



Obstacle detection for buses & trains



EN | Data sheet

7500509	EKS 002 TPE
7501755	EKS 026 TPE
7501869	EKS 030 TPE
7500674	SE 1 15 TPE
7500270	SE 1 18 TPE

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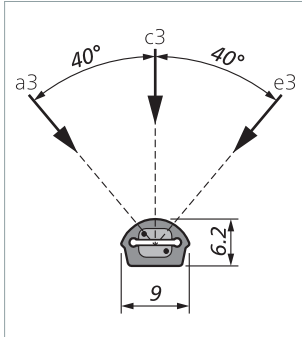
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Overview of combinations

	EKS ... TPE			SE ... TPE	
Cables	002	026	030	1 15	1 18
1004681		●			
1004733	●		●	●	●
1005052	○		○	○	○
1005437		○			
1006491	○		○	○	○
1007144	○		○	○	○
1003288	○		○	○	○
1005975	○		○	○	○
1006180	○		○	○	○
	● = standard		○ = optional		

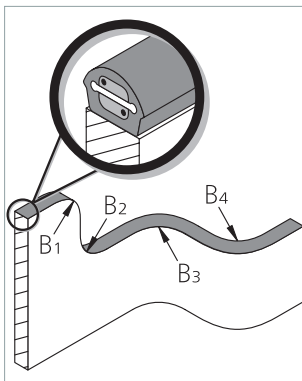
Sensors

7500509 EKS 002 TPE



Dimensional tolerances according to ISO 3302 E2/L2

Bend radii:



Switching characteristics at $v_{\text{test}} = 50 \text{ mm/min}$

	+23 °C	−25 °C	−40 °C
Actuation force (c3)			
Test piece (rod) Ø 20 mm	< 15 N	< 20 N	< 30 N
Test piece (cylinder) Ø 80 mm	< 60 N	< 100 N	< 130 N
Test specimen length *	1 m		
Actuation distance (c3)			
Test piece (cylinder) Ø 80 mm	< 1.5 mm		
Actuation angle (a3 to e3)			
Test piece (cylinder) Ø 80 mm	±40°		

Safety classifications

ISO 13849-1: B _{10D}	2× 10 ⁶
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Mechanical operating conditions

Sensor length (min. max.)	100 mm 150 m
Cable length (min. max.)	200 mm 100 m
Tensile load, cable (max.)	60 N
Bend radii (min.): B ₁ B ₂ B ₃ B ₄	50 80 120 120 mm
IEC 60529: degree of protection	IP67
EN 50125-1:	
Air temperature class	TX
Class of altitude range	AX, max. 2000 m NHN
Max. humidity at	100%
Max. temperature change	3 K/s
Operating temperature	−40 to +80 °C
Short-term (max. 10 min)	−40 to +100 °C
Weight (without cable)	43 g/m

Electrical operating conditions

When sensor is not actuated	
Monitoring resistor (±1%)	1k2, 8k2, others on request
Nominal output (max.)	250 mW
Total resistance	
For sensor with max. 12 m and cable with max. 20 m	1k2 ±10%, 8k2 ±3%
When sensor is actuated	Test piece (cylinder) Ø 80 mm, F = 150 N
Contact transition resistance	< 400 ohms
Switching current (min. max.)	DC 1 mA DC 10 mA
More than one sensor	Max. 5 in series
Connection cable	1004733

Physical resistance

See Page 9

Chemical resistance

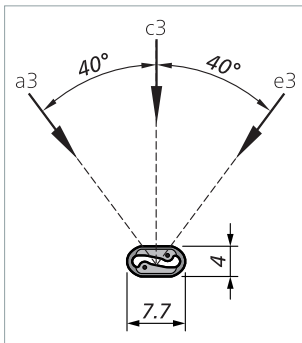
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Compatibility of materials

See Page 9

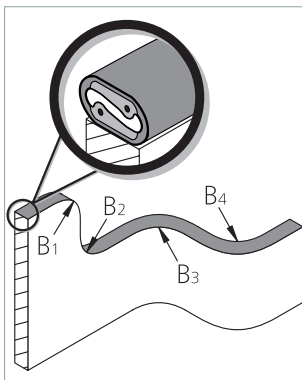
* Shorter test specimens have different actuation forces.

