MAYSER®

Innovative by tradition.

RoadFR®: Sensors, cables

EN | Data sheet

7503889 SE 1 18 RoadFR
7503535 SE 3 18 RoadFR

Mayser GmbH & Co. KG
Örlinger Strasse 1–3
89073 Ulm
GERMANY
Tel.: +49 731 2061-0
Fax: +49 731 2061-222
E-mail: info.ulm@mayser.com
Website: www.mayser.com

MAYSER®

Table of contents

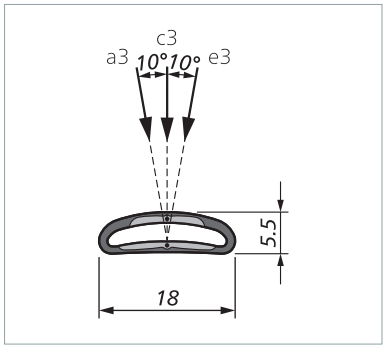
Overview of combinations

	SE ... RoadFR			
Cable	**1 18**	**3 18**		
1006491	○	○		
1007144	●	●		
1006180	○	○		

● = standard ○ = optional

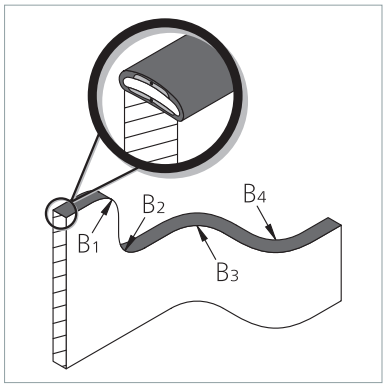
Sensors

7503889 SE 1 18 RoadFR

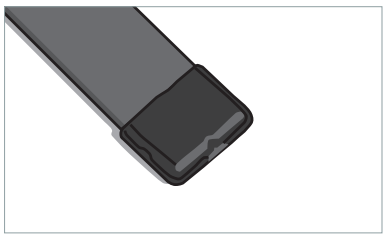


Dimensional tolerances according to ISO 3302 E2/L2

Bend radii:



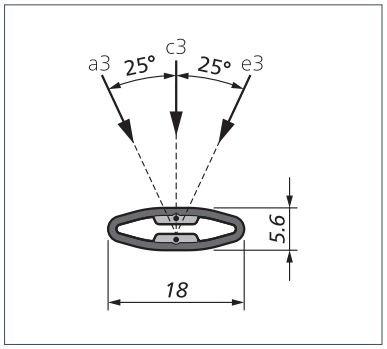
Without pull-in tab:



Switching characteristics at v_{test} = 50 mm/min			
Actuation force (c3)	**+23 °C**	**–25 °C**	**–40 °C**
Test piece (rod) Ø 20 mm	< 20 N	< 30 N	< 35 N
Test piece (cylinder) Ø 80 mm	< 80 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		
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, minimum			
B_1 / B_2 / B_3 / B_4	80 / 90 / 150 / 150 mm		
IEC 60529: degree of protection	IP67		
Operating temperature	–40 to +80 °C		
Short-term (max. 10 min)	–40 to +100 °C		
Weight (without cable)	56 g/m		
Electrical operating conditions			
When sensor is not actuated			
Terminal resistance (±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	1007144		

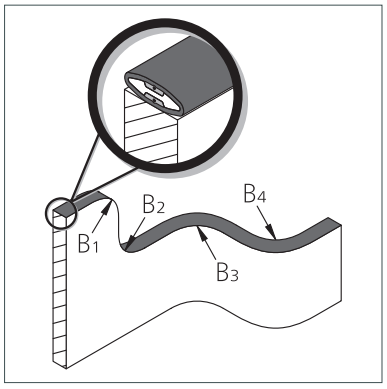
Physical resistance
See page 5
Chemical resistance
See page 5
Compatibility of materials
See page 5

7503535 SE 3 18 RoadFR



Dimensional tolerances according to ISO 3302 E2/L2

Bend radii:



