

the **sensor** people

CPSET, ROBUST-SET

Safety Sensor Sets for
access guarding with and
without Muting function



Efficient safety solutions with the **No Worries Pack.**

Demand-oriented Safety Sensor Sets in a wide range of models.

Safety Sensor Sets permit the efficient setup of access guarding. Both the preconfigured CPSET solutions with integrated Muting and the ROBUST-SET models with and without Muting function can be anchored permanently as free-standing devices using special foot elements. The components are electronically and mechanically optimally matched and specifically selected for the respective application. As a result, access guardings can be implemented easier, faster, and generally cheaper than with comparable individual components.



ROBUST-SET – the simple complete solution for the setup of access guardings with and without Muting function.

For access guarding and **Muting applications** – when simplicity and time count.

CPSET systems

CPSET systems are Safety Sensor sets with integrated Muting, with both optoelectronic Muting sensors and induction loops. The configuration preset by the factory is already adapted to the respective application case. This minimizes the effort spent on planning and at the construction site.

- Plug & Play complete Muting solutions with optical sensors preinstalled in device columns (Multiple Light Beam Safety Device or Muting Transceiver)
- Efficient setup and commissioning due to plug-in connections
- Preinstalled Muting components and display and control unit with start button for unlocking start/restart interlock

Conveyor systems are one of many possible applications for CPSET complete systems with integrated Muting and override functions.



ROBUST-SET systems

ROBUST-SET systems contain pretty much everything required for the efficient setup of access guarding. The Muting function can be implemented with an additional MSI Safety Relay in the cabinet.

- Comprehensive set for the efficient installation of access guardings
- 2-Sensor or 4-Sensor Muting with MSI-mx Safety Relay
- ROBUST Transceiver, also available with integrated Muting indicator
- Integrated optics heating for use in extreme environmental conditions

Safety Sensor Systems ROBUST-SET provide reliable protection and, together with MSI Safety Relays, permit Muting as well.



Two examples from a **wide range of options.**
Everything you need.

Example 1

CPSET-M23 – 2-beam complete system for 2-sensor Parallel Muting

The CPSET-M23 uses two retro-reflective photoelectric sensors with crossed beams as Muting sensors. The Muting sensors and reflectors are already mounted at the factory on the MMS Muting mounting system's fixing component. The safety sensors are already preinstalled into the device columns. Settings can be made via switch in the device or via the SafetyLab PC software.

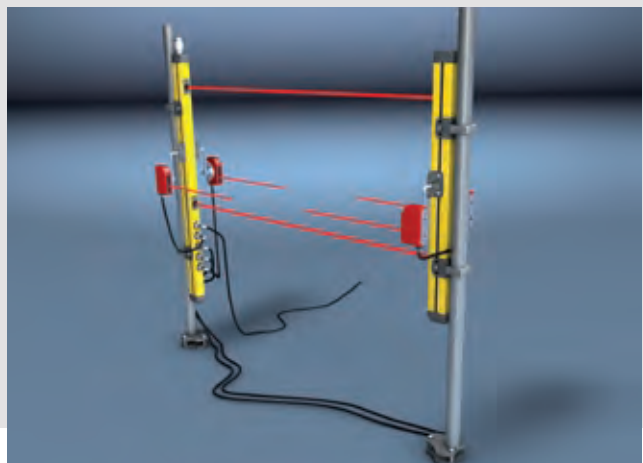
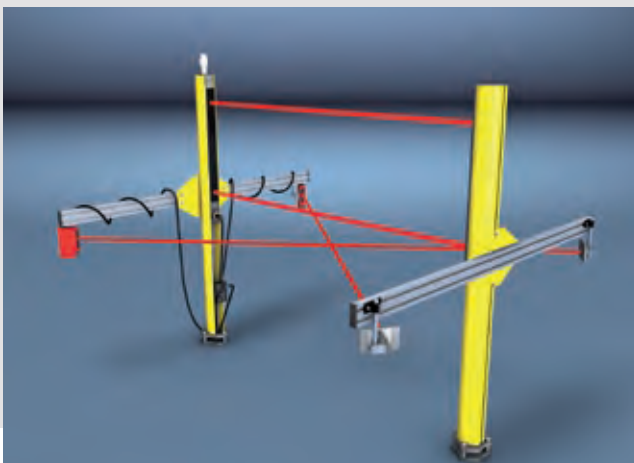
Functions: 2-sensor Parallel Muting, integrated Muting indicator, Muting time limit, Muting restart override mode, start/restart interlock, MultiScan.

Example 2

ROBUST-SET M8HRT46 – a set for access guardings with Muting option

ROBUST-SET M8HRT46 are complete sets with Muting sensors and mounting columns. The components contained in the set include four diffuse reflection light scanners, permitting an easy implementation of applications with 4-sensor Parallel Muting with an additional MSI Safety Relay.

Functions: Access guarding with Muting function, 4-sensor Muting with MSI-mx Safety Relays, automatic start/restart, optics heating, LED display, Muting sensor connection.



The full **CPSET** diversity at a glance.

