



Accessories

de

Effizienz ist unser Antrieb

Technologien von Bosch kommen weltweit in fast allen Fahrzeugen zum Einsatz. Dabei stehen für uns die Menschen und die Sicherstellung ihrer Mobilität im Vordergrund.

Ihnen widmen wir über 125 Jahre Pioniergeist, Forschung, Fertigung und Expertise.

Und für sie arbeiten wir unentwegt an einer Kombination aus Ersatzteilen, Diagnose, Werkstattausrüstung und Serviceleistungen.

en

Driven by efficiency

Bosch technologies are used worldwide in almost all vehicles. People, and assuring their mobility, is what we are focused on.

Therefore, we have dedicated the last 125 years of pioneering spirit and expertise in research and manufacturing to achieving this.

We continue to work on our unique combination of solutions for spare parts, diagnostic devices, workshop equipment and services.

fr

Guidés par l'efficacité

Les technologies de Bosch sont utilisées partout dans le monde, dans la quasi-totalité des véhicules. Nous nous concentrons sur les populations et cherchons avant tout à assurer leur mobilité.

Depuis 125 ans, nous mettons notre esprit pionnier et notre expertise en matière de recherche et de fabrication au service de cet objectif.

Chaque jour, nous travaillons sur notre offre unique de pièces détachées, d'appareils de diagnostic, de matériel et sur les services proposés dans les ateliers.

it

Guidati dall'efficienza

Le tecnologie Bosch sono utilizzate a livello mondiale in quasi tutti i veicoli. Siamo concentrati sulle persone e sulla loro mobilità.

Per raggiungere questo risultato, abbiamo dedicato gli ultimi 125 anni alla ricerca e produzione, con spirito pionieristico e competenza.

Continuiamo a lavorare sulla nostra combinazione unica di soluzioni per ricambi, dispositivi di diagnosi, attrezzature e servizi per l'officina.

es

La eficiencia es nuestra motivación

La tecnología de Bosch se utiliza en todo el mundo en casi todos los vehículos. Garantizar la movilidad de las personas es nuestra prioridad.

Llevamos más de 125 años siendo pioneros en el mundo del automóvil, investigando, fabricando y aportando nuestra experiencia.

Trabajamos para ofrecerte una combinación exclusiva de piezas de recambio, diagnóstico, equipamiento de taller y servicios.



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en

Bosch hat die Lösung

Qualität, die überzeugt!

Bosch Zubehör für Kraftfahrzeuge



Bosch ist mit neuen Ideen und innovativen Produkten weltweit führend bei der Entwicklung und Fertigung von Komponenten und Systemen für die Kraftfahrzeugtechnik.

Autofahrer profitieren auch im Aftermarket vom hochwertigen Service und der langjährigen Erfahrung von Bosch. Durch neue Technologien setzt Bosch weltweit Maßstäbe im Automobilbereich.

Bosch bietet neben Ersatzteilen und Zubehör für Kraftfahrzeuge ein umfassendes Programm für:

- ▶ Old- und Youngtimer
- ▶ Land- und Baumaschinen
- ▶ Krafträder
- ▶ Boote
- ▶ Industriemaschinen, u.v.m.

In der gewohnt hohen Bosch Qualität finden Werkstatt und Handel ein komplettes Zubehör-Programm von A-Z.

de

Online-Katalog für Kraftfahrzeug-Ausrüstung

en

Online Catalog for Automotive Parts

fr

Catalogue online de pièces détachées et de rechange

it

Catalogo online per ricambi di automobili

es

Catálogo online equipamiento para vehículos

www.bosch-automotive-catalog.com

Einfacher und schneller Zugriff auf Kfz-Ausrüstungsdaten von Bosch.

Easy and quick access to vehicle application data from Bosch.

Accès facile et rapide aux données de rechange automobile Bosch.

Ricerca semplice e veloce dei dati Bosch di equipaggiamento veicoli.

Fácil y rápido acceso a la información de equipamiento Bosch para vehículos.

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Application






B 2	Ignition-cables
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Part-number overview










Lighting Technology

		Type			Type	
0 305 002 001	Rallye 225	A26		0 986 310 965	R-1800-F	A35
0 306 003 002	Rallye 225	A15		0 986 310 966	R-3000-F	A36
0 306 003 003	Rallye 225	A15		0 986 310 967	R-4300-F	A37
0 306 003 006	Rallye 225	A15		0 986 310 970	Rallye 225 Highlight ECE	A10
0 306 003 007	Rallye 225	A15		0 986 310 971	Rallye 225 Highlight ECE	A10
0 306 003 008	Rallye 225	A15		0 986 310 972	Rallye 225 Highlight Pencil Beam	A11
0 306 003 009	Rallye 225	A15		0 986 310 973	Rallye 225 Highlight Pencil Beam	A11
0 306 055 001	Compact 100	A20		0 986 310 974	Rallye 225 Highlight Xenon ECE	A12
0 306 080 003	Profi 210	A54		0 986 310 975	Rallye 225 Highlight Xenon ECE	A12
0 306 382 001	Kiruna 140	A55		0 986 310 976	Rallye 225 Highlight Xenon ECE	A12
0 306 407 001	Pilot 150	A19		0 986 310 977	Rallye 225 Highlight Xenon ECE	A12
0 306 407 901	Pilot 150	A19		0 986 310 980	Light-Star ECE	A8
0 306 481 001	Pilot 140	A47		0 986 310 981	Light-Star ECE	A8
0 306 481 002	Pilot 140	A47		0 986 310 982	Light-Star Pencil Beam	A9
0 306 481 003	Pilot 140	A48		0 986 310 983	Light-Star Pencil Beam	A9
0 306 482 003	Pilot 145	A49		0 986 310 984	Light-Star LED	A6
0 306 484 001	Pilot 150	A50		0 986 310 985	Light-Star LED	A6
0 306 606 001	Pilot 160	A18		0 986 310 986	Light-Star Xenon ECE	A7
0 306 606 901	Pilot 160	A18		0 986 310 987	Light-Star Xenon ECE	A7
0 306 680 001	Pilot 160	A52		1 300 334 910	Unit Rallye 225	A15
0 332 019 150	Relay	A16		1 300 516 018	Protective cap Rallye 225	A15, A26
0 986 310 208	Control unit Rallye 175	A16		1 300 591 053	Protective cap Profi 210	A22, A27
0 986 310 530	Compass	A21		1 305 320 816	Unit Profi 210	A27
0 986 310 533	Rallye 175 Halogen	A17		1 305 334 925	Unit Rallye 225	A15
0 986 310 537	Profi 210	A22		1 305 540 101	Protective cap Pilot 145	A49
0 986 310 538	Profi 210	A22		1 305 540 165	Protective cap Pilot 150	A19, A50
0 986 310 539	Profi 210	A27		1 307 010 170	Fastening kit	A15, A26
0 986 310 674	Rallye 175 Xenon	A16		1 987 305 109	Lens Pilot X	A53
0 986 310 675	Pilot X	A53		1 987 305 110	Protective cap Pilot 175	A13
0 986 310 676	Pilot X	A53		1 987 305 111	Protective cap Pilot 225	A14
0 986 310 677	Pilot X	A53		1 987 305 112	Unit Pilot 175	A13
0 986 310 678	Pilot X	A53		1 987 305 113	Unit Pilot 225	A14
0 986 310 930	Pilot 100	A44		1 987 305 114	Unit Pilot 175	A13
0 986 310 931	Pilot 100	A44		1 987 305 115	Unit Pilot 225	A14
0 986 310 932	Pilot 100	A44		1 987 305 118	Unit Rallye 225 Highlight	A10
0 986 310 933	Pilot 100	A44		1 987 305 119	Unit Rallye 225 Highlight	A10
0 986 310 934	Pilot 155 Double Beam	A51		1 987 305 120	Unit Rallye 225 Highlight	A11
0 986 310 935	Pilot 155 Double Beam	A51		1 987 305 121	Unit Rallye 225 Highlight	A11
0 986 310 936	Pilot 135 Single Beam	A45		1 987 305 122	Unit Rallye 225 Highlight	A12
0 986 310 937	Pilot 135 Single Beam	A45		1 987 305 123	Unit Rallye 225 Highlight	A12
0 986 310 938	Pilot 135 Double Beam	A46		1 987 305 126	Unit Light Star	A8
0 986 310 939	Pilot 135 Double Beam	A46		1 987 305 127	Unit Light Star	A8
0 986 310 940	R-1000-F	A39		1 987 305 128	Unit Light Star	A9
0 986 310 941	O-2000-F	A40		1 987 305 129	Unit Light Star	A9
0 986 310 942	S-1500-F	A41		1 987 305 130	Unit Light Star	A6
0 986 310 943	S-2250-C	A43		1 987 305 131	Unit Light Star	A6
0 986 310 945	S-2250-F	A42		1 987 305 132	Unit Light Star	A7
0 986 310 945	S-1000-C	A43		1 987 305 134	Protective cap	A6, A7, A8, A9
0 986 310 946	S-1000-F	A42				
0 986 310 950	Pilot 175	A13		1 987 305 137	Installation material	A6, A7, A8, A9
0 986 310 951	Pilot 175	A13				
0 986 310 952	Pilot 225	A14		1 987 305 138	Control unit Light Star	A7
0 986 310 953	Pilot 225	A14		1 987 305 139	Control unit Light Star	A7
0 986 310 960	LED 135	A38		7 781 999 001	Vehicle stand	A65, A66, A72, A75
0 986 310 961	LED 135	A38				
0 986 310 964	R-950-F	A34				

	Type			Type		
7 781 999 015	Vehicle stand	A65, A66, A72	8 785 620 108	Reflector RKLE 200 A, B1, D	A64, A65, A67	
7 782 319 052	RSWA 100 Floodlight	A72	8 785 620 110	Cover RKLE 200 A, B1, D	A64, A65, A67	
7 782 319 054	RSWA 100 Floodlight	A72	8 785 620 111	Cover RKLE 200 A, B1, D	A64, A65, A67	
7 782 319 062	RSWF 100 Floodlight	A72	8 785 620 112	Cover RKLE 200 A, B1, D	A64, A65, A67	
7 782 319 064	RSWF 100 Floodlight	A72	8 785 620 200	Reflector RKLE 200 B2	A66	
7 782 322 020	RKLE 200 B1 Rotating beacon	A65	8 785 620 202	Cover RKLE 200 B2	A66	
7 782 322 021	RE-60 B Rotating beacon	A70	8 785 620 203	Cover RKLE 200 B2	A66	
7 782 322 220	RKLE 200 B1 Rotating beacon	A65	8 785 620 204	Cover RKLE 200 B2	A66	
7 782 322 420	RKLE 200 B1 Rotating beacon	A65	8 785 620 300	Cover RE-60 A, B, FLX, D	A68, A69, A70, A71	
7 782 324 020	RKLE 200 B1 Rotating beacon	A65	8 785 620 301	Reflector RE-60 A, B, FLX, D	A68, A69, A70, A71	
7 782 324 021	RE-60 B Rotating beacon	A70	8 787 010 010	3-point magnetic attachment	A74	
7 782 324 220	RKLE 200 B1 Rotating beacon	A65	8 787 010 011	3-point magnetic attachment	A73	
7 782 324 420	RKLE 200 B1 Rotating beacon	A65	8 787 010 015	Magnetic stand RKLE 200 D	A67, A73	
7 782 328 002	RKLE LED Compact A Rotating beacon	A60	8 787 022 013	Spigot tube	A60, A64, A73	
7 782 328 004	RKLE LED Compact B Rotating beacon	A61	8 787 022 016	Spigot tube	A60, A64, A73	
7 782 328 006	RKLE LED Compact D Rotating beacon	A62	8 787 022 019	Spigot tube	A60, A64, A73	
7 782 332 020	RKLE 200 A Rotating beacon	A64				
7 782 332 021	RE-60 A Rotating beacon	A68				
7 782 332 022	RE-60 FLX Rotating beacon	A69				
7 782 332 220	RKLE 200 A Rotating beacon	A64				
7 782 332 420	RKLE 200 A Rotating beacon	A64				
7 782 334 020	RKLE 200 A Rotating beacon	A64				
7 782 334 021	RE-60 A Rotating beacon	A68				
7 782 334 022	RE-60 FLX Rotating beacon	A69				
7 782 334 220	RKLE 200 A Rotating beacon	A64				
7 782 334 420	RKLE 200 A Rotating beacon	A64				
7 782 362 020	RKLE 200 B2 Rotating beacon	A66				
7 782 362 220	RKLE 200 B2 Rotating beacon	A66				
7 782 362 420	RKLE 200 B2 Rotating beacon	A66				
7 782 364 020	RKLE 200 B2 Rotating beacon	A66				
7 782 364 220	RKLE 200 B2 Rotating beacon	A66				
7 782 364 420	RKLE 200 B2 Rotating beacon	A66				
7 782 372 020	RKLE 200 D Rotating beacon	A67				
7 782 372 021	RE-60 D Rotating beacon	A71				
7 782 372 220	RKLE 200 D Rotating beacon	A67				
7 782 372 420	RKLE 200 D Rotating beacon	A67				
7 782 374 020	RKLE 200 D Rotating beacon	A67				
7 782 374 021	RE-60 D Rotating beacon	A71				
7 782 374 220	RKLE 200 D Rotating beacon	A67				
7 782 374 420	RKLE 200 D Rotating beacon	A67				
8 780 113 024	Paint-protection foil RE-60 D	A71				
8 780 206 048	Rubber wedge RKLE 200 B2	A66, A74				
8 780 223 011	Rubber seal RKLE 200 B1	A65				
8 780 223 012	Rubber seal RKLE 200 B2	A66				
8 784 460 102	Spiral cable RKLE 200 D	A67, A74				
8 785 110 068	Mounting flange RKLE 200 B1	A65, A72, A74				
8 785 110 077	Mounting flange RKLE 200 B2	A66, A74				
8 785 110 109	Plug-in base RKLE 200 B1	A65, A75				
8 785 110 127	Intermediate flange RKLE 200 B1	A65				
8 785 110 128	Intermediate flange RKLE 200 B2	A66				
8 785 411 296	Caps RKLE 200 B1	A65, A67				
8 785 411 297	Caps RKLE 200 B2	A66				
8 785 510 170	Cover RSWA, RSWF	A72				
8 785 520 004	Transmitter and holder RSWA, RSWF	A72				

Auxiliary lamps – Driving lamps

Range overview

	<p>A6/7/8/9 Light-Star – Driving lamp. Extremely robust, corrosion-resistant, attractive stainless steel housing. Particularly suitable for the demands of SUV and commercial vehicles.</p>	
	<p>A10/11/12 Rallye 225 Highlight – Driving lamp. Innovative, modern design with LED position light as standard. Extremely robust die-cast aluminum housing for passenger, commercial, emergency service and off-road vehicles.</p>	
	<p>A15/16/17 Rallye – Driving lamp. Exceptionally high lighting efficiency thanks to large and deep reflector. Tried and tested in motor sport. Also available in Xenon technology and as a fog lamp.</p>	
	<p>A13/14 Pilot 175, 225 – Driving lamp. Sporty halogen driving lamp with glass fiber-reinforced polyamide housing. Available in two different sizes.</p>	
	<p>A18/19 Pilot – Driving lamp. Extra-flat housing. Specially designed for mounting on narrow bumpers. Version without mounting base is suitable for installation in spoiler or radiator grille. Also available as a fog lamp.</p>	
	<p>A20 Compact 100 – Small driving lamp with latest-generation lighting engineering and colorless lens. Ideally suited for integrated external fitting and flush fitting. Also available as a fog lamp.</p>	
	<p>A21 Compass – Driving lamp. Compact and robust for more stringent requirements in commercial vehicles.</p>	
	<p>A22 Profi – Driving lamp. Robust and resistant to vibration. Ideal for tough day-to-day use on commercial vehicles. Also available as a fog lamp.</p>	

Bosch auxiliary lamps

– for all types of vehicles and applications



Bosch supplies a comprehensive range

of auxiliary lamps for all vehicles. Choose outstanding quality, unique design and enhanced safety thanks to more light on the road. Bosch auxiliary lamps improve the standard lighting profile of your vehicle. This gives you better visibility and valuable extra time to react more quickly to changing traffic situations. These seconds can be critical for your safety.

Xenon or halogen

Some Bosch auxiliary lamps are already equipped with the latest Xenon gas discharge technology. Compared to a headlamp with a halogen bulb of the same size, this means up to three times more light. In addition, Xenon headlamps deliver a light color similar to daylight, improving driving comfort.

Which light do you prefer?

Bosch auxiliary lamps are available with two different light profiles. “Wide/long” for a normal light profile. “Narrow/long” for those who prefer longer but narrower illumination. The advantage of mounting multiple auxiliary lamps: The two light profiles can be combined to achieve maximum light yield. The wide/long light profiles have ECE approval.

Bosch is continuously advancing the technology in its auxiliary lamps. To adapt the additional lighting capacity for today’s aerodynamic vehicles, exceptionally small and compact auxiliary lamps are needed. One result of this development is the Bosch Compact 100, which delivers up to 50 % more light compared to conventional ultra driving lamps of the same size. This is because the computer-designed reflector surface ensures more effective light distribution, illuminates the road more evenly and lights up the sides of the road better than conventional headlamps.

Xenon auxiliary lamps with gas discharge bulb



Halogen auxiliary lamps



Wide/long light profile



Narrow/long light profile



Light-Star LED

Halogen/LED



Extremely robust, corrosion-resistant, attractive stainless steel housing. Particularly suitable for the demands of SUV and commercial vehicles. With the latest generation, high-power LED ring.

Headlamp housing

Stainless steel housing, polished.

Lens

Colorless or blue.

Attachment

With M10 threaded stud.

Mounting

Upright.

Scope of delivery

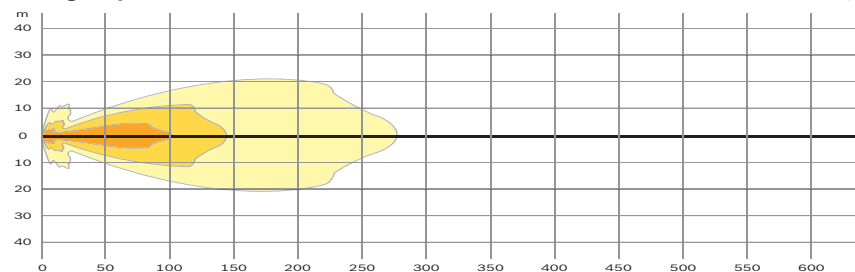
Headlamp, operating instructions, installation material.

Standard

ECE and SAE approval.

Driving lamp 12 V/55 W

Reference number: 17,5



Light-Star LED	
ECE, colorless	0 986 310 984
ECE, blue	0 986 310 985¹⁾

Accessories and spare parts	
Driving-lamp unit, ECE, colorless	1 987 305 130
Driving-lamp unit, ECE, blue	1 987 305 131¹⁾
Protective cap	1 987 305 134
Mounting set	1 987 305 137

Type of bulb		
H1	12 V/55 W	1 987 302 011
H1	24 V/70 W	1 987 302 411

¹⁾ Operate blue ECE version with colorless bulbs only, H1

Light-Star Xenon ECE

Xenon



Extremely robust, corrosion-resistant, attractive stainless steel housing. Particularly suitable for the demands of SUV and commercial vehicles. With integral xenon control unit in the housing for greater reliability and convenience.

Headlamp housing

Stainless steel housing, polished.

Lens

Colorless.

Attachment

With M10 threaded stud.

Mounting

Upright.

Scope of delivery

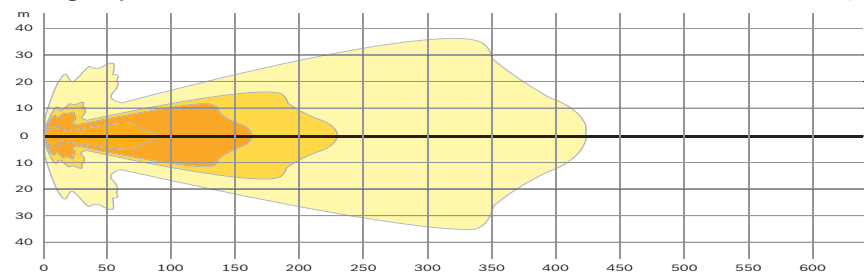
Headlamp, gas-discharge lamp D1S, control unit, complete cable connection set and marker lamp W5W, operating instructions, installation material.

Standard

ECE approval.

Driving lamp 12 V/35 W

Reference number: 37,5



Light-Star Xenon ECE

Xenon ECE, 12 V colorless **0 986 310 986¹⁾**

Xenon ECE, 24 V colorless **0 986 310 987¹⁾**

Accessories and spare parts

Driving-lamp unit, **1 987 305 132¹⁾**

Xenon ECE, colorless

Xenon-Controller 12 V **1 987 305 138**

Xenon-Controller 24 V **1 987 305 139**

Protective cap **1 987 305 134**

Mounting set **1 987 305 137**

Type of bulb

D1S 35 W **1 987 302 905**

W5W 12 V/5 W **1 987 302 206**

W5W 24 V/5 W **1 987 302 518**

¹⁾ Observe legal regulations and safety instructions

Light-Star ECE

Halogen



Extremely robust, corrosion-resistant, attractive stainless steel housing. Particularly suitable for the demands of SUV and commercial vehicles.

Headlamp housing

Stainless steel housing, polished.

Lens

Colorless or blue.

Attachment

With M10 threaded stud.

Mounting

Upright.

Scope of delivery

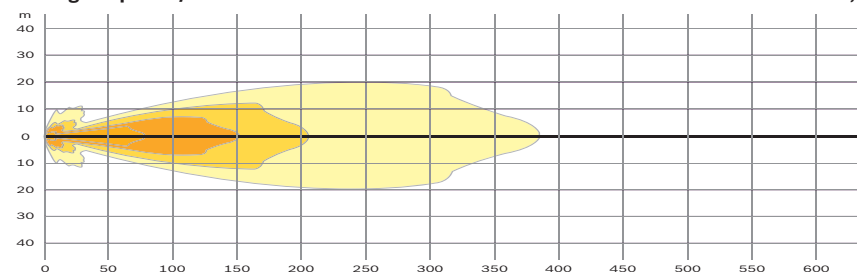
Headlamp, operating instructions, installation material.

Standard

ECE approval.

Driving lamp 12 V/55 W

Reference number: 37,5



Light-Stat ECE

ECE, colorless	0 986 310 980
ECE, blue	0 986 310 981¹⁾

Accessories and spare parts

Driving-lamp unit, ECE, colorless	1 987 305 126
Driving-lamp unit, ECE, blue	1 987 305 127¹⁾
Protective cap	1 987 305 134
Mounting set	1 987 305 137

Type of bulb

H1	12 V/55 W	1 987 302 011
H1	24 V/70 W	1 987 302 411
W5W	12 V/5 W	1 987 302 206
W5W	24 V/5 W	1 987 302 518

¹⁾ Operate blue ECE version with colorless bulbs only, H1

Light-Star Pencil Beam

Halogen



Extremely robust, corrosion-resistant, attractive stainless steel housing. Particularly suitable for the demands of SUV and commercial vehicles.

Headlamp housing

Stainless steel housing, polished.

Lens

Colorless or blue.

Attachment

With M10 threaded stud.

Mounting

Upright.

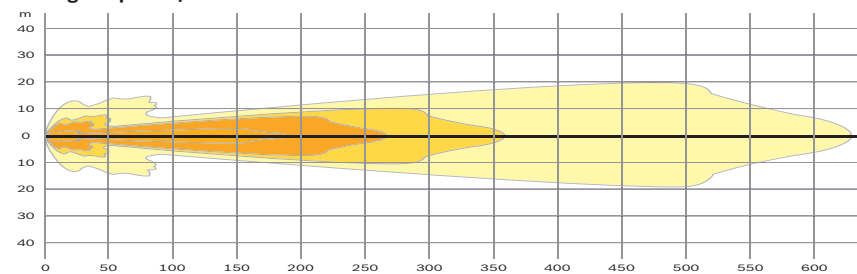
Scope of delivery

Headlamp, operating instructions, installation material.

Standard

Observe legal regulations and safety instructions.

Driving lamp 12 V/55 W



Light-Star Pencil Beam

Pencil Beam, colorless	0 986 310 982¹⁾
Pencil Beam, blue	0 986 310 983¹⁾

Accessories and spare parts

Driving-lamp unit, Pencil Beam, colorless	1 987 305 128¹⁾
Driving-lamp unit, Pencil Beam, blue	1 987 305 129¹⁾
Protective cap	1 987 305 134
Mounting set	1 987 305 137

Type of bulb

H1	12 V/55 W	1 987 302 011
H1	24 V/70 W	1 987 302 411
W5W	12 V/5 W	1 987 302 206
W5W	24 V/5 W	1 987 302 518

¹⁾ Observe legal regulations and safety instructions

Rallye 225 Highlight ECE

Halogen/LED



Elegant design for optimum light efficiency and added safety. With innovative LED position light as standard.

Headlamp housing

Extra robust die-cast aluminum housing.

Lens

Colorless or blue.

Attachment

With M10 threaded stud.

Mounting

Upright.

