

Signal Transmission Systems

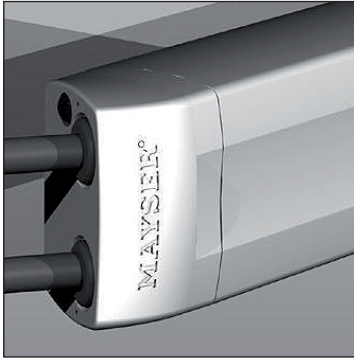
Contents

Transponder System TRS-S

Transponder System TRS-R

Spiral Cable System WLS

RadioBandSystem RBS



Product Information Transponder system TRS-S

Transponder system TRS-S – wear-free signal transmission for door systems

Area of application

For the transmission of safety-related signals on door systems, Mayser has taken wireless transmission, already established in the bus + train sector, a step further. The wireless transmission system is based on transponder technology. It has been adapted to the special requirements of door systems: the results are very easy assembly and installation, as well as top reliability and zero wear. And all this is proven and tested at a high level: EN 954 category 3 and SIL2 as per EN 61508. Better safe than sorry. Also without wires: Wireless Safety.



Function

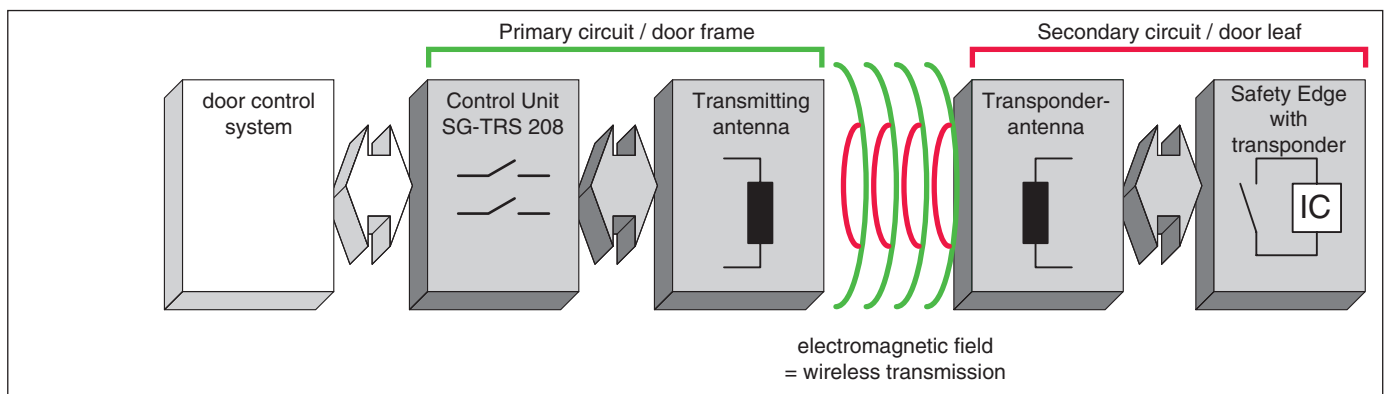
The transponder system is a highly tolerant complete system which roughly consists of two circuits:

The **primary circuit** is secured to the door frame and directly connected to the door control. It consists of

- transmitting antenna, which at the same time is the power source for the secondary circuit, and
- Control Unit with connection to door control system

The **secondary circuit** is fitted to the moving door leaf and consists of

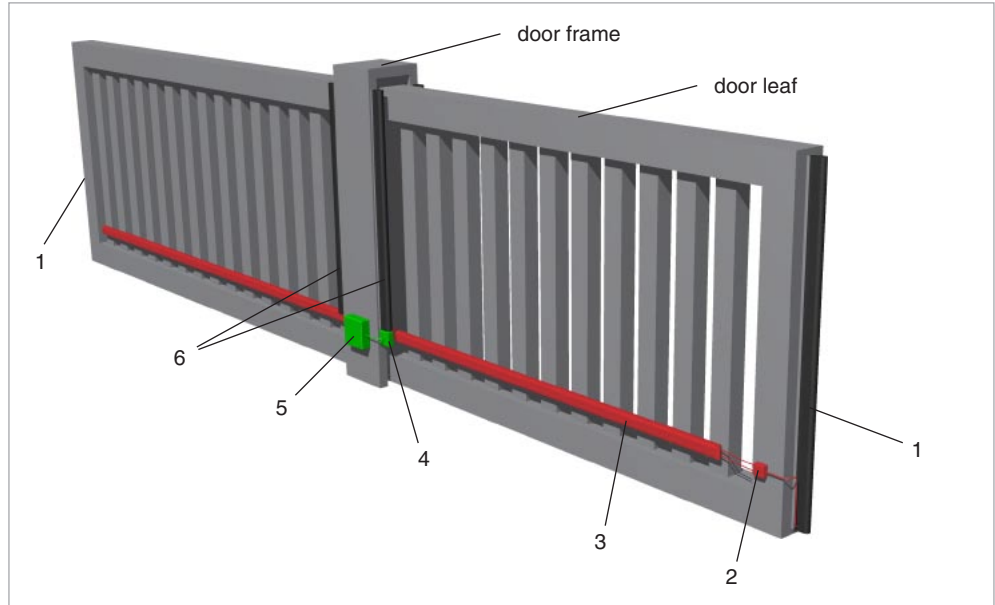
- Safety Edge,
- tuning box for fast length adaptation and
- transponder antenna.



At a glance

- simple and fast assembly
- door system tolerances unimportant, thus easy to install
- suitable for retrofitting
- secondary circuit without separate power source
- non-susceptible to interference from other radio signals
- wear-free

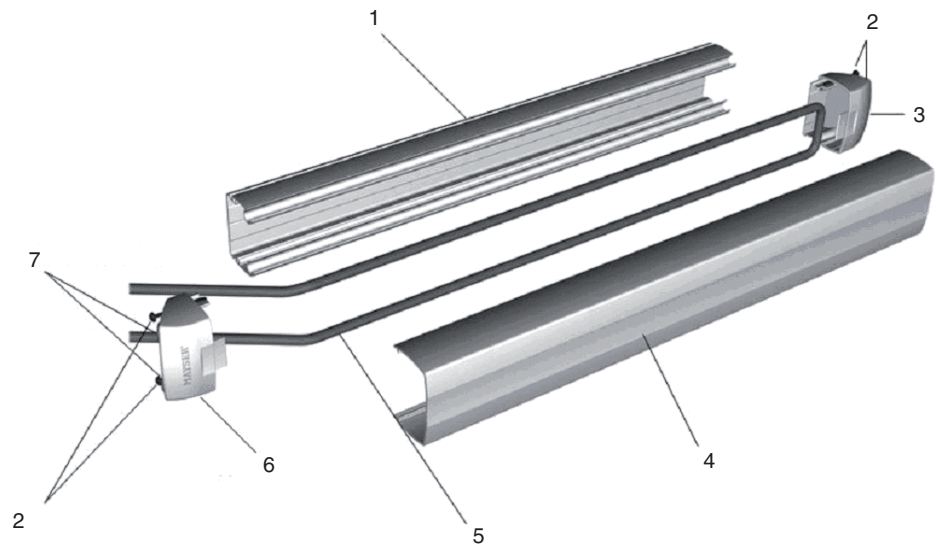
System setup



Pos.	Part No.	Designation	Comment
1	– –	Safety Edge, door leaf SL/TRS SL/BK	incl. rubber profile and aluminium profile with integrated transponder chip BK type Safety Edge
2	1004300	Tuning box TRS-S 55 AB	for configuration of the transponder antenna, incl. integrated transponder chip for SL/BK
3	7502026 to 7502041	Transponder antenna set TRS-S 55 TS	complete with spool carrier, antenna cable and end cap set (see page 3)
4	7502366	Transmitting antenna TRS-03-M	4.5 m connection cable for attaching to metal
5	1004179 1004180	Control Unit SG-TRS 208/8k2 SG-TRS 208/NC	SIL2, DC 24 V, two channel, 2 relay contacts, secondary closing edge connection for Safety Edges with R = 8k2 NC-Safety Edges
6	– – – –	Safety Edge, door frame SL/8k2 SL/BK SL/NC SL/NC/W8k2	incl. rubber profile and aluminium profile with monitoring resistor 8k2 BK type with NC contact with NC contact and integrated monitoring resistor 8k2

We will be pleased to submit an offer for bulk buyers.