CPSET	Muting complete system consists of ...
-M01, -M02	CPR400/3-mxl01/R2 (3-beam Light Beam Safety Device receiver with integrated Muting indicator), CPT400/3/T1S0 (3-beam Light Beam Safety Device transmitter incl. supply cable), 2 UDC-1600-S1 (device columns), 2 PRK 25B (retro-reflective photoelectric sensors with UMS Deflecting Mirrors), MMS-A-1000 (Muting Mounting System), MMS-P-1000, 2 sensor cables, connection cable: 10 m (CPSET-M01), 25 m (CPSET-M02)
-M03, -M04	CPR400/3-mxl02/R2 (3-beam Light Beam Safety Device receiver with integrated Muting indicator), CPT400/3/T1S0 (3-beam Light Beam Safety Device transmitter incl. supply cable), 2 UDC-1600-S1 (device columns), 4 HRT 46B (diffuse reflection light scanners with fixing component BT46), 2 MMS-A-350 (Muting Mounting System), 4 sensor cables, connection cable: 10 m (CPSET-M03), 25 m (CPSET-M04)
-M05, -M06	CPRT500/2-mxl01/R2 (Muting Transceiver with integrated Muting indicator), CPM500/2V-SO (Deflecting Mirror), 2 UDC-1600-S1 (device column), 2 PRK 25B (retro-reflective photoelectric sensors with UMS Deflecting Mirror), MMS-A-1000 (Muting Mounting System), MMS-P-1000, 2 sensor cables, connection cable: 10 m (CPSET-M05), 25 m (CPSET-M06)
-M07, -M08	CPRT500/2-mxl02/R2 (Muting Transceiver with integrated Muting indicator), CPM500/2V-SO (Deflecting Mirror), 2 UDC-1600-S1 (device column), 2 MMS-A-350 (Muting Mounting System), 4 HRT 46B (diffuse reflection light scanners with fixing component BT46), 4 sensor cables, connection cable: 10 m (CPSET-M07), 25 m (CPSET-M08)
-M11, -M31	CPSET-M11: CPRT500/2-m03/R2 (Muting Transceiver), CPM500/2V-SO (Deflecting Mirror). CPSET-M31: CPR400/3-m03/R2 (3-beam Light Beam Safety Device receiver), CPT400/3/T4 (3-beam Light Beam Safety Device transmitter). Also in both sets: 2 UDC-1900-S1 (device columns), 2 MSSU-H46 (Muting sensor set), AC-BB-OPT (display and control unit with start button and Muting indicator), 2 sensor cables
-M12, -M32	CPSET-M12: CPRT500/2-m03/R2 (Muting Transceiver), CPM500/2V-SO (Deflecting Mirror). CPSET-M32: CPR400/3-m03/R2 (3-beam Light Beam Safety Device receiver), CPT400/3/T4 (3-beam Light Beam Safety Device transmitter). Also in both sets: 2 UDC-1900-S1 (device columns), 2 KAS_1 (induction loops with connection cable 6m), AC-BB-IND (display and control unit with evaluation unit for induction loops, start button, and Muting indicator)
-M13, -M33	CPSET-M13: CPRT500/2-m03/R2 (Muting Transceiver), CPM500/2V-SO (Deflecting Mirror). CPSET-M33: CPR400/3-m03/R2 (3-beam Light Beam Safety Device receiver), CPT400/3/T4 (3-beam Light Beam Safety Device transmitter). Also in both sets: 2 UDC-1900-S1 (device columns), AC-BB-RES (display and control unit with start button)
-M20	CPRT500/2-m04/T4 (Muting Transceiver), CPM500/2V (Deflecting Mirror), AC-ABF-SL1 (display and control unit with start button and Muting indicator), PRK 46B (retro-reflective photoelectric sensors with mounting brackets TKS 50x50), MMS-AP-N60 (Muting Mounting System), splitter cable to Muting sensors and control unit, connection cable 15 m, no device columns
-M23	CPRT500/2-mI0/R2 (Muting Transceiver with integrated Muting indicator), CPM500/2V-SO (Deflecting Mirror), 2 UDC-1300-S1 (device column), 2 PRK 46B (retro-reflective photoelectric sensors with UMS Deflecting Mirrors), MMS-A-1000 (Muting Mounting System), MMS-P-1000, 2 sensor cables
-M24	CPRT500/2-m06/R2 (Muting Transceiver), CPM500/2V-SO (Deflecting Mirror), 2 UDC-1900-S1 (device column), 2 PRK46B (retro-reflective photoelectric sensors), MMS-A-1000S (Muting installation system), MMS-P-1000S (Muting Mounting System incl. reflectors), AC-ABF-SL1 (display and control unit), AC-SCM1-BT (Muting sensor connection box)

ROBUST RT/RR 43.6



Multiple Light Beam Safety Device (Type 4 AOPD)

The ROBUST RR/RT43.6 Multiple Light Beam Safety Device is a design type with M12 connection.



Safety note:

Knowledge of the connecting and operating instructions of the basic device of the type 4 ROBUST multiple light beam safety devices and the data sheet of the design type of the ROBUST RR/RT43.6 multiple light beam safety devices is required for the connection and initial operation of the ROBUST RT43.6 and RR43.6 design types.



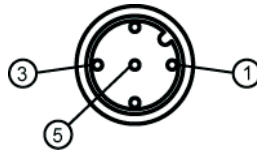
607122 - 2009/01 Subject to change without prior notice

Features

- Multiple light beam safety devices in accordance with EN IEC 61496-1, 61496-2
- Beam distance 400 mm
- 2 safety relay outputs
- M12 connection (receiver, 8-pin; transmitter 5-pin)

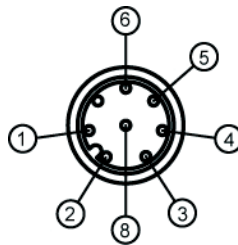
Electrical connection

Transmitter:



Pin	Color	Inputs/outputs
1	Brown	24 V DC
n.c	White	
3	Blue	0 V
n.c	Black	
5	Grey	PE shield

Receiver:



Pin	Color	Inputs/outputs
1	White	24 V DC
2	Brown	0 V
3	Green	K1.1
4	Yellow	K1.2
5	Grey	K2.1
6	Pink	K2.2
7	Blue	n.c
8	PE	Shield

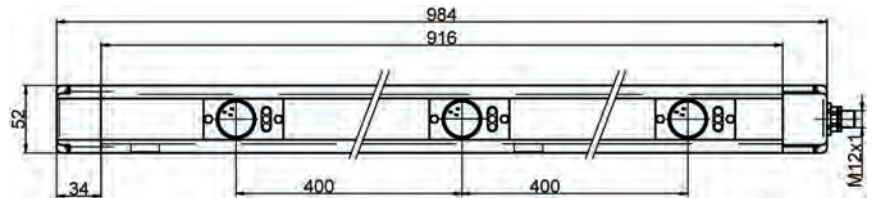
PIN assignment, M12 connection, RR43.6



Safety note:

The maximum permissible switching voltage of the safety relay outputs is 42V AC/DC.