7501755 EKS 026 TPE



Dimensional tolerances according to ISO 3302 E2/L2

Bend radii:



Switching characteristics at $v_{\text{test}} = 50 \text{ mm/min}$

	+23 °C	−25 °C	−40 °C
Actuation force (c3)			
Test piece (rod) Ø 20 mm	< 10 N	< 15 N	< 20 N
Test piece (cylinder) Ø 80 mm	< 50 N	< 90 N	< 100 N
Test specimen length *	1 m		
Actuation distance (c3)			
Test piece (cylinder) Ø 80 mm	< 1.5 mm		
Actuation angle (a3 to e3)			
Test piece (cylinder) Ø 80 mm	±40°		

Safety classifications

ISO 13849-1: B _{10D}	2× 10 ⁶
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Mechanical operating conditions

Sensor length (min. max.)	100 mm 150 m
Cable length (min. max.)	200 mm 100 m
Tensile load, cable (max.)	20 N
Bend radii (min.): B ₁ B ₂ B ₃ B ₄	80 50 120 120 mm
IEC 60529: degree of protection	IP67
EN 50125-1:	
Air temperature class	TX
Class of altitude range	AX, max. 2000 m NHN
Max. humidity at	100%
Max. temperature change	3 K/s
Operating temperature	−40 to +80 °C
Short-term (max. 10 min)	−40 to +100 °C
Weight (without cable)	23 g/m

Electrical operating conditions

When sensor is not actuated	
Monitoring resistor (±1%)	1k2, 8k2, others on request
Nominal output (max.)	250 mW
Total resistance	
For sensor with max. 12 m and cable with max. 20 m	1k2 ±10%, 8k2 ±3%
When sensor is actuated	Test piece (cylinder) Ø 80 mm, F = 150 N
Contact transition resistance	< 400 ohms
Switching current (min. max.)	DC 1 mA DC 10 mA
More than one sensor	Max. 5 in series
Connection cable	1004681

Physical resistance

See Page 9

Chemical resistance

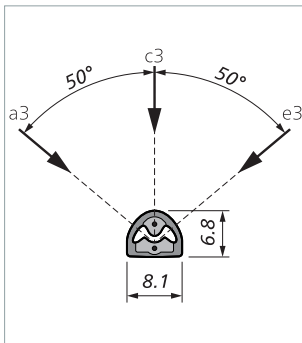
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Compatibility of materials

See Page 9

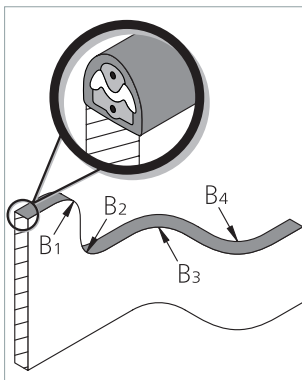
* Shorter test specimens have different actuation forces.

7501869 EKS 030 TPE



Dimensional tolerances according to ISO 3302 E2/L2

Bend radii:



Switching characteristics at $v_{\text{test}} = 50 \text{ mm/min}$

	+23 °C	–25 °C	–40 °C
Actuation force (c3)			
Test piece (rod) Ø 20 mm	< 15 N	< 25 N	< 30 N
Test piece (cylinder) Ø 80 mm	< 80 N	< 120 N	< 140 N
Test specimen length *	1 m		
Actuation distance (c3)			
Test piece (cylinder) Ø 80 mm	< 2.0 mm		
Actuation angle (a3 to e3)			
Test piece (cylinder) Ø 80 mm	±50°		

Safety classifications

ISO 13849-1: B _{10D}	2× 10 ⁶
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Mechanical operating conditions

Sensor length (min. max.)	100 mm 150 m
Cable length (min. max.)	200 mm 100 m
Tensile load, cable (max.)	40 N
Bend radii (min.): B ₁ B ₂ B ₃ B ₄	70 60 30 30 mm
IEC 60529: degree of protection	IP67
EN 50125-1:	
Air temperature class	TX
Class of altitude range	AX, max. 2000 m NHN
Max. humidity at	100%
Max. temperature change	3 K/s
Operating temperature	–40 to +80 °C
Short-term (max. 10 min)	–40 to +100 °C
Weight (without cable)	40 g/m