Scope of delivery

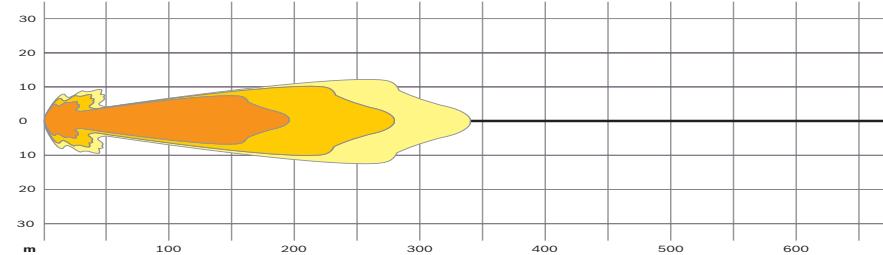
Headlamp, operating instructions, installation material.

Standard

ECE approval.

Driving lamp 12 V/55 W

Reference number: 37,5



Rallye 225 Highlight ECE		
ECE, colorless		0 986 310 970²⁾
ECE, blue		0 986 310 971¹⁾²⁾

Accessories and spare parts		
Driving-lamp unit, ECE colorless		1 987 305 118²⁾
Driving-lamp unit, ECE blue		1 987 305 119¹⁾²⁾

Type of bulb		
H1	12 V/55 W	1 987 302 011
H1	24 V/70 W	1 987 302 411

¹⁾ Operate blue ECE version with colorless bulbs only, H1

²⁾ Available while stocks last

Rallye 225 Highlight Pencil Beam

Halogen/LED



Elegant design for optimum light efficiency and added safety. With innovative LED position light as standard.

Headlamp housing

Extra robust die-cast aluminum housing.

Lens

Colorless or blue.

Attachment

With M10 threaded stud.

Mounting

Upright.

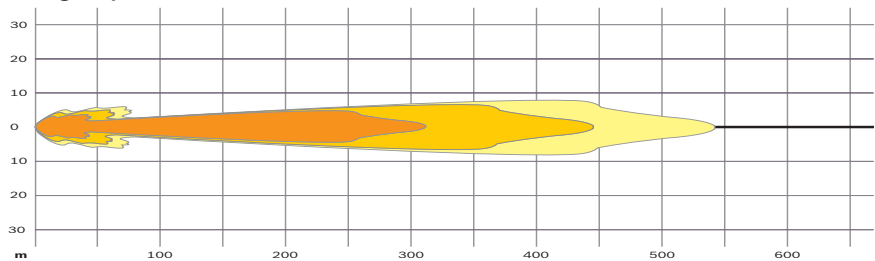
Scope of delivery

Headlamp, operating instructions, installation material.

Standard

Observe legal regulations and safety instructions.

Driving lamp 12 V/55 W



Rallye 225 Highlight Pencil Beam

Pencil Beam, colorless **0 986 310 972**¹⁾²⁾

Pencil Beam, blue **0 986 310 973**¹⁾²⁾

Accessories and spare parts

Driving-lamp unit, **1 987 305 120**¹⁾²⁾

Pencil Beam, colorless

Driving-lamp unit, **1 987 305 121**¹⁾²⁾

Pencil Beam, blue

Type of bulb

H1 12 V/55 W **1 987 302 011**

H1 24 V/70 W **1 987 302 411**

¹⁾ Observe legal regulations and safety instructions

²⁾ Available while stocks last

Rallye 225 Highlight Xenon ECE

Xenon/LED



Elegant design for optimum light efficiency and added safety. With innovative LED position light as standard.

Headlamp housing

Extra robust die-cast aluminum housing.

Lens

Colorless or blue.

Attachment

With M10 threaded stud.

Mounting

Upright.

Scope of delivery

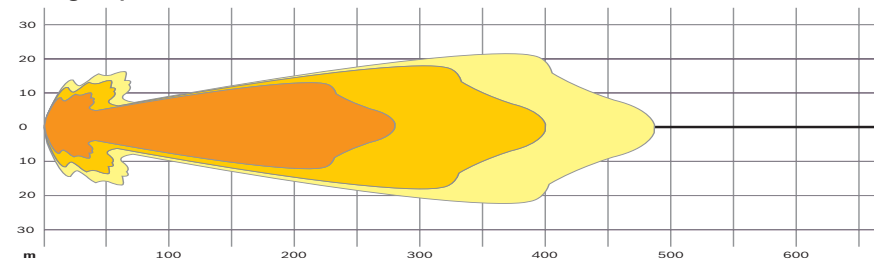
Headlamp, operating instructions, installation material.

Standard

ECE approval.

Driving lamp 12 V/35 W

Reference number: 45



Rallye 225 Highlight Xenon ECE

Xenon ECE, 12V, colorless **0 986 310 974**¹⁾³⁾

Xenon ECE, 12V, blue **0 986 310 975**²⁾³⁾

Xenon ECE, 24V, colorless **0 986 310 976**¹⁾³⁾

Xenon ECE, 24V, blue **0 986 310 977**²⁾³⁾

Accessories and spare parts

Driving-lamp unit, **1 987 305 122**¹⁾³⁾

Xenon ECE colorless

Driving-lamp unit, **1 987 305 123**²⁾³⁾

Xenon ECE blue

Type of bulb

D1S 35 W **1 987 302 905**

¹⁾ Observe legal regulations and safety instructions

²⁾ Operate blue ECE version with colorless bulbs only, D1S

³⁾ Available while stocks last

Pilot 175

Halogen



Modern design paired with safety.
The high-grade chrome ring is a real eye-catcher. The computer-calculated reflector guarantees maximum light efficiency.

Headlamp housing

Fiberglass reinforced impact-resistant polyamide housing, black.

Lens

Colorless or blue.

Attachment

With M10 threaded stud.

Mounting

Upright.

Scope of delivery

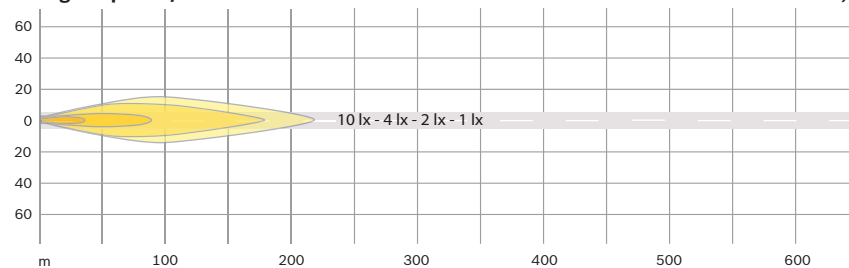
Headlamp, operating instructions, installation material.

Standard

ECE and SAE approval.

Driving lamp 12 V/55 W

Reference number: 17,5



Pilot 175	
Colorless	0 986 310 950
Blue	0 986 310 951 ¹⁾

Accessories and spare parts	
Driving-lamp unit, colorless	1 987 305 112
Driving-lamp unit, blue	1 987 305 114 ¹⁾
Protective cap	1 987 305 110

Type of bulb		
H1	12 V/55 W	1 987 302 011
H1	24 V/70 W	1 987 302 411
W5W	12V/5W	1 987 302 206
W5W	24V/5W	1 987 302 518

¹⁾ Operate blue ECE version with colorless bulbs only, H1

Pilot 225

Halogen



Modern design paired with safety.
The high-grade chrome ring is a real eye-catcher. The computer-calculated reflector guarantees maximum light efficiency.

Headlamp housing

Fiberglass reinforced impact-resistant polyamide housing, black.

Lens

Colorless or blue.

Attachment

With M10 threaded stud.

Mounting

Upright.

Scope of delivery

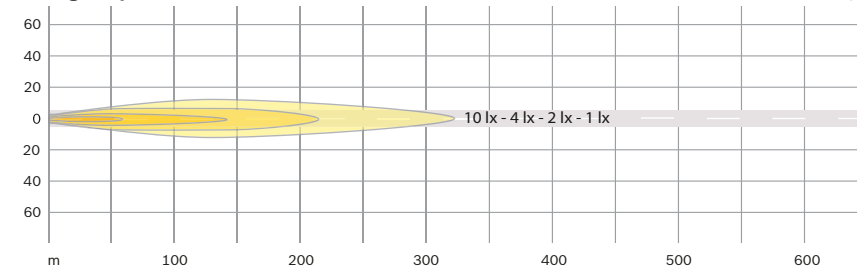
Headlamp, operating instructions, installation material.

Standard

ECE approval.

Driving lamp 12 V/55 W

Reference number: 37,5

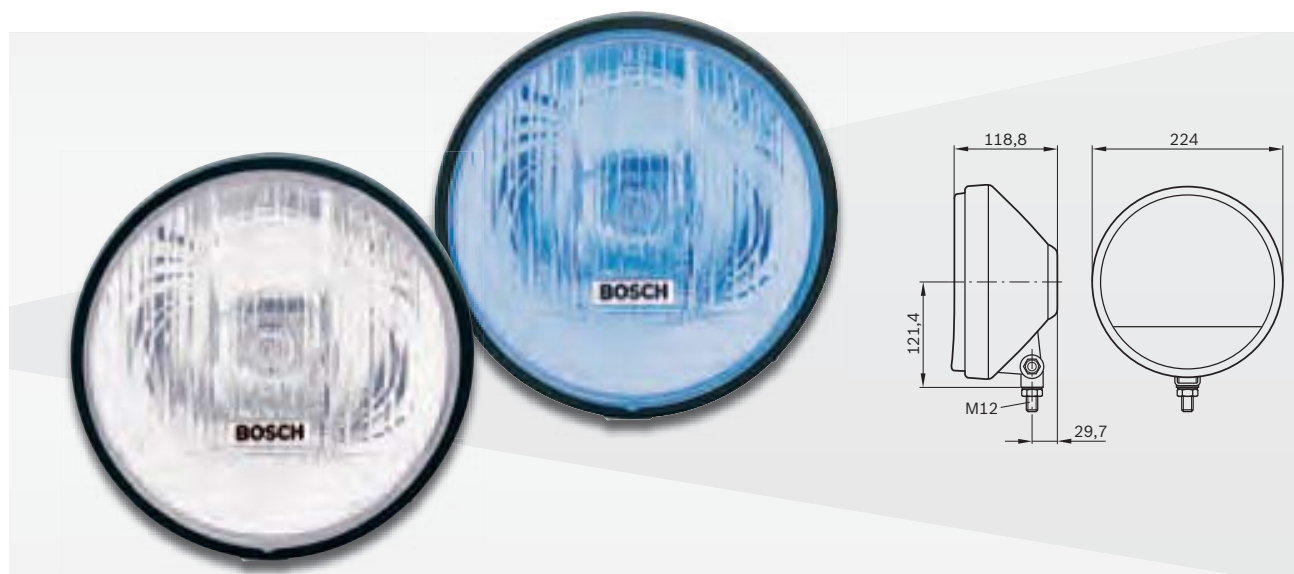


Pilot 225		
Colorless		0 986 310 952
Blue		0 986 310 953¹⁾
Accessories and spare parts		
Driving-lamp unit, colorless		1 987 305 113
Driving-lamp unit, blue		1 987 305 115¹⁾
Protective cap		1 987 305 111
Type of bulb		
H1	12 V/55 W	1 987 302 011
H1	24 V/70 W	1 987 302 411
W5W	12V/5W	1 987 302 206
W5W	24V/5W	1 987 302 518

¹⁾ Operate blue ECE version with colorless bulbs only, H1

Rallye 225

Halogen



Robust auxiliary lamp – developed for rally sport. Optimum light and best road illumination for heavy-duty applications. With or without side-marker lamp.

Headlamp housing

Waterproof steel housing, black resicoated.

Lens

Colorless or blue. Lens aperture Ø 205 mm.

Attachment

With M12 threaded stud.

Mounting

Upright.

Scope of delivery

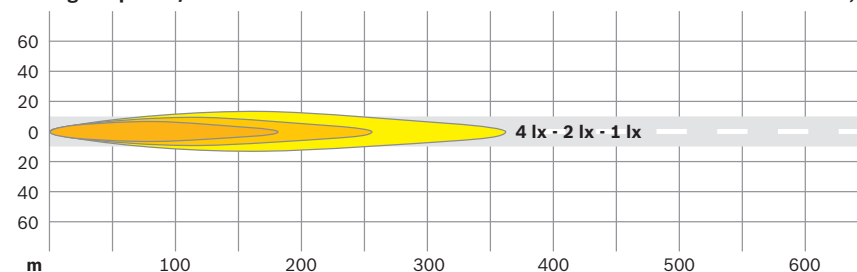
Headlamp, operating instructions, installation material.

Standard

Observe legal regulations and safety instructions.

Driving lamp 12 V/55 W

Reference number: 37,5



Rallye 225	
ECE, colorless	0 306 003 002 ³⁾
ECE, colorless, with position light	0 306 003 006 ³⁾
ECE, blue, with position light	0 306 003 008 ²⁾³⁾
Pencil beam, colorless, with protective cap	0 306 003 003 ¹⁾³⁾
Pencil beam, colorless, with position light	0 306 003 007 ¹⁾³⁾
Pencil beam, blue, with position light	0 306 003 009 ²⁾³⁾

Accessories and spare parts	
Protective cap	1 300 516 018 ³⁾
Unit, ECE, colorless, without position lamp	1 300 334 910 ³⁾
Unit, ECE, blue, with position light	1 305 334 925 ²⁾³⁾
Fastening kit	1 307 010 170 ³⁾

Type of bulb		
H3	12 V/55 W	1 987 302 031
H3	24 V/70 W	1 987 302 431
T 4 W	12 V/4 W	1 987 302 207
T 4 W	24 V/4 W	1 987 302 512

¹⁾ Observe legal regulations and safety instructions

²⁾ Operate blue ECE version with colorless bulbs only, T4W, H3

³⁾ Available while stocks last

Rallye 175

Xenon



Auxiliary lamp for a wide variety of applications. Optimum homogeneous light distribution. Suitable for use in even the toughest of weather conditions.

Headlamp housing

Fiberglass reinforced plastic, matte black surface.

Lens

Colorless.

Attachment

With M10 threaded stud.

Mounting

Upright, suspended and side-mounted with up to 90° adjustable base.

Scope of delivery

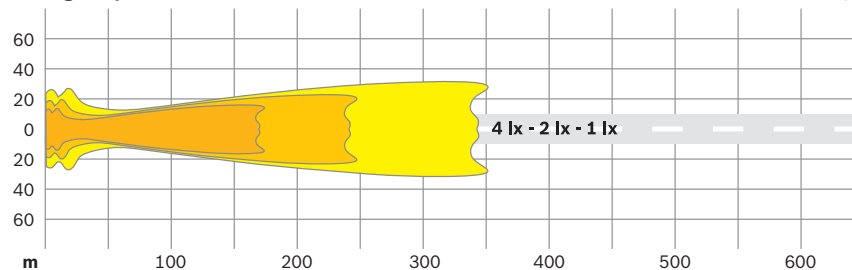
□ SB packaging, 1 headlamp with D1S gaseous-discharge lamp, control unit, electrical connecting parts, operating instructions.

Standard

ECE approval.

Driving lamp 12 V/35 W/Xenon

Reference number: 37,5



Rallye 175 Xenon	
Colorless 12 V	0 986 310 674¹⁾

Accessories and spare parts	
Xenon control unit with 80 cm high-voltage cable 12 V	0 986 310 208¹⁾
Relay 12 V	0 332 019 150

Type of bulb	
Gaseous-discharge lamp D1S, 35 W	1 987 302 905

¹⁾ Available while stocks last

Rallye 175

Halogen



Auxiliary lamp for a wide variety of applications. Optimum homogeneous light distribution. Suitable for use in even the toughest of weather conditions.

Headlamp housing

Fiberglass reinforced plastic, matte black surface.

Lens

Colorless or blue.

Attachment

With M10 threaded stud.

Mounting

Upright, suspended and side-mounted with up to 90° adjustable base.

Scope of delivery

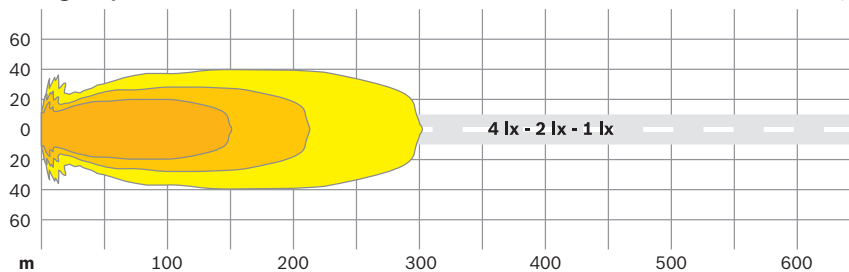
□ SB packaging, 1 headlamp with H1 halogen lamp, electrical connecting parts, operating instructions.

Standard

ECE and SAE approval.

Driving lamp 12 V/55 W

Reference number: 17,5



Rallye 175	
Colorless	0 986 310 533 ¹⁾

Type of bulb		
H1	12 V/55 W	1 987 302 011
H1	24 V/70 W	1 987 302 411
T 4 W	12 V/4 W	1 987 302 207
T 4 W	24 V/4 W	1 987 302 512

¹⁾ Available while stocks last

Pilot 160

Halogen



The all-rounder for additional mounting as a driving lamp.

Headlamp housing

Fiberglass reinforced polyamide housing, matte black surface.

Lens

Colorless.

Attachment

With M10 threaded stud.

Mounting

Optionally upright or suspended.

Scope of delivery

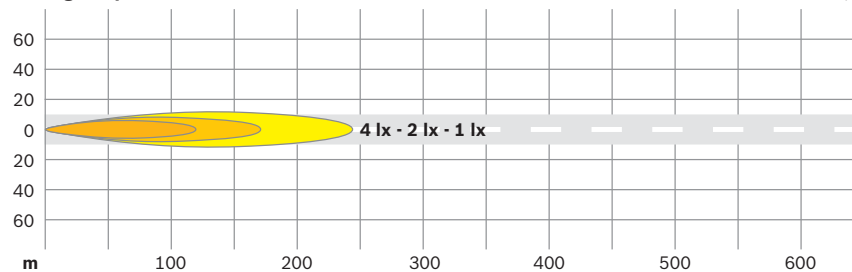
SB packaging: Complete installation kit, 2 headlamps with H3 bulbs, wiring harness, relay, fuse carrier, assembly parts and installation instructions.

Standard

ECE and SAE approval.

Driving lamp 12 V/55 W

Reference number: 17,5



Pilot 160	
Colorless	0 306 606 001 ¹⁾
SB packaging	0 306 606 901 ¹⁾ <input type="checkbox"/>

Type of bulb		
H3	12 V/55 W	1 987 302 031
H3	24 V/70 W	1 987 302 431

¹⁾ Available while stocks last

Pilot 150

Halogen



Extra-flat auxiliary lamp for vehicles with narrow bumper. Ideal for compact-class vehicles. Impact-resistant, fracture-proof and non-corroding.

Headlamp housing

Fiberglass reinforced polyamide housing, matte black surface.

Lens

Colorless or yellow.

Mounting

Optionally upright, suspended and from rear.

Scope of delivery

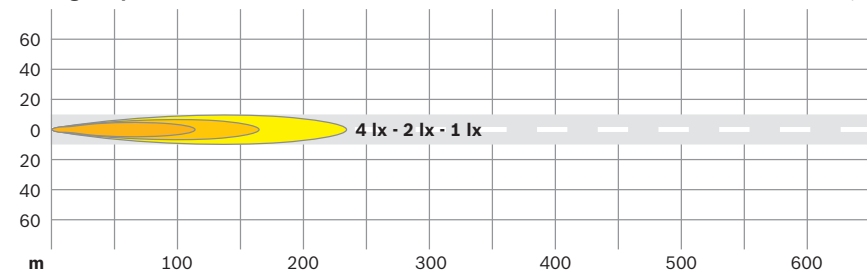
SB packaging: Complete installation kit, 2 headlamps with H3 bulbs, wiring harness, relay, fuse carrier, switch, assembly parts and installation instructions (driving lamp without switch).

Standard

ECE and SAE approval.

Driving lamp 12 V/55 W

Reference number: 12,5



Pilot 150

Attachment with threaded stud

Colorless	0 306 407 001¹⁾
SB packaging	0 306 407 901¹⁾ <input type="checkbox"/>

Accessories and spare parts

Guard	1 305 540 165¹⁾
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Type of bulb

H3	12 V/55 W	1 987 302 031
H3	24 V/70 W	1 987 302 431

¹⁾ Available while stocks last

Compact 100 Halogen



Power that's well worth seeing. Longer range, enhanced road illumination for earlier detection of obstacles. A better view at dusk and at night.

Headlamp housing

Fiberglass reinforced polyamide housing, matte black surface. Waterproof ventilation system with GORE-TEX® membrane.

Lens

Colorless.

Mounting

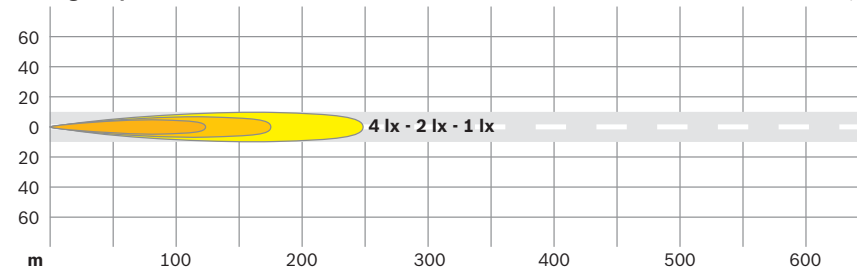
Optionally upright or suspended.

Standard

ECE approval.

Driving lamp 12 V/55 W

Reference number: 17,5



Compact 100		
Colorless		0 306 055 001 ¹⁾
Type of bulb		
H3	12 V/55 W	1 987 302 031

¹⁾ Available while stocks last

Compass

Halogen



Compact driving lamp with aluminum die-cast housing for the more stringent requirements of commercial vehicles. Long service life due to approved product quality.

Lens

Colorless.

Attachment

With two M10 screws.

Mounting

suspended.

Scope of delivery

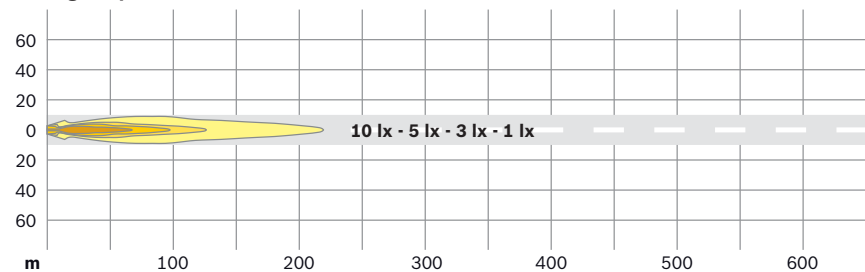
Headlamp with assembled bracket, operating instructions.

Standard

ECE approval.

Driving lamp 12 V/55 W

Reference number: 20



Compass	
Colorless	0 986 310 530

Type of bulb	
H3	12 V/55 W 1 987 302 031

Profi 210 Halogen



Auxiliary lamp in steel housing. Robust and vibration-resistant. Scratch-resistant and non-corroding. Ideal for trucks and buses.

Headlamp housing

Waterproof steel housing. Version with yellow lens: Black resicoated housing.

Lens

Colorless, yellow or blue.

Attachment

With 2 screws at side or pivoting fastening bracket with M 10 threaded stud.

Mounting

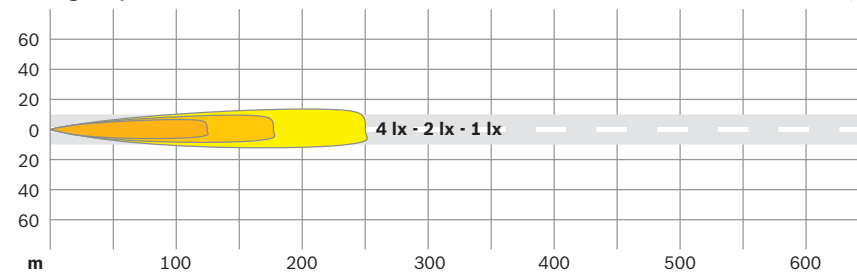
Upright and suspended.

Standard

ECE and SAE approval.

Driving lamp 12 V/55 W

Reference number: 17,5



Profi 210	
Colorless	0 986 310 537 ²⁾
Blue	0 986 310 538 ²⁾

Accessories and spare parts	
Protective cap	1 300 591 053 ¹⁾²⁾

Type of bulb		
H3	12 V/55 W	1 987 302 031
H3	24 V/70 W	1 987 302 431

¹⁾ Observe legal regulations and safety instructions

²⁾ Available while stocks last

Auxiliary lamps – Fog lamps

Range overview



A26

Rallye – Fog lamp.

Exceptionally high lighting efficiency thanks to large and deep reflector. Tried and tested in motor sport. Also available as a driving lamp.



A27

Profi – Fog lamp.

Robust and resistant to vibration. Ideal for tough day-to-day use on commercial vehicles. Also available as a driving lamp.



Information



A total of two additional front fog lamps are permissible on each vehicle. These must be capable of being switched on and off separately from the upper and lower-beam headlamps. They may only be switched on together with the lower-beam headlamps. Adjustment is as for the main headlamps. Adjustment dimensions and statutory regulations must always be adhered to.