Dimensional drawing



Technical data

See the information for technical data in the connecting and operating instructions for type 4 ROBUST multiple light beam safety devices.

Ordering information

Order numbers

Art. no.	Item	Description
909697	ROBUST RT43.6	Transmitter
909698	ROBUST RR43.6	Receiver
Connection cable		
429087	CB-M12-5000-5G/F	Connection cable, M12 5-pin, length 5 m
429088	CB-M12-15000-5G/F	Connection cable, M12 5-pin, length 15 m
429089	CB-M12-25000-5G/F	Connection cable, M12 5-pin, length 25 m
548405	CB-M12-5000S8-8G/F	Connection cable, M12 8-pin, length 5 m
548415	CB-M12-15000S8-8G/F	Connection cable, M12 8-pin, length 15 m
548425	CB-M12-25000S8-8G/F	Connection cable, M12 8-pin, length 25 m

ROBUST RRT 24.1



Multiple Light Beam Safety Device (Type 2 AOPD)

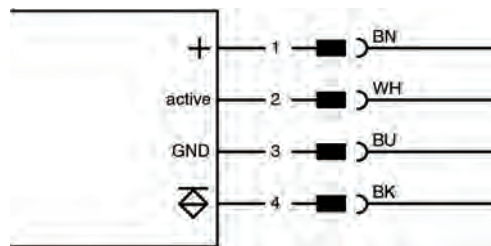
ROBUST Multiple Light Beam Safety Devices in combination with a test monitoring unit (safety interfaces, MSI, TNT 35 or TMC 66) are type 2 active opto-electronic devices (AOPD) in accordance with IEC/EN 61496-1 and 2. RRT 24.1 is a 4-beam Multiple Light Beam Safety Device with a beam distance of 300 mm with integrated transmitter and receiver systems. It forms a functional unit in combination with a passive deflecting mirror, PM4-300 or PM4-300V.



Features

- Switching output: pnp transistor output
- Beam distance, 300 mm (in acc. with EN 999)
- Durable, torsion-resistant aluminum profile
- Integrated optics heating for use at low temperatures
- Glass optics with spacing bolts for mounting laser alignment aid
- Compact profile with integrated fixing slot
- Positionable M6 sliding nuts for fast mounting
- Activation input for testing and connection in series
- EC prototype certified safety component in accordance with IEC/EN 61496-1 and 2
- M12 connection

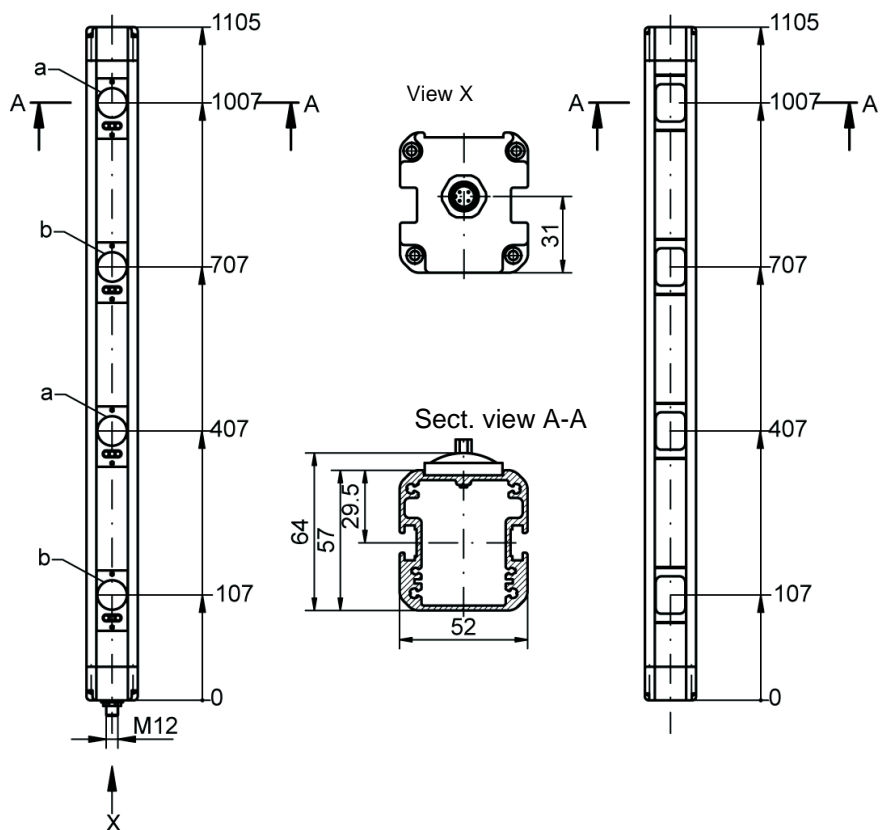
Electrical connection



Dimensional drawing

ROBUST RRT 24.1

Passive deflecting mirror, PM4 (accessory)