Electrical operating conditions

When sensor is not actuated	
Monitoring resistor (±1%)	1k2, 8k2, others on request
Nominal output (max.)	250 mW
Total resistance	
For sensor with max. 12 m and cable with max. 20 m	1k2 ±10%, 8k2 ±3%
When sensor is actuated	Test piece (cylinder) Ø 80 mm, F = 150 N
Contact transition resistance	< 400 ohms
Switching current (min. max.)	DC 1 mA DC 10 mA
More than one sensor	Max. 5 in series
Connection cable	1004733

Physical resistance

See Page 9

Chemical resistance

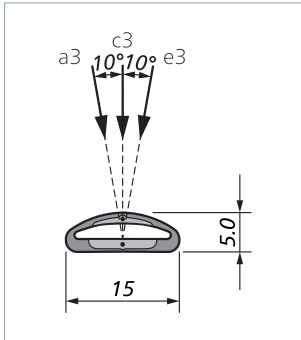
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Compatibility of materials

See Page 9

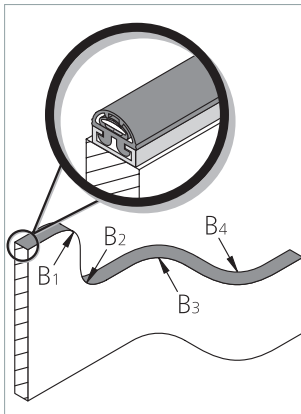
* Shorter test specimens have different actuation forces.

7500674 SE 1 15 TPE

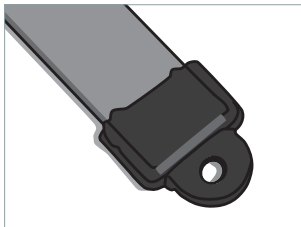


Dimensional tolerances according to ISO 3302 E2/L2

Bend radii:
SE 1 15 TPE in GP 22-1 NBR



With pull-in tab:



Physical resistance

See Page 9

Chemical resistance

See Page 9

Compatibility of materials

See Page 9

Switching characteristics at $v_{\text{test}} = 50 \text{ mm/min}$

Actuation force (c3)	+23 °C	-25 °C	-40 °C
Test piece (rod) Ø 20 mm	< 10 N	< 25 N	< 30 N
Test piece (cylinder) Ø 80 mm	< 35 N	< 90 N	< 100 N
Test specimen length *	1 m		
Actuation distance (c3)			
Test piece (cylinder) Ø 80 mm	< 3.0 mm		
Actuation angle (a3 to e3)			
Test piece (cylinder) Ø 80 mm	±10°		

Safety classifications

ISO 13849-1: B _{10D}	2× 10 ⁶
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Mechanical operating conditions

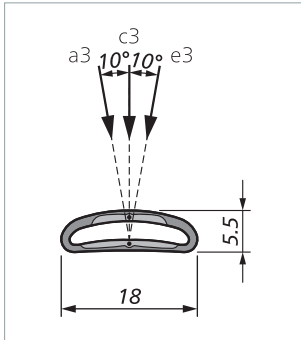
Sensor length (min. max.)	100 mm 50 m
Cable length (min. max.)	200 mm 100 m
Tensile load (max.)	
Cable	50 N
Pull-in tab	30 N
Bend radii (min.): B ₁ B ₂ B ₃ B ₄	300 350 300 300 mm
Tested in rubber profile	GP 22-1 NBR
IEC 60529: degree of protection	IP67
EN 50125-1:	
Air temperature class	TX
Class of altitude range	AX, max. 2000 m NHN
Max. humidity at	100%
Max. temperature change	3 K/s
Operating temperature	-40 to +80 °C
Short-term (max. 10 min)	-40 to +100 °C
Weight (without cable)	42 g/m