Transponder
antenna set TRS-S

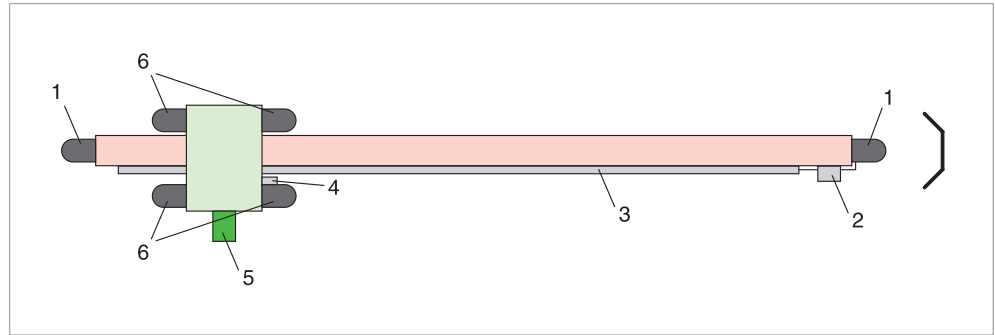


- | | |
|--------------------------------------|------------------------------|
| 1 Spool carrier lower section TRS 55 | 5 Antenna cable for TRS-S 55 |
| 2 Fixing screws for end cap | 6 End cap for TRS-S 55 |
| 3 End cap for TRS 55 | 7 Cable grommets TRS-S 55 |
| 4 Spool carrier upper section TRS 55 | |

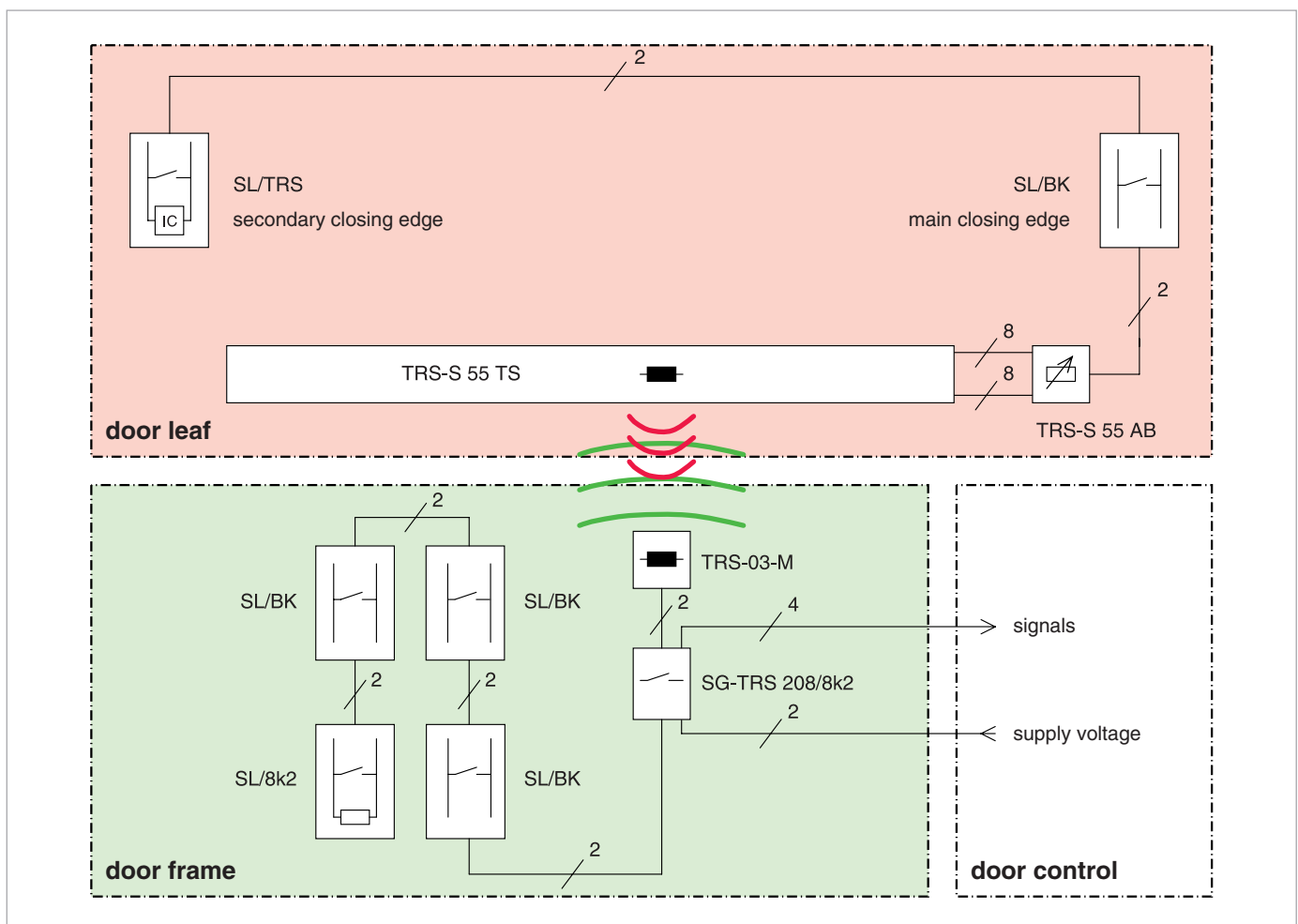
Transponder antenna set TRS-S 55 TS complete Part No.	Runway max. FW [m]	System length L_S [m]	Antenna cable for TRS-S 55 L_A [m]
7502026	3.0	3	7.0
7502027	4.0	4 = 2+2	9.0
7502028	5.0	5 = 3+2	11.0
7502029	6.0	6 = 3+3	13.0
7502030	7.0	7 = 3+2+2	15.0
7502031	8.0	8 = 3+3+2	17.0
7502032	9.0	9 = 3+3+3	19.0
7502033	10.0	10 = 3+3+2+2	21.0
7502034	11.0	11 = 3+3+3+2	23.0
7502035	12.0	12 = 3+3+3+3	25.0
7502036	13.0	13 = 3+3+3+2+2	27.0
7502037	14.0	14 = 3+3+3+3+2	29.0
7502038	15.0	15 = 3+3+3+3+3	31.0
7502039	16.0	16 = 3+3+3+3+2+2	33.0
7502040	17.0	17 = 3+3+3+3+3+2	35.0
7502041	18.0	18 = 3+3+3+3+3+3	37.0

Note: The longest runway FW_{max} possible depends on each individual configuration. Please observe the order examples on the following pages.

Order example 1



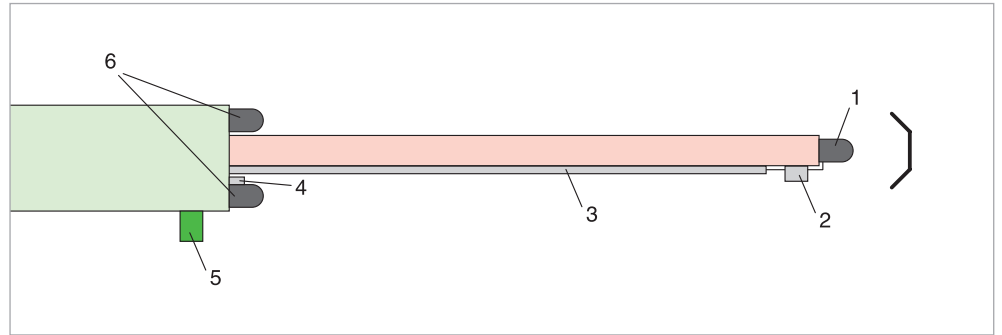
Sliding door with runway FW = 7.2 m.
Door leaf has 2 NO-Safety Edges (1), one per closing edge.
Door frame has 4 NO-Safety Edges (6), one per secondary closing edge.