There are three different optical principles for additional fog lamps:

Paraboloid

A parabolic reflector reflects paraxial light (such as upper beam), which is drawn out into a horizontal band by the lens. A screen restricts the upward radiation of light.

Free-form technology

Using computer-aided calculation methods (CAL technology), reflectors are designed to scatter the light directly and at the same time produce a sharply defined light-dark cutoff. The design of the bulb surround ensures an extremely high light volume with maximum diffusion.

PES fog lamps

In fog, this technology ensures a minimum of dazzle for the driver from his/her own lamps. The lens helps to ensure the best-possible light-dark cutoff contrast on the road.

Rallye 225

Halogen



Robust auxiliary lamp – developed for rally sport. Optimum light and best road illumination for heavy-duty applications.

Headlamp housing

Waterproof steel housing, black resicoated.

Lens

Colorless. Lens aperture \varnothing 205 mm.

Attachment

With M12 threaded stud.

Mounting

Upright.

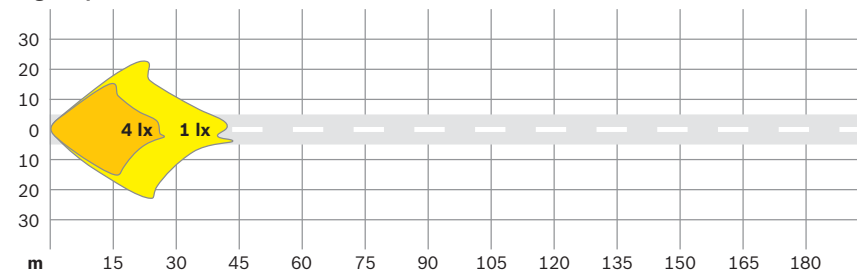
Scope of delivery

Assembly parts included.

Standard

ECE approval.

Fog lamp 12 V/55 W



Rallye 225		
Colorless		0 305 002 001²⁾
Accessories and spare parts		
Protective cap		1 300 516 018¹⁾²⁾
Fastening kit		1 307 010 170²⁾
Type of bulb		
H3	12 V/55 W	1 987 302 031
H3	24 V/70 W	1 987 302 431
T 4 W	12 V/4 W	1 987 302 207
T 4 W	24 V/4 W	1 987 302 512

¹⁾ Observe legal regulations and safety instructions

²⁾ Available while stocks last

Profi 210

Halogen



Fog lamp in steel housing. Robust and vibration-resistant. Scratch-resistant and non-corroding. Ideal for trucks and buses.

Headlamp housing

Waterproof steel housing.

Lens

Colorless or yellow.

Attachment

Pivoting fastening bracket with M10 threaded stud.

Mounting

Upright and suspended.

Standard

ECE and SAE approval.

Profi 210

Colorless	0 986 310 539²⁾
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Accessories and spare parts

Protective cap	1 300 591 053¹⁾²⁾
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Fog-lamp unit, colorless	1 305 320 816²⁾
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Type of bulb

H3	12 V/55 W	1 987 302 031
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H3	24 V/70 W	1 987 302 431
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¹⁾ Observe legal regulations and safety instructions

²⁾ Available while stocks last

Flood and spot lamps

Range overview



A 34/35/36/37 **R-950-F, R-1800-F, R-3000-F, R-4300-F** – LED heavy-duty work headlight in OE- quality suitable for challenging environmental conditions.



A 38 **LED 135** – The innovative LED 135 floodlamp and spot lamp ensures unbeatable light efficiency and a long service life.



A 39/40/41 **O-2000-F, R-1000-F, S-1500F** – LED work lamp with aluminum die-cast housing, low current consumption and long service life.



A 42/43 **S-1000-C, S-1000-F, S-2250-C, S-2250-F** – LED work lamp and combination lamp.



A 44/45/46/51 **Pilot 100, Pilot 135, Pilot 155** – Halogen floodlamps and spot lamps. Efficient and suitable for all applications. Optionally available with one (single beam) or two (double beam) light sources.



A 47/48/49 **Pilot 140, Pilot 145, Pilot 150, Pilot 160** – Halogen floodlamps and spot lamps, available in a wide range of designs.



A 53 **Pilot X** – The most compact, most powerful xenon floodlamp in its class.



A 54 **Profi** – Exceptionally robust flood lamp, complete with guard.



A 55 **Kiruna 140** – Flood lamp, with option of handle and switch.



Information



Flood lamps

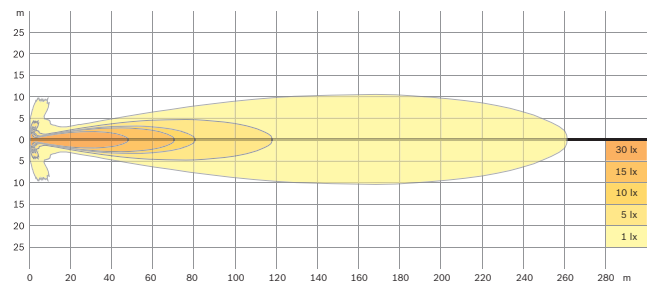
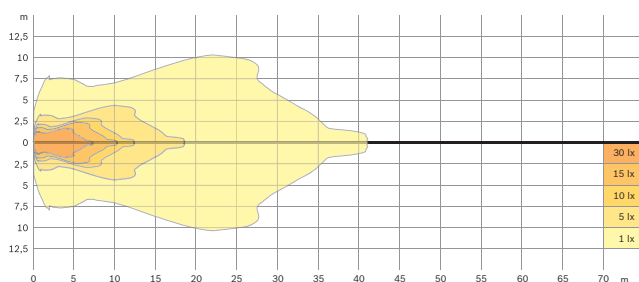
Flood lamps are used for illuminating stationary or mobile work-places. Their robust design makes flood lamps particularly well suited for mounting on commercial vehicles and opens up a wide variety of applications. Flood lamps are widely used in construction, agriculture and forestry, transport, municipal services, by the emergency services and in shipping.

Flood lamps feature large, uniform light distribution. This allows a large working area to be illuminated at close range.

Spot lamps

The densely concentrated light from a spot lamp is ideal when there is a need for targeted illumination of an object from a long distance. For example, spot lamps are used by the police, by fire brigades, and for technical assistance and emergency services. However, a spot lamp can also be useful in other specialist areas where there is a need for a strong searchlight, for example inland waterways for illuminating canals, locks or landing stages.

A spot lamp produces a narrow beam of concentrated high-intensity light, effectively illuminating a specific area at long range.



Flood and spot lamps



When you need to turn night into day

Anyone who has to work on vehicles at night or in poor daytime lighting conditions needs extra illumination of their working area. Standard sources of light are in no way adequate.

The right lamps for every application

Bosch supplies a wide range of different flood lamps and spot lamps to suit every purpose. Flood lamps are used in situations requiring a broad light beam for uniform illumination of a large area.

By contrast, spot lamps provide a narrow beam of light for the concentrated illumination of a smaller, more distant area. Flood lamps and spot lamps feature a compact construction, which enables them to be easily mounted at various positions on a vehicle.

They also offer impressive flexibility: They can be swiveled to numerous positions and securely fixed at every point.

Top quality makes light of hard work

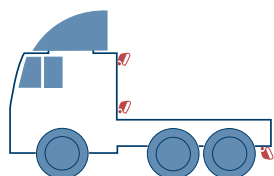
Many years' experience, continuous testing and strict production controls guarantee the premium quality of all flood lamps and spot lamps from Bosch. Outstanding quality features:

- ▶ High light yield thanks to reflects with a surface accuracy of 1/10,000 mm, ground using a special reflection method and smoothed by multiple lacquer coats
- ▶ Exceptionally vibration resistant and durable designs for tough applications
- ▶ Easy service construction for uncomplicated replacement of bulbs
- ▶ Vibration-damped versions available
- ▶ Splash-proof design

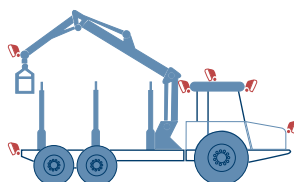
Attachment examples



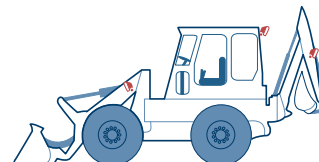
Optimum illumination for every application



Truck / semi-trailer tractors



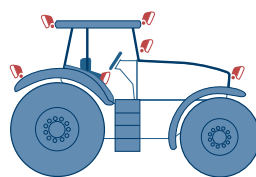
Forestry machines



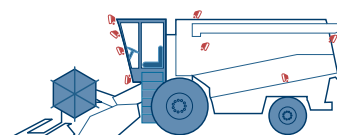
Wheel loaders / excavators



Fork-lift trucks



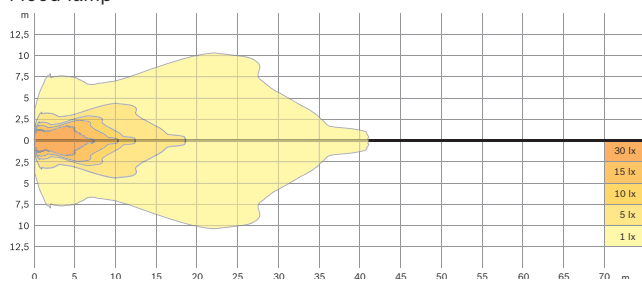
Tractors



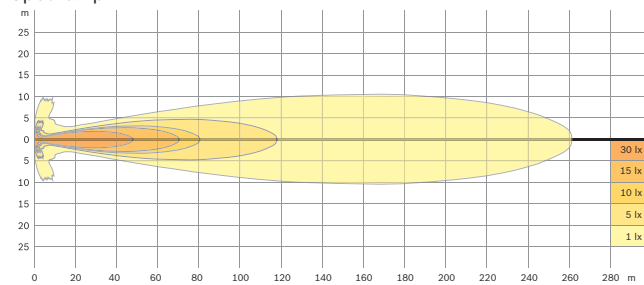
Combine harvesters

For every application the right lamps

Flood lamp



Spot lamp



Ideal illumination IP degrees of protection



Large tilt angle:
Close-range illumination



Small tilt angle:
Long-range illumination

Ideal illumination!

Practical hints

The attachment height and tilt angle are the critical parameters for obtaining optimum illumination with a flood lamp. The greatest area of illumination can be achieved with a small tilt angle (approx. 5°) and a high attachment position (approx. 2.5 m). Individual settings can be made to suit the relevant application.

IP degrees of protection

Safety you can rely on

Bosch places great emphasis on high quality materials and workmanship. These are essential for the reliable, long-term operation of products. An important indicator of the loads to which a lamp unit can be subjected is provided by the IP degree of protection (International Protection). IP degrees of protection specify the amount of protection afforded to electrical equipment by a housing. Various tests are performed to determine the exact degree of protection.

Two levels of protection are tested

Protection against the ingress of solid foreign matter (including dust), indicated by the first code element. Secondly, protection against the ingress of water, indicated by the second code element.

Where no code element is given, the letter „X“ is to be substituted. E.g. IPX4K, if only the protection against water ingress was examined.

The structure of IP degrees of protection is as follows:

1st code element and supplementary K	Protection of electrical equipment against ingress of foreign matter
0	Not protected
1	Protection against foreign matter $\varnothing \geq 50$ mm
2	Protection against foreign matter $\varnothing \geq 12,5$ mm
3	Protection against foreign matter $\varnothing \geq 2,5$ mm
4	Protection against foreign matter $\varnothing \geq 1,0$ mm
5K	Dust protected
6K	Dust proof

2nd code element and supplementary K	Protection of electrical equipment against ingress of water
0	Not protected
1	Protection against vertical drops
2	Protection against drops from 15° angle
3	Protection against sprayed water
4	Protection against splash water
4K	Protection against splash water with increased pressure
5	Protection against water jets
6	Protection against strong water jets
6K	Protection against strong water jets with increased pressure
7	Protection against temporary immersion
8	Protection against temporary submersion
9K	Protection against high pressure/vapor pressure cleaning

LED lamps from Bosch

A big safety boost



Anyone who has ever worked at night or in poor lighting conditions knows how important good lighting is. Particularly in automotive engineering, LED technology opens up totally new horizons in providing more targeted and efficient lighting. For example, Bosch has developed the new LED 135 flood lamp and spot lamp. Even better visibility, enhanced safety and added convenience.



Tailored to your requirements

Bosch LED flood lamps deliver a broad and uniformly distributed light cone in the close-up range, Bosch LED spot lamps, meanwhile, provide a directed beam of concentrated bright light. LED combination lamps combine the properties of a work lamp with those of a search lamp. In all cases, a color temperature similar to daylight relieves strain on the eyes and ensures a pleasant working atmosphere.

Low power consumption

Bosch LED flood lamps feature minimal energy consumption. This is particularly beneficial where the alternator only provides a small amount of power or, for example on electric fork-lift trucks or special purpose vehicles, where a battery supplies the power.

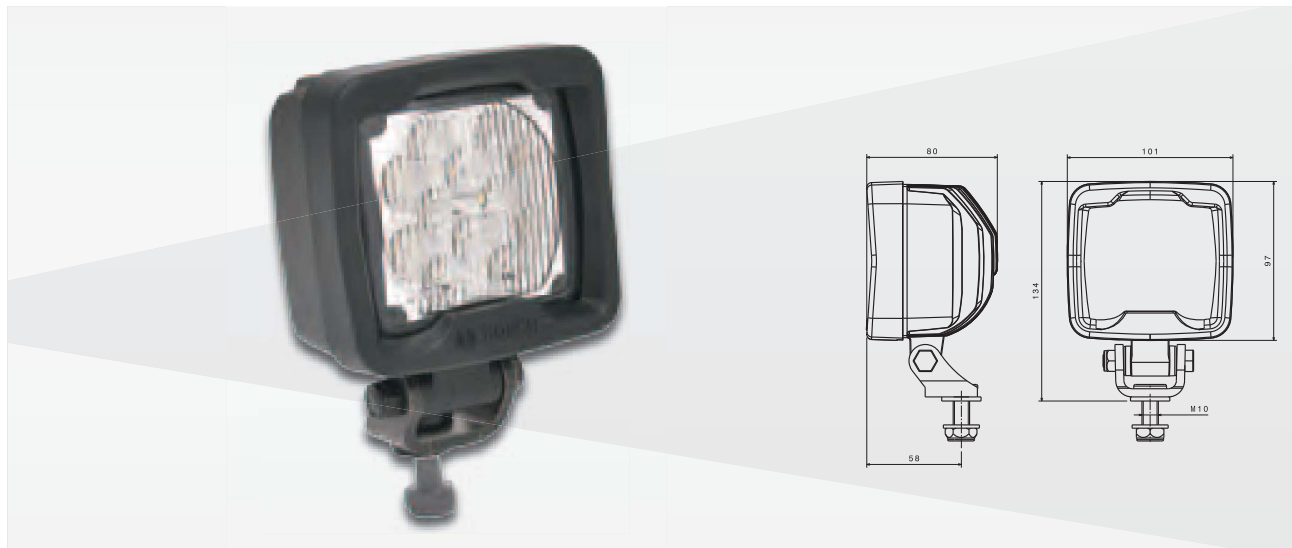
Long service life and zero maintenance

Flood lamps often need to be used throughout the night. This would place huge demands on any lamps based on conventional technology. LED flood lamps from Bosch can comfortably cope with continuous use. They offer an impressively long service life thanks to the low power consumption and the small amount of heat generated. They are also maintenance free, which means that there is no need for troublesome bulb changes.

For the toughest conditions

Flood lamps and spot lamps need to be able to withstand plenty of punishment in day-to-day use. Which is why Bosch makes them exceptionally durable. The housing, attachments and supply lines feature high quality materials and painstaking workmanship. Bosch LED lamps also have another technical advantage: Their LEDs are much less sensitive, particularly to vibrations, than conventional bulbs. This durability also includes all of the electronics used in the Bosch LED lamps. By choosing Bosch, you can count on exceptional reliability and a long service life.

R-950-F
Flood lamps
LED



Heavy-duty LED headlight in OE quality with hardened glass lens. Power consumption 11 W, with 12 high-performance LEDs, suitable for every polarity. The impact-resistant, vibration-tested headlight is especially well-suited for the challenging conditions encountered in mines and on construction sites. The effective luminous flux is 850 lm. EMC exceeds ECE R10. Available for 12 or 24 V. Protection rating IP68/IP69K.

Lamp housing

Aluminum,
Dimensions: 101 mm x 134 mm x 80 mm.

Attachment

Upright or suspended options available.

Mounting

With swivel type forked holder for mounting on body or bumper Stud M 10.

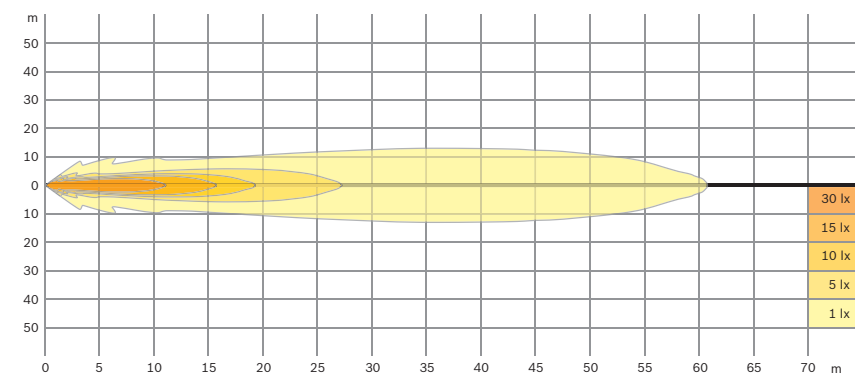
Electrical connection

Built-in Germany.

Scope of delivery

Individual packaging:
1 lamp including mounting parts.

Flood lamp 12/24 V

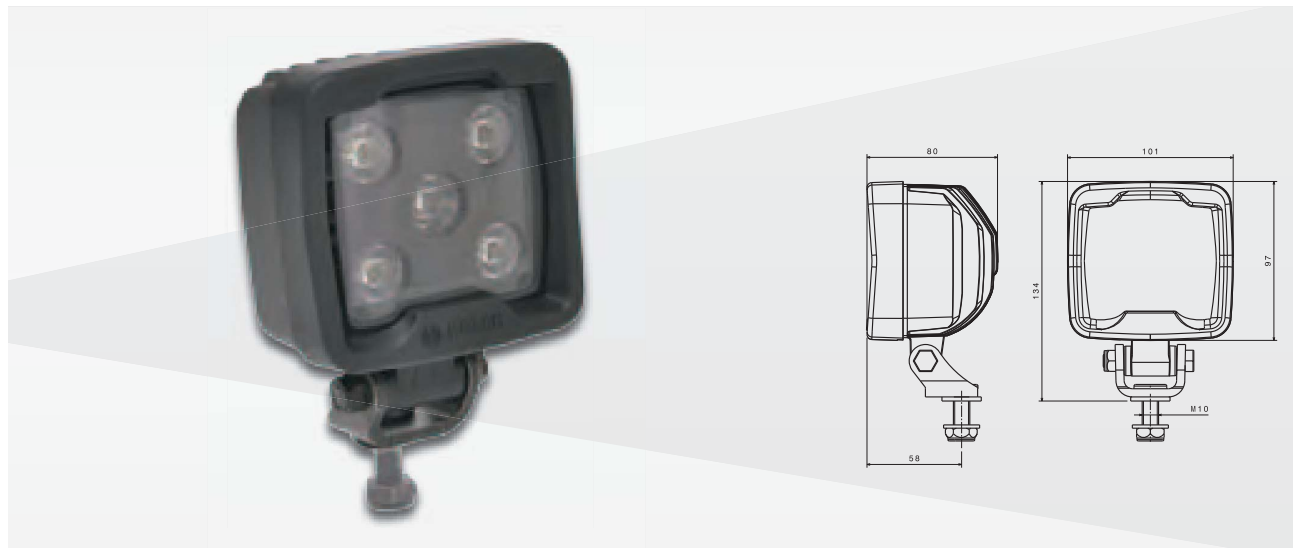


Flood lamp R-950-F
12/24 V **0 986 310 964**

R-1800-F

Flood lamps

LED



Heavy-duty LED headlight in OE quality with hardened glass lens. Power consumption 20 W, with 5 high-performance LEDs, suitable for every polarity. The impact-resistant, vibration-tested headlight is especially well-suited for the challenging conditions encountered in mines and on construction sites. The effective luminous flux is 1,200 lm. EMC to CISPR 25 Class 5. Optionally for 12 or 24 V. Protection rating IP68/IP69K.

Lamp housing

Aluminum,
Dimensions: 84 mm x 111 mm x 65 mm.

Attachment

Upright or suspended options available.

Mounting

With swivel type forked holder for mounting on body or bumper Stud M 10.

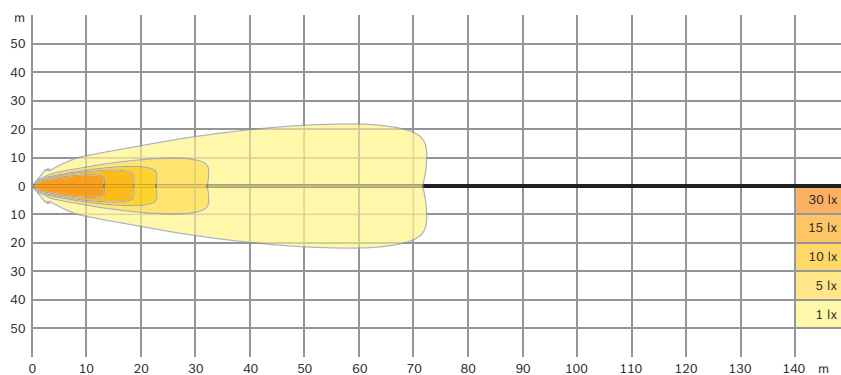
Electrical connection

Built-in Germany.

Scope of delivery

Individual packaging:
1 lamp including mounting parts.

Flood lamp 12/24 V



Flood lamp R-1800-F

12/24 V

0 986 310 965

R-3000-F
Flood lamps
LED



Heavy-duty LED headlight in OE quality with hardened glass lens. Power consumption 28 W, with 6 high-performance LEDs, suitable for every polarity. The impact-resistant, vibration-tested headlight is especially well-suited for the challenging conditions encountered in mines and on construction sites. The effective luminous flux is 2,000 lm. EMC exceeds ECE R10. Optionally for

12 or 24 V. Protection rating IP68/IP69K.

Lamp housing

Aluminum,
Dimensions: 101 mm x 134 mm x 80 mm.

Attachment

Upright or suspended options available.

Mounting

With swivel type forked holder for mounting on body or bumper Stud M 10.

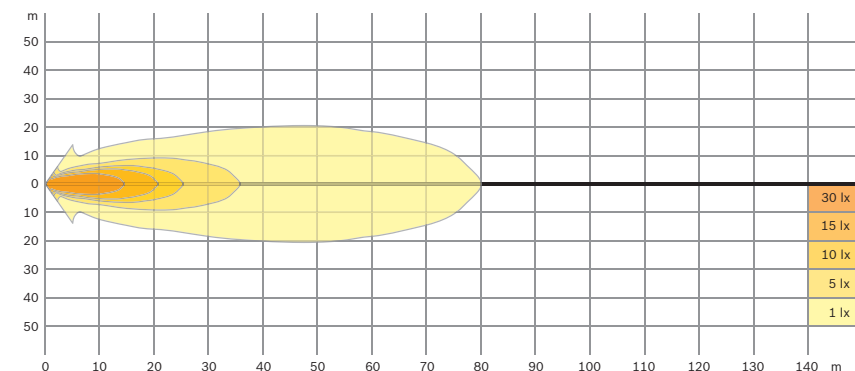
Electrical connection

Built-in Germany.

Scope of delivery

Individual packaging:
1 lamp including mounting parts.

Flood lamp 12/24 V



Flood lamp R-3000-F
12/24 V **0 986 310 966**

R-4300-F

Flood lamps

LED



Heavy-duty LED headlight in OE quality with hardened glass lens. Power consumption 36 W, with 6 high-performance LEDs, reverse polarity protection. The impact-resistant, vibration-tested headlight is especially well-suited for the challenging conditions encountered in mines and on construction sites. The effective luminous flux is 3,000 lm. EMC exceeds ECE R10. Optionally for 12 or 24 V. Protection rating IP68/IP69K.

Lamp housing

Aluminum,
Dimensions: 101 mm x 134 mm x 80 mm.

Attachment

Upright or suspended options available.

Mounting

With swivel type forked holder for mounting on body or bumper
Stud M 10.

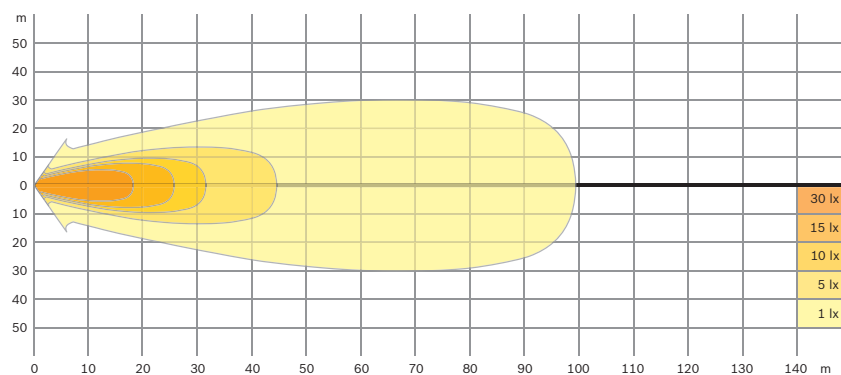
Electrical connection

Built-in Germany.