Electrical operating conditions

When sensor is not actuated	
Monitoring resistor (±1%)	1k2, 8k2, others on request
Nominal output (max.)	250 mW
Total resistance	
For sensor with max. 12 m and cable with max. 20 m	1k2 ±10%, 8k2 ±3%
When sensor is actuated	Test piece (cylinder) Ø 80 mm, F = 150 N
Contact transition resistance	< 400 ohms
Switching current (min. max.)	DC 1 mA DC 10 mA
More than one sensor	Max. 5 in series
Connection cable	1004733

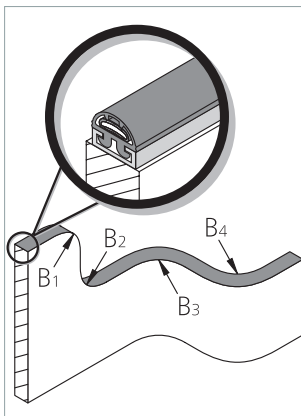
* Shorter test specimens have different actuation forces.

7500270 SE 1 18 TPE

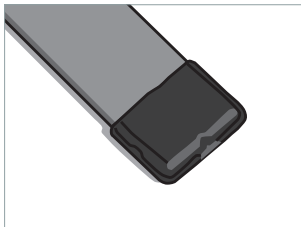


Dimensional tolerances according to ISO 3302 E2/L2

Bend radii:
SE 1 18 TPE in GP 22-1 NBR



Without pull-in tab:



Physical resistance

See Page 9

Chemical resistance

See Page 9

Compatibility of materials

See Page 9

Switching characteristics at $v_{\text{test}} = 50 \text{ mm/min}$

	+23 °C	−25 °C	−40 °C
Actuation force (c3)			
Test piece (rod) Ø 20 mm	< 15 N	< 30 N	< 35 N
Test piece (cylinder) Ø 80 mm	< 55 N	< 100 N	< 120 N
Test specimen length *	1 m		
Actuation distance (c3)			
Test piece (cylinder) Ø 80 mm	< 3.0 mm		
Actuation angle (a3 to e3)			
Test piece (cylinder) Ø 80 mm	±10°		

Safety classifications

ISO 13849-1: B _{10D}	2× 10 ⁶
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Mechanical operating conditions

Sensor length (min. max.)	100 mm 50 m
Cable length (min. max.)	200 mm 100 m
Tensile load (max.)	
Cable	50 N
Pull-in tab (optional)	30 N
Bend radii (min.): B ₁ B ₂ B ₃ B ₄	300 350 300 300 mm
Tested in rubber profile	GP 22-1 NBR
IEC 60529: degree of protection	IP67
EN 50125-1:	
Air temperature class	TX
Class of altitude range	AX, max. 2000 m NHN
Max. humidity at	100%
Max. temperature change	3 K/s
Operating temperature	−40 to +80 °C
Short-term (max. 10 min)	−40 to +100 °C
Weight (without cable)	52 g/m

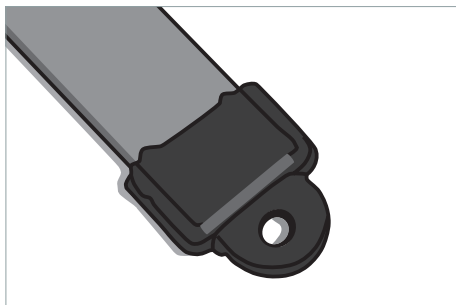
Electrical operating conditions

When sensor is not actuated	
Monitoring resistor (±1%)	1k2, 8k2, others on request
Nominal output (max.)	250 mW
Total resistance	
For sensor with max. 12 m and cable with max. 20 m	1k2 ±10%, 8k2 ±3%
When sensor is actuated	Test piece (cylinder) Ø 80 mm, F = 150 N
Contact transition resistance	< 400 ohms
Switching current (min. max.)	DC 1 mA DC 10 mA
More than one sensor	Max. 5 in series
Connection cable	1004733

* Shorter test specimens have different actuation forces.