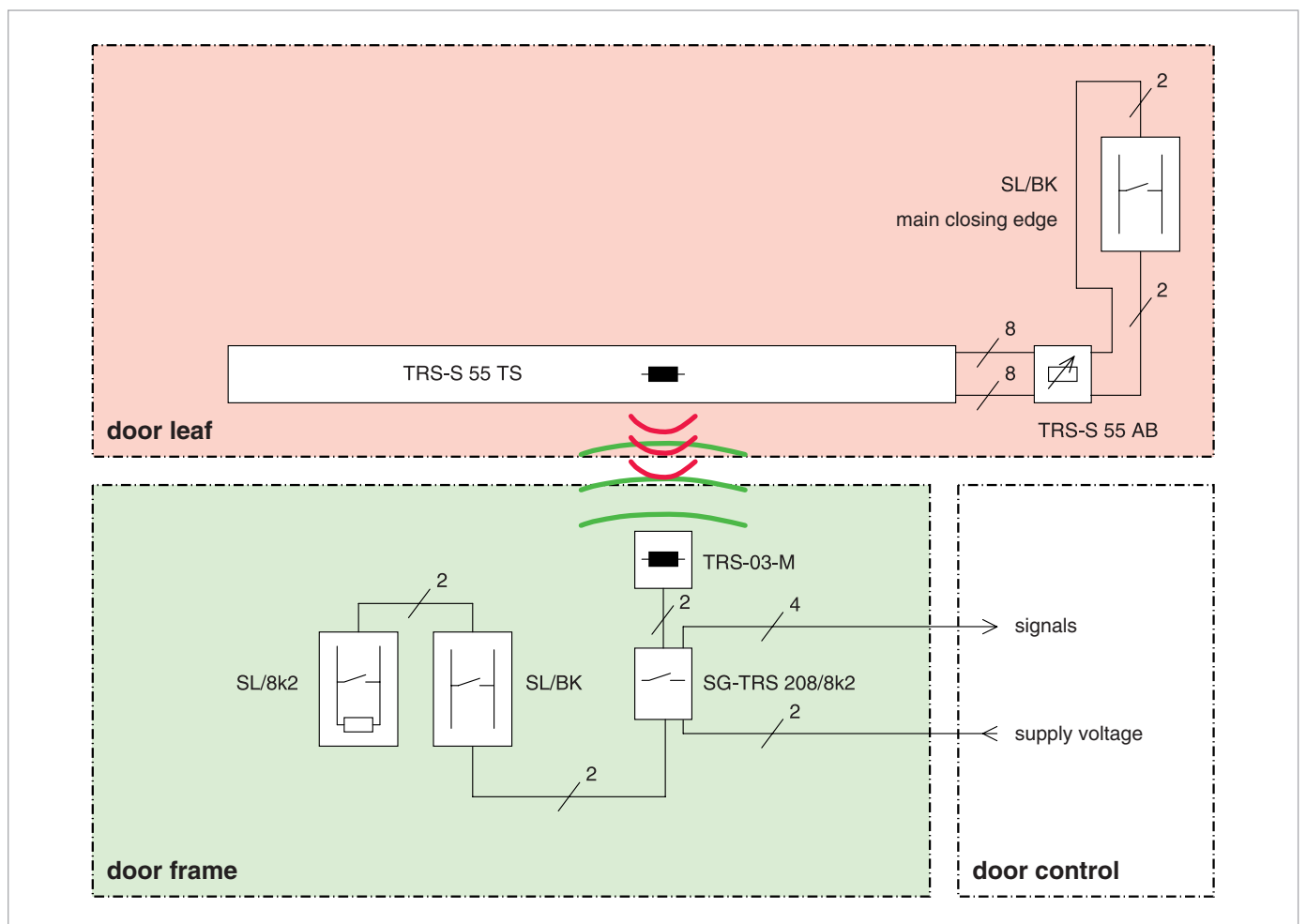
for door leaf (secondary circuit)	Part No.
1x Transponder Safety Edge SL/TRS (1)	-
1x NO-Safety Edge SL/BK (1)	-
1x Tuning box TRS-S 55 AB (2)	1004300
1x Transponder antenna set TRS-S 55 TS, 8 m (3)	7502031

for door frame (primary circuit)	Part No.
1x Transmitting antenna TRS-03-M (4)	7502366
1x Control Unit SG-TRIS 208/8k2 (5)	1004179
3x NO-Safety Edge SL/BK (6)	-
1x NO-Safety Edge SL/8k2 (6)	-

Order example 2



Sliding door with runway FW = 3.8 m.
Door leaf has 1 NO-Safety Edge (1) on the main closing edge.
Door frame has 2 NO-Safety Edges (6), one per secondary closing edge.

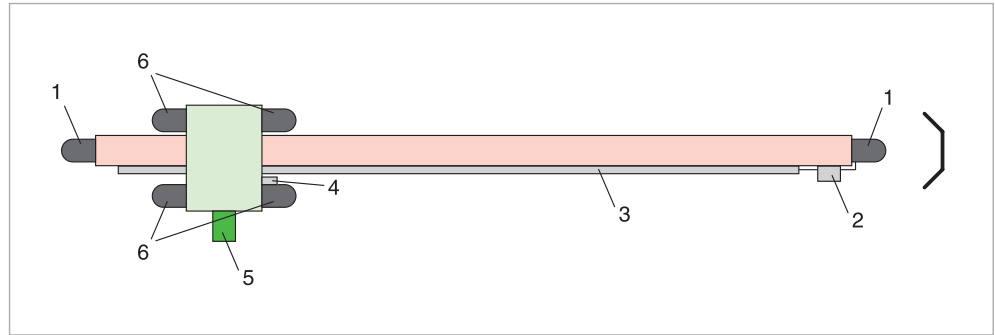


for door leaf (secondary circuit)	Part No.
1× NO-Safety Edge SL/BK (1)	–
1× Tuning box TRS-S 55 AB (2)	1004300
1× Transponder antenna set TRS-S 55 TS, 4 m (3)	7502027

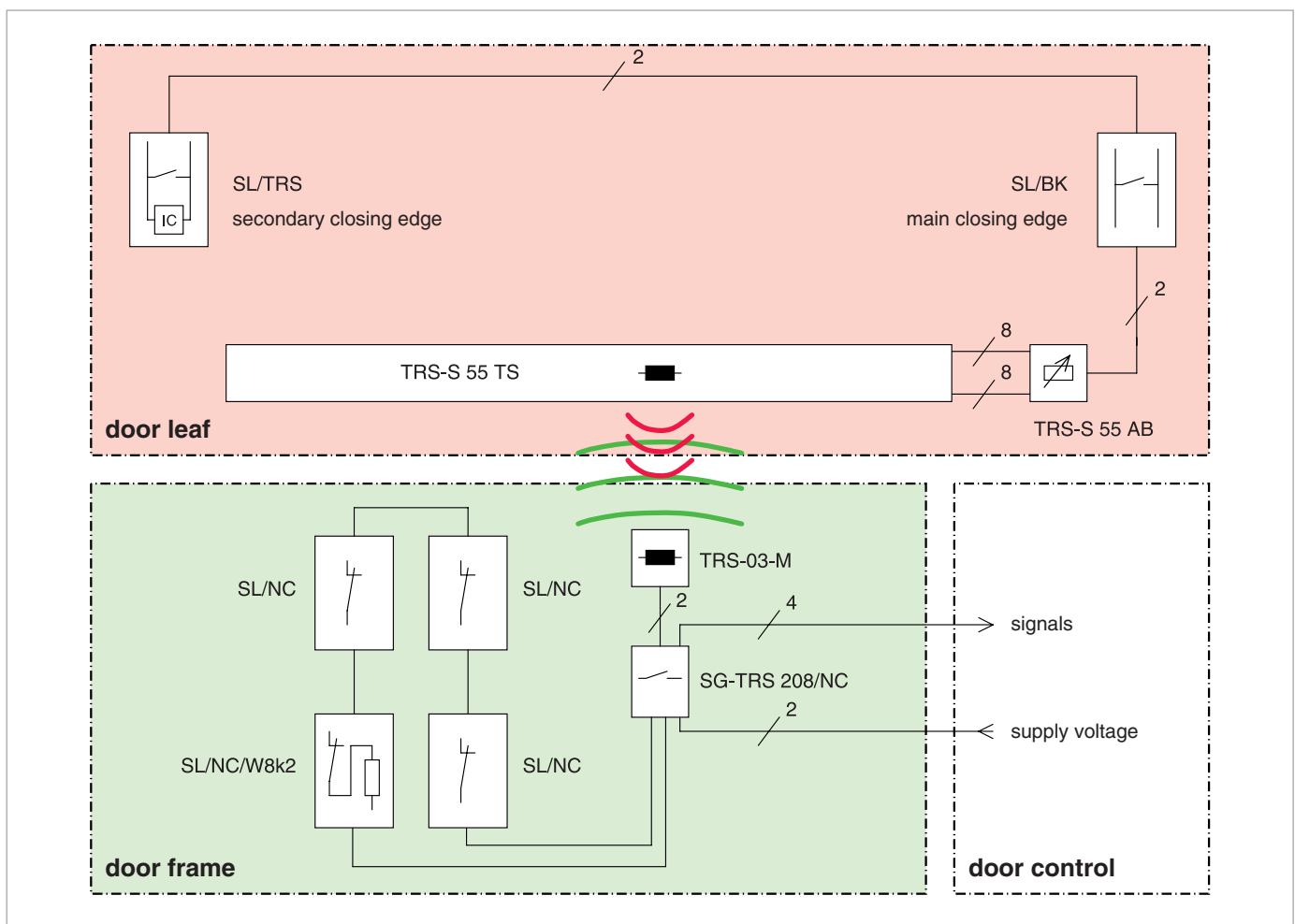
Note: In this case, the longest possible runway FW_{max} is 18.0 m.