Scope of delivery

Individual packaging:
1 lamp including mounting parts.

Flood lamp 12/24 V



Flood lamp R-4300-F

12/24 V

0 986 310 967

LED 135

Flood and spot lamps

LED



The Bosch LED 135 offers more than just superb light yield. The long service life of the entire lamp and its low power consumption make it the ideal working solution wherever there are stringent requirements in terms of additional lighting. The flood lamp has six high powered LEDs, the spot lamp seven (740 or 1,020 lumens). Available in 12 or 24 Volt versions. RFI suppressed in acc. with ECE R10 (EMC), degree of protection IP67.

Lamp housing

Aluminum,
Dimensions: 80 mm x 135 mm x 72 mm.

Attachment

Upright or suspended options available.

Mounting

With swivel type forked holder for mounting on body or bumper Stud M 10.

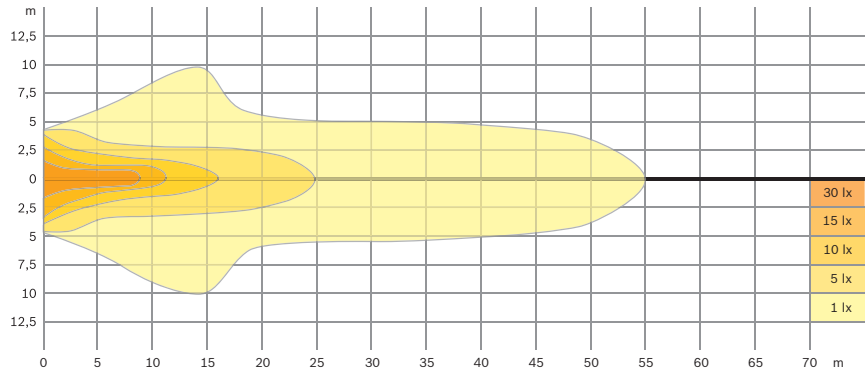
Electrical connection

Cable connection.

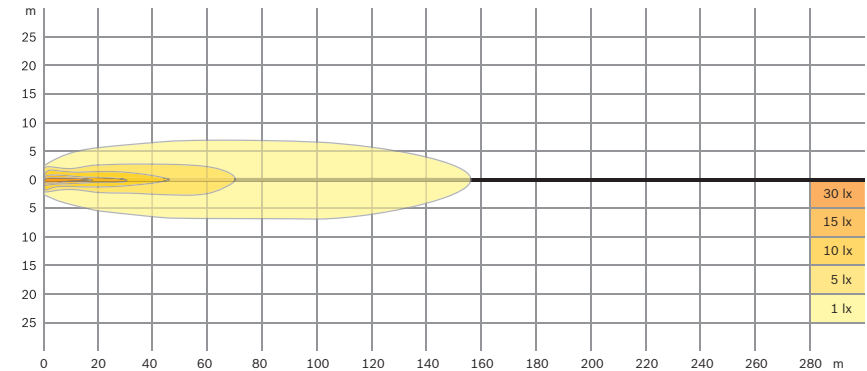
Scope of delivery

Individual packaging:
1 lamp including mounting parts.

Flood lamp 12/24 V



Spot lamp 12/24 V



① Flood lamp LED 135

12/24 V

0 986 310 960

② Spot lamp LED 135

12/24 V

0 986 310 961

R-1000-F

Flood lamps

LED



Round LED work lamp with 12W power input. The work lamp is equipped with 4 high-performance LEDs. The effective luminous flux is 600 lm. Optionally 12 or 24 Volt. RFI-suppressed in acc. with ECE R10 (EMC), degree of protection: IP67.

Lamp housing

Aluminum,
Dimensions: 84 mm x 111 mm x 65 mm.

Attachment

Upright or suspended options available.

Mounting

With swivel type forked holder for mounting on body or bumper
Stud M 8.

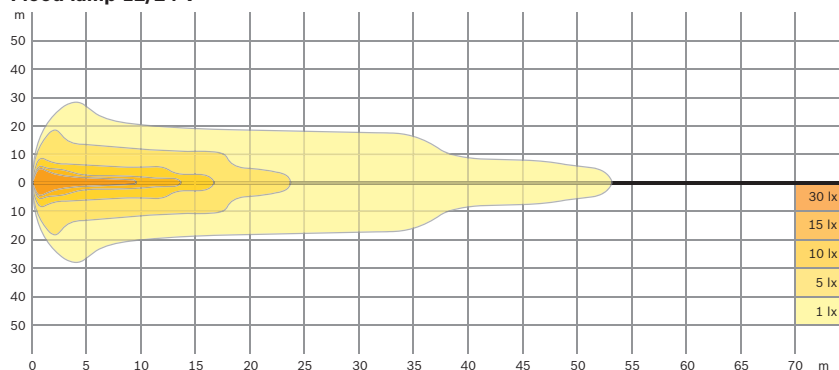
Electrical connection

0.5 m cable without connector.

Scope of delivery

Blister packaging:
1 lamp including mounting parts.

Flood lamp 12/24 V



Flood lamp R-1000-F

12/24 V

0 986 310 940

O-2000-F

Flood lamps

LED



Oval LED work lamp with 24W power input. The work lamp is equipped with 8 high-performance LEDs. The effective luminous flux is 1,250 lm. Optionally 12 or 24 Volt. RFI-suppressed in acc. with ECE R10 (EMC), degree of protection: IP67.

Lamp housing

Aluminum,
Dimensions: 143 mm x 120 mm x 65 mm.

Attachment

Upright or suspended options available.

Mounting

With swivel type forked holder for mounting on body or bumper Stud M 8.

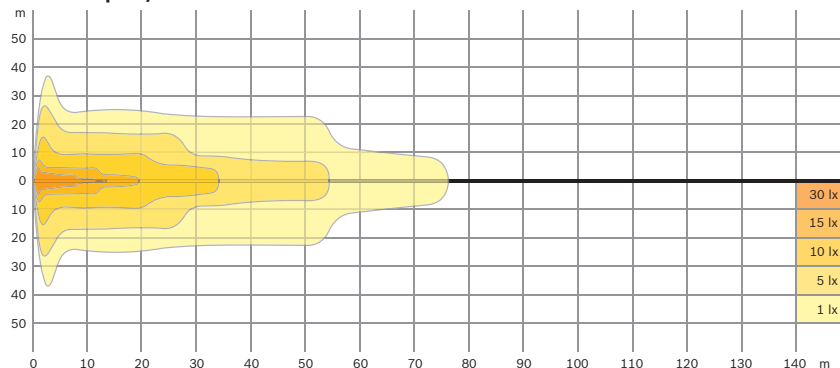
Electrical connection

0.5 m cable without connector.

Scope of delivery

Blister packaging:
1 lamp including mounting parts.

Flood lamp 12/24 V



Flood lamp O-2000-F

12/24 V

0 986 310 941

S-1500-F

Flood lamps

LED



Vertically pivoting LED work lamp with 18W power input. The work lamp is equipped with 6 high-performance LEDs. The effective luminous flux is 1,100 lm. Optionally 12 or 24 Volt. RFI-suppressed in acc. with ECE R10 (EMC), degree of protection: IP67.

Lamp housing

Aluminum,
Dimensions: 88 mm x 100 mm x 102 mm.

Attachment

Upright or suspended options available.

Mounting

With swivel type forked holder for mounting on body or bumper Stud M 8.

Pivoting range

60° forwards, 20° to rear.

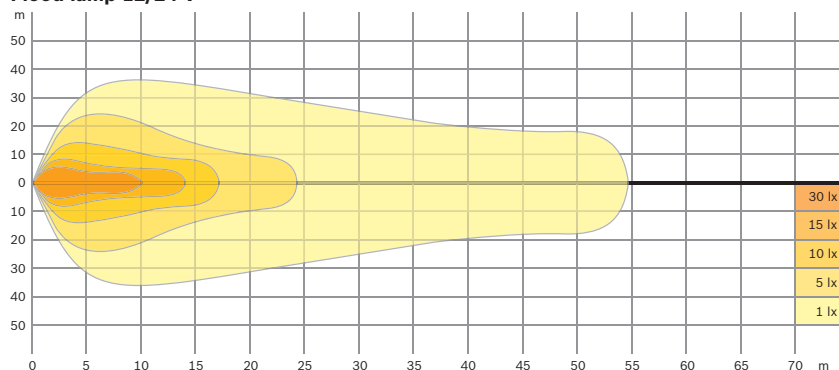
Electrical connection

0.5 m cable without connector.

Scope of delivery

Blister packaging:
1 lamp including mounting parts.

Flood lamp 12/24 V



Flood lamp S-1500-F

12/24 V

0 986 310 942

S-1000-F, S-1000-C

Work and combination lamp
LED



Flat LED headlamp with 12 W power input. Optionally available as a work lamp or a combination lamp. Both headlamps are equipped with 4 high-performance LEDs. The effective luminous flux is 600 lm. Optionally for 12 or 24 Volt. RFI-suppressed in acc. with ECE R10 (EMC), degree of protection: IP67.

Lamp housing

Aluminum,
Dimensions: 70 mm x 96 mm x 46 mm.

Attachment

Upright or suspended options available.

Mounting

With swivel type forked holder for mounting on body or bumper Stud M 8.

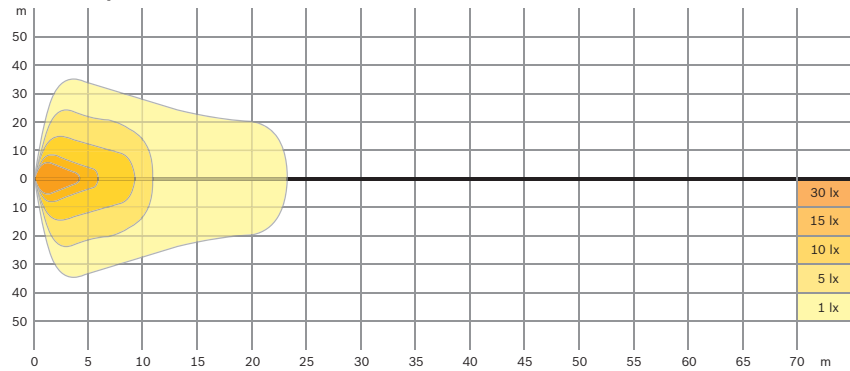
Electrical connection

0.5 m cable without connector.

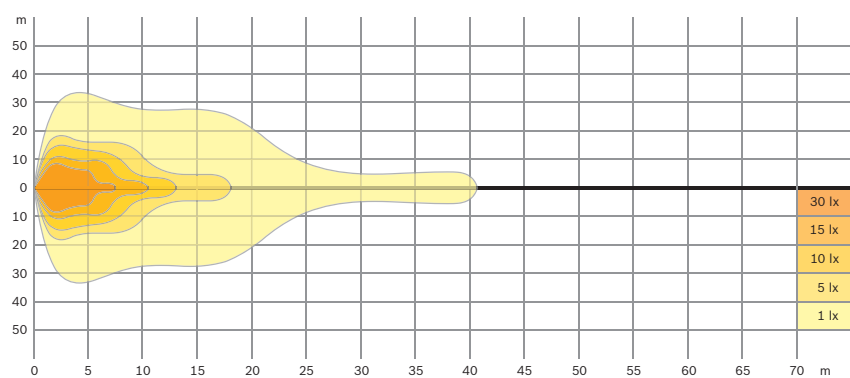
Scope of delivery

Blister packaging:
1 lamp including mounting parts.

Flood lamp 12/24 V



Combination lamp 12/24 V



① Flood lamp S-1000-F

12/24 V

0 986 310 946

② combination lamp S-1000-C

12/24 V

0 986 310 944

S-2250-F, S-2250-C

Work and combination lamp
LED



LED headlamps with 27 W power input.
Depending on area of application as work lamp or combination lamp.
Both headlamps are equipped with 9 high-performance LEDs.
The effective luminous flux is 1,500 lm.
Optionally for 12 or 24 Volt.
RFI-suppressed in acc. with ECE R10 (EMC), degree of protection: IP67.

Lamp housing

Aluminum,
Dimensions: 112 mm x 131 mm x 74 mm.

Attachment

Upright or suspended options available.

Mounting

With swivel type forked holder for mounting on body or bumper Stud M 10.

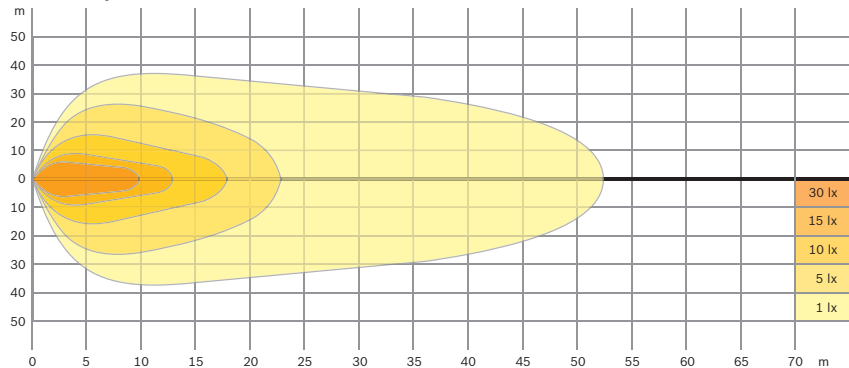
Electrical connection

0.5 m cable without connector.

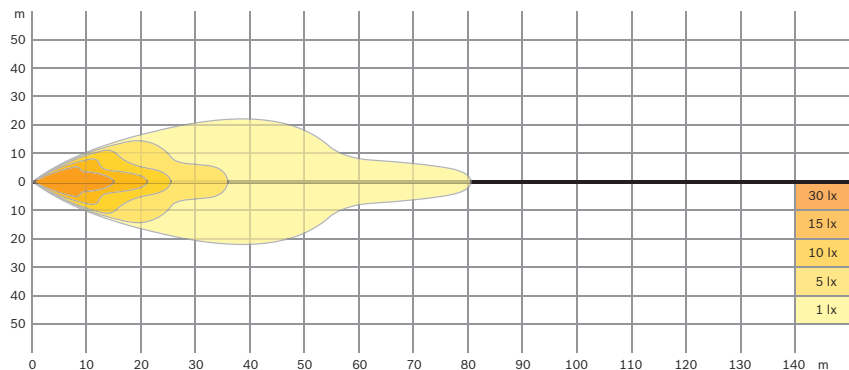
Scope of delivery

Blister packaging:
1 lamp including mounting parts.

Flood lamp 12/24 V



Combination lamp 12/24 V



① Flood lamp S-2250-F

12/24 V

0 986 310 945

② combination lamp S-2250-C

12/24 V

0 986 310 943

Pilot 100

Flood and spot lamps

Halogen



Halogen technology offers impressive value for money. The Pilot lamps have a compact design and a huge range of possible applications. Suitable for use as a flood or spot lamp depending on application. For 12 V with 55 W output or 24 V with 70 W available with degree of protection IPX4K and IP6K9K.

Lamp housing

Glassfiber reinforced plastic
Dimensions: 147 mm x 128 mm x 107 mm.

Attachment

Upright.

Mounting

Stainless steel bracket
With swivel type forked holder for mounting on body or bumper, M 10 studs.

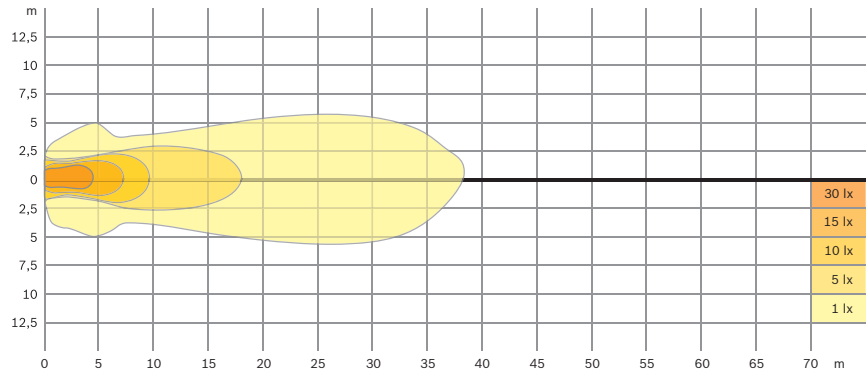
Electrical connection

Cable connection.

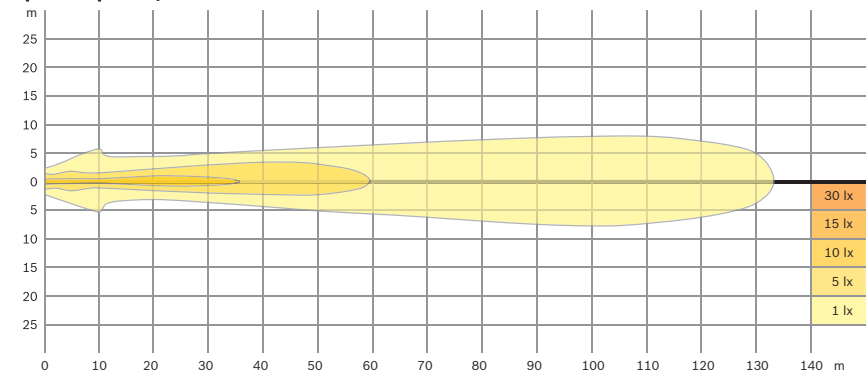
Scope of delivery

Individual packaging:
1 lamp including mounting parts.

Flood lamp 12 V/55 W



Spot lamp 12 V/55 W



Type of bulb		
H3	12 V/55 W	1 987 302 031
H3	24 V/70 W	1 987 302 431

① Flood lamp Pilot 100	
12 V IPX4K	0 986 310 930
12 V IP6K9K	0 986 310 932

② Spot lamp Pilot 100	
12 V IPX4K	0 986 310 931
12 V IP6K9K	0 986 310 933

Pilot 135 Single Beam
Flood and spot lamps
Halogen



For everyone who needs plenty of light but doesn't have much space for auxiliary lamps. Single beam design, i.e. with one light source. Choice of flood lamp with broad light cone or spot lamp with narrow light cone and a longer range. For 12 V with 55 W output or 24 V with 70 W. Degree of protection IP6K9K.

Lamp housing

Glassfiber reinforced plastic
Dimensions: 128 mm x 162 mm x 80 mm.

Attachment

Upright.

Mounting

With swivel type forked holder for mounting on body or bumper, M 10 studs.

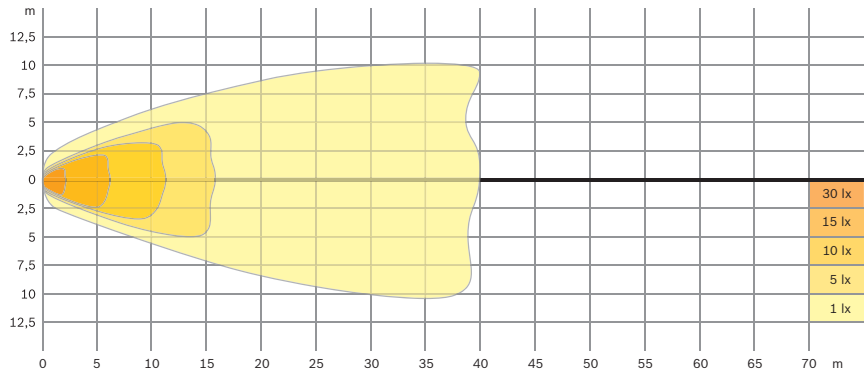
Electrical connection

Cable connection.

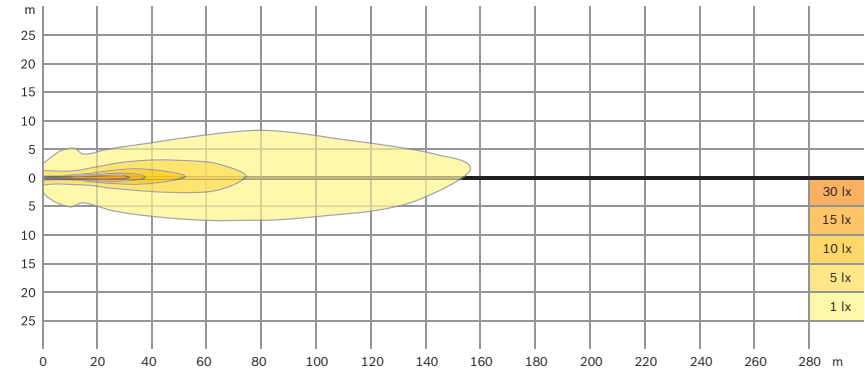
Scope of delivery

Individual packaging:
1 lamp including mounting parts.

Flood lamp 12 V/55 W



Spot lamp 12 V/55 W



① Flood lamp Pilot 135	
Single Beam	0 986 310 936
② Spot lamp Pilot 135	
Single Beam	0 986 310 937

Type of bulb		
H3	12 V / 55 W	1 987 302 031
H3	24 V / 70 W	1 987 302 431

Pilot 135 Double Beam
Flood and spot lamps
Halogen



For everyone who needs plenty of light but doesn't have much space for auxiliary lamps. Double beam design, i.e. with two light sources. Choice of flood lamp with broad light cone or spot lamp with narrow light cone and a longer range. For 12 V with 55 W output or 24 V with 70 W. Degree of protection IP6K9K.

Lamp housing

Glassfiber reinforced plastic
Dimensions: 128 mm x 162 mm x 80 mm.

Attachment

Upright.

Mounting

With swivel type forked holder for mounting on body or bumper, M 10 studs.

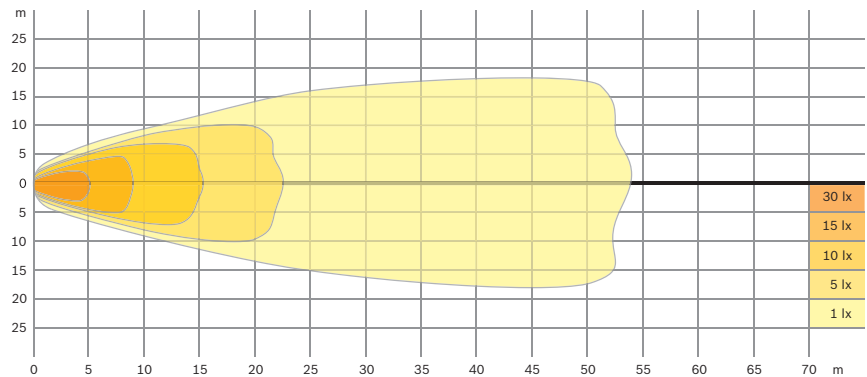
Electrical connection

Cable connection.

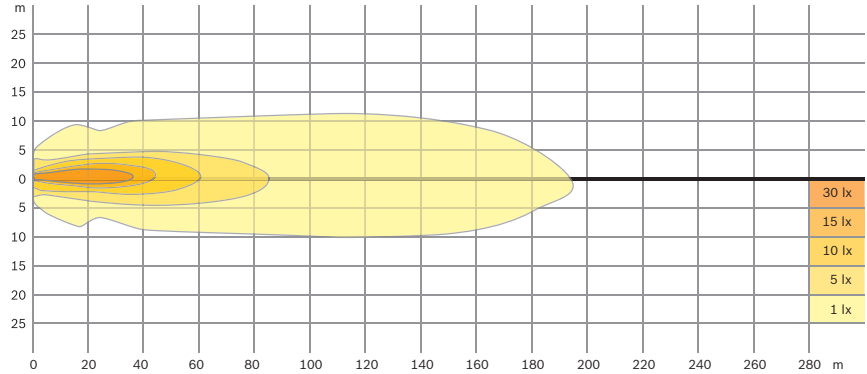
Scope of delivery

Individual packaging:
1 lamp including mounting parts.

Flood lamp 12 V/55 W



Spot lamp 12 V/55 W



① Flood lamp Pilot 135	
Double Beam	0 986 310 938
② Spot lamp Pilot 135	
Double Beam	0 986 310 939

Type of bulb		
H3	12 V / 55 W	1 987 302 031
H3	24 V / 70 W	1 987 302 431

Pilot 140

Flood lamp

Halogen



Waterproof flood lamp, available with or without practical handle and guard. For heavy-duty applications. Degree of protection IPX4.

Headlamp housing

Fiberglass reinforced plastic, matte black surface. Impact-resistant, non-corroding and fracture-proof.

Lens

Colorless lens, with waterproof bonding to reflector.

Mounting

Optionally upright or suspended.

Attachment

Pivoting, corrosion-resistant fastening bracket with 4 holes for M 6 bolts

Pivoting range

30° forwards, 110° to rear, 360° lateral.