Options for SE 1 18 TPE

With pull-in tab:



With snap hook:



Physical resistance

	TPE
VW PV 3930: weathering 2800 h "Florida" EKS ... TPE SE ... TPE	No cracks –
FMVSS 302: burn rate	Max. 35 mm/min

Chemical resistance

The product is resistant to normal chemical influences over an exposure time of 24 hours.

Explanation of symbols:

- + = resistant
- ± = resistant to a certain extent
- = not resistant

	TPE
Cyanoacrylate adhesive	+
Cyclohexylamine	–
Dicyclohexylcarbodiimide	–
Dithiocarbonate	–
Greases	±
Graffiti remover	±
Urea derivatives	–
Skin cream	±
Isopropanol	±
Neutral cleaner	+
Alkaline cleaner	+
Hydrochloric acid cleaner	+
Phosphoric acid cleaner	+
Plastic cleaner	+
Soap solution	+
Saline solution 5%	+
Spirit (ethyl alcohol)	±
Talc	+

All tests were carried out at room temperature (+23 °C).

Compatibility of materials

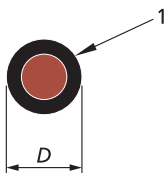
The suitability of the product as part of the complete system (particularly the degree to which the materials are compatible with the components used) must be assessed in the context of the specific application. This is the responsibility of the company integrating the product into the system.

Depending on the exact nature of your requirements, we will be happy to assist you with alternative methods for testing the compatibility of materials (pressure-sensitive sensor + rubber sleeve profile used) by drawing on our expertise.

Cables

1004681 Single-core wire 1× 0.35 mm²

Labelling: LEONI

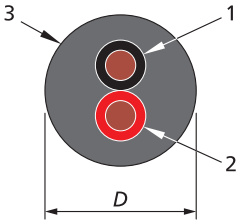


Cable structure	
Conductor, No. 1	CU wire, plain, wire EN 13602 – Cu-ETP1
Nominal cross-section	0.35 mm ²
Insulation No. 1	Black, TPS
Outer diameter D	1.4 ±0.1 mm
Weight	5 g/m
Electrical operating conditions	
Conductor resistance at 20 °C	≤ 52 ohms/km
Operating voltage (max.)	–
Test voltage	–
Mechanical operating conditions	
Bend radii (min.)	
Single	7 mm (5× D)
Multiple (< 100×)	21 mm (15× D)
Drag chain R 10	
Cycles: min. 1× 10 ⁶	–
Operating temperature (3,000 h)	–40 to +125 °C
Physical resistance	
UNECE R118: flame propagation	
Cable: section 6.2.6	Passed
2011/65/EU: RoHS	Complies
Chemical resistance	
ISO 4892-2: UV resistance (500 h)	Passed
ISO 6722-1: ozone resistance	
100 pphm, 65 °C, 192 h	Passed
ISO 6722-1: media resistance	
Test method 2	Passed

	EKS ... TPE			SE ... TPE	
For	002	026	030	1 15	1 18
Suitable		●			

1004733 Multi-core cable 2x 0.22 mm²

Labelling: MAYSER GmbH & Co.KG 1004733 2x0.22 mm²

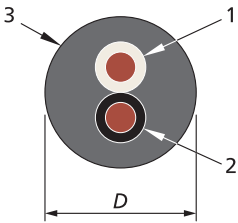


Cable structure	
Conductors, Nos. 1 and 2	CU wire, plain, wire EN 13602 – Cu-ETP1
Nominal cross-section	0.22 mm ²
Insulation No. 1	Black, PVC
No. 2	Red, PVC
Sheath No. 3	Black, TPS
Outer diameter D	3.7 ±0.15 mm
Weight	15 g/m
Electrical operating conditions	
Conductor resistance at 20 °C	≤ 87 ohms/km
Operating voltage (max.)	DC 60 V
Test voltage	–
Mechanical operating conditions	
Bend radii (min.)	
Single	19 mm (5× D)
Multiple	56 mm (15× D)
Drag chain R 10	
Cycles: min. 1× 10 ⁶	–
Operating temperature (3,000 h)	–40 to +90 °C
Physical resistance	
UNECE R118: flame propagation	
Cable: section 6.2.6	–
2011/65/EU: RoHS	Complies
Chemical resistance	
ISO 4892-2: UV resistance (500 h)	–
ISO 6722-1: ozone resistance	
100 pphm, 65 °C, 192 h	–
ISO 6722-1: media resistance	
Test method 2	–