a = Transmitter
b = Receiver

Technical data

Safety type in accordance with IEC/EN 61496:	Type 2 in combination with a Safety Interface Device or a Test Monitoring Unit	
Beam distance	300 mm	
Range ¹⁾	With PM4-300:	0,5 - 2,5 m
	With PM4-300V:	1,5 - 8 m
Sensor response time	12 ms	
Supply voltage, U _a	24 V DC, ± 15 %	
Residual ripple	≤ 15% of U _a	
Protection class	III	
Protection rating	IP 67	
Ambient temperature, operation	-25...+55 °C	
Ambient temperature, storage	-30...+70 °C	
Weight (depending on length)	1.80 kg	
Housing	Extruded aluminum profile	
Color	RAL 1021, yellow (lead and cadmium-free)	
Optics	Glass with optics heating	
Installation position	Any	
Fixing	With M6 sliding nuts, positionable	
Power consumption	Approx. 160 mA without external load	
Connection technology	M12 plug 5-pin, B-coded	
Transmission element		
Transmitter diodes, class in acc. with EN 60825	1	
Wavelength	880 nm	
Light source	LED, infrared (floating light)	
LED yellow	Transmitter activated	
Test activation, T _A (high active)	Transmitter active ≥ 3 mA Transmitter inactive ≤ 1 mA Input resistance 5 kΩ Test-Response time ≤ 400 μs	
Reception element		
Safety-related switching output (OSSD) ²⁾	pnp transistor output (short-circuit-proof)	
Output current	Max. 200 mA	
Function	Light on	
LED red	Light path interrupted	
LED green, flashing	Light path free, no functional reserve	
LED green	Light path free, with functional reserve	

1) Operating range: Recommended range with functional reserve

2) 1 = transient protection, 2 = reverse-connect protection, 3 = short-circuit protection for all outputs

Notes

The Multiple Light Beam Safety Device is an active opto-electronic device (AOPD) in combination with a safety-related control system a machine to be protected, in which the transmitter and receiver are cyclical tested in accordance with IEC/EN 61496-1. Suitable in this respect are, for example, the safety interfaces of the MSI family or the test monitoring units, TNT 35 and TMC 66.

The power supply to which the Multiple Light Beam Safety Device is connected must intercept changes and interruptions of the supply voltage in accordance with IEC/EN 61496-1.

Testing

In operating status the activation input on the transmitter is switched to high active (24 V DC). The input is briefly switched off for testing (≤ 2 V, at least 10 ms). The receiver then also switches off briefly. This function test is evaluated accordingly from the test monitoring unit. The monitoring of the control line to the transmitter and the output line from the receiver is also an additional advantage of this test method.

Ordering information

RRT 24.1 supply schedule:

- 1 RRT 24.1 transceiver
- 1 BT-S brackets
- 1 connecting and operating instructions manual

Note: A PM4-300 or PM4-300V is required for the function (see accessories)

Order numbers

Item no.	Item
50081465	ROBUST RRT 24.1

1 BT-S brackets are included in the supply schedule

Accessories

MSI

Safety interfaces, e.g. with muting functions

TNT 35

Test monitoring unit with integrated cyclical test interval – 2 seconds

TMC 66

Test monitoring unit with integrated muting function and permanent cyclical testing

- Mounting accessories with mounting bracket
- UDC mounting columns
- Laser alignment aid: LA 78, LA 78U, LA 78UDC
- Passive deflecting mirror: PM4-300/PM4-300V
- UMC deflecting mirror columns

Order numbers

Item no.	Item
Test monitoring unit	
50033058	TNT 35
50082121	TMC 66
Mounting accessories	
560120 ¹⁾	BT-S
560300 ²⁾	BT-SSD
Mounting columns	
549810	UDC-1000
549813	UDC-1300
Laser alignment aids	
549000	LA-78
560020	LA-78U
520004	LA-78UDC
Passive deflecting mirror	
50029570	PM4-300
909663	PM4-300V
Deflecting mirror column	
549704	UMC-1304

1) Standard bracket included in supply schedule

2) 2 pieces required for RRT 24.1

ROBUST RRT42.3-MCB-2.1



Supplement to the ROBUST 42, 43 and 44 Connecting and Operating Instructions (AOPD type 4)

In order to bring together all the safety-related signals for a muting control device, ideally using the safety interface modules MSI-m/R(T) and MSI-mx/RX(Tx), a special version of the ROBUST has now been developed

ROBUST RRT42.3-MCB-2.1

RRT42.3-MCB-2.1 with integrated signal lamp. The built-in M12 sockets in the profile of the multibeam safety light barrier make it an easy matter to connect the cable to the switch cabinet. Connections for muting sensors as parallel muting, additional muting signal lamp and start/restart button.



More technical data see connecting and operating instruction ROBUST 42, 43, 44 (AOPD category 4).

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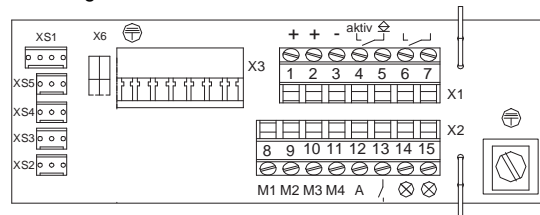
Features

- M12 socket for muting signal lamp and on-the-spot start/restart button
- M12 sockets for muting sensors
- Only one cable required for connecting to the switch cabinet
- Large terminal compartment with pull-out terminal
- Compact profile with adjustable sliding blocks
- Parallel muting
- Activation of the muting sensors by means of separate operating voltage is possible

Electrical Connection

! The only permissible operating and switching voltage (e.g. for relay outputs) is 24V DC. The cable connection to the switch cabinet must be laid in such a way that it is adequately protected against mechanical damage.