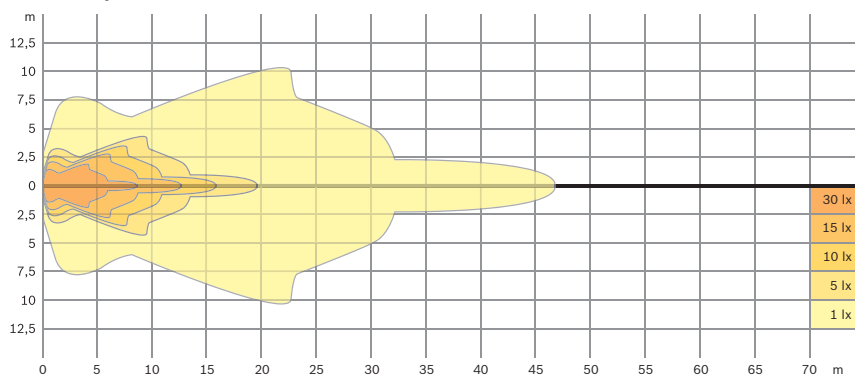
Electrical connection

Two-pole, blade-terminal connections, cable entry through splash-proof rubber grommet.

Scope of delivery

In single pack: 1 lamp with assembly parts.
Halogen H3 bulb to be ordered separately.

Flood lamp 12 V/55 W



Pilot 140

Without handle, without guard	0 306 481 001¹⁾
Without handle, without guard, ring-shaped bulb cover	0 306 481 002¹⁾

Type of bulb

H3	12 V/55 W	1 987 302 031
H3	24 V/70 W	1 987 302 431

¹⁾ Available while stocks last

Pilot 140
Spot lamp
Halogen



Spot lamp version with handle and guard.
For heavy-duty applications. Degree of protection IPX4.

Headlamp housing

Fiberglass reinforced plastic, matte black surface. Impact-resistant, non-corroding and fracture-proof.

Lens

Colorless lens, with waterproof bonding to reflector.

Mounting

Optionally upright or suspended.

Attachment

Pivoting, corrosion-resistant fastening bracket with 4 holes for M 6 bolts.

Pivoting range

30° forwards, 110° to rear, 360° lateral.

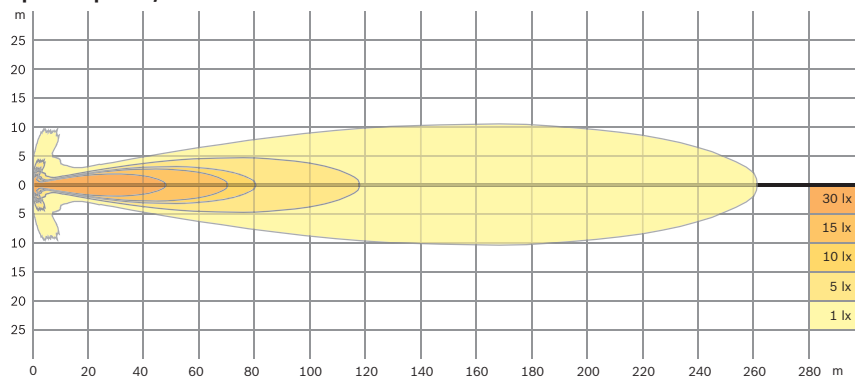
Electrical connection

Two-pole, blade-terminal connections, cable entry through splash-proof rubber grommet.

Scope of delivery

In single pack: 1 lamp with assembly parts.
Halogen H3 bulb to be ordered separately.

Spot lamp 12 V/55 W



Pilot 140		
With handle and guard		0 306 481 003¹⁾
Type of bulb		
H3	12 V/55 W	1 987 302 031
H3	24 V/70 W	1 987 302 431

¹⁾ Available while stocks last

Pilot 145

Flood lamp

Halogen



Versatile flood lamp for a wide range of applications. Available with or without handle and with or without fastening bracket. Degree of protection IPX4.

Headlamp housing

Fiberglass reinforced plastic, matte black surface. Impact-resistant, non-corroding and fracture-proof.

Lens

Colorless lens, with waterproof bonding to reflector.

Mounting

Optionally upright or suspended.

Attachment

Pivoting, corrosion-resistant fastening bracket with 4 holes for M6 bolts or pivoting, corrosion-resistant M10 threaded studs.

Pivoting range

30° forwards, 110° to rear, 360° lateral.

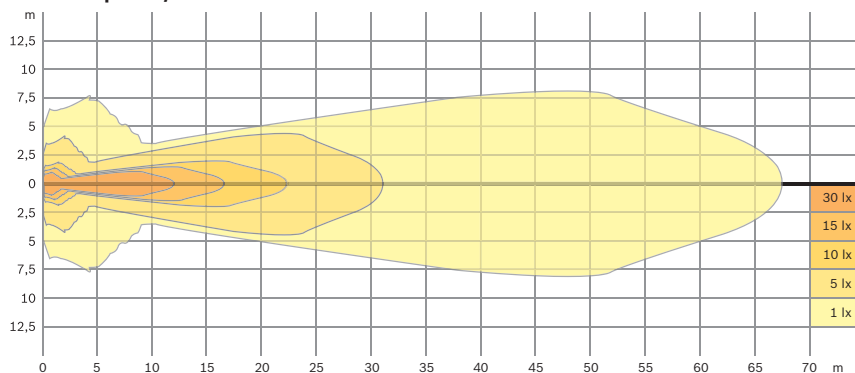
Electrical connection

Two-pole, blade-terminal connections, cable entry through splash-proof rubber grommet.

Scope of delivery

In single pack: 1 lamp with assembly parts. Halogen H3 bulb to be ordered separately.

Flood lamp 12 V/55 W



Pilot 145

With handle, frame and fastening bracket **0 306 482 003¹⁾**

Accessories and spare parts

Protective cap **1 305 540 101¹⁾**

Type of bulb

H3 12 V/55 W **1 987 302 031**

H3 24 V/70 W **1 987 302 431**

¹⁾ Available while stocks last

Pilot 150

Flood lamp

Halogen



Flood lamp with and without pivoting fastening bracket for flexible mounting
Universal application range. Optimum homogeneous light distribution. Degree of protection IPX4.

Headlamp housing

Fiberglass reinforced plastic, matte black surface.

Headlight unit

Interchangeable.

Mounting

Upright and suspended.

Attachment

With pivoting forked holder for mounting on body or bumper.

Pivoting range

80° forwards, 95° to rear, 360° lateral.

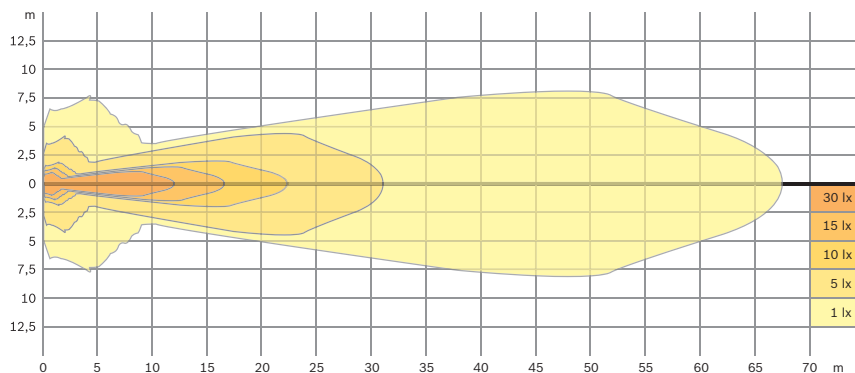
Electrical connection

Blade terminal and grommet.

Scope of delivery

In single pack: 1 lamp with assembly parts.
 Halogen H3 bulb to be ordered separately.

Flood lamp 12 V/55 W



Pilot 150		
With forked holder		0 306 484 001¹⁾
Accessories and spare parts		
Guard		1 305 540 165¹⁾
Type of bulb		
H3	12 V/55 W	1 987 302 031
H3	24 V/70 W	1 987 302 431

¹⁾ Available while stocks last

Pilot 155

Flood and spot lamps

Halogen



Ideal for anyone with special requirements for their flood or spot lamps. Double beam design, i.e. with two light sources. For 12 V with 55 W output or 24 V with 70 W. Degree of protection IP6K9K.

Lamp housing

Glassfiber reinforced plastic
Dimensions: 121 mm x 174 mm x 83 mm.

Attachment

Upright.

Mounting

With swivel type forked holder for mounting on body or bumper, M 10 studs.

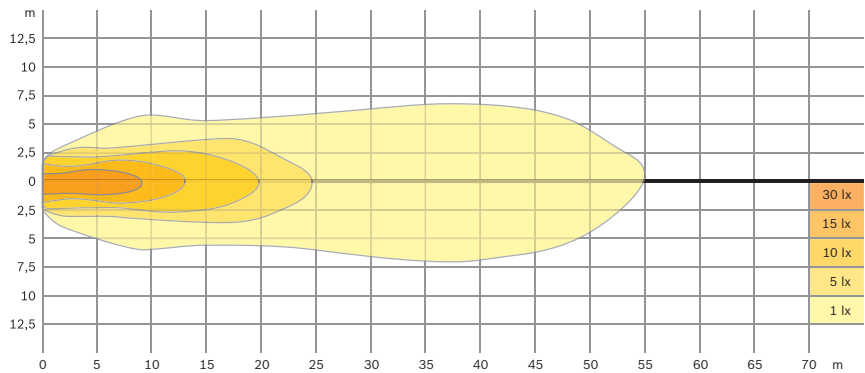
Electrical connection

Cable connection.

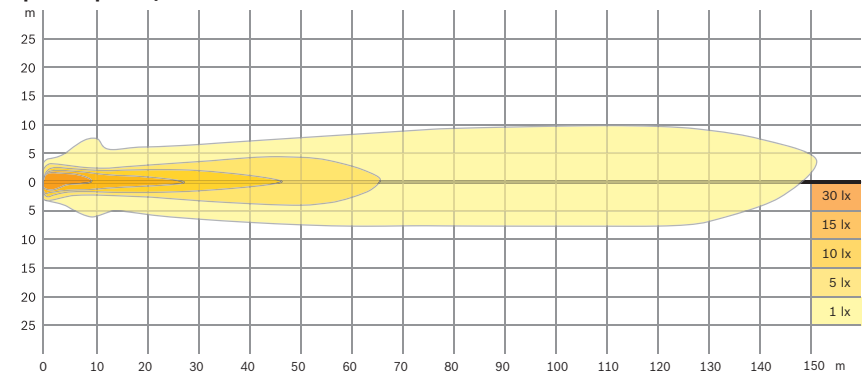
Scope of delivery

Individual packaging:
1 lamp including mounting parts.

Flood lamp 12 V/55 W



Spot lamp 12 V/55 W



① Flood lamp Pilot 155	
Double Beam	0 986 310 934
② Spot lamp Pilot 155	
Double Beam	0 986 310 935

Type of bulb		
H3	12 V / 55 W	1 987 302 031
H3	24 V / 70 W	1 987 302 431

Pilot 160

Flood lamp

Halogen



Flood lamp with fastening bracket for flexible installation. Universal application range. Optimum homogeneous light distribution. Degree of protection IPX4.

Headlamp housing

Fiberglass reinforced plastic, matte black surface.

Headlight unit

Interchangeable.

Mounting

Upright and suspended.

Attachment

With pivoting forked holder for mounting on body or bumper.

Pivoting range

25° forwards, 95° to rear, 360° lateral.

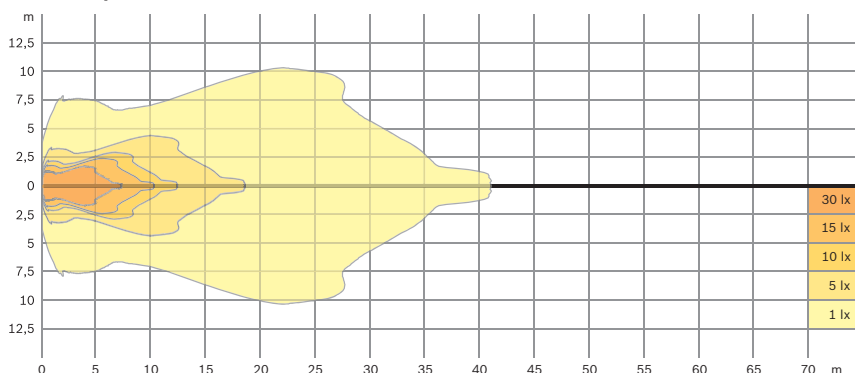
Electrical connection

Cable entry through grommet for single cores.

Scope of delivery

Individual packaging: 1 lamp with assembly parts. Halogen H3 bulb to be ordered separately.

Flood lamp 12 V/55 W



Pilot 160		
		0 306 680 001¹⁾
Type of bulb		
H3	12 V/55 W	1 987 302 031
H3	24 V/70 W	1 987 302 431

¹⁾ Available while stocks last

Pilot X

Flood lamp

Xenon



The most compact Xenon flood lamp of its type is now available with even more power: 45 Watt of Xenon light similar to daylight. Around 2.5x more light yield than halogen bulbs, around 1/3 lower energy consumption and a longer service life. Integrated D1-type control unit. Degree of protection IPX4K.

Headlamp housing

Fiberglass reinforced plastic. Corrosion-resistant. Dimensions: 130 x 120 x 120 mm.

Mounting

Optionally upright or suspended.

Attachment

Pivoting, corrosion-resistant M10 threaded stud.
Pivoting range 20° forwards, 30° to rear, 360° lateral.
Adjustable by 6 cm in longitudinal axis.

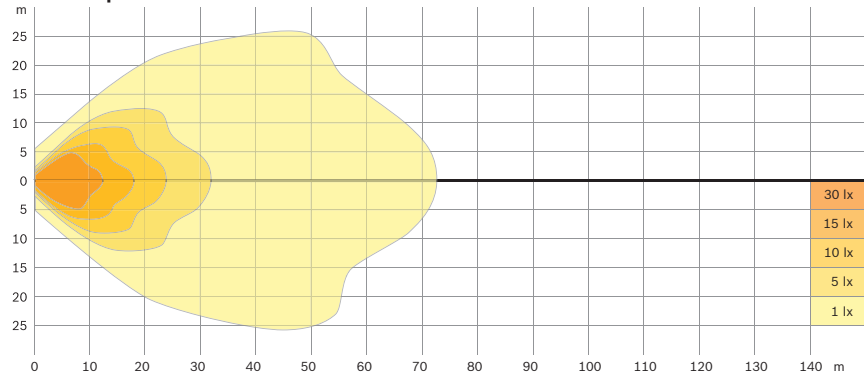
Electrical connection

Connector: 15 cm (mobile).

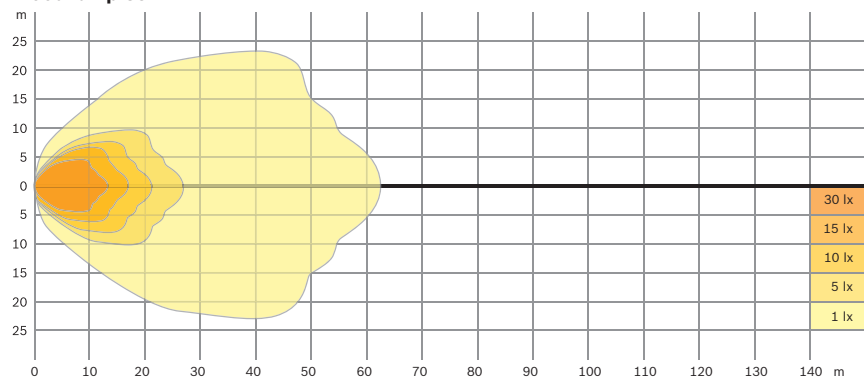
Scope of delivery

Xenon gaseous-discharge lamp, igniter, Xenon control unit. Completely pre-assembled, ready to connect.

Flood lamp 45 W



Flood lamp 35 W



Flood lamp Pilot X

12 V/45 W	0 986 310 678¹⁾
24 V/45 W	0 986 310 677¹⁾
12 V/35 W	0 986 310 676¹⁾
24 V/35 W	0 986 310 675¹⁾

Accessories and spare parts

Cable 1.000 mm, blue **1 987 305 109¹⁾**

Type of bulb

D1S 12/24 V / 45 W/35 W 1 987 302 031

¹⁾ Available while stocks last

Profi 210
Flood lamp
Halogen



Extremely robust with impact-resistant plastic guard. Optionally with handle and switch. Degree of protection IPX4.

Headlamp housing

Steel, black-resicoated, scratch-resistant and non-corroding. Outer rim made of Fiberglass reinforced polyamide, matte black, impact-resistant and fracture-proof.

Lens

Colorless lens, with waterproof bonding to reflector.

Mounting

Upright and suspended.

Attachment

Pivoting, corrosion-resistant fastening bracket with 4 holes for M 6 bolts.

Pivoting range

40° forwards, 75° to rear, 360° lateral.

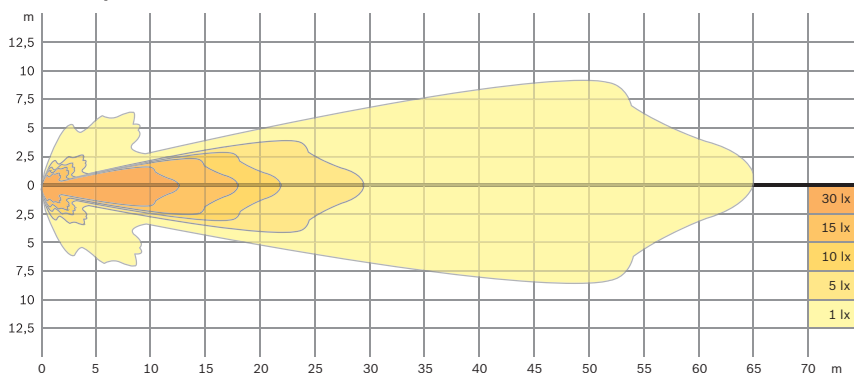
Electrical connection

Single pole (separate ground connection provided), blade-terminal connections, cable entry through rubber grommet.

Scope of delivery

In single pack: 1 lamp with assembly parts.
Halogen H3 bulb to be ordered separately.
With guard.

Flood lamp 12 V/55 W



Profi 210	
Without handle, without switch	0 306 080 003¹⁾

Type of bulb		
H3	12 V/55 W	1 987 302 031
H3	12 V/100 W	1 987 302 036
H3	24 V/70 W	1 987 302 431

¹⁾ Available while stocks last

Kiruna 140

Flood lamp

Halogen



Vibration-resistant flood lamp for heavy-duty applications. Degree of protection IP54.

Headlamp housing

Steel, black-resicoated, scratch-resistant and non-corroding.

Headlight unit

Reflector has watertight bond to lens and is mounted in housing with vibration absorbing rubber ring. This results in low transmission of vibration.

Lens

Colorless lens with rectangular fluting.

Mounting

Optionally upright or suspended on horizontal, vertical or angled surfaces.

Attachment

Pivoting, non-corroding M12 threaded stud.

Pivoting range

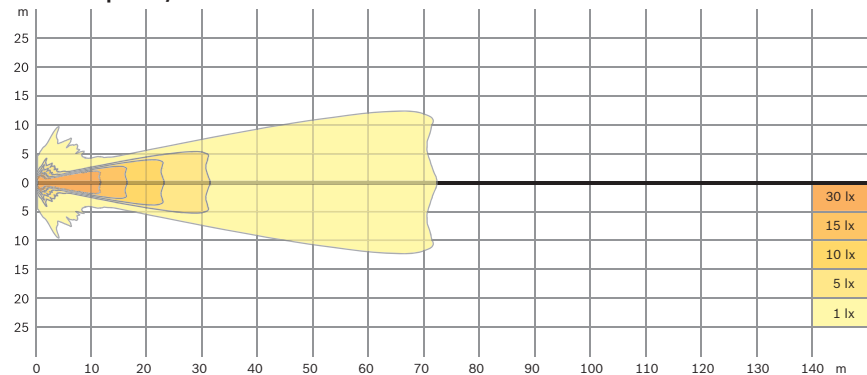
6° forwards, 45° to rear, 360° lateral.

Electrical connection

Single-pole, blade-terminal connection, cable entry through rubber grommet.

Scope of delivery

In single pack: 1 lamp with assembly parts.
Halogen H1 bulb to be ordered separately.

Flood lamp 12 V/55 W**Kiruna 140****0 306 382 001¹⁾****Type of bulb****H1** 12 V/55 W **1 987 302 011****H1** 12 V/100 W **1 987 302 016****H1** 24 V/70 W **1 987 302 411**

¹⁾ Available while stocks last

Rotating beacons

Range overview



A59-62

Compact LED technology – RKLE LED Compact

Zero-maintenance LED technology for high light output. Low power consumption, minimal risk of breakdown and maximum service life.



Form A



Form B



Form D

A63-67

The professional range – RKLE 200

Top quality for the highest standards. Excellent warning action with Bosch OPS reflector.



Form A



Form B1



Form B2



Form D

A68-71

The standard range – RE 60

Robust warning lamp for specific applications on construction sites, on the open road and in urban traffic.



Form A



Form FLX



Form B



Form D

A72

The special range – RSWA/F

Rotating beacons for use as floodlamps and spot lamps. Rotating beacon light can be directed as required by remote control.



Form B

Rotating beacons

Information



Bosch produces a comprehensive range of high-performance beacons for installation in a wide variety of vehicles. Optimized custom solutions further increase the range of applications. In many situations, reliable and effective warning signals are critical to ensure safety for traffic or for working.

Zero-maintenance LED technology – RKLE LED Compact (Form A, Form B, Form D)

High illumination power, low power consumption, minimal risk of breakdown and maximum service life characterize the rotary beacons in the RKLE LED Compact line. The changing of bulbs becomes a thing of the past with these zero-maintenance and compact RKLE LED Compact lights. The beacons can be combined with one another. They are ideally suited for use in transport vehicles, agricultural and forestry vehicles, roadside assistance, waste disposal, street cleaning, winter service (gritters & snow plows) and municipal vehicles.

The professional range – RKLE 200 (Form A, Form B1, Form B2, Form D)

Top quality for customer groups with exacting demands in terms of warning action and conspicuousness, ease of use and installation, easy single-handed bulb replacement and interference suppression for radio, two-way radio and telephone reception, e.g. fire brigades, haulage companies, road construction departments, rescue services, breakdown and recovery services, mobile cranes and emergency relief services.

The standard range – RE 60 (Form A, Form FLX, Form B, Form D)

Sturdy warning lamps offering attractive value for money for customer groups in hauling, construction and related trades, agriculture and forestry. Benefits include ease of operation and installation, easy one-handed bulb replacement and radio-interference suppression.

The special range – RSWA/F (Form B)

The RSWA/F range of floodlamps and spot lamps provides top performance for the police and emergency services, breakdown and recovery services, agricultural machinery and outdoor applications.

Type-Overview

	RKLE LED	RKLE 200	RE-60	RSWA/F
Construction				
A	•	•	•	–
FLX	–	–	•	–
B1	•	•	•	•
D	•	•	•	–
Cover color				
Blue	•	•	–	–
Yellow	–	•	•	–
Red	–	•	–	–
Clear	–	–	–	•
Voltage				
12 V	–	•	•	•
24 V	–	•	•	•
12/24 V	•	–	–	–
Approval				
Complies with German StVZO	•	•	•	–
Quality features				
Drive system	–	Worm gear	Belt	–
Frequency	2,06 Hz	–	2,66 Hz	–
Rotational speed	–	160 rpm	–	–
Noise level	None	Very low	Medium	–
Interference suppression in acc. with ECE R10	•	•	•	–
Degree of protection as per ISO 20653	IP 66	IP 54K/IP59K	IP 55	IP 55
Warning effect	Maximum	Maximum	Satisfactory	–

• = Standard

RKLE LED Compact Rotating beacon



Use

Due to their long service life, their low energy consumption and their high lighting capacity, the beacons in the RKLE LED Compact line are ideally suited for use in transport vehicles (including heavy-duty applications), agricultural and forestry vehicles, roadside assistance and tow trucks, as well as for waste disposal, road cleaning, winter service (gritters and snow plows), and municipal vehicles.

With their smooth domes, these beacons are also extremely resistant to dirt.

Technology

RKLE LED Compact work with advanced LED technology. That eliminates the need for wearing parts such as vehicle lamps or mobile elements. That extends their service lives and makes them absolutely zero-maintenance and easy to look after.

Several beacons can be combined with one another and can be operated synchronously.

They are suitable for Multivolt use at 12 to 32 Volts with a power consumption of 15 Watts. The 8 LEDs (Cree) operate at a flashing frequency of 2.06 Hertz.

The optimum temperature for operation lies between -40 and +60 degrees Celsius.

Mounting

RKLE LED Compact units are offered in 3 variants:

- ▶ Form A
for mounting on a plug-in tube using a screw with butterfly nut (no tools needed)
- ▶ Form B
for mounting with self-tapping screws at their base in the hole circle with 130 mm diameter
- ▶ Form D
for flexible mounting with powerful magnets integrated in the lamp. Ideal for short-term applications

RKLE LED Compact Form A



Scope of delivery

LED lamp, installation instructions.