for door frame (primary circuit)	Part No.
1× Transmitting antenna TRS-03-M (4)	7502366
1× Control Unit SG-TRS 208/8k2 (5)	1004179
1× NO-Safety Edge SL/BK (6)	–
1× NO-Safety Edge SL/8k2 (6)	–

Order example 3



Sliding door with runway FW = 5.5 m.
Door leaf has 2 NO-Safety Edges (1), one per closing edge.
Door frame has 4 NC-Safety Edges (6), one per secondary closing edge.

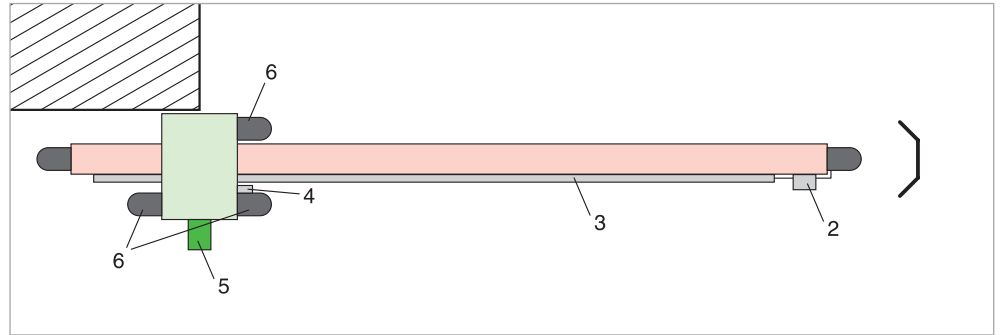


for door leaf (secondary circuit)	Part No.
1x Transponder Safety Edge SL/TRS (1)	–
1x NO-Safety Edge SL/BK (1)	–
1x Tuning box TRS-S 55 AB (2)	1004300
1x Transponder antenna set TRS-S 55 TS, 6 m (3)	7502029

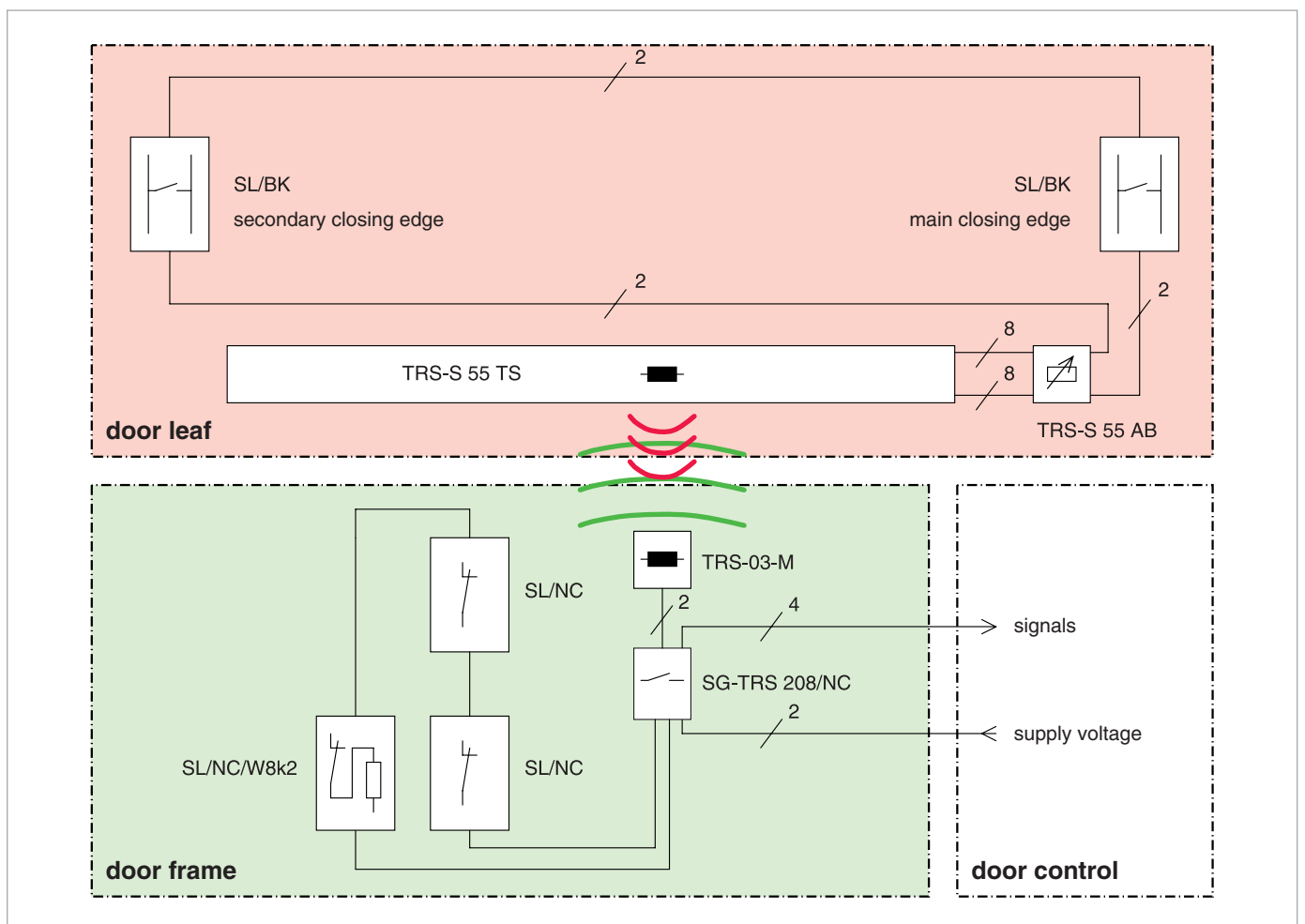
Note: In this case, the longest possible runway FW_{max} is 16.0 m.

for door frame (primary circuit)	Part No.
1x Transmitting antenna TRS-03-M (4)	7502366
1x Control Unit SG-TRIS 208/NC (5)	1004180
3x NC-Safety Edge SL/NC (6)	–
1x NC-Safety Edge SL/NC/W8k2 (6)	–

Order example 4



Retrofitted sliding door with runway FW = 5.3 m.
Door leaf already has 2 NO-Safety Edges, one per closing edge.
Door frame has 3 NC-Safety Edges (6), one per secondary closing edge.

