SMART
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Part no.: 53800116
RSL440-XL
Safety laser scanner

Figure can vary

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We reserve the right to make technical changes • eng 2018-04-02
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Technical data

Basic data	
Series	RSL 400

Functions	
Functions	Four-field mode
	Dynamic contactor monitoring (EDM), selectable
	E-stop linkage
	Safe time delay, internal
	Data output, configurable
	Resolution, selectable

Characteristic parameters	
Type	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	200 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.	1.8 %

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	
Radial resolution	5 mm
Detection range	0 ... 50 m
Angular resolution	0.1 °

Electrical data	

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Protective circuit	Overvoltage protection
Performance data	
Supply voltage	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	
Type	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	
Switching element	Transistor, PNP
Safety-related switching output 2	
Switching element	Transistor, PNP
Safety-related switching output 3	
Switching element	Transistor, PNP
Safety-related switching output 4	
Switching element	Transistor, PNP

Interface	
Type	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	
Cable properties	
Cable resistance, max.	15 Ω

Mechanical data	
Dimension (W x H x L)	140 mm x 149 mm x 140 mm
Housing material	Metal Plastic, Diecast zinc,
Lens cover material	Plastic/PC
Net weight	2,000 g
Housing color	Yellow, RAL 1021
Type of fastening	Mounting plate Through-hole mounting Via optional mounting device

Operation and display	
Type of display	LED indicator Alphanumerical display
Number of LEDs	6 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

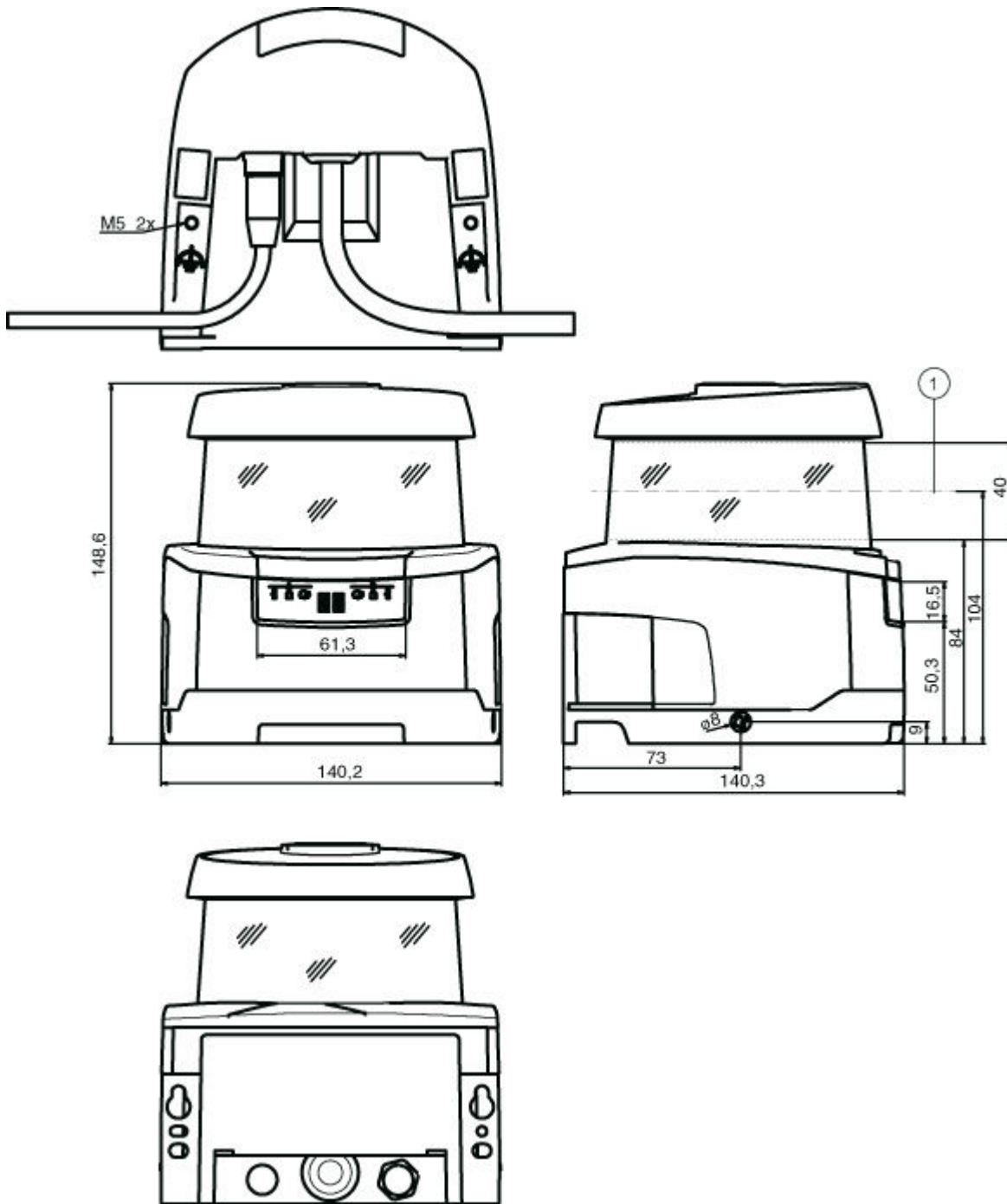| *Certifications*	
Degree of protection	IP 65
Protection class	III, EN 61140
Certifications	c UL US c TÜV Süd US TÜV Süd
US patents	US 7,656,917 B US 2016/0086469 A US 7,696,468 B US 8,520,221 B