Form A version in line with ISO 4148

RKLE LED Compact A, **7 782 328 002¹⁾**
blue

Technical data

Type test in acc. with ECE R65

Blue TB1 E11 001015

Weight

kg 0.5

Degree of protection

IP 66

Interference suppression in acc. with ECE R10 (EMV)

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Operating position

Upright

Operating voltage

V 12 - 32

Rated input:

W 15

Temperature range

°C -40...+60

Flashing frequency

Hz 2.06

Attachment

On spigot tube with wing nut (no tools)

Accessories

Spigot tube for welding

Connected via 2 blade terminals 6.3 mm

8 787 022 019¹⁾

Spigot tube for screw attachment

8 787 022 013

Spigot tube with welded bracket

8 787 022 016

¹⁾ Available while stocks last

RKLE LED Compact Form B



Scope of delivery

LED lamp, Rubber seal,
installation instructions.

Form B version in line with ISO 4148

RKLE LED Compact B, **7 782 328 004¹⁾**
blue

Technical data

Type test in acc. with ECE R65

Blue TB1 E11 001015

Weight

kg 0.56

Degree of protection

IP 66

Interference suppression in acc. with ECE R10 (EMV)

Ⓔ 10R-04 2042

Operating position

Upright

Operating voltage

V 12 - 32

Rated input:

W 15

Temperature range

°C -40...+60

Flashing frequency

Hz 2.06

Attachment

with 3 screws, hole circle dia. 130 mm

¹⁾ Available while stocks last

RKLE LED Compact Form D



Scope of delivery

LED lamp with magnet, cable and connector, installation instructions.

Form D version in line with ISO 4148

RKLE LED Compact D, **7 782 328 006¹⁾**
blue

Technical data

Type test in acc. with ECE R65

blue TB1 E11 001015

Weight

kg 0.82

Degree of protection

IP 66

Interference suppression in acc. with ECE R10 (EMC)

Ⓢ 10R-04 2042

Operating position

Upright

Operating voltage

V 12 - 32

Rated input:

W 15

Temperature range

°C -40...+60

Flashing frequency

Hz 2.06

Attachment

Magnet mounting with cables and combination connector, maximum speed 150 km/h

¹⁾ Available while stocks last

RKLE 200 Rotating beacons



The right range

For mobile or fixed mounting, for vehicles that are only fitted with beacons when specifically required, or for vehicles that are in constant use: Version A in line with DIN 14620/ISO 4148 for mounting on spigot tube, version B1 and B2 in line with DIN 14620/ISO 4148 for fixed installation. All yellow and blue lights are type-tested to ECE R65 and approved for use on public highways. The Bosch OPS reflector¹⁾ ensures optimum utilization and direction of the light beam and provides 40% more light for the same bulb power. The light is propagated accurately by the OPS reflector rather than being dispersed by the cover. This guarantees optimum visibility at close and long range as well as in rough terrain; no scattering loss. This eliminates scattering losses, which would be worsened by dirt. The long-range visibility and high light intensity enables the RKLE 200 to achieve an unrivalled warning effect even in bright sunlight or from a great distance.

The Bosch RKLE 200 – quiet, maintenance-free and long service life.

The RKLE 200 lamps use a worm drive specially developed for continuous operation. Since no wearing parts such as V-belts and collector rings are used, no maintenance is required. The self-lubricating bronze sinter bearing on the motor assures consistently good performance and function over many years.

Quick and easy installation thanks to mounting aids and hollow rubber profiles

The rubber seal between the B1/B2 version rotating beacon and the vehicle simultaneously provides a drilling template for the hole diameter in line with DIN 14620 and ISO 4148. The mounting aids accessible from outside provide quick and unobstructed access to the fixing components. After installation, the mounting aids are sealed with the caps supplied to protect against dirt. This eliminates wind noise and corrosion.

Sophisticated ventilation

The patented new ventilation system with labyrinth seal prevents condensation from forming and misting the cover of the light.

No radio interference

Perfect for vehicles with telephone or 2-way radio. This drive, silent while in operation is RFI-suppressed in accordance with ECE R10.

Bulb replacement made easy

The cover can be removed and the defective bulb exchanged with one hand and without the need for tools.

Securing the cover

Fit the cover and turn as far as possible in either direction (bayonet lock). It can be opened with or without a tool.

Perfect look – base in vehicle color

You can, of course, paint the glass-fiber-reinforced base in orange or any other color of your choice.

¹⁾ OPS, Optimized plane-parabolic segments = "Flat" segments arranged on a parabola

RKLE 200 Form A Rotating beacon



Scope of delivery

Lamp including H1 bulb, installation instructions.

Form A version in line with ISO 4148

RKLE 200 A, 12 V, yellow	7 782 332 020
RKLE 200 A, 24 V, yellow	7 782 334 020
RKLE 200 A, 12 V, blue	7 782 332 220
RKLE 200 A, 24 V, blue	7 782 334 220
RKLE 200 A, 12 V, red	7 782 332 420
RKLE 200 A, 24 V, red	7 782 334 420

Technical data

Type test in acc. with ECE R65

Yellow	TA1 E3 007166
Blue	TB1 E3 007166
Red	TR1 E3 007166

Weight

kg	0.97
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Resistance to

Vibration	in acc. with DIN 14 620
Temperature	in acc. with DIN 14 620
Damp alternating atmosphere	in acc. with DIN 14 620
Corrosion	in acc. with DIN 14 620

Degree of protection

IP	54K, 59K
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Interference suppression

in acc. with ECE R10 (EMV)

12V:	E3 10R-04 1214
24V:	E3 10R-04 1213

Operating position

Upright

Temperature range

°C	-40...+60
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Speed

rpm	160
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Technical data

Attachment

On spigot tube with wing nut (no tools)

Spare parts

H1 bulb

12 V/55 W	1 987 302 011
24 V/70 W	1 987 302 411

Cover

Yellow	8 785 620 110
Blue	8 785 620 111
Red	8 785 620 112

Reflector

8 785 620 108

Accessories

Spigot tube for welding

Connected via 2 blade terminals 6.3 mm

8 787 022 019¹⁾

Spigot tube for screw attachment

8 787 022 013

Spigot tube with welded bracket

8 787 022 016

¹⁾ Available while stocks last

RKLE 200 Form B1 Rotating beacon



Scope of delivery

Lamp including H1 bulb, rubber seal, fastening parts, installation instructions.

Form B1 version in line with DIN 14620/ISO 4148

RKLE 200 B1, 12 V, yellow	7 782 322 020
RKLE 200 B1, 24 V, yellow	7 782 324 020
RKLE 200 B1, 12 V, blue	7 782 322 220
RKLE 200 B1, 24 V, blue	7 782 324 220
RKLE 200 B1, 12 V, red	7 782 322 420
RKLE 200 B1, 24 V, red	7 782 324 420

Technical data

Type test in acc. with ECE R65

Yellow	TA1 E3 007166
Blue	TB1 E3 007166
Red	TR1 E3 007166

Weight

kg	0.87
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Resistance to

Vibration	in acc. with DIN 14 620
Temperature	in acc. with DIN 14 620
Damp alternating atmosphere	in acc. with DIN 14 620
Corrosion	in acc. with DIN 14 620

Degree of protection

IP	54K, 59K
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Interference suppression

in acc. with ECE R10 (EMV)

12V: E3 10R-04	1214
24V: E3 10R-04	1213

Operating position

Upright

Temperature range

°C	-40...+60
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Technical data

Speed

rpm	160
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Attachment

With 3 bolts, hole circle \varnothing 130 mm.

Spare parts

H1 bulb

12 V/55 W	1 987 302 011
24 V/70 W	1 987 302 411

Cover

Yellow	8 785 620 110
Blue	8 785 620 111
Red	8 785 620 112

Reflector

8 785 620 108

Caps for mounting aids

3 units	8 785 411 296
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Rubber seal

2 mm	8 780 223 011
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Accessories

Hollow rubber profile to compensate for roof slopes and beads

Intermediate flange

8 785 110 127¹⁾

Mounting flange

Straight for stand **8 785 110 068¹⁾**

Vehicle stand

LZU 14/5 **7 781 999 001¹⁾**

LZU 15/5M **7 781 999 015¹⁾**

Plug-in base

For conversion **8 785 110 109**

to version A

¹⁾ Available while stocks last

RKLE 200 Form B2 Rotating beacon



Scope of delivery

Lamp including H1 bulb, rubber seal, fastening parts, installation instructions.

Form B2 version in line with DIN 14620 / ISO 4148

RKLE 200 B2, 12 V, yellow **7 782 362 020**

RKLE 200 B2, 24 V, yellow **7 782 364 020**

RKLE 200 B2, 12 V, blue **7 782 362 220**

RKLE 200 B2, 24 V, blue **7 782 364 220**

RKLE 200 B2, 12 V, red **7 782 362 420**

RKLE 200 B2, 24 V, red **7 782 364 420**

Technical data

Type test in acc. with ECE R65

Yellow TA1 E3 007164

Blue TB1 E3 007164

Red TR1 E3 007164

Weight

kg 1.54

Resistance to

Vibration in acc. with DIN 14620

Temperature in acc. with DIN 14620

Damp alternating atmosphere in acc. with DIN 14620

Corrosion in acc. with DIN 14620

Degree of protection

IP 54K, 59K

Interference suppression

in acc. with ECE R10 (EMV)

12V: E3 10R-04 1214

24V: E3 10R-04 1213

Operating position

Upright

Technical data

Temperature range

°C -40...+60

Speed

rpm 160

Attachment

With 3 bolts, hole circle \varnothing 200 mm.

Spare parts

H1 bulb

12 V/55 W **1 987 302 011**

24 V/70 W **1 987 302 411**

Cover

Yellow **8 785 620 203**

Blue **8 785 620 204**

Red **8 785 620 202**

Reflector

8 785 620 200

Caps for mounting aids

3 units **8 785 411 297**

Rubber seal

2 mm **8 780 223 012**

Accessories

Hollow rubber profile to compensate for roof slopes and beads

8 780 206 048¹⁾

Intermediate flange

8 785 110 128¹⁾

Mounting flange

Straight for stand **8 785 110 077¹⁾**

Vehicle stand

LZU 14/5 **7 781 999 001¹⁾**

LZU 15/5M **7 781 999 015¹⁾**

¹⁾ Available while stocks last

RKLE 200 Form D Rotating beacon



Scope of delivery

Lamp including H1 bulb, magnet, cable and connector, installation instructions.

Form D version in line with ISO 4148

RKLE 200 D, 12 V, yellow	7 782 372 020
RKLE 200 D, 24 V, yellow	7 782 374 020
RKLE 200 D, 12 V, blue	7 782 372 220
RKLE 200 D, 24 V, blue	7 782 374 220
RKLE 200 D, 12 V, red	7 782 372 420
RKLE 200 D, 24 V, red	7 782 374 420

Technical data

Type test in acc. with ECE R65

Yellow	TA1 E3 007166
Blue	TB1 E3 007166
Red	TR1 E3 007166

Weight

kg	1.64
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Resistance to

Vibration	in acc. with DIN 14620
Temperature	in acc. with DIN 14620
Damp alternating atmosphere	in acc. with DIN 14620
Corrosion	in acc. with DIN 14620

Degree of protection

IP	54K, 59K
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Interference suppression in acc. with ECE R10 (EMV)

12V: E3 10R-04	1214
24V: E3 10R-04	1213

Operating position

Upright

Temperature range

°C	-40...+60
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Speed

rpm	160
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Attachment

Magnetic attachment with cable (length 0.5 m, extends to 3 m) and combination connector, TÜV tested to 250 km/h

Spare parts

H1 bulb

12 V/55 W	1 987 302 011
24 V/70 W	1 987 302 411

Cover

Yellow	8 785 620 110
Blue	8 785 620 111
Red	8 785 620 112

Reflector

	8 785 620 108
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Caps for mounting aids

3 units	8 785 411 296
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Magnetic stand

	8 787 010 015
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Spiral cable with connector

0.5 m – extends to 3 m	8 784 460 102
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RE-60 Form A Rotating beacon



Applications

For special vehicles that are only used sporadically on main roads or in city traffic. Sturdy warning lamp offering attractive value for money for customer groups in hauling, construction and related trades, agriculture and forestry. Benefits include ease of operation and installation, easy one-handed bulb replacement and radio-interference suppression.

Drive system

Robust belt drive ensuring reliable starting under extreme operating conditions.

Attachment

For attachment to spigot tube with bolt.

Scope of delivery

Lamp including H21W bulb, installation instructions.

Technical data

Cover	
Made of unbreakable polycarbonate. ECE R65 approval for Germany and Europe. Observe national regulations (e.g. StVZO).	
Weight	0,51 kg
Flash frequency	2,66 Hz
Degree of protection	
IP	55
Warning effect in acc. with ECE R65	
E3 TA1 007165	
Interference suppression in acc. with ECE R10 (EMV)	
E3 10R-04 1215	Allows radio reception with no interference.

Form A version in line with ISO 4148

RE-60 Form A		
12 V	Yellow	7 782 332 021
24 V	Yellow	7 782 334 021

Spare parts

Cover	
Yellow	8 785 620 300
Reflector	
	8 785 620 301
H21W halogen bulb	
12 V/21 W	1 987 302 264
24 V/21 W	1 987 302 533

RE-60 Form FLX Rotating beacon



Attachment

With flexible holder for attachment to spigot tube.

Scope of delivery

Light including H21W bulb, installation instructions.

Technical data

Cover

Made of unbreakable polycarbonate. ECE R65 approval for Germany and Europe. Observe national regulations (e.g. StVZO).

Weight

kg 0,66

Flash frequency

Hz 2,66

Degree of protection

IP 55

Max. inclination in case of obstacle contact

° 90

Warning effect in acc. with ECE R65

E3 TA1 007165

Interference suppression

in acc. with ECE R10 (EMV)

E3 10R-04 1215 Allows radio reception with no interference.

Form FLX version in line with ISO 4148

RE-60 Form FLX

12 V Yellow **7 782 332 022**

24 V Yellow **7 782 334 022**

Spare parts

Cover

Yellow **8 785 620 300**

Reflector

8 785 620 301

H21W halogen bulb

12 V/21W **1 987 302 264**

24 V/21W **1 987 302 533**

RE-60 Form B Rotating beacon



Attachment

Attached with 3 self-tapping screws 4.2 mm (hole circle Ø 130 mm) or with 3 M6 screws (hole circle Ø 115 mm).

Scope of delivery

Lamp including H21W bulb, rubber seal, installation instructions.

Technical data

Cover	
Made of unbreakable polycarbonate. ECE R65 approval for Germany and Europe. Observe national regulations (e.g. StVZO).	
Weight	
kg	0,48
Flash frequency	
Hz	2,66
Degree of protection	
IP	55
Warning effect in acc. with ECE R65	
E3 TA1 007165	
Interference suppression in acc. with ECE R10 (EMV)	
E3 10R-04 1215	Allows radio reception with no interference.

Form B version in line with ISO 4148

RE-60 Form B		
12 V	Yellow	7 782 322 021
24 V	Yellow	7 782 324 021

Spare parts

Cover	
Yellow	8 785 620 300
Reflector	
	8 785 620 301
H21W halogen bulb	
12 V/21 W	1 987 302 264
24 V/21 W	1 987 302 533
Caps for mounting aids (x3)	8 787 001 322

RE-60 Form D Rotating beacon



Connection

With 3.5 m spiral cable and multi-purpose automotive connector.

Attachment

Attached with strong magnet (approx. 30 kg adhesive force in line with DIN). For vehicle speeds of up to max. 100 km/h.

Scope of delivery

Lamp including H21W bulb, spiral cable with connector, installation instructions.

Technical data

Cover

Made of unbreakable polycarbonate.
ECE R65 approval for Germany and Europe.
Observe national regulations (e.g. StVZO).

Weight

kg 0,93

Flash frequency

Hz 2,66

Degree of protection

IP 55

Warning effect in acc. with ECE R65

E3 TA1 007165

Interference suppression

in acc. with ECE R10 (EMV)

E3 10R-04 1215 Allows radio reception with no interference.

Form D version in line with ISO 4148

RE-60 Form D

12 V Yellow **7 782 372 021**

24 V Yellow **7 782 374 021**

Spare parts

Cover

Yellow **8 785 620 300**

Reflector

8 785 620 301

H21W halogen bulb

12 V/21 W **1 987 302 264**

24 V/21 W **1 987 302 533**

Accessories

Paint-protection foil for magnet, self-adhesive **8 780 113 024¹⁾**

¹⁾ Available while stocks last

RSWA 100/RSWF 100 Floodlight



Applications

Flood lamp (RSWA) or spot lamp (RSWF) with radio remote control for police, emergency services, breakdown and recovery services, agricultural vehicles and off-road applications.

Design

Fiberglass reinforced plastic, matte black surface. Impact-resistant, non-corroding, and fracture-proof.

Headlight unit

The radio remote control allows targeted direction of the floodlight beam. Simultaneous horizontal and vertical movement allows the operator to quickly adjust the lighting as required, even from a distance (range with unimpaired view approx. 100 m). Coding allows one floodlight to be operated from up to four remote control units. In the same way, one remote control unit can operate different floodlights.

Light distribution

RSWA – large-area, uniform illumination at close range (floodlamp).
RSWF – narrow, high-intensity light beam (spot lamp).

Attachment

Attached with 3 bolts, hole circle \varnothing 130 mm.

Scope of delivery

Lamp including H1 bulb, remote control, 9 Volt battery 6LR61, installation/operating instructions.

Lamp technical data:

Cover	
Polycarbonate	
Weight	
kg	1,13
Current input	
12 V/4.6 A 24 V/2.9 A	
Temperature range	
°C	-20...+50
Horizontal rotation	
°	360
	in 12 seconds
Vertical rotation	
°	260
	in 24 seconds

Degree of protection

IP	55
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Remote-control technical data:

Frequency	
MHz	433,92
Range	
m	100 with unimpaired view
Weight	
kg	Approx. 0.15
Approval	
CE tested	
EN	60-950, 300-220
Ets	300-000

Design

RSWA 100, 12 V	7 782 319 052
RSWA 100, 24 V	7 782 319 054
RSWF 100, 12 V	7 782 319 062
RSWF 100, 24 V	7 782 319 064

Spare parts

Cover	
Clear	8 785 510 170
Transmitter and holder	
	8 785 520 004

H1 bulb

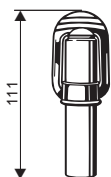
12 V/55 W	1 987 302 011
24 V/70 W	1 987 302 411

Accessories

Mounting flange	
Straight, for stand	8 785 110 068¹⁾
Vehicle stand LZU 14/5	7 781 999 001¹⁾
Vehicle stand LZU 14/5 M	7 781 999 015¹⁾

¹⁾ Available while stocks last

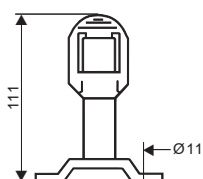
Accessories and spare parts



Spigot tube

For welding, for rotating beacons, Form A to DIN 14 620 and ISO 4148.
With socket and rain cap. Ground on housing. Connection via 2 blade terminals (6.3 mm).
With insulating sleeve (Qty. 1).

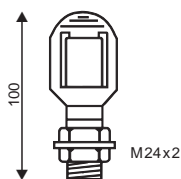
Part number:
8 787 022 019



Spigot tube

With welded bracket for Form A rotating beacons in line with DIN 14 620 and ISO 4148.
For screwing onto the vehicle with 2 screws. With socket and rain cover.

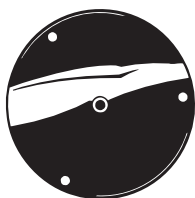
Part number:
8 787 022 016



Spigot tube

For screw fastening, for Form A rotating beacons in line with DIN 14 620 and ISO 4148.
With socket and rain cover.

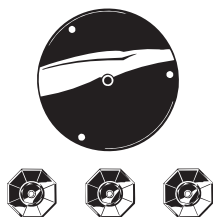
Part number:
8 787 022 013



Magnetic stand

For RKLE 200 Form D rotating beacons for speeds of up to 250 km/h.
The use of rotating beacons with additional magnetic base mounting is not approved in Germany (StVZO). Exceptions can be approved by the relevant authorities.
The operator must apply individually.

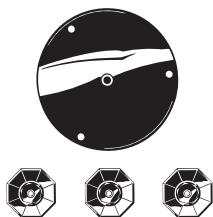
Part number:
8 787 010 015



3-point magnetic attachment

For RKLE Form B1 rotating beacons. For mobile or temporary use. The magnetic feet are flexibly mounted and thus adapt to the shape of the vehicle body. Supplied with protective foil to prevent damage to the body. For vehicle speeds of up to max. 80 km/h.

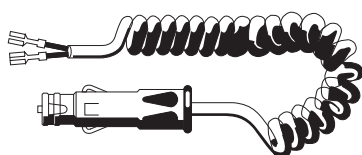
Part number:
8 787 010 011



3-point magnetic attachment

As ...011 but with spiral cable (max. length 3 m) and universal connector for vehicle socket or cigarette lighter. For vehicle speeds of up to max. 80 km/h.

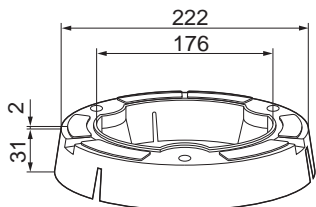
Part number:
8 787 010 010



Spiral cable

Complete with universal connector for vehicle socket or cigarette lighter, and connectors. Length 0.5 m, extends to 3 m.

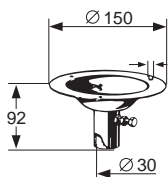
Part number:
8 784 460 102



Rubber wedge

For RKLE Form B2 rotating beacons. To compensate for roof slopes.

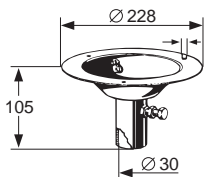
Part number:
8 780 206 048



Mounting flange, straight

For RKLE Form B1 rotating beacons. For fitting on vehicle stand LZU 14/5.

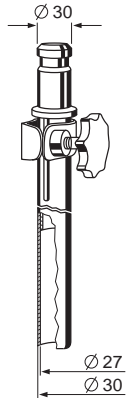
Part number:
8 785 110 068



Mounting flange, straight

For RKLE Form B2 rotating beacons. For fitting on vehicle stand LZU 14/5.

Part number:
8 785 110 077



Vehicle stand LZU 14/5

For attaching headlamps and rotating beacons.

Design: Mounting stud \varnothing 30 mm in line with DIN 14 640.

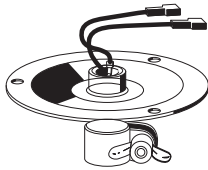
Can be used with: Mounting flange 8-785 110 068/077 for rotating beacons.

Extends from 1260 mm to 2160 mm. Lockable with star handle.

Dimensions (W x H): 140 x 1260 mm, weight: 2.8 kg.

Part number:

7 781 999 001



Mounting flange for bolting to RKLE BKL Form B1

With plug-in base and cable. Allows mounting on spigot tube for Form A.

Part number:

8 785 110 109

Trucklight/Trucklight Maxlife

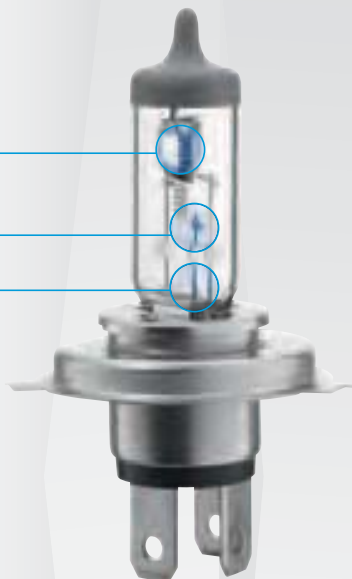


Bosch technology:

The tungsten filament has an optimized material structure thanks to high-temperature treatment

Enhanced filler gas composition and higher filler gas pressure

Greater filament stability



Area of application: Commercial vehicles

No doubt about it: Commercial vehicles need particularly powerful lights. Bosch supply a comprehensive range of 24 V automotive bulbs. Two product lines cover all requirements and areas of application.

Bosch Trucklight

High-grade materials and precision manufacturing guarantee consistent quality and maximum reliability – bulb for bulb. In contrast to 12 V halogen bulbs, 24 V truck bulbs have a doubly wound filament for optimum adaptation to commercial vehicle requirements. Automotive bulbs from Bosch are constantly checked under realistic conditions. This ensures that Bosch Trucklight bulbs fully conform to original equipment standards. The comprehensive Bosch Trucklight range has just the right bulb for practically every application.

Bosch Trucklight Maxlife

Bosch have always been pioneers in the field of vehicle lighting technology. The Trucklight Maxlife range from Bosch is a good example of the continuous quality enhancement and development process. A long service life and robust design make Trucklight Maxlife from Bosch the professionals' choice of automotive bulb for all sorts of requirements: It is just as ideal for the everyday long motorway journeys of trucks and buses as it is for all commercial vehicles facing the toughest conditions in off-road use.

The Trucklight Maxlife range combines all the essential features for satisfying the most exacting demands:

- Long service life
- Reliability
- High light efficiency
- Robust construction

The special design, high-grade materials, excellent workmanship and stringent quality controls all form the basis for this.



Comprehensive range of 24 V bulbs for commercial vehicles

The Trucklight range from Bosch is available for practically all types of commercial vehicle and covers all requirements and areas of application.