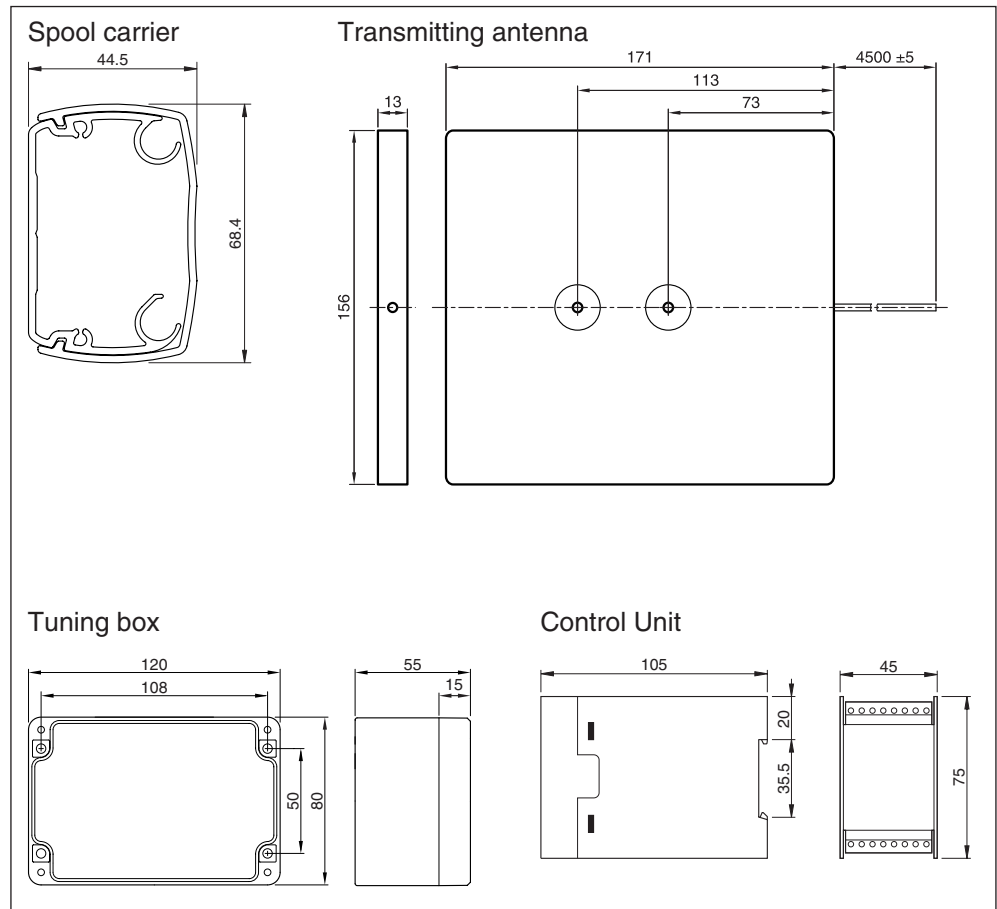


for door leaf (secondary circuit)		Part No.
1x	Tuning box TRS-S 55 AB (2)	1004300
1x	Transponder antenna set TRS-S 55 TS, 6 m (3)	7502029

Note: In this case, the longest possible runway FW_{max} is 14.0 m.

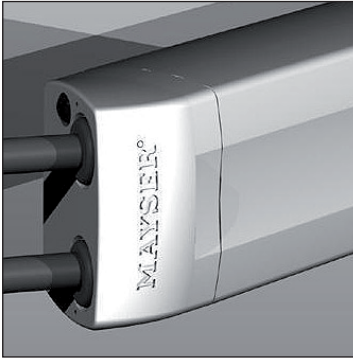
for door frame (primary circuit)		Part No.
1x	Transmitting antenna TRS-03-M (4)	7502366
1x	Control Unit SG-TRS 208/NC (5)	1004180
2x	NC-Safety Edge SL/NC (6)	—
1x	NC-Safety Edge SL/NC/W8k2 (6)	—

Dimensions



Technical data

Safety:	
Standards	EN 954 category 3, EN 12978, EN 13241-1, SIL2 according to IEC 61508
System	tolerates door variations of up to 40 mm (with 8 m system length)
Protection class:	
Antennae, tuning box	IP66
Control Unit	IP20
Temperature range:	
Antennae, tuning box	-40 °C to +70 °C
Control Unit	-20 °C to +50 °C
Spool carrier:	weather-resistant PVC profile
Available lengths:	3 to 18 m in steps of 1 m



Product Information Transponder System TRS-R

The wireless transmission system – roller gates, high-speed doors and maintenance pits

Area of application

The new TRS-R transponder system now transmits safety-related signals wirelessly from the Safety Edge to the door control module. And it does this on roller gates, overhead sectional doors and high-speed doors as well as on fire doors and maintenance pits. Unlike complicated, temperamental wired signal transmission, the TRS-R transponder system is a wear-resistant, maintenance-free solution.

And all this is proven and tested at a high level: EN 954 category 3 and SIL2 as per EN 61508. Better safe than sorry. Also without wires: Wireless Safety.

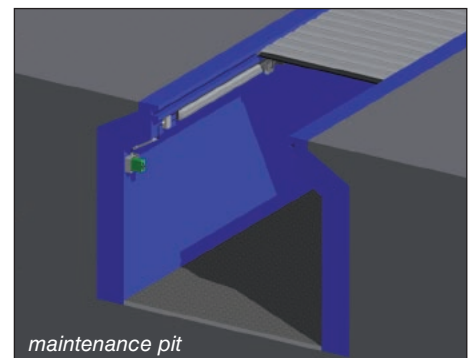
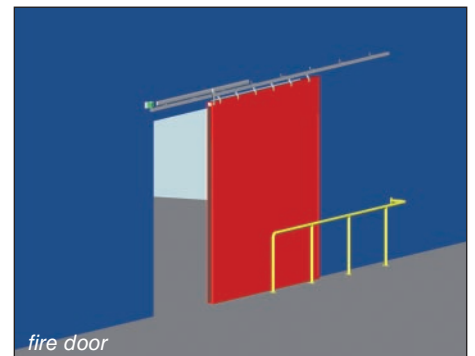
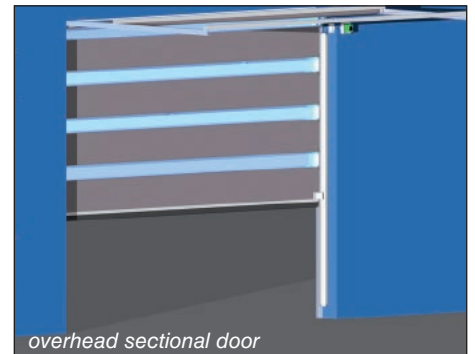
The transponder system is a highly tolerant overall system which generally speaking can be divided into two circuits:

The primary circuit is mounted in a stationary position and directly connected to the gate control. It consists of

- a transmitting antenna, which at the same time is the power source for the secondary circuit, and
- a Control Unit with a connection to the gate control system.

The secondary circuit is fitted to the moving door leaf and consists of

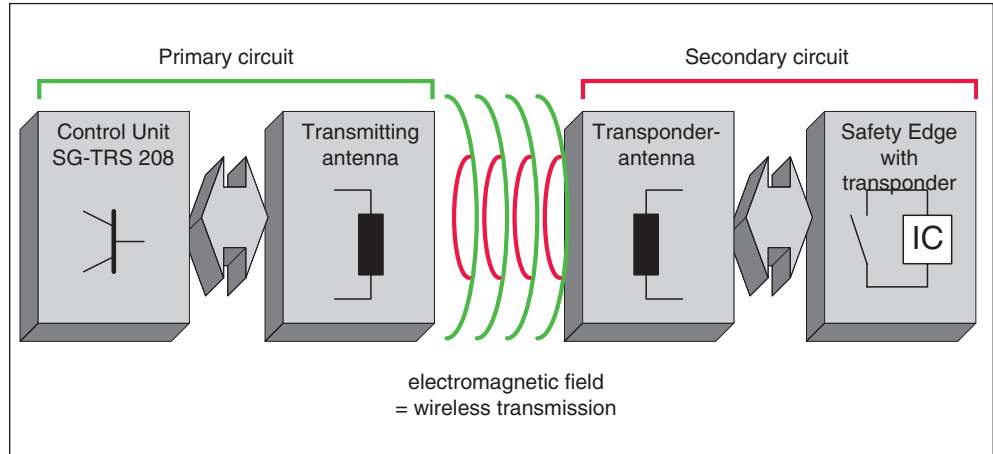
- a Safety Edge and
- a transponder antenna