Classification	
eCl@ss 8.0	27272705
eCl@ss 9.0	27272705
ETIM 5.0	EC002550

Dimensioned drawings

All dimensions in millimeters

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Dimensions safety laser scanner with connection unit

1   Scan level

Mounting dimensions safety laser scanner with connection unit
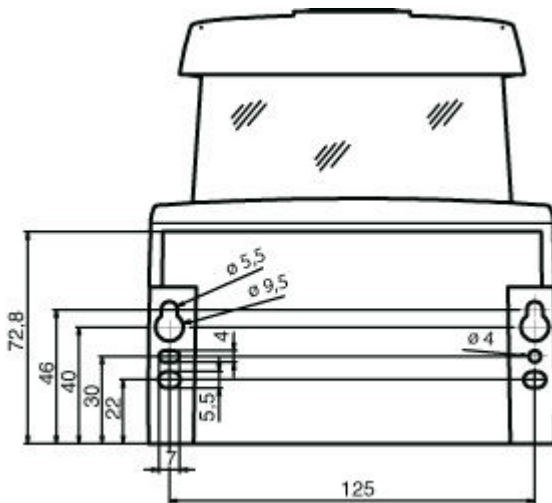
Minimum space requirements for installation and replacement of scanner unit
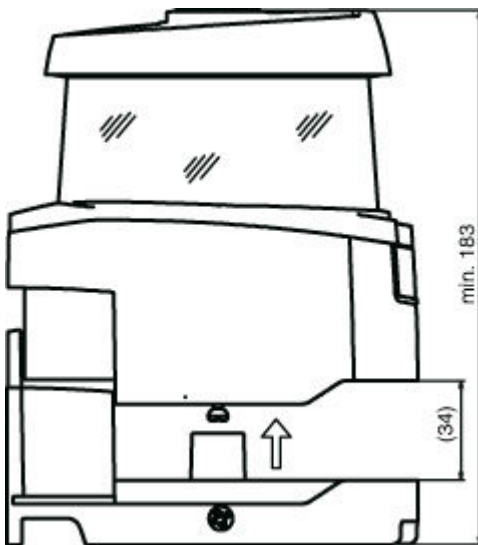
Dimensions of scanning range
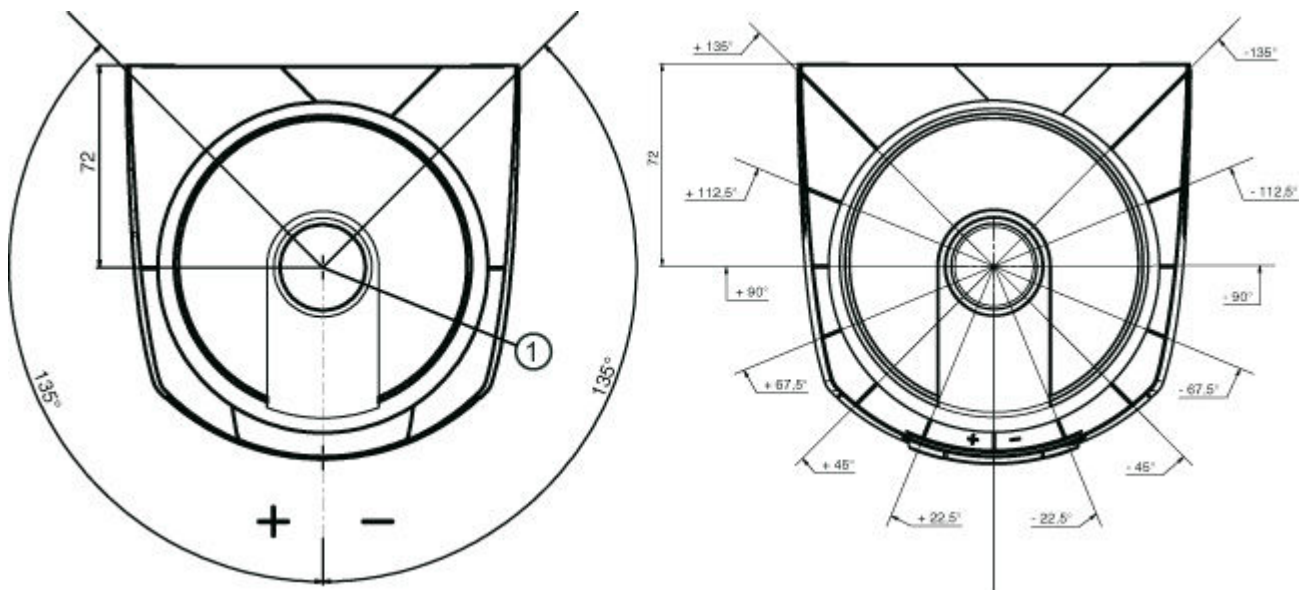
1   Reference point for distance measurement and protective field radius