Trucklight:

- ▶ Top quality and reliability – conforming to original equipment standards

Trucklight Maxlife:

- ▶ Durable and robust for off-road and motorway driving – reliable lighting even under the most challenging usage and road conditions
- ▶ Outstanding shock and vibration resistance for a long service life and greater economy



	ECE	$\frac{U}{V}$	$\frac{P}{W}$			ECE	$\frac{U}{V}$	$\frac{P}{W}$	
Trucklight					Trucklight				
1 987 302 411	H1	24 V	70 W	P14,5s	1 987 302 532	P21W	24 V	21 W	BA15d
1 987 302 421	R2	24 V	55/50 W	P45t	1 987 302 533	H21W	24 V	21 W	BAY9s
1 987 302 431	H3	24 V	70 W	PK22s	1 987 302 535	–	28 V	7 W	BA15s
1 987 302 441	H4	24 V	75/70 W	P43t	1 987 302 537	–	24 V	1,2 W	B8,5d/2
1 987 302 471	H7	24 V	70 W	PX26d	1 987 302 538	–	24 V	2 W	W2x4,6d
1 987 302 481	H11	24 V	70 W	PGJ19-2	1 987 302 539	–	24 V	3 W	BA9s
1 987 302 501	P21W	24 V	21 W	BA15s	1 987 302 540	–	24 V	15 W	SV8,5-8
1 987 302 504	–	24 V	1,2 W	W2x4,6d	1 987 302 541	–	24 V	18 W	SV8,5-8
1 987 302 505	R10W	24 V	10 W	BA15s	Trucklight Maxlife				
1 987 302 507	C5W	24 V	5 W	SV8,5-8	1 987 302 701	P21W	24 V	21 W	BA15s
1 987 302 508	–	24 V	2 W	BA9s	1 987 302 703	PY21W	24 V	21 W	BAU15s
1 987 302 510	R5W	24 V	5 W	BA15s	1 987 302 704	R5W	24 V	5 W	BA15s
1 987 302 527	R5W	24 V	5 W	BA15d	1 987 302 705	R5W	24 V	5 W	BA15d
1 987 302 512	T4W	24 V	4 W	BA9s	1 987 302 706	R10W	24 V	10 W	BA15s
1 987 302 514	–	24 V	1,2 W	B8,5d	1 987 302 707	T4W	24 V	4 W	BA9s
1 987 302 515	–	24 V	1,2 W	B8,3d	1 987 302 712	H1	24 V	70 W	P14,5s
1 987 302 516	–	24 V	2 W	W2,1x9,5d	1 987 302 732	H3	24 V	70 W	PK22s
1 987 302 517	W3W	24 V	3 W	W2,1x9,5d	1 987 302 742	H4	24 V	75/70 W	P43t
1 987 302 518	W5W	24 V	5 W	W2,1x9,5d	1 987 302 772	H7	24 V	70 W	PX26d
1 987 302 519	–	24 V	3 W	BA7s					
1 987 302 520	–	24 V	5 W	SV8,5-8					
1 987 302 521	–	24 V	10 W	SV8,5-8					
1 987 302 523	–	24 V	18 W	BA15s					
1 987 302 524	P21/5W	24 V	21/5 W	BAY15d					
1 987 302 526	–	24 V	15 W	BA15s					
1 987 302 528	–	24 V	3 W	SV7-8					

Horns and fanfares from Bosch

A powerful signal



Horns and fanfares are needed in every motor vehicle. Particularly in hazardous situations, they allow the driver to warn other road users.

Bosch has been developing and producing acoustic signaling devices since 1921. Bosch signaling devices are based on these decades of experience and expertise and incorporate innovative technology.

Ultra-reliable functionality and state of the art technologies are their main features. The production sites are subject to stringent inspection and testing procedures, guaranteeing first-class product quality.

Today, numerous well-known vehicle manufacturers throughout the world trust the quality of our signaling devices. Bosch signaling devices provide increased safety on the road.



Vehicle Coverage

Trucks Buses		Loud and mega-loud horns 	Compressor fanfares 	Pneumatic fanfares 	Reversing warning devices 			
Vans Mini buses		Loud and mega-loud horns 	Compressor fanfares 					
Passenger cars SUVs Pick-ups		FC9 	FC4/FD4 	Air horns 	EC9-EVO 	EC9-C 	Loud and mega-loud horns 	Compressor fanfares
Motorbikes		FC4 				FC9 		

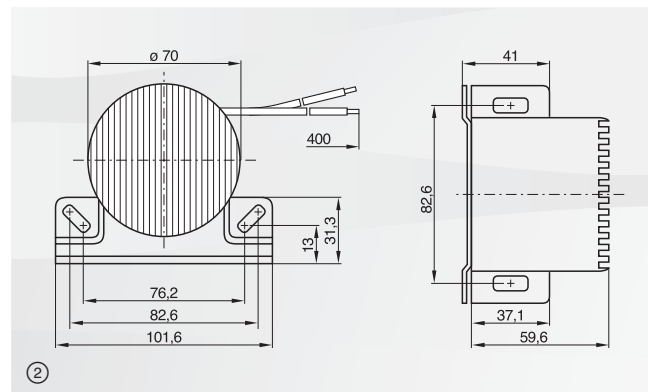
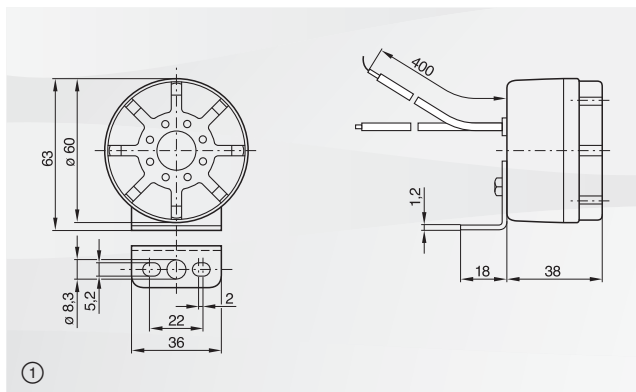
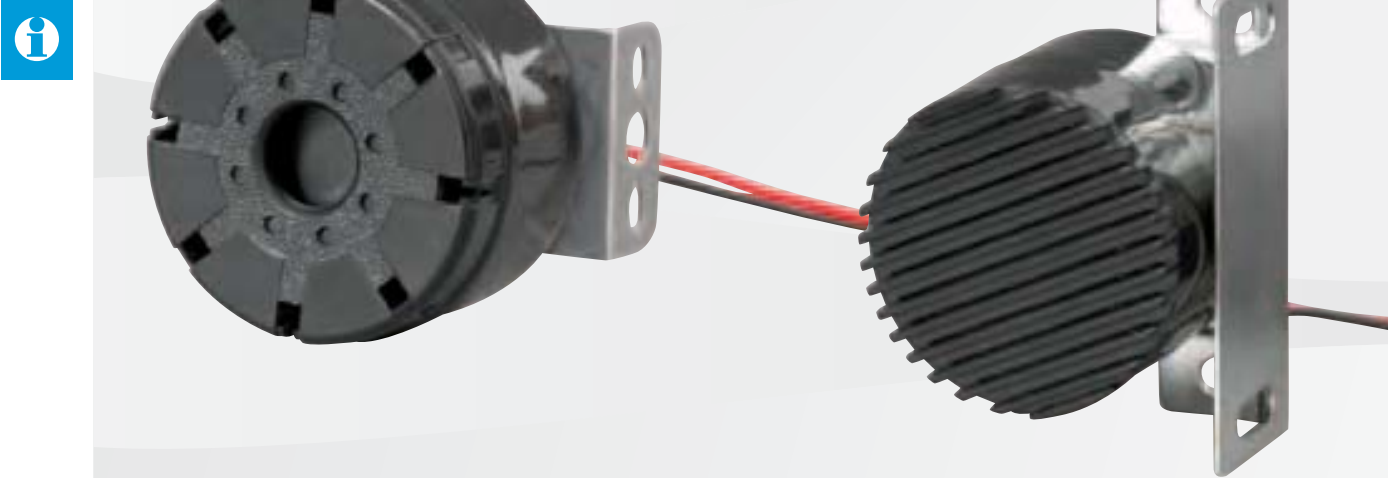
Product Characteristics

Models		Disc Horns					Fanfare Horns			Compressor Trumpets	
		Supertone horn	FC4 Disc Standard	FD4 Disc Duty	FC9	Megatone	EC9 - EVO	EC9 - C	Windtone	2-3 Tone Air Fanfare	Trucker
Resistance Factors	Weather-Resistant	✓	✓	✓	✓	✓	✓	✓		✓	
	Impact-Resistant	✓	✓	✓	✓	✓		✓		✓	✓
	Corosion-Resistant	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	EMC Protection	✓	✓	✓	✓		✓	✓	✓		
	Teflon Filter	✓	✓		✓	✓	✓	✓			
Design & Tuning Factors	Compact Design				✓			✓		✓*	
	Serviceable										
	Extra-high										
	Privileged Vehicles	✓								✓	
	Suitable for External Mounting	✓		✓		✓					✓

* Mini option available

Backup warning buzzer

Active accident prevention for situations with impeded visibility



Additional safety for commercial vehicles when maneuvering and reversing in situations with impeded visibility and on construction sites.

The backup warning buzzer emits a warning tone as soon as reverse gear is engaged.

Specially suited for construction-site vehicles, cranes, public-service vehicles, forklift trucks, mobile industrial handling machinery and for haulage and bus companies.

Warning! Not all countries allow the use of backup warning buzzers on public roads. National road transport regulations must therefore be observed.

Scope of delivery: 1 backup warning buzzer with 400 mm cable, 2 connectors, fastening elements, installation instructions.

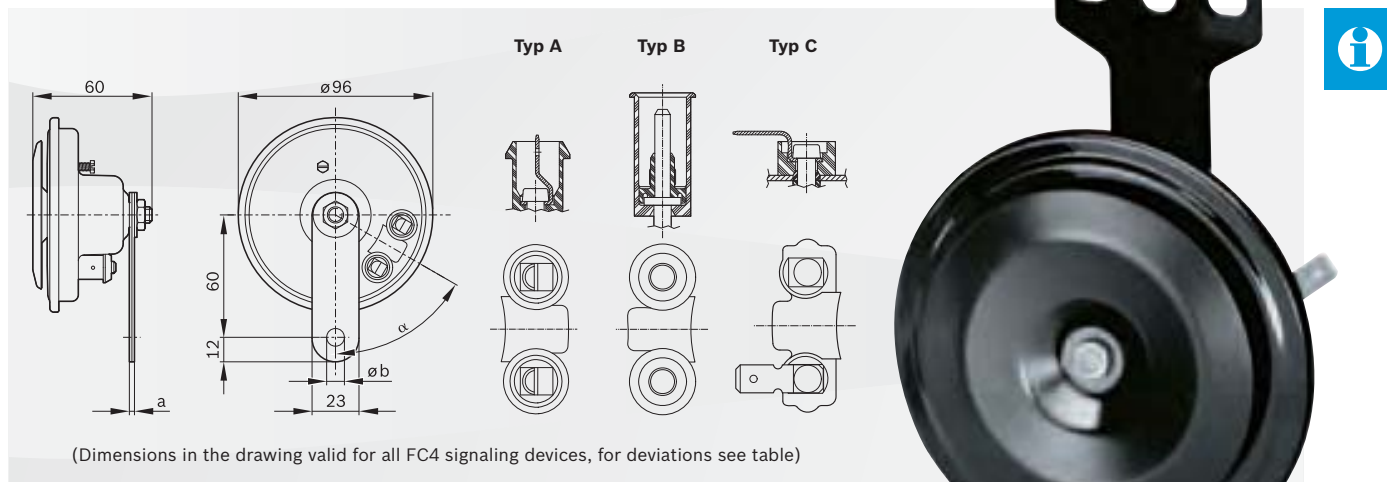
Fixed sound pressure level (Fig. ①)

Nominal voltage	12/24 V
Operating voltage	3.5 ... 30 V
Sound pressure level/1 m	≥ 97 dB
Frequency	3000 ± 200 Hz
Type of tone	Pulsed tone
Degree of protection	IP 67
Order number	0 986 334 001

Self-adjusting sound pressure level (Fig. ②)

Nominal voltage	12/24 V
Operating voltage	9 ... 28 V
Sound pressure level/1 m	82 ± 5 dB to 100 dB
Frequency	1000 ± 200 Hz
Type of tone	Pulsed tone
Degree of protection	IP 67
Order number	0 986 334 002

FC4



Application range



Maximum attention

- ▶ Penetrating, harsh sound carries for long distances
- ▶ Unobstructed forward propagation of sound

Long service life and reliable quality

- ▶ Insensitive to rust and stone impact

Maximum functional reliability

- ▶ Solid mechanical construction
- ▶ Pressure compensation with microporous Teflon filter
- ▶ Weather-resistant material

Approved as per EC, ECE and R10 directives

- ▶ Including Austria and Switzerland

Powerful tone

- ▶ 110 dB (A) at a distance of 2 meters

EMC protection included

Features

Voltage V	Output W	Frequency Hz	Color	a mm	Ø b mm	α Degrees	Connection	Weight kg	Part number
FC4									
6	30	335	Steel	2.4	Thread M8	275	Type A	0.35	0 986 320 101
6	30	335	Black	1.6	8.4	175	Type A	0.35	0 986 320 102
12	60	335	Steel	2.4	Thread M8	90	Type A	0.35	0 986 320 111
12	60	335	Steel	1.6	8.4	60	Type A	0.35	0 986 320 132 ¹⁾
12	60	335	Steel	1.6	8.4	275	Type A	0.35	0 986 320 146
12	60	335	Steel	1.6	10.5	90	Type A	0.35	0 986 320 112
12	60	335	Black	1.6	8.4	60	Type A	0.35	0 986 320 137
12	60	335	Black	2.4	8.4	300	Type A	0.35	0 986 320 131
12	60	335	Black	1.6	8.4	285	Type B	0.35	0 986 320 148
12	60	335	Black	1.6	8.4	180	Type A	0.35	0 986 320 113
12	60	335	Black	2.0	8.4	60	Type C	0.35	0 986 320 110 ²⁾
12	60	335	Black	1.6	8.4	300	Type A	0.35	0 986 320 136 ³⁾
12	60	420	Steel	1.6	8.4	90	Type A	0.35	0 986 320 147
12	60	420	Steel	1.6	8.4	300	Type A	0.35	0 986 320 133 ¹⁾
12	60	420	Steel	2.4	8.7	100	Type A	0.35	0 986 320 140
12	60	420	Black	1.6	8.4	285	Type B	0.35	0 986 320 149
12	60	420	Black	1.6	8.4	270	Type A	0.35	0 986 320 114
12	60	335	Steel	2.4	Thread M8	90	Type A	0.35	0 986 320 130
12	60	420	Steel	1.6	8.4	270	Type A	0.35	0 986 320 135
12	60	420	Steel	1.6	8.4	300	Type C	0.35	0 986 320 151
12	60	335	Steel	2.4	Thread M8	90	Type A	0.35	0 986 320 187

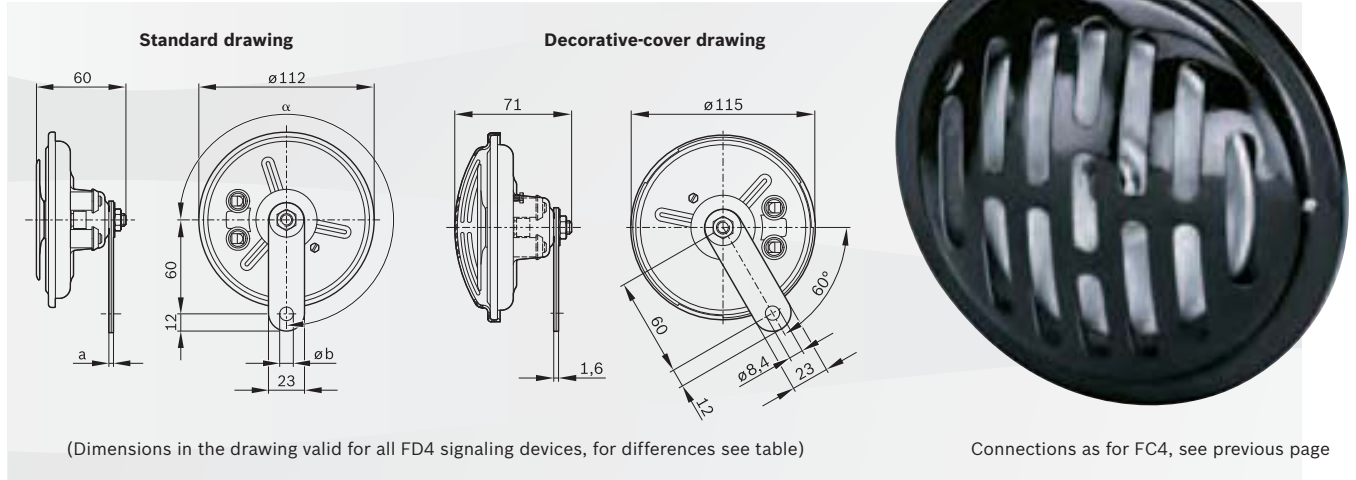
Sets

Set consisting of 0 986 320 132 and 0 986 320 133

0 986 320 191 ¹⁾

¹⁾ No EMC protection ²⁾ Three-point mounting ³⁾ Steel tone disk

FD4



(Dimensions in the drawing valid for all FD4 signaling devices, for differences see table)

Connections as for FC4, see previous page

Application range



Maximum attention

- ▶ Penetrating, harsh sound carries for long distances
- ▶ Unobstructed forward propagation of sound

Long service life and reliable quality

- ▶ Insensitive to rust and stone impacts

Maximum functional reliability

- ▶ Solid mechanical construction
- ▶ Weather-resistant material

Approved as per EC, ECE and R10 directives

- ▶ Including Austria and Switzerland

Attractive grill design

- ▶ Suitable for external mounting

Powerful tone

- ▶ 110 dB (A) at a distance of 2 meters

EMC protection included

Features

Voltage V	Output W	Frequency Hz	Color	a mm	Ø b mm	α Degrees	Connection ¹⁾	Weight kg	Part number
FD4									
12	60	335	Steel	1.6	8.4	60	Type A	0.36	0 986 320 310
12	60	420	Steel	1.6	8.4	300	Type A	0.36	0 986 320 311
24	60	335	Steel	1.6	8.4	270	Type A	0.36	0 986 320 301
24	60	420	Steel	1.6	8.4	60	Type A	0.36	0 986 320 302
24	60	335	Black	2.4	8.4	90	Type A	0.36	0 986 320 314
24	60	335	Black	2.4	8.4	270	Type A	0.36	0 986 320 351
24	60	335	Black	2.4	10.5	155	Type B	0.36	0 986 320 312
24	60	420	Black	2.4	8.4	60	Type A	0.36	0 986 320 316
24	60	420	Black	2.4	8.4	155	Type B	0.36	0 986 320 313
24	60	420	Steel	1.6	8.4	300	Type A	0.36	0 986 320 304

FD4 with decorative cover

12	60	335	Steel	1.6	8.4	60	Type A	0.4	0 986 320 306
12	60	420	Steel	1.6	8.4	60	Type A	0.4	0 986 320 307

Set

Set consisting of high and low tone 0 986 320 310 and 0 986 320 311	0 986 320 392
Set consisting of high and low tone 0 986 320 301 and 0 986 320 302	0 986 320 394
Set consisting of high and low tone 0 986 320 306 and 0 986 320 307	0 986 320 393

¹⁾ Connections identical to FC4

FC9



(Dimensions in the drawing valid for all FC9 signaling devices, for differences see table)

Application range



High functional reliability

- ▶ Solid mechanical construction
- ▶ Use of weather-resistant materials

Long service life and reliable quality

- ▶ Insensitive to rust and stone impacts

Easy fitting in minimal space

- ▶ 25% smaller and lighter than normal-tone horns

Approved as per EC, ECE and R10 directives

Powerful tone

- ▶ 110 dB (A) at a distance of 2 meters

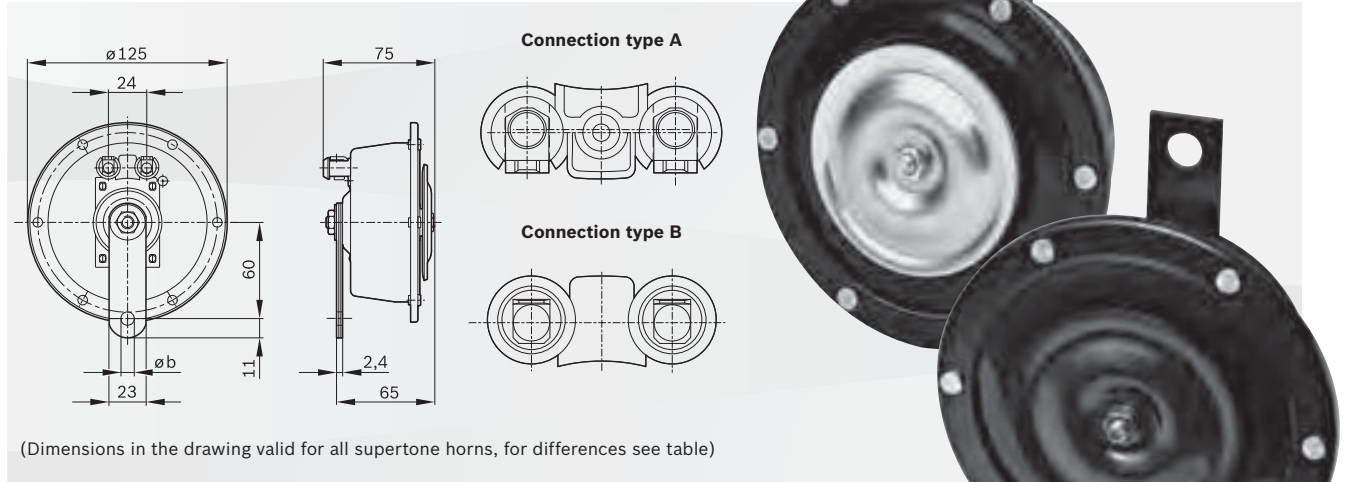
Features

Voltage V	Output W	Frequency Hz	Color	Ø b mm	α Degrees	Weight kg	Part number
FC9							
12	50	335	Steel	8.4	270	0.21	9 320 332 803
12	50	420	Steel	8.4	90	0.21	9 320 332 804
24	50	420	Steel	8.4	270	0.21	6 033 FB4 103
24	50	335	Steel	8.7	90	0.21	6 033 FB4 174

Sets

Set consisting of high and low tone 9 320 332 803 and 9 320 332 804	9 320 332 802
Set consisting of high and low tone 6 033 FB4 174 and 6 033 FB4 103	6 033 FB4 147

Supertone horn



(Dimensions in the drawing valid for all supertone horns, for differences see table)

Application range



Maximum attention

- ▶ Penetrating, harsh sound carries for long distances
- ▶ Unobstructed forward propagation of sound

Long service life and reliable quality

- ▶ Insensitive to rust and stone impacts

Maximum functional reliability

- ▶ Solid mechanical construction
- ▶ Pressure compensation with microporous Teflon filter
- ▶ Weather-resistant material

Approved as per EC, ECE and R10 directives

- ▶ Including Austria and Switzerland

Powerful tone

- ▶ 110 dB (A) at a distance of 2 meters

EMC protection included

Features

Voltage V	Output W	Frequency Hz	Color	Ø b mm	Connection	Weight kg	Part number
Supertone horn standard							
12	60	300	Black / silver	10.5	Type A	0.9	0 320 223 021
12	60	375	Black / silver	10.5	Type A	0.9	0 320 223 022
24	60	300	Black / silver	10.5	Type A	0.9	0 320 226 007
24	60	375	Black / silver	10.5	Type A	0.9	0 320 226 008
24	60	500	Black / silver	10.5	Type A	0.9	0 320 226 009
12	60	375	Black	10.5	Type B	0.9	0 320 223 011
24	60	375	Black	10.5	Type A	0.9	0 320 226 010
24	60	375	Black	10.5	Type B	0.9	0 320 226 011
24	60	500	Black	10.5	Type B	0.9	0 320 226 012

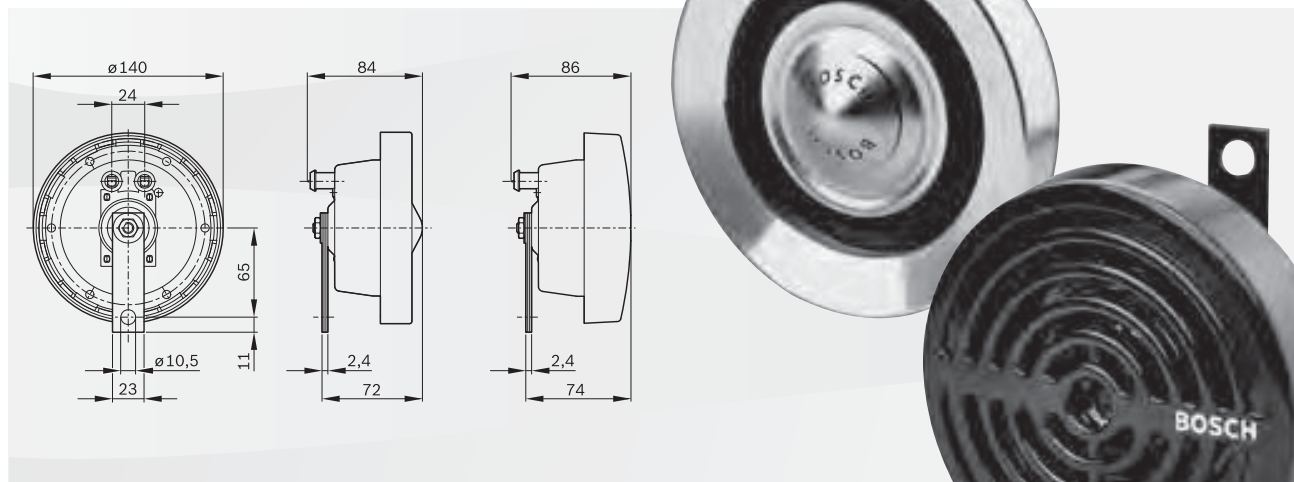
Supertone horn with decorative ring for priority vehicles (police, fire-fighting, ambulance etc.)