PCB view:

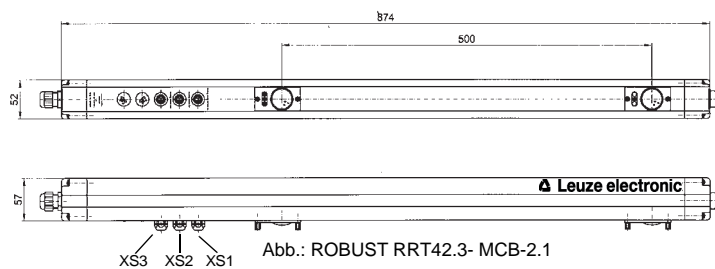


Connection assignment:

	Pin	Function	Comment	XS Assignment
X1	1	+ 24 V	Supply voltage	XS1 Pin4
	2	+ 24 V	bridged with pin 1 supply voltage	-
	3	0 V		XS1,2,3 Pin3
	4	K1.1		
	5	K1.2		
	6	K2.1		
	7	K2.2		
X2	8	M1	Muting sensor output	XS2 Pin4
	9	M2	Muting sensor output	XS3, Pin4
	10	M3	Muting sensor output	
	11	M4	Muting sensor output	
	12	+ 24 V	Supply voltage of muting sensor	XS2 Pin1
	13	Start-Key		XS1 Pin2
	14	Muting lamp	for version with integrated indicator	
	15	Muting lamp	for external indicators	XS1 Pin1

Connections that are to be connected in muting operation with a jumper are identified with -

Dimensional Drawing



Technical Data

Safety classification	Category 4
Operating voltage	24V DC +/- 15%
Residual ripple	< 10%
Power consumption (with RRT42)	(ohne Last) ca. 600 mA
VDE protection class	1
Protection level	IP 65
Weight	320 g + RRT 42
Housing	Aluminium extruded profile
Colour	RAL 1021, no lead or cadmium content

Ordering Information

Art. no.	Typ	Designation
909679	RRT42.3-MCB-2.1	Multiple Light Beam Safety Device, Transceiver

ROBUST RRT42.3-MCB-4.1



Supplement to the ROBUST 42, 43 and 44 Connecting and Operating Instructions (AOPD type 4)

In order to bring together all the safety-related signals for a muting control device, ideally using the safety interface modules MSI-m/R(T) and MSI-mx/RX(Tx), a special version of the ROBUST has now been developed

ROBUST RRT42.3-MCB-4.1

RRT42.3-MCB-4.1 with integrated signal lamp. The built-in M12 sockets in the profile of the multibeam safety light barrier make it an easy matter to connect the cable to the switch cabinet. Connections for muting sensors with sequential muting, 4-sensor muting as parallel muting, additional muting signal lamp and start/restart button.

! More technical data see connecting and operating instruction ROBUST 42, 43, 44 (AOPD category 4).

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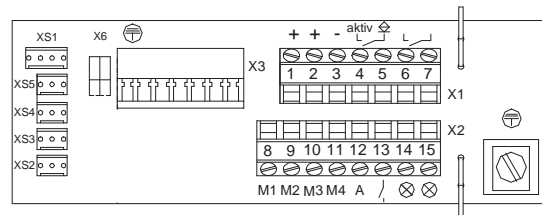
Features

- M12 socket for muting signal lamp and on-the-spot start/restart button
- M12 sockets for muting sensors
- Only one cable required for connecting to the switch cabinet
- Large terminal compartment with pull-out terminal
- Compact profile with adjustable sliding blocks
- Parallel and sequential muting both possible
- Activation of the muting sensors by means of separate operating voltage is possible

Electrical Connection

! The only permissible operating and switching voltage (e.g. for relay outputs) is 24V DC. The cable connection to the switch cabinet must be laid in such a way that it is adequately protected against mechanical damage.

PCB view:



Connection assignment:

Pin	Function	Comment	XS Assignment
1	+ 24 V	Supply voltage	XS1 Pin4
2	+ 24 V		
3	0 V		XS1,2,3 Pin3
4	K1.1		
5	K1.2		
6	K2.1		
7	K2.2		
8	M1	Muting sensor output	XS2 Pin4
9	M2	Muting sensor output	XS3, Pin4
10	M3	Muting sensor output	XS4, Pin4
11	M4	Muting sensor output	XS5, Pin4
12	+ 24 V	Supply voltage of muting sensor	XS2 Pin1
13	Start-Key		XS1 Pin2
14	Muting lamp	Internal indicator	
15	Muting lamp		XS1 Pin1

Dimensional Drawing

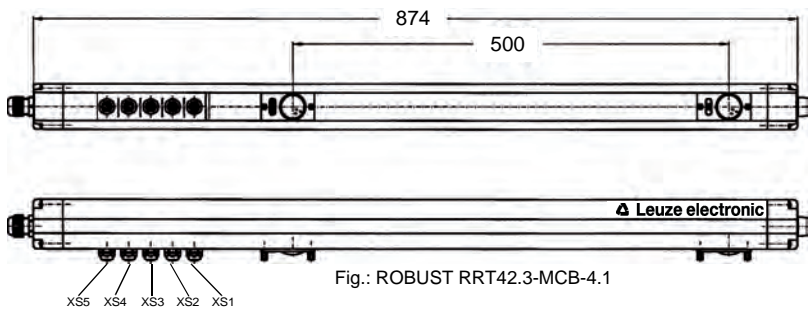


Fig.: ROBUST RRT42.3-MCB-4.1

Technical Data

Safety classification	Category 4
Operating voltage	24V DC +/- 15%
Residual ripple	< 10%
Power consumption (with RRT42)	(ohne Last) ca. 600 mA
VDE protection class	1
Protection level	IP 65
Weight	320 g + RRT 42
Housing	Aluminium extruded profile
Colour	RAL 1021, no lead or cadmium content

Ordering Information

Art. no.	Typ	Designation
909678	RRT42.3-MCB-4.1	Multiple Light Beam Safety Device, Transceiver

ROBUST RRT42.6/RRT44.6



Multiple Light Beam Safety Device, Transceiver

Device-version with M12 connecting.