	EKS ... TPE			SE ... TPE	
For	002	026	030	1 15	1 18
Suitable	●		●	●	●

1005052 Multi-core cable 2x 0.35 mm² TPV

Labelling: MAYSER 1005052 2x0.35 mm²

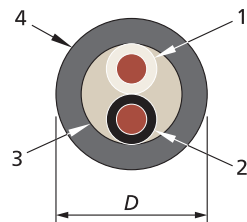


Cable structure	
Conductors, Nos. 1 and 2	CU wire, plain, wire EN 13602 – Cu-ETP1
Nominal cross-section	0.35 mm ²
Insulation No. 1	White, PVC
No. 2	Black, PVC
Sheath No. 3	Black, TPV
Outer diameter D	4.15 ±0.1 mm
Weight	20 g/m
Electrical operating conditions	
Conductor resistance at 20 °C	≤ 52 ohms/km
Operating voltage (max.)	DC 60 V
Test voltage	–
Mechanical operating conditions	
Bend radii (min.)	
Single	21 mm (5× D)
Multiple (< 100×)	63 mm (15× D)
Drag chain R 10	
Cycles: min. 1× 10 ⁶	–
Operating temperature (3,000 h)	–40 to +90 °C
Physical resistance	
UNECE R118: flame propagation	
Cable: section 6.2.6	–
2011/65/EU: RoHS	Complies
Chemical resistance	
ISO 4892-2: UV resistance (500 h)	–
ISO 6722-1: ozone resistance	
100 pphm, 65 °C, 192 h	–
ISO 6722-1: media resistance	
Test method 2	–

	EKS ... TPE			SE ... TPE	
For	002	026	030	1 15	1 18
Suitable	●		●	●	●

1005437 Multi-core cable 2x 0.35 mm² TPV

Labelling: MAYSER 2x0.35 mm² Foil 1005437

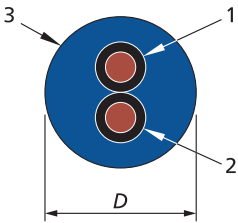


Cable structure	
Conductors, Nos. 1 and 2	CU wire, plain, wire EN 13602 – Cu-ETP1
Nominal cross-section	0.35 mm ²
Insulation No. 1	White, TPS
No. 2	Black, TPS
Shielding No. 3	Natural, PP
Sheath No. 4	Black, TPV
Outer diameter D	4.2 ±0.15 mm
Weight	20 g/m
Electrical operating conditions	
Conductor resistance at 20 °C	≤ 52 ohms/km
Operating voltage (max.)	DC 60 V
Test voltage	–
Mechanical operating conditions	
Bend radii (min.)	
Single	21 mm (5× D)
Multiple	63 mm (15× D)
Drag chain R 10	
Cycles: min. 1× 10 ⁶	–
Operating temperature (3,000 h)	–40 to +90 °C
Physical resistance	
UNECE R118: flame propagation	
Cable: section 6.2.6	–
2011/65/EU: RoHS	Complies
Chemical resistance	
ISO 4892-2: UV resistance (500 h)	–
ISO 6722-1: ozone resistance	
100 pphm, 65 °C, 192 h	–
ISO 6722-1: media resistance	
Test method 2	–

	EKS ... TPE			SE ... TPE	
For	002	026	030	1 15	1 18
Suitable		●			

1006491 Mayser RoadFR® 2× 0.35 mm²

Labelling: URus AWM Style 21439 300V 105°C FT2 Mayser RoadFR 1006491
ECE R118 2x0.35 mm²