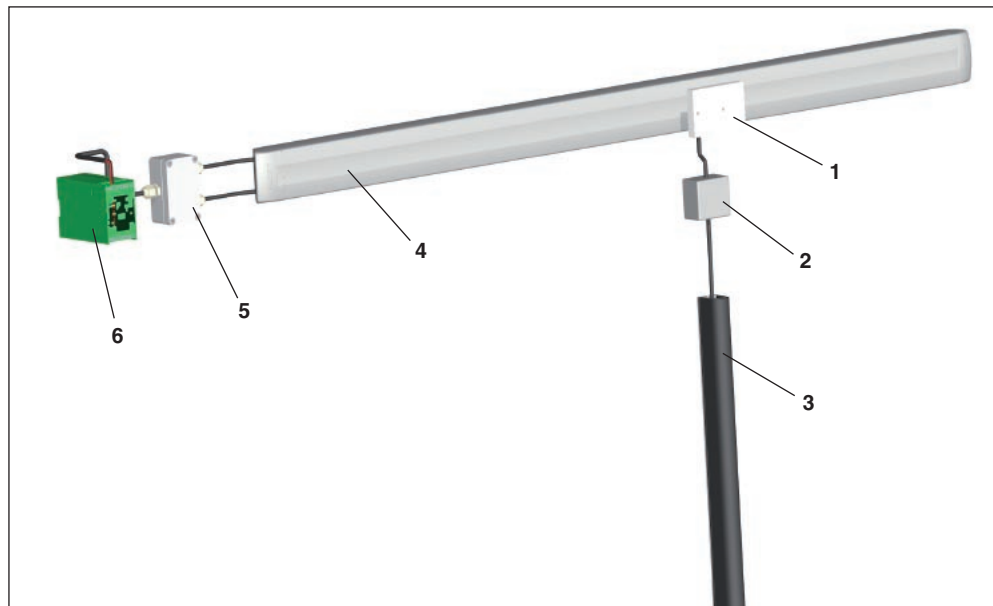
At a glance

- simple and fast assembly
- ideal for very tight spaces
- SIL2 in accordance with IEC 61508
- no separate power source such as rechargeable battery or battery for Safety Edge (passive system)
- suitable for retrofitting
- high reliability
- wear-free, low maintenance
- impervious to environmental influences such as ice, snow, water or dirt

Function

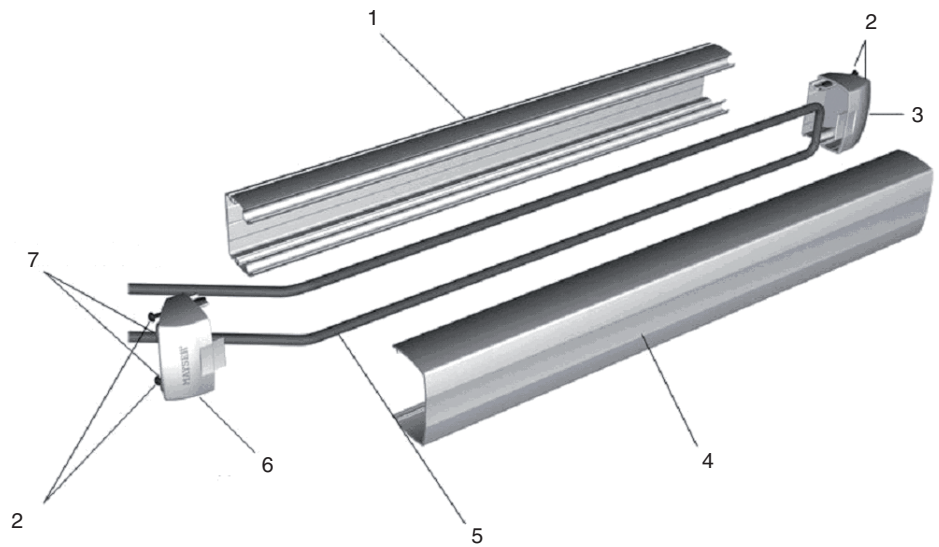


System setup



Pos.	Part number	Designation	Comment
1	7501107 7501200	Transponder antenna TRS-01-M TRS-01-K	4.5 m service cable for attachment to metal for attachment to plastic
2	7502163	Terminal box TRS-R-SL	for wiring between Safety Edge and transponder antenna
3	–	Safety Edge SL/TRS	incl. rubber profile and aluminium profile with integrated transponder chip
4	7502124 bis 7502139	Transmitting antenna set TRS-R 55	complete with spool carrier, antenna cable and end cap set (see page 3)
5	7502162	Terminal box TRS-R-ANT	for wiring between transmitting antenna and Control Unit
6	1004179 1004180	Control Unit SG-TRS 208/8k2 SG-TRS 208/NC	SIL2, DC 24 V, dual channel mode, 2 relay contacts, secondary closing edge contact for Safety Edges with R = 8.2 kΩ NC Safety Edges

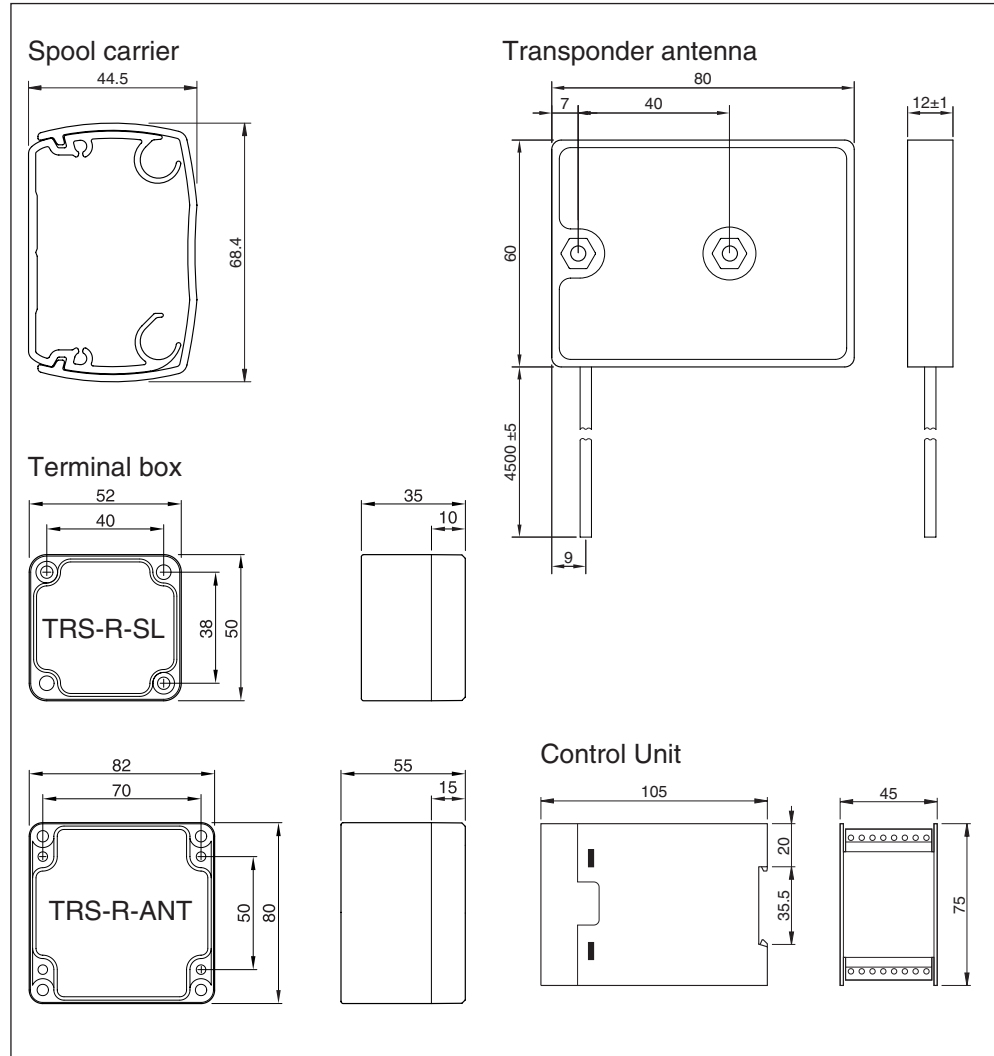
Transmitting antenna set TRS-R



- | | |
|--------------------------------------|------------------------------|
| 1 Spool carrier lower section TRS 55 | 5 Antenna cable for TRS-R 55 |
| 2 Fixing screws for end cap | 6 End cap for TRS-R 55 |
| 3 End cap for TRS 55 | 7 Cable grommets TRS-R 55 |
| 4 Spool carrier upper section TRS 55 | |