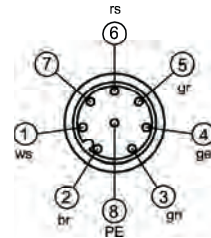
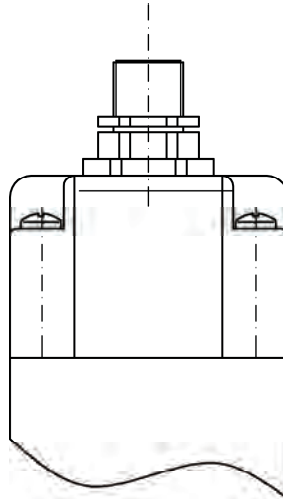
Safety Note:

When putting the Multiple Light Beam Safety Device ROBUST RRT42.6. and RRT44.6 into operation you should be familiar with the Connecting and Operating Instructions Multiple Light Beam Safety Devices Robust 4 and the Data Sheet ROBUST RRT42.6/RRT44.6... version.

Features

- Multiple Light Beam Safety Device/Transceiver acc. to EN IEC 61496
RRT42.6 2-beam Transceiver with beam distance 500mm
RRT44.6 4-beam Transceiver with beam distance 300mm
- 2 safety-relay outputs
- M12 connecting (8-pole)

Electrical connection



Color	Function	M12-Pin-Nr.
white	+ 24 VDC	1
brown	+ 0V	2
green	K 1.1	3
yellow	K 1.2	4
grey	K 2.1	5
pink	K 2.2	6
blue	n.c.	7
rt (PE)	shield	8

PIN-allocation M12 connection RRT42.6/RRT44.6



Max. switching voltage of the safety-relay-outputs amounts to 42V AC/DC.

Technical data

See the information on technical data in the Connecting and Operating Instructions Multiple Light Beam Safety Device ROBUST 4.

Order details

Art. no.	Type	Designation
909692	ROBUST RRT42.6	Multiple Light Beam Safety Device, Transceiver
909683	ROBUST RRT44.6	Multiple Light Beam Safety Device, Transceiver
548405	CB-M12-5000S8-G/F	Connection cable with M12 plug, straight, length: 5 m
548415	CB-M12-15000S8-G/F	Connection cable with M12 plug, straight, length: 15 m

ROBUST RRT42.3 / RRT44.3 with integrated Lamp



Multiple Light Beam Safety Device

Device-version with integrated indicator light unit.



Safety Note:

When putting the Multiple Light Beam Safety Devices ROBUST RRT42.3 / 44.3 into operation you should be familiar with the Connecting and Operating Instructions Multiple Light Beam Safety Devices Robust 4 and the Data Sheet ROBUST RRT42.3 / 44.3 version.

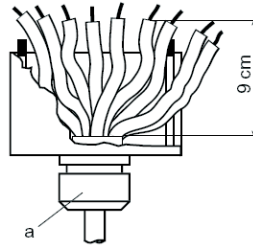
ISO 9001

Features

- Multiple Light Beam Safety Device/Transceiver acc. to EN IEC 61496
- 2 safety-relay outputs
- integrated indicator light unit

Electrical connection

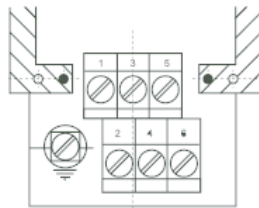
The transmitters and receivers of the multiple light beam safety device are delivered ex-factory with integrated PG screw connections, PG 11, with cable strain relief. The connection cables must be prepared with 9 cm signal output lines, as in the illustration below.



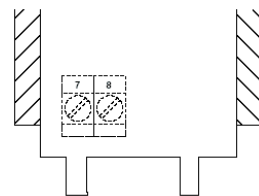
a = PG with cable strain relief

Multiple light beam safety device receiver/transceiver connection

Receiver strip terminal assignment:



- 1 = Supply voltage 24 V DC
- 2 = Supply voltage 0 V
- 3 = Relais output 1
- 4 = Relais output 1
- 5 = Relais output 2
- 6 = Relais output 2



- 7 = indicator light unit
- 8 = indicator light unit

To connect the lamp pull out the add-on board completely, turn the PCB and connect the lines. After connecting the lines insert the PCB into the bottom slot. Caution: Do not insert into the screws slot!

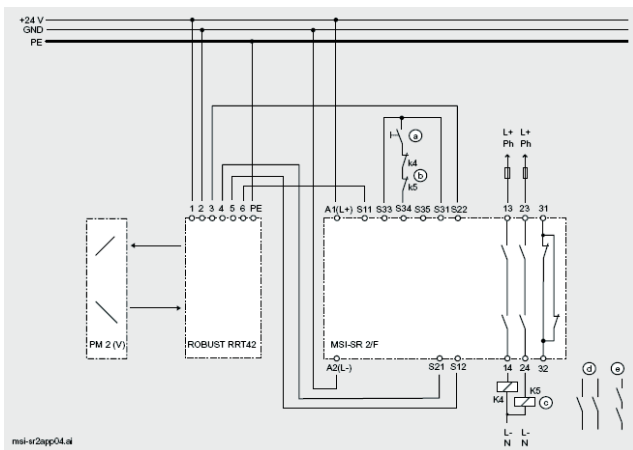
Technical data

See the information on technical data in the Connecting and Operating Instructions Multiple Light Beam Safety Device ROBUST 4.