With pull-in tab:

Switching characteristics at v_{test} = 50 mm/min			
Actuation force (c3)	**+23 °C**	**–25 °C**	**–40 °C**
Test piece (rod) Ø 20 mm	< 10 N	< 15 N	< 20 N
Test piece (cylinder) Ø 80 mm	< 25 N	< 30 N	< 40 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	±25°		
Safety classifications			
ISO 13849-1: B_{10D}	2×10^6		
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, minimum			
B_1 / B_2 / B_3 / B_4	100 / 100 / 150 / 150 mm		
IEC 60529: degree of protection	IP67		
Operating temperature	–40 to +80 °C		
Short-term (max. 10 min)	–40 to +100 °C		
Weight (without cable)	62 g/m		
Electrical operating conditions			
When sensor is not actuated			
Terminal resistance (±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	1007144		

Physical resistance
See page 5
Chemical resistance
See page 5
Compatibility of materials
See page 5

Physical resistance

	RoadFR
IEC 60529: degree of protection	IP67
UNECE R118: flame propagation Sensor: Paragraphs 6.2.1 and 6.2.3	Passed

Chemical resistance

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

	RoadFR
Cyanoacrylate adhesive	+
Greases	+
Graffiti remover	±
Skin cream	±
Isopropanol	±
Alkaline cleaner	+
Plastic cleaners	+
Neutral cleaner	+
Phosphoric acid cleaner	+
Hydrochloric acid cleaner	+
Saline solution 5%	+
Soap solution	+
Spirit (ethyl alcohol)	+
Talc	+

Explanation of symbols:

+ = resistant

± = resistant to a certain extent

– = not resistant

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

Compatibility of materials

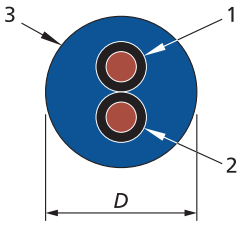
The suitability of the product as part of the complete system (particularly the degree to which the materials are compatible with the components used) must be assessed in the context of the specific application. This is the responsibility of the company integrating the product into the system.

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

1006491 Mayser RoadFR® 2× 0.35 mm²

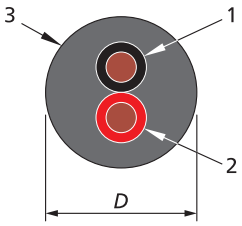
Labelling: URus AWM Style 21439 300V 105°C FT2 Mayser RoadFR 1006491 ECE R118 2x0,35 mm²



Cable structure	
Conductors, Nos. 1 and 2	CU wire, plain, wire EN 13602 – Cu-ETP1
Nominal cross-section	0.35 mm²
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× 10⁶	–
Operating temperature (3,000 h)	–40 to +105 °C
Physical resistance	
UN/ECE R118 Paragraph 6.2.6:	
Flame propagation	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

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

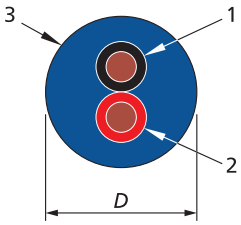


Cable structure	
Conductors, Nos. 1 and 2	CU wire, tinned, wire EN 13602 – Cu-ETP1
Nominal cross-section	0.22 mm²
Insulation No. 1	Black, PVC
No. 2	Red, PVC
Sheath No. 3	Black, TPS
Outer diameter D	3.7 ±0.1 mm
Weight	15 g/m
Electrical operating conditions	
Conductor resistance at 20 °C	≤ 87 ohms/km
Operating 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× 10⁶	–
Operating temperature (3,000 h)	–40 to +105 °C
Physical resistance	
UN/ECE R118 Paragraph 6.2.6:	
Flame propagation	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

Drag chain cable

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 mm²
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× 10⁶	48 mm (12.5× D)
Operating temperature (3,000 h)	–40 to +90 °C
Physical resistance	
UN/ECE R118 Paragraph 6.2.6:	
Flame propagation	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