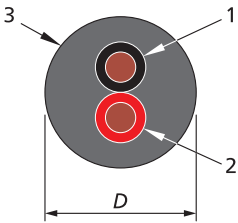


Cable structure	
Conductors, Nos. 1 and 2	CU wire, plain, wire EN 13602 – Cu-ETP1
Nominal cross-section	0.35 mm ²
Insulation No. 1	Black, PVC
No. 2	Black, PVC
Sheath No. 3	Signal blue (RAL 5005), TPS
Outer diameter D	4.1 ±0.2 mm
Weight	22 g/m
Electrical operating conditions	
Conductor resistance at 20 °C	≤ 52 ohms/km
Operating voltage (max.)	DC 60 V
Test voltage	–
Mechanical operating conditions	
Bend radii (min.)	
Fixed installation	25 mm (6× D)
Moving / free installation	33 mm (8× D)
Drag chain R 10	
Cycles: min. 1× 10 ⁶	–
Operating temperature (3,000 h)	–40 to +105 °C
Physical resistance	
UNECE R118: flame propagation	
Cable: section 6.2.6	Passed
2011/65/EU: RoHS	Complies
Chemical resistance	
ISO 4892-2: UV resistance (500 h)	Passed
ISO 6722-1: ozone resistance	
100 pphm, 65 °C, 192 h	Passed
ISO 6722-1: media resistance	
Test method 2	Passed

	EKS ... TPE			SE ... TPE	
For	002	026	030	1 15	1 18
Suitable	●		●	●	●

1007144 Mayser RoadFR® 2× 0.22 mm²

Labelling: cURus AWM Style 21439 300V 105°C FT2 I/II A/B Mayser RoadFR
1007144 ECE R118 2x0.22 mm²



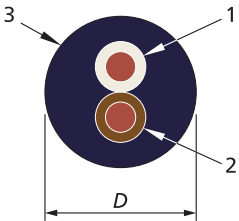
Cable structure	
Conductors, Nos. 1 and 2	CU wire, plain, wire EN 13602 – Cu-ETP1
Nominal cross-section	0.22 mm ²
Insulation No. 1	Black, PVC
No. 2	Red, PVC
Sheath No. 3	Black, TPS
Outer diameter D	3.7 ±0.1 mm
Weight	15 g/m
Electrical operating conditions	
Conductor resistance at 20 °C	≤ 87 ohms/km
Operating voltage (max.)	DC 60 V
Test voltage	–
Mechanical operating conditions	
Bend radii (min.)	
Fixed installation	19 mm (5× D)
Moving / free installation	30 mm (8× D)
Drag chain R 10	
Cycles: min. 1× 10 ⁶	–
Operating temperature (3,000 h)	–40 to +105 °C
Physical resistance	
UNECE R118: flame propagation	
Cable: section 6.2.6	Passed
2011/65/EU: RoHS	Complies
Chemical resistance	
ISO 4892-2: UV resistance (500 h)	Passed
ISO 6722-1: ozone resistance	
100 pphm, 65 °C, 192 h	Passed
ISO 6722-1: media resistance	
Test method 2	Passed

	EKS ... TPE			SE ... TPE	
For	002	026	030	1 15	1 18
Suitable	●		●	●	●

Drag chain cables

1003288 Chainflex CF900 2× 0.25 mm²

Labelling: igus chainflex CF900.14.442 2x0.25mm² 300/500V CE M/Y/WW
RoHS-II conform Mayser GmbH&Co.KG 1003288

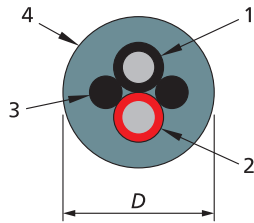


Cable structure	
Conductors, Nos. 1 and 2	CU wire, tinned, wire EN 13602 – Cu-ETP1
Nominal cross-section	0.25 mm ²
Insulation No. 1	White, TPE
No. 2	Brown, TPE
Sheath No. 3	Steel blue (RAL 5011), TPE
Outer diameter D	4.0 ±0.2 mm
Weight	18 g/m
Electrical operating conditions	
Conductor resistance at 20 °C	≤ 78 ohms/km
Operating voltage (max.)	DC 60 V
Test voltage	–
Mechanical operating conditions	
Bend radii (min.)	
Fixed installation	28 mm (6.8× D)
Moving / free installation	–
Drag chain	
Cycles: min. 1× 10 ⁶	28 mm (6.8× D)
Operating temperature (3000 h)	–40 to +105 °C
Physical resistance	
UNECE R118: flame propagation	
Cable: section 6.2.6	–
2011/65/EU: RoHS	Complies
Chemical resistance	
ISO 4892-2: UV resistance (500 h)	Passed
ISO 6722-1: ozone resistance	
100 pphm, 65 °C, 192 h	Passed
ISO 6722-1: media resistance	
Test method 2	Passed