Order details

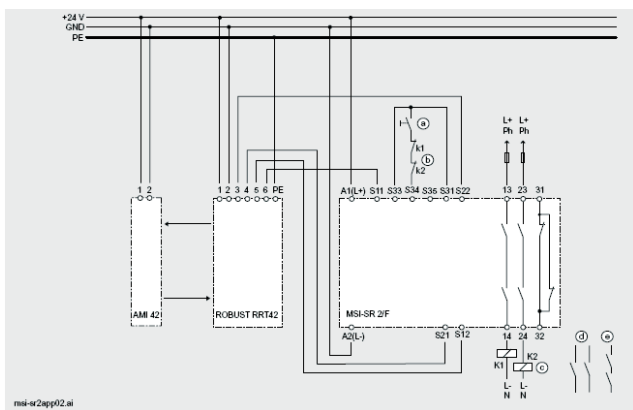
Part No.	Type	Designation
909681	ROBUST RRT42.3	Multiple Light Beam Safety Device, 2-beam
909699	ROBUST RRT44.3	Multiple Light Beam Safety Device, 4-beam

ROBUST RR/RT42 / RR/RT44 with MSI-SR2/F and PM2 (v)



- a = Start
- b = EDM
- c = Safety outputs, OSSD
- d = Control unit, two-channel
- e = Control unit, single-channel

ROBUST RRT42 / RRT44 with MSI-SR2/F and AMI42



- a = Start
- b = EDM
- c = Safety outputs, OSSD
- d = Control unit, two-channel
- e = Control unit, single-channel

ROBUST RRT42-MCB2.1/R2



Supplement to the ROBUST 42, 43 and 44 Connecting and Operating Instructions (AOPD type 4)

In order to bring together all the safety-related signals for a muting control device, ideally using the safety interface modules MSI-m/R(T) and MSI-mx/RX(Tx), a version of the ROBUST has now been developed

ROBUST RRT42-MCB2.1/R2

The built-in M12 sockets in the profile of the multibeam safety light barrier make it an easy matter to connect the cable to the switch cabinet. Connections for muting sensors as parallel muting, additional muting signal lamp and start/restart button

! More technical data see connecting and operating instructions ROBUST 42, 43, 44 (AOPD category 4).

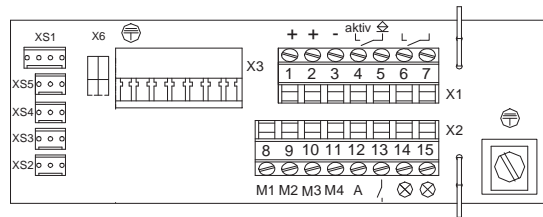
Features

- Connection socket for muting signal lamp and on-the-spot start/restart button
- Connection socket for muting sensors
- Only one cable required for connecting to the switch cabinet
- Large terminal compartment with pull-out terminal
- Compact profile with adjustable sliding blocks
- Parallel muting
- Activation of the muting sensors by means of separate operating voltage is possible

Electrical Connection

! The only permissible operating and switching voltage (e.g. for relay outputs) is 24 V DC. The cable connection to the switch cabinet must be laid in such a way that it is adequately protected against mechanical damage.

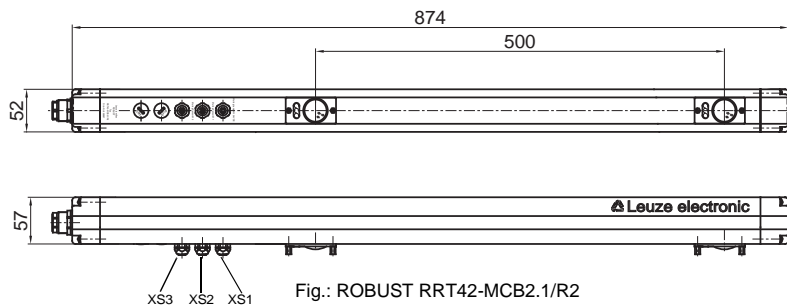
PCB view:



Connection assignment:

Hirschmann plug N11 R		Function	Comment	XS Assignment
PIN	Connecting cable color			
1	brown	+ 24 V	Supply voltage	XS1, Pin4
2	pink	+ 24 V	Supply voltage	XS2, Pin1-
3	blue	0 V		XS1,2,3, Pin3
4	grey	K1.1		
5	black	K1.2		
6	orange	K2.1		
7	red	K2.2		
8	violett	M1	Muting sensor output	XS2 Pin4
9	white	M2	Muting sensor output	XS3 Pin4
10	beige	Start-Key		XS1 Pin2
11	clear	Muting lamp		XS1 Pin1
PE	green / yellow			

Dimensional Drawings



Technical Data

Safety classification	Category 4
Operating voltage	24 V DC +/- 15%
Residual ripple	< 10%
Power consumption (with RRT42)	(ohne Last) ca. 500 mA
VDE protection class	1
Protection level	IP 65
Weight	320 g + RRT42
Housing	Aluminium extruded profile
Colour	RAL 1021, no lead or cadmium content

Ordering Information

Art. no.	Type	Designation
909687	RRT42-MCB2.1/R2	Multiple Light Beam Safety Device, Transceiver

ROBUST RRT42.3-MCB2.1/R2



Supplement to the ROBUST 42, 43 and 44 Connecting and Operating Instructions (AOPD type 4)

In order to bring together all the safety-related signals for a muting control device, ideally using the safety interface modules MSI-m/R(T) and MSI-mx/RX(Tx), a version of the ROBUST has now been developed

ROBUST RRT42.3-MCB2.1/R2

ROBUST RRT42.3-MCB2.1/R2 with integrated signal lamp. The built-in M12 sockets in the profile of the multibeam safety light barrier make it an easy matter to connect the cable to the switch cabinet. Connections for muting sensors as parallel muting, additional muting signal lamp and start/restart button

More technical data see connecting and operating instructions ROBUST 42, 43, 44 (AOPD category 4).

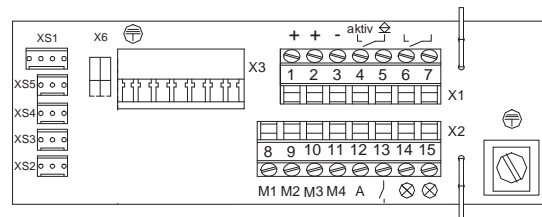
Features

- M12 socket for muting signal lamp and on-the-spot start/restart button
- M12 sockets for muting sensors
- Only one cable required for connecting to the switch cabinet
- Large terminal compartment with pull-out terminal
- Compact profile with adjustable sliding blocks
- Parallel muting
- Activation of the muting sensors by means of separate operating voltage is possible

Electrical Connection

The only permissible operating and switching voltage (e.g. for relay outputs) is 24 V DC. The cable connection to the switch cabinet must be laid in such a way that it is adequately protected against mechanical damage.