Transmitting antenna set TRS-R 55 complete Part No	Runway maximum FW [m]	System length L_s [m]	Antenna cable for TRS-R 55 L_A [m]
7502124	3,0	3	7,0
7502125	4,0	4 = 2+2	9,0
7502126	5,0	5 = 3+2	11,0
7502127	6,0	6 = 3+3	13,0
7502128	7,0	7 = 3+2+2	15,0
7502129	8,0	8 = 3+3+2	17,0
7502130	9,0	9 = 3+3+3	19,0
7502131	10,0	10 = 3+3+2+2	21,0
7502132	11,0	11 = 3+3+3+2	23,0
7502133	12,0	12 = 3+3+3+3	25,0
7502134	13,0	13 = 3+3+3+2+2	27,0
7502135	14,0	14 = 3+3+3+3+2	29,0
7502136	15,0	15 = 3+3+3+3+3	31,0
7502137	16,0	16 = 3+3+3+3+2+2	33,0
7502138	17,0	17 = 3+3+3+3+3+2	35,0
7502139	18,0	18 = 3+3+3+3+3+3	37,0

Dimensions



Technical data

Safety:

Standards

EN 954 category 3,
SIL2 in accordance with IEC 61508

System

tolerates fluctuations of up to 40 mm
(with 8 m system length)

Protection class:

Antennae, terminal boxes

IP66

Control Unit

IP20

Temperature range:

Antennae, terminal boxes

-40 °C to +70 °C

Control Unit

-20 °C to +50 °C

Spool carrier:

weatherproof PVC profile

Available lengths:

3 to 18 m in 1 m steps



Product Information WLS

WLS – the epitome of durability

Areas of application

The WLS signal transmission system is used as a protective conduit for cables in doors and gates. When it comes to making danger areas safe, the system is especially suitable for safe transmission of signals between tactile sensors e.g. Safety Edges and the control module.

Examples:

- Vertical and horizontal gates
- Machine hoods and windows
- Conservatories
- Sun blinds
- Moulding and textile machines



Function

The system consists of an aluminium profile tube and a specially designed, abrasion-resistant and extremely dimensionally stable spiral cable with carriage. When the carriage is put into motion the cable is stretched inside the profile tube and returns to its original position when the carriage goes back. The system components were designed to co-ordinate with each other and can be used in gates both indoors and outdoors. The WLS is suitable for gates in high-frequency operation.

Technical data

Cable:	special, wear-free, double insulated spiral cable
Number of wires/cross-section:	4x 0.14 mm ²
Max. operating voltage:	max. 48 V AC/DC
Max. load at +25 °C:	max. 1.5 A eff.
Temperature range:	-20 °C to +80 °C
Conduit rail:	aluminium, anodized, warp resistant
Moving speed:	max. 40 m/min
Runway lengths:	1.5 m to 23.5 m
System lengths:	2.0 m to 26.0 m in fixed lengths: 2, 3, 4 and 6 m

At a glance

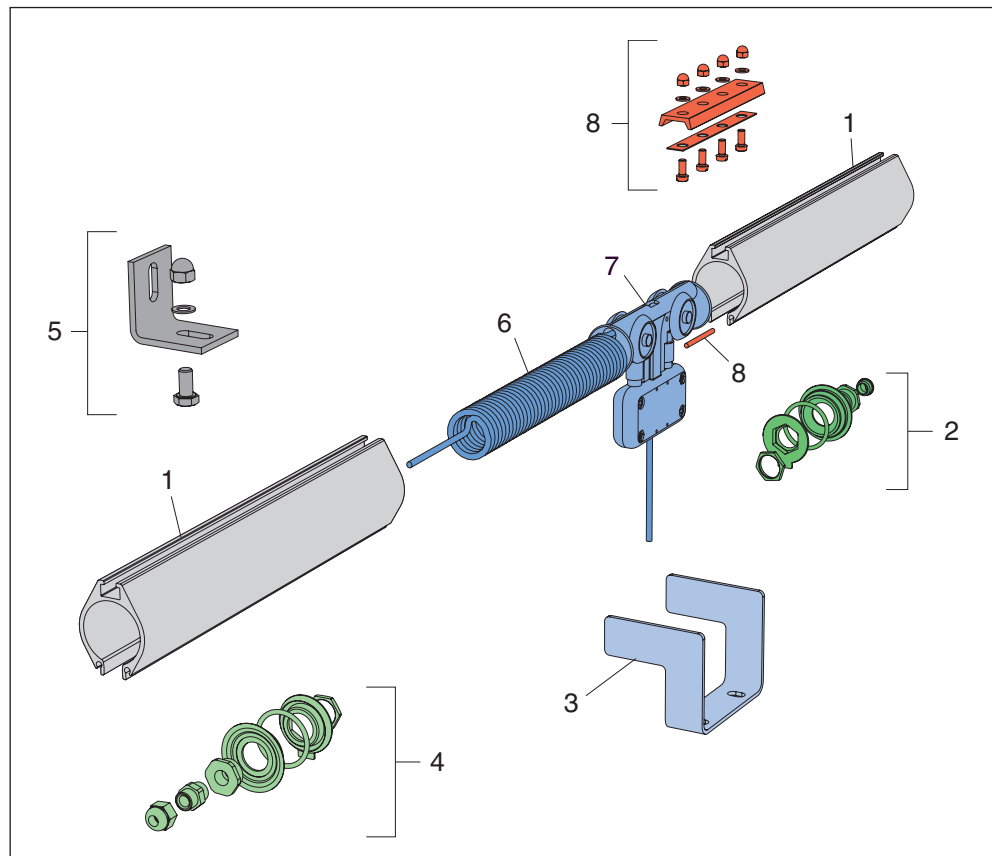
- Robust, simple, proven construction
- Quick and easy installation due to low number of components in modular form
- Maintenance-free
- Short envelope delay to meet the dynamic force and time parameters in accordance with EN 12453 and EN 12445



Product Information WLS

**WLS –
the epitome of durability**

System assembly



Pos.	Part No.	Designation	Comment
1	10038-06 ... -09	Profile tube WLS	aluminium anodised; 2, 3, 4 and 6 m
2	1003792	WLS-sealing cap	closed
3	1003771	Carrying fork for WLS	
4	1003791	WLS-sealing cap	PG 7
6	–	Spiral cable	4x 0.14 mm ²
7	–	Carriage	
8	1003802	Tube connector for WLS	galvanised
7 + 6	75015-13 ... -24	Spiral cable with carriage	4x 0.14 mm ²

Accessories

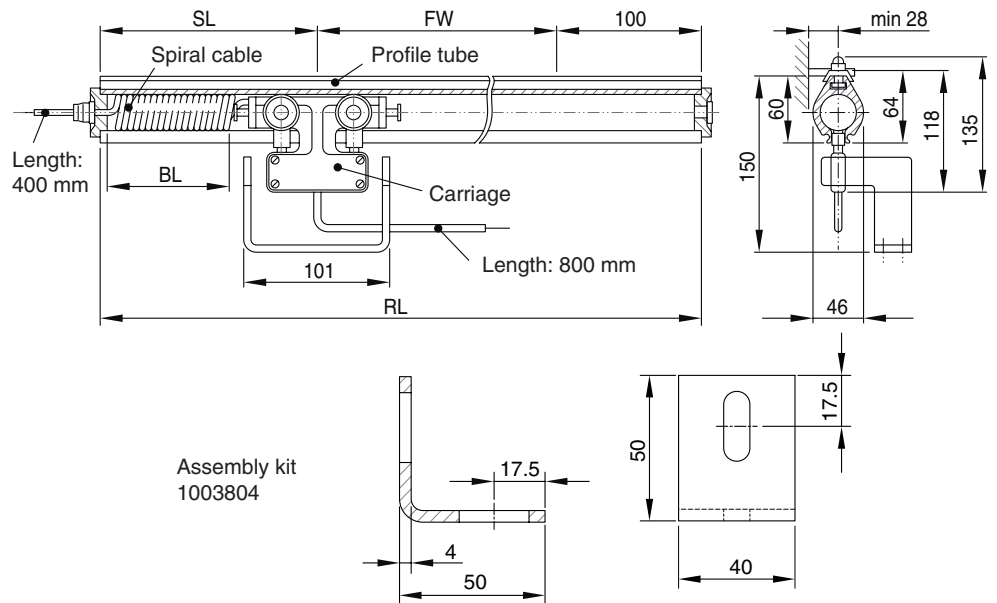
5	1003804	Fastening parts for WLS	incl. nuts and screws
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Product Information WLS