	EKS ... TPE			SE ... TPE	
For	002	026	030	1 15	1 18
Suitable	●		●	●	●

1005975 Mayser RailFR® 2× 0.25 mm²

Labelling: MAYSER RailFR 1005975 2x0.25 mm²



Cable structure

Conductors, Nos. 1 and 2	CU wire, tinned, wire EN 13602 – Cu-ETP1
Nominal cross-section	0.25 mm ²
Insulation No. 1	Black, TPE
No. 2	Red, TPE
Dummy wire No. 3	Black, TPE
Sheath No. 4	Squirrel grey (RAL 7000), TPE
Outer diameter D	3.8 ±0.2 mm
Weight	22 g/m

Electrical operating conditions

Conductor resistance at 20 °C	≤ 80 ohms/km
Operating voltage (max.)	DC 48 V
Test voltage	1.5 kV

Mechanical operating conditions

Bend radii (min.)	
Fixed installation	19 mm (5× D)
Moving / free installation	39 mm (10× D)
Drag chain R 40	
Cycles: min. 1× 10 ⁶	41 mm (10.5× D)
Operating temperature (3,000 h)	–40 to +90 °C

Physical resistance

EN 45545-2: suitable for	
Hazard level	HL3
Set of requirements	R15 and R16
HD 605: artificial weathering	
60 W/m ² , 720 h, 38 °C, 65% rel. hu- midity, cycle: 18/102 min	No cracks
IEC 60754-1	Halogen-free
2011/65/EU: RoHS	Complies

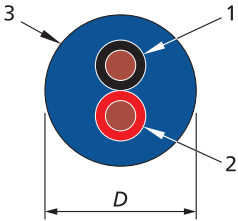
Chemical resistance

Hydrolysis	Very good
Acids	Good
EN 50264-1 (EM 104):	
Oil	Very good
Fuels	Very good
EN 50396 paragraph 8.1.3:	
Ozone resistance 72 h, 40 °C, 55% rel. humidity	No cracks

	EKS ... TPE			SE ... TPE	
For	002	026	030	1 15	1 18
Suitable	●		●	●	●

1006180 Mayser RoadFR® 2× 0.25 mm²

Labelling: igus chainflex CF900.15.293 CE M +++ Mayser RoadFR 2x0.25 mm²



Cable structure	
Conductors, Nos. 1 and 2	CU wire, wire EN 13602 – Cu-ETP1
Nominal cross-section	0.25 mm ²
Insulation No. 1	Black, TPS
No. 2	Red, TPS
Sheath No. 3	Signal blue (RAL 5005), TPV
Outer diameter D	3.7 ±0.1 mm
Weight	20 g/m
Electrical operating conditions	
Conductor resistance at 20 °C	≤ 78 ohms/km
Operating voltage (max.)	DC 60 V
Test voltage	2 kV
Mechanical operating conditions	
Bend radii (min.)	
Fixed installation	23 mm (6× D)
Moving / free installation	30 mm (8× D)
Drag chain R 10	
Cycles: min. 1× 10 ⁶	48 mm (12.5× D)
Operating temperature (3,000 h)	–40 to +90 °C
Physical resistance	
UNECE R118: flame propagation	
Cable: section 6.2.6	Passed
2011/65/EU: RoHS	Complies
Chemical resistance	
ISO 4892-2: UV resistance (500 h)	Passed
ISO 6722-1: ozone resistance	
100 pphm, 65 °C, 192 h	Passed
ISO 6722-1: media resistance	
Test method 2	Passed

	EKS ... TPE			SE ... TPE	
For	002	026	030	1 15	1 18
Suitable	●		●	●	●