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

Accessories

Connection technology - Terminal boxes

	Part no.	Designation	Article	Description
	53800122	CU429-10000	Connection unit	Number of connections: 2 Piece(s) Connection 1: Cable, 10,000 mm, PVC, 29 -wire Connection 2: Connector, M12, D-coded, 5 -pin Dimensions: 140.2 mm x 72.8 mm x 140.3 mm Color: Black Type of fastening: Bayonet system
	53800123	CU429-25000	Connection unit	Number of connections: 2 Piece(s) Connection 1: Cable, 25,000 mm, PVC, 29 -wire Connection 2: Connector, M12, D-coded, 5 -pin Dimensions: 140.2 mm x 72.8 mm x 140.3 mm Color: Black Type of fastening: Bayonet system
	53800181	CU429-300-WPU	Connection unit	Number of connections: 2 Piece(s) Connection 1: Cable with connector, M30, 300 mm, PVC, 30 -pin Connection 2: Connector, M12, D-coded, 5 -pin Dimensions: 140.2 mm x 72.8 mm x 140.3 mm Color: Black Type of fastening: Bayonet system
	53800121	CU429-5000	Connection unit	Number of connections: 2 Piece(s) Connection 1: Cable, 5,000 mm, PVC, 29 -wire Connection 2: Connector, M12, D-coded, 5 -pin Dimensions: 140.2 mm x 72.8 mm x 140.3 mm Color: Black Type of fastening: Bayonet system

Mounting technology - Mounting brackets

	Part no.	Designation	Article	Description
	53800134	BT840M	Mounting bracket	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
	53800135	BT856M	Mounting bracket	Dimensions: 119 mm x 72 mm x 233.5 mm Color: Yellow, RAL 1021 Type of fastening, at system: Through-hole mounting Type of fastening, at device: Screw type Material: Metal
	53800132	BTF815M	Mounting bracket	Dimensions: 186 mm x 120 mm x 288 mm Color: Yellow, RAL 1021 Type of fastening, at system: Through-hole mounting Type of fastening, at device: Screw type Material: Metal
	53800133	BTF830M	Mounting bracket	Dimensions: 186 mm x 275 mm x 288 mm Color: Yellow, RAL 1021 Type of fastening, at system: Through-hole mounting Type of fastening, at device: Screw type Material: Metal

Mounting technology - Other

	Part no.	Designation	Article	Description
	53800130	BTU800M	Mounting system	Dimensions: 54.5 mm x 90 mm x 192 mm Color: Black Type of fastening, at system: Through-hole mounting Type of fastening, at device: Screw type Material: Metal

Mounting

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

General

	Part no.	Designation	Article	Description
	430400	RS4-clean-Set1	Cleaning set	Number of cleaning cloths: 40 Piece(s) Content of cleaning fluid: 150 ml
	430410	RS4-clean-Set2	Cleaning set	Number of cleaning cloths: 120 Piece(s) Content of cleaning fluid: 1,000 ml

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.