	Brown
3	EA1	Green
4	A1	Yellow
5	OSSDA1	Gray
6	OSSDA2	Pink
7	GND / Ground	Blue
8	MELD	Red



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	

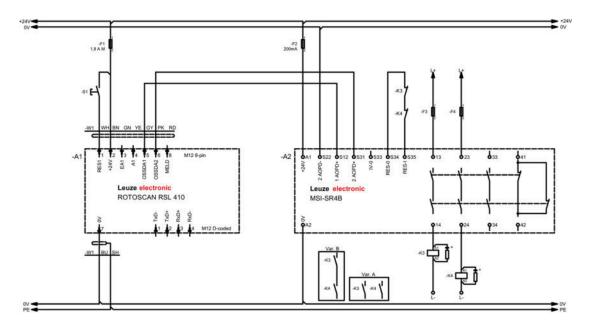
Pin	Pin assignment	Conductor color
1	TD+	Yellow
2	RD+	White
3	TD-	Orange
4	RD-	Blue





Circuit diagrams

RSL 410 with MSI-SR4B safety relay



Spark extinction circuit, suitable spark extinction provided

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	Four field mode: warning field 3 free
	Blue, continuous light	Four field mode: warning field 3 interrupted
5	Yellow, flashing	Four field mode: warning field 2 interrupted

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.

Accessories

Connection technology - Connection cables

Part no.	Designation	Article	Description
50135128	KD S-M12-8A- P1-050	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 8 -pin Connection 2: Open end Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR

Connection technology - Interconnection cables

Part no.	Designation	Article	Description
50135081	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	втр800М	Loop guard	Dimensions: 160 mm x 169 mm Color: Black Material: Metal

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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.