PCB view:



Connection assignment:

Hirschmann plug N11 R		Function	Comment	XS Assignment
PIN	Connecting cable color			
1	brown	+ 24 V	Supply voltage	XS1, Pin4
2	pink	+ 24 V	Supply voltage	XS2, Pin1.
3	blue	0 V		XS1,2,3, Pin3
4	grey	K1.1		
5	black	K1.2		
6	orange	K2.1		
7	red	K2.2		
8	violett	M1	Muting sensor output	XS2 Pin4
9	white	M2	Muting sensor output	XS3 Pin4
10	beige	Start-Key		XS1 Pin2
11	clear	Muting lamp		XS1 Pin1
PE	green / yellow			

Dimensional Drawings

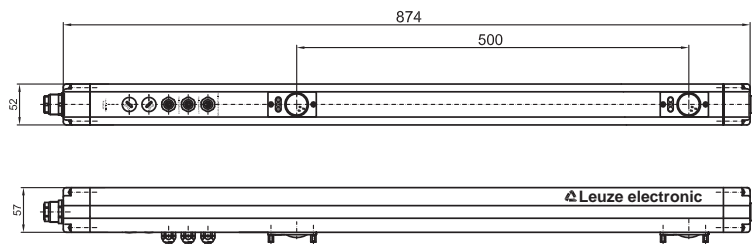


Fig.: RRT42.3-MCB2.1/R2

Technical Data

Safety classification	Category 4
Operating voltage	24 V DC +/- 15%
Residual ripple	< 10%
Power consumption (with RRT42)	(ohne Last) ca. 500 mA
VDE protection class	1
Protection level	IP 65
Weight	320 g + RRT42
Housing	Aluminium extruded profile
Colour	RAL 1021, no lead or cadmium content

Ordering Information

Art. no.	Typ	Designation
909688	RRT42-MCB2.1/R2	Multiple Light Beam Safety Device, Transceiver

ROBUST RR43-MCB-4.2



Supplement to ROBUST 42, 43, 44 Connecting- and Operating Instructions

The RR43-MCB-4.2 Receiver for combining all safety-related signals for a muting control, preferably using the MSI-m/R and MSI-mx/Rx safety interfaces.

The M12 connection sockets in the profile of the multiple light beam safety device simplify the cable-laying to the control cabinet. There are connections for 4 muting sensors, muting lamps and restart buttons.



Safety note:

Knowledge of the connecting and operating instructions of the basic ROBUST 4 multiple light beam safety devices and the data sheet of the ROBUST RR43-MCB-4.2 multiple light beam safety device type is required for the connection and initial operation of the ROBUST RR43-MCB-4.2.6 device type.

Features

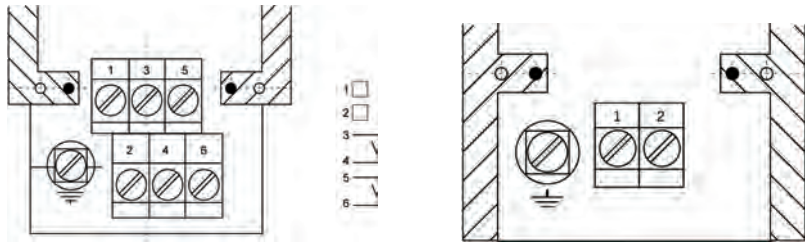
- Multiple light beam safety devices in acc. with EN 61496-1, 61496-2
- Beam distance - 400 mm
- 2 safety relay outputs
- M12 connection socket for muting lamps and start/restart buttons on-site
- M12 connection socket for muting sensors
- Parallel and sequential muting possible

Electrical connection

(See also, ROBUST 4 connecting and operating instructions)

Receiver:
RR43-MCB-4.2

Transmitter:
RT43



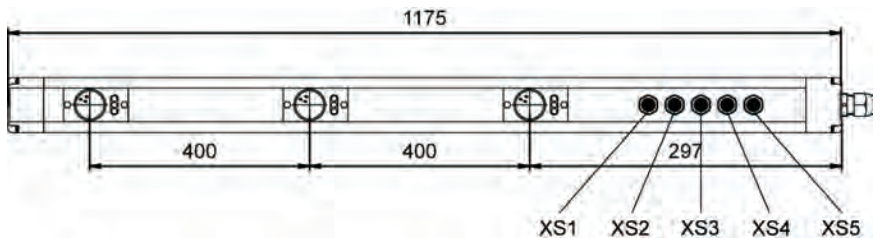
Pin assignment RR43-MCB-4.2

Pin	Function	Comment	XS assignment
1	+ 24V	Supply voltage	XS1, Pin4
2	+ 24V		
3	0 V		XS1,2,3 Pin3
4	K1.1		
5	K1.2		
6	K2.1		
7	K2.2		
8	M1	Muting sensor output	XS2, Pin4
9	M2	Muting sensor output	XS3, Pin4
10	M3	Muting sensor output	XS4, Pin4
11	M4	Muting sensor output	XS5, Pin4
12	+ 24V	Muting sensors supply voltage	XS2, Pin1
13	Start button		XS1, Pin2
14	Muting lamp	Internal lamp	
15	Muting lamp		XS1, Pin1



The maximum permissible switching voltage of the safety relay outputs is 42V AC/DC. Dimensional drawing

Dimensional drawing



Technical data

See the information for technical data in the connecting and operating instructions for ROBUST 4 multiple light beam safety devices.

Ordering information

Article no.	Type	Description
909673	ROBUST RR43-MCB4.2	Multiple light beam safety device, receiver with integr. muting connection box
50029085	ROBUST RT43	Multiple light beam safety device, transmitter

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