**WLS –
the epitome of durability**

Dimensions and part numbers



WLS complete Part No.	WLS-kit, no profile tube Part No.	Spiral cable with carriage Part No.	Max. runway FW [m]	Profile tube length RL [m]	Storage length SL [m]	Block length BL [m]
7501482	7501501	7501513	1.5	2	0.3	0.12
7501483	7501502	7501514	1.6 ... 2.5	3	0.4	0.29
7501484	7501502	7501514	2.6 ... 3.5	4	0.4	0.29
7501485	7501503	7501515	3.6 ... 4.3	5 = 2+3	0.6	0.46
7501486	7501503	7501515	4.4 ... 5.3	6	0.6	0.46
7501487	7501504	7501516	5.4 ... 6.1	7 = 3+4	0.8	0.63
7501488	7501504	7501516	6.2 ... 7.1	8 = 4+4	0.8	0.63
7501489	7501505	7501517	7.2 ... 8.0	9 = 3+6	0.9	0.80
7501490	7501505	7501517	8.1 ... 9.0	10 = 4+6	0.9	0.80
7501491	7501506	7501518	9.1 ... 9.8	11 = 3+4+4	1.05	0.96
7501492	7501506	7501518	9.9 ... 10.8	12 = 6+6	1.05	0.96
7501493	7501506	7501518	10.9 ... 11.8	13 = 3+4+6	1.05	0.96
7501494	7501507	7501519	11.9 ... 12.6	14 = 2+6+6	1.25	1.13
7501495	7501507	7501519	12.7 ... 13.6	15 = 3+6+6	1.25	1.13
7501496	7501508	7501520	13.7 ... 15.3	17 = 2+3+6+6	1.60	1.48
7501497	7501509	7501521	15.4 ... 17.1	19 = 3+4+6+6	1.80	1.65
7501498	7501510	7501522	17.2 ... 19.0	21 = 3+6+6+6	1.90	1.78
7501499	7501511	7501523	19.1 ... 20.9	23 = 2+3+6+6+6	2.00	1.85
7501500	7501512	7501524	21.0 ... 23.5	26 = 2+6+6+6+6	2.40	2.28

Quantity buyers and dealers: please send us your request for quotation.



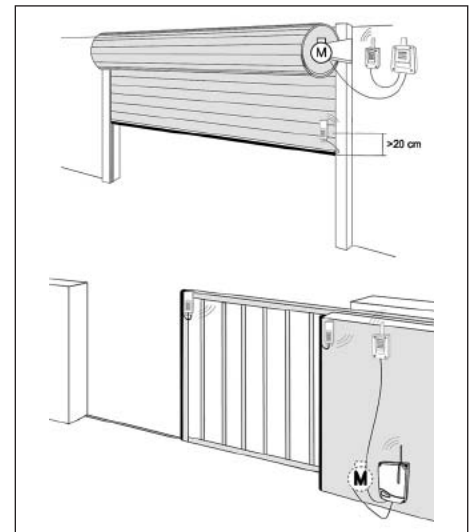
Product information RadioBandSystem RBS – System JCM –

Radio communication for Safety Edges – the wireless transmission technology

Area of application

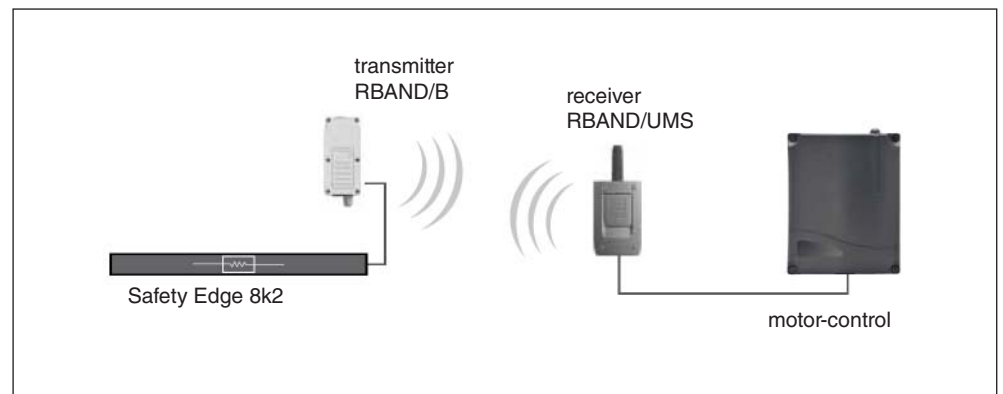
The RBS RadioBandSystem was developed specially for making closing edges on doors and gates of commercial and residential buildings safe.

Optimised for transmission of signals from Safety Edges with a monitoring resistance of 8k Ω , the RBS is directly connected to the motor-control, which makes it a cost-effective alternative to spiral cables that are subject to wear or to inductive systems. Whether used with roller gates, swing gates, sliding gates, hinged gates, sectional doors, folding gates, high-speed doors or revolving doors, the RBS RadioBandSystem functions reliably, and is also very easy to install and maintain.



Function

The RBS RadioBandSystem transmits signals without using wires: from the RBAND/B transmitter, connected to the Safety Edge, via radio to the RBAND/UMS receiver, which simulates the Safety Edge for the motor-control.

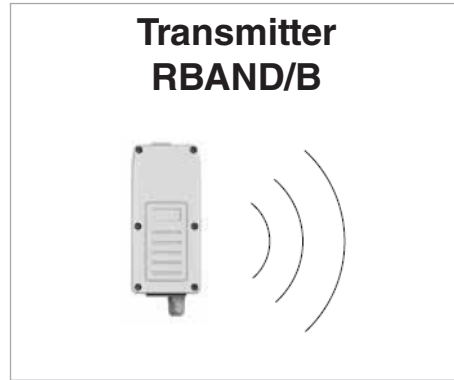


The radio signal strength is automatically adjusted to the transmission distance. That ensures both a constant good signal quality and a long battery lifetime.

At a glance

- very easy assembly
- for Safety Edges with 8k Ω
- 10 m range
- complies with EN 12978 Section 4.1 b)
- complies with ISO 13849-1:2006 Category 2 PL c (with autotest)
- 1 receiver for up to 6 transmitters

Technical data



	RBAND/B	RBAND/UMS
Radio system	Multifrequency system 2G	Multifrequency system 2G
Frequency 868 MHz	4-channel	4-channel
Frequency 433 MHz	safety channel	safety channel
Inputs	1× Safety Edge 8k2	2× autotest (reversible polarity)
Outputs	–	2× simulation Safety Edge 8k2 or 1× simulation Safety Edge 8k2 1× battery level indicator
Functions set using	Programming button, jumper	Programming button, check button, DIP switch, jumper
Range	10 m	10 m
Power supply	DC 3 V (2× 1.5V alkaline AA)	AC/DC 12 V, AC/DC 24 V
Voltage range	–	DC 9 to 35 V, AC 8 to 28 V
Nominal current	10 mA	255 mA
Battery lifetime	approx. 2 years	–
IEC 60529 (protection class)	IP65	IP54 (IP65 with PG screw connection)
Operating temperature	-20 to +55 °C	-20 to +85 °C
Dimensions (W × H × D)	60 × 174 × 23 mm	82 × 190 × 40 mm
Weight	155 g (incl. batteries)	165 g

For your application

- The latest generation with two-way communication (bi-directional) with 868 MHz
- Additional safety channel with 433 MHz
- Battery voltage monitoring for all transmitters used
- Monitoring and automatic adjustment of radio signal strength
- Reaction time of the system: < 35 ms
- Two invertible autotest inputs to test the safety function of both (gate or door) directions of movement via the motor-control
- Certified according to ISO 13849-1:2006 and EN 12978:2003 Section 4.1 b)
- With autotest signal of motor-control, complies with category 2