12	60	375	Black	10.5	Type A	0.9	0 320 223 002
12	60	500	Black	10.5	Type A	0.9	0 320 223 003
24	60	375	Black	10.5	Type A	0.9	0 320 226 002
24	60	500	Black	10.5	Type A	0.9	0 320 226 003

Tone-sequence switch for controlling the interval tone for priority vehicles

12	0 335 411 015 ¹⁾
24	0 335 411 016 ¹⁾

¹⁾ Available while stocks last


Application range

Maximum attention

- ▶ Penetrating, harsh sound carries for long distances
- ▶ Unobstructed forward propagation of sound

Long service life and reliable quality

- ▶ Insensitive to rust and stone impacts

Maximum functional reliability

- ▶ Solid mechanical construction
- ▶ Pressure compensation with microporous Teflon filter
- ▶ Weather-resistant material

Approved as per EC, ECE and R10 directives

- ▶ Including Austria and Switzerland

Powerful tone

- ▶ 110 dB (A) at a distance of 2 meters

EMC protection included
Features

Voltage V	Output W	Frequency Hz	Color	Connection	Weight kg	Part number
Supertone horn with decorative ring						
12	60	300	Silver	Type A	0.95	0 320 223 016
12	60	375	Silver	Type A	0.95	0 320 223 017
24	60	300	Silver	Type A	0.95	0 320 226 016
24	60	375	Silver	Type A	0.95	0 320 226 017

Supertone horn with decorative grill

12	60	300	Black	Type A	0.95	0 320 223 804
12	60	375	Black	Type A	0.95	0 320 223 805
24	60	300	Black	Type A	0.95	0 320 226 004
24	60	375	Black	Type A	0.95	0 320 226 005
12	60	300	Chromium-plated	Type A	0.95	0 320 223 144
12	60	375	Chromium-plated	Type A	0.95	0 320 223 145
12	60	300	Black	Type A	0.95	0 320 223 024
12	60	375	Black	Type A	0.95	0 320 223 025

Sets

Set consisting of high and low tone 0 320 223 016 and 0 320 223 017

0 320 223 911

Set consisting of high and low tone 0 320 223 804 and 0 320 223 805

0 320 223 910

Supertone horn with decorative ring for priority vehicles (police, fire-fighting, ambulance etc.)

12		375	Silver	Type A	0.95	0 320 223 008
12		500	Silver	Type A	0.95	0 320 223 009

Tone-sequence switch for controlling the interval tone for priority vehicles

12					0.95	0 335 411 015 ¹⁾
24					0.95	0 335 411 016 ¹⁾

¹⁾ Available while stocks last

Megatone



Application range



Penetrating signal tone

- ▶ 118 dB (A) signal tone with long range

Attractive design

- ▶ High-quality chromium-plated protective grill
- ▶ Suitable for visible mounting

Maximum functional reliability

- ▶ Optimum-quality diaphragm and contact points

Tested quality

- ▶ Type-tested under EU directives

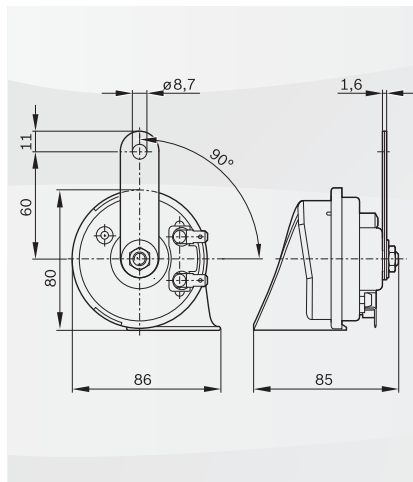
EMC protection included

Features

Voltage V	Output W	Frequency Hz Low tone/ High tone	Color	Weight	Part number
Megatone					
Set consisting of 0 986 AH0 201 and 0 986 AH0 202					
12	48	325/400	Silver	1,2	0 986 AH0 203
12	48	325	silber	0,6	0 986 AH0 201¹⁾
12	48	400	silber	0,6	0 986 AH0 202¹⁾

¹⁾ Available only in set

EC9 – EVO



Application range



Maximum attention

- ▶ Soft melodic sound, even over long distances
- ▶ Unobstructed forward propagation of sound

Long service life and reliable quality

- ▶ Insensitive to rust and stone impacts

Maximum functional reliability

- ▶ Fracture-proof and corrosion-free plastic trumpet
- ▶ Pressure compensation with microporous Teflon filter
- ▶ Vibration-resistant

Powerful tone

- ▶ 110 dB (A) at a distance of 2 meters

EMC protection included

Approved as per EC, ECE and R10 directives

Features

Voltage V	Output W	Frequency Hz	Color	Weight kg	Part number
Fanfare EC9					
12	60	420	Black	0.31	6 033 FB2 011 ¹⁾
12	60	510	Black	0.31	6 033 FB2 012 ¹⁾
12	60	420	Black	0.31	6 033 FB1 213 ²⁾
12	60	510	Black	0.31	6 033 FB1 214 ²⁾
12	60	420	Chromium-plated	0.31	6 033 FB1 194 ¹⁾ ³⁾
12	60	510	Chromium-plated	0.31	6 033 FB1 195 ¹⁾ ³⁾

Sets

Set consisting of 9 320 335 012 and 9 320 335 013	0.62	9 320 335 007
Set consisting of 6 033 FB1 213 and 6 033 FB1 214	0.62	6 033 FB1 217 □
Set consisting of 6 033 FB1 194 and 6 033 FB1 195	0.62	6 033 FB1 193 □
Set consisting of relays, small parts and fitting instructions, in black	0.62	9 320 335 052 □

□ SB packaging for sales-promoting POS appearance ¹⁾ Galvanized housing ²⁾ Housing painted black ³⁾ Available only in set

EC9-C



(Dimensions in the drawing valid for all EC9-C signaling devices, for differences see table)

Application range



Maximum attention

- ▶ High volumes achieved in direction of travel

Long service life and reliable quality

- ▶ Insensitive to rust and stone impacts

Upright installation

- ▶ Upright installation trumpet underneath
- ▶ Can be used as replacement for horns
- ▶ Particularly suitable for restricted installation conditions

Powerful tone

- ▶ 110 dB (A) at a distance of 2 meters

EMC protection included

Approved as per EC, ECE and R10 directives

Features

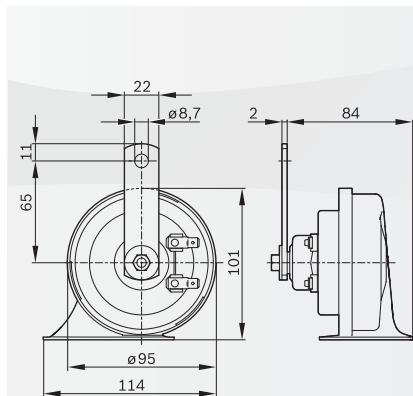
Voltage V	Output W	Frequency Hz	Color	α Degrees	Weight kg	Part number
Fanfare EC9-C						
12	60	420	Black	60	0.2	9 320 335 207
12	60	510	Black	300	0.2	9 320 335 208
12	60	420	Chromium-plated	60	0.2	6 033 FB1 505 ¹⁾
12	60	510	Chromium-plated	300	0.2	6 033 FB1 506 ¹⁾

Sets

Set consisting of 9 320 335 207 and 9 320 335 208	9 320 335 206 <input type="checkbox"/>
Set consisting of 6 033 FB1 505 and 6 033 FB1 506	6 033 FB1 510 <input type="checkbox"/>

SB packaging for sales-promoting POS appearance ¹⁾ Available only in set

Windtone



Application range



Audible safety

- ▶ Always a penetrating, pure warning tone even under the toughest of conditions

Long service life and reliable quality

- ▶ Optimum-quality diaphragm and contact points

Tested quality

- ▶ Approved as per ECE standards

Powerful tone

- ▶ 110 dB (A) at a distance of 2 meters

EMC protection included

Features

Voltage V	Output W	Frequency Hz	Color	Part number
Windtone				
12	60	420	Black	0 986 AH0 501
12	60	500	Black	0 986 AH0 502
12	60	420	Red	0 986 AH0 505
12	60	500	Red	0 986 AH0 506

Sets

Set consisting of 0 986 AH0 501 and 0 986 AH0 502	0 986 AH0 503 <input type="checkbox"/>
Set consisting of 0 986 AH0 505 and 0 986 AH0 506	0 986 AH0 507 <input type="checkbox"/>

- SB packaging for sales-promoting POS appearance

Compressor fanfare



Application range



Full power of 117 dB (A)

- ▶ Effective and harmonious sound in city and rural traffic

The best ratio between size and performance

- ▶ The best acoustic efficiency currently on the market

Compressor included

- ▶ Powerful and maintenance-free

Maximum functional reliability

- ▶ Impact-proof and weather-resistant plastic trumpet

Fast response time

- ▶ Between pressing the horn and hearing the tone

Easy fitting

- ▶ Quick installation thanks to two-hole mounting and blade terminal

Features

Voltage V	Output W	Frequency 1 Hz	Frequency 2 Hz	Frequency 3 Hz	a1 mm	a2 mm	a3 mm	Weight kg	Part number
Mini compressor fanfares									
12	240	795	840	-	166	158	-	0.7	0 986 320 003 <input type="checkbox"/>
Two-tone compressor fanfares									
12	240	630	795	-	217	166	-	0.7	0 328 003 024 <input type="checkbox"/>
24	240	630	795	-	217	166	-	0.7	0 328 006 002 <input type="checkbox"/>
Three-tone compressor fanfares									
12	240	630	795	840	217	166	158	0.8	0 328 003 025 <input type="checkbox"/>
Replacement compressor									
12	240								0 986 320 395
24	240								0 986 320 396

SB packaging for sales-promoting POS appearance

Compressor fanfare - Airmaster



Application range



Powerful sound

- ▶ Loud noise without a time lag
- ▶ 115 dB (A) at a distance of 2 meters

Electro-pneumatic horn

- ▶ Compact shape without connecting hoses
- ▶ Integrated compressor

Long service life and dependable quality

- ▶ Specially designed air inlet to protect against corrosion and wear

Rapid and simple assembly

- ▶ Assembly with just one retaining screw and without connecting hoses

Tested quality

- ▶ Approved in acc. with ECE standards

Features

Voltage V	Output W	Frequency 1 Hz	Frequency 2 Hz	a1 mm	a2 mm	a3 mm	Weight kg	Part number
compressor fanfares Airmaster								
12	240	520	660	136	91	115	0,7	0 986 320 400 <input type="checkbox"/>
24	240	520	660	136	91	115	0,7	0 986 320 401 <input type="checkbox"/>

SB packaging for sales-promoting POS appearance

Compressed-air fanfare



Application range



Maximum attention

- ▶ with penetrating two-tone signal audible over long distances

Long service life and reliable quality

- ▶ Insensitive to rust and stone impacts

Attractive design

- ▶ Two chromium-plated metal trumpets with black base

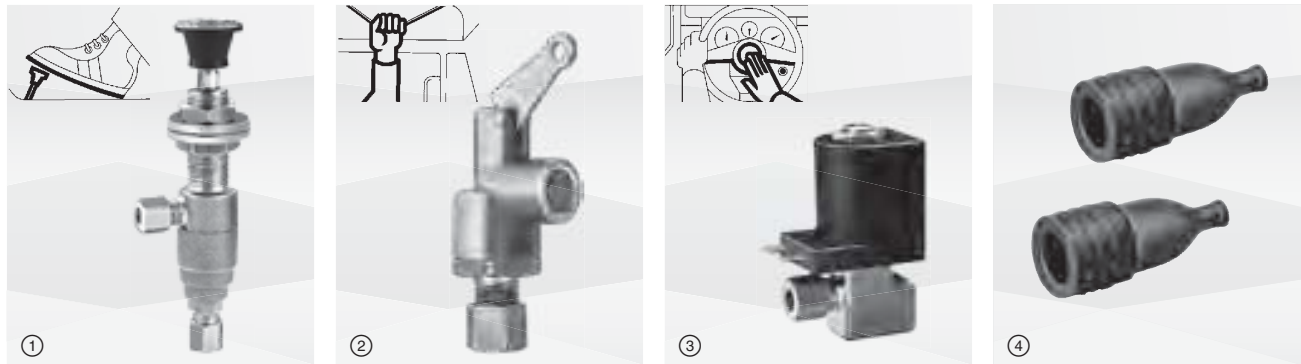
Approved as per German StVZO (FMVSS/CUR) and EC directives

Powerful tone

- ▶ 118 dB (A) at a distance of 2 meters

Secure mounting

- ▶ Secured and fixed anchorage using two-point mounting



Features

Pressure range bar	Volume dB (A)	Frequency Hz	Color	Connection	Weight kg	Part number
5 ... 8	118	300 / 320	Chromium-plated	for on-board compressor	1.2	0 328 100 002 □

Accessories




Description	Fitting	Illustration	Part number
Foot valve:	Fitted on floor of driver's cabin. Operated by foot pressure.	1	1 327 011 003
Pull valve:	Fitted on roof of driver's cabin. Operated by pulling.	2	1 327 011 004
Electric valve (24V):	Fitted in engine compartment. Operated using existing horn button.	3	1 327 011 002

Spout for horns and fanfares (order separately)

Protects connections against dirt and moisture to increase weather resistance	4	3 340 522 025 ¹⁾
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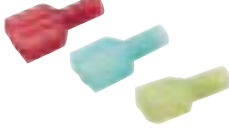

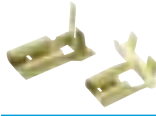
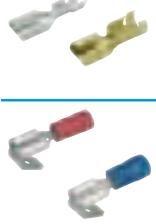


□ SB packaging for sales-promoting POS appearance ¹⁾ Two units must be ordered for horns

Battery charger




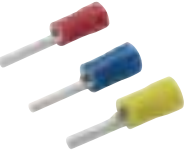

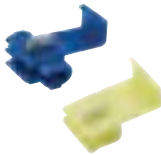
Figure	Type	Part number																																
 <p>Battery charger C1</p> 	<p>Nominal specification (primary)</p> <table border="1"> <tr><td>Nominal voltage:</td><td>220–240 V~ 50/60 Hz</td></tr> <tr><td>Cutin current:</td><td>< 50 A</td></tr> <tr><td>Calculation input voltage:</td><td>max. 0.6 A (Effective value)</td></tr> <tr><td>Rated input:</td><td>60 W</td></tr> </table> <p>Nominal specification (secondary)</p> <table border="1"> <tr><td>Calculation voltage:</td><td>12 V</td></tr> <tr><td>Charge voltage:</td><td>14,7 V (±0,25 V)</td></tr> <tr><td>Charging current:</td><td>3.5 A (±10%)</td></tr> <tr><td>Rated current:</td><td>3.5 A</td></tr> <tr><td>Ripple ondulation:</td><td>max. 150 mV</td></tr> <tr><td>Return current:</td><td>< 5 mA (no AC-input)</td></tr> <tr><td>Degree of protection:</td><td>IP 65 (dust-protected, waterproof)</td></tr> <tr><td>Battery type:</td><td>12 V lead-acid battery (EFB, GEL, MF, Open and VRLA)</td></tr> <tr><td>Battery capacity:</td><td>12 V: 5 Ah –120 Ah</td></tr> <tr><td>Noise level:</td><td>< 50 dB</td></tr> <tr><td>Surrounding temperature:</td><td>0 to 40°C</td></tr> <tr><td>Accessories:</td><td>In scope of delivery</td></tr> </table>	Nominal voltage:	220–240 V~ 50/60 Hz	Cutin current:	< 50 A	Calculation input voltage:	max. 0.6 A (Effective value)	Rated input:	60 W	Calculation voltage:	12 V	Charge voltage:	14,7 V (±0,25 V)	Charging current:	3.5 A (±10%)	Rated current:	3.5 A	Ripple ondulation:	max. 150 mV	Return current:	< 5 mA (no AC-input)	Degree of protection:	IP 65 (dust-protected, waterproof)	Battery type:	12 V lead-acid battery (EFB, GEL, MF, Open and VRLA)	Battery capacity:	12 V: 5 Ah –120 Ah	Noise level:	< 50 dB	Surrounding temperature:	0 to 40°C	Accessories:	In scope of delivery	<p>0 189 999 01M</p> <p>0 189 999 130</p>
Nominal voltage:	220–240 V~ 50/60 Hz																																	
Cutin current:	< 50 A																																	
Calculation input voltage:	max. 0.6 A (Effective value)																																	
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Nominal voltage:	220–240 V~ 50/60 Hz																																	
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Accessories:	In scope of delivery																																	

Cable connectors

Universally applicable

Figure	Design	Contact width mm	Contact thickness mm	For conductor cross section mm ²	Colour	Material/finish*)	Qty. per pack	Part number
	Blade terminal	6.3	0.8	0.5–1.0	red	CuZn/tin-plated	100	8 784 480 010
				1.5–2.5	blue	CuZn/tin-plated	100	8 784 480 011
	Blade terminal	6.3	0.8	0.5–1.0		CuZn/bright	100	7 781 700 006
				0.5–1.0		CuZn/bright	100	7 781 700 007
				0.75–1.5		CuZn/bright	100	7 781 700 008
				1.5–2.5		CuZn/bright	100	7 781 700 010
	Blade terminal with locking lance	6.3	0.8	1.0–1.5		CuZn/tin-plated	100	7 781 700 009
	Blade receptacle	6.3	0.8	0.5–1.0	red	CuZn/tin-plated	100	1 901 355 866
				0.5–1.0	red	CuZn/tin-plated	100	1 901 355 876
				0.5–1.0	red	CuZn/tin-plated	100	1 901 355 880
				1.5–2.5	blue	CuZn/tin-plated	100	1 901 355 881
				4.0–6.0	yellow	CuZn/tin-plated	50	1 901 355 882
				1.5–2.5	blue	CuZn/tin-plated	50	8 781 355 810
				4.0–6.0	yellow	CuZn/tin-plated	50	8 781 355 811
	Blade terminal with isolation	6.3	0.8	0.5–1.0	red	CuZn/tin-plated	50	8 784 478 014
				1.5–2.5	blue	CuZn/tin-plated	50	8 784 478 015
	Blade receptacle	6.3	0.8	0.5–1.0	red	CuZn/tin-plated	50	7 781 700 029
				1.5–2.5	blue	CuZn/tin-plated	50	7 781 700 030
				4.0–6.0	yellow	CuZn/tin-plated	50	7 781 700 031
	Blade receptacle	6.3	0.8	0.5–1.0		CuZn/bright	100	1 904 478 301
				0.5–1.0		CuZn/bright	100	1 904 478 325
				1.5–2.5		CuZn/bright	100	1 904 478 331
				0.5–1.0		CuZn/bright	100	1 901 355 835
				1.5–2.5		CuZn/bright	100	1 901 355 836
				4.0–6.0		CuZn/bright	100	1 901 355 837
	Blade receptacle	6.3	0.8	1.0–2.5		CuZn/bright	100	8 784 477 008
				0.5–1.5		CuSn/tin-plated	25	1 904 492 016
				0.5–1.0		CuZn/bright	100	1 901 355 968
				1.5–2.5		CuZn/bright	100	1 901 355 975
				4.0–6.0		CuZn/bright	50	1 901 355 981
	Blade receptacle with branch	6.3	0.8	0.5–1.0	red	CuZn/tin-plated	50	1 901 360 820
				1.5–2.5	blue	CuZn/tin-plated	50	1 901 360 821
	Predictive cover for blade receptacle	6.3	0.8		trans-parent	Polyethylen natur	50	8 790 451 002
	Multiple-blade connector 2-fold	6.3	0.8			CuZn/bright	100	1 901 360 810


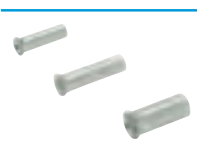


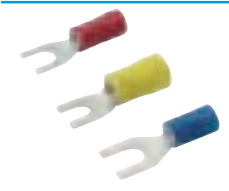



*) CuSn = bronze. CuZn = brass

Figure	Design	Contact width mm	Contact thickness mm	For conductor cross section mm ²	Colour	Material/finish*)	Qty. per pack	Part number
	Multiple-blade connector	6.3	0.8			CuZn/bright	50	8 781 360 800
	3-fold							
	Multiple-blade connector	6.3	0.8			CuZn/nickel-plated	50	8 784 479 006
	3-fold							
	Multiple-blade connector	6.3	0.8			CuZn/nickel-plated	50	8 784 479 005
	4 way							
	Flat connector	6.3	0.8			CuZn/tin-plated	50	8 781 360 810
	Pin terminal	Ø 4.0		0.5–1.0	red	CuZn/tin-plated	100	8 784 480 000
		Ø 5.0		1.5–2.5	blue	CuZn/tin-plated	100	8 784 480 001
	Pin terminal	Ø 4.0		0.5–1.0		CuZn/bright	100	7 781 700 013
		Ø 5.0		1.5–2.5		CuZn/bright	100	7 781 700 014
	Pin receptacle	Ø 4.0		0.5–1.0	red	CuZn/tin-plated	100	8 781 355 000
		Ø 5.0		1.5–2.5	blue	CuZn/tin-plated	50	8 781 355 800
	Pin receptacle	Ø 4.5		1.5–2.5		CuSn/blank	100	7 781 700 004
	Wire pin sleeve	Ø 1.8		0.5–1.0	red	Cu/tin-plated	100	7 781 700 017
				1.5–2.5	blue	Cu/tin-plated	100	8 784 480 009
				4.0–6.0	yellow	Cu/tin-plated	100	7 781 700 018
	Butt coupling			0.5–1.0	red	Cu/tin-plated	100	8 784 485 000
				1.5–2.5	blue	Cu/tin-plated	100	8 784 485 001
				4.0–6.0	yellow	Cu/tin-plated	50	8 784 485 023
	Multiple butt connector			0.5–1.5	blue	Cu/tin-plated	25	8 784 485 024
				4.0	yellow	Cu/tin-plated	25	8 784 485 025



*) CuSn = bronze. CuZn = brass



**Cable connectors
universally applicable**
(continued)


Figure	Design	Contact width mm	Contact thickness mm	For conductor cross section mm ²	Colour	Material/finish*)	Qty. per pack	Part number
	Multiple butt connector			0.5–1.5	red	CuZn/tin-plated	25	7 781 700 027
				1.5–2.5	blue	CuZn/tin-plated	25	8 784 485 034
				4.0–6.0	yellow	CuZn/tin-plated	25	7 781 700 028
	Wire end ferrule			up to 1.0		Cu/tin-plated	100	8 780 422 000
				1.0–2.5		Cu/tin-plated	100	7 781 700 019
				4.0–6.0		CuZn/tin-plated	100	7 781 700 020
	Spark-plug connector					CuSn/bright	50	8 780 499 002
	Cable lug	M3		0.5–1.0	red	Cu/tin-plated	100	8 781 353 119
				1.5–2.5	blue	Cu/tin-plated	100	7 781 700 032
		M4		0.5–1.0	red	Cu/tin-plated	100	8 781 353 121
				1.5–2.5	blue	Cu/tin-plated	100	8 781 353 125
				4.0–6.0	yellow	Cu/tin-plated	50	7 781 700 025
				0.5–1.0	red	Cu/tin-plated	100	8 781 353 122
				1.5–2.5	blue	Cu/tin-plated	100	8 781 353 126
				4.0–6.0	yellow	Cu/tin-plated	100	8 781 353 130
		M6		0.5–1.0	red	Cu/tin-plated	100	7 781 700 021
				1.5–2.5	blue	Cu/tin-plated	100	8 781 353 127
				4.0–6.0	yellow	Cu/tin-plated	50	8 781 353 131
				0.5–1.0	red	Cu/tin-plated	100	7 781 700 022
				1.5–2.5	blue	Cu/tin-plated	100	8 781 353 128
4.0–6.0	yellow			Cu/tin-plated	50	8 781 353 132		
M10		1.5–2.5	blue	Cu/tin-plated	50	7 781 700 023		
	Open cable lug	M4		0.5–1.0	red	Cu/tin-plated	100	8 781 353 133
				4.0–6.0	yellow	Cu/tin-plated	50	8 781 353 007
		M5		4.0–6.0	yellow	Cu/tin-plated	50	7 781 700 026
				1.5–2.5	blue	Cu/tin-plated	100	8 781 353 009
		M6		4.0–6.0	yellow	Cu/tin-plated	50	8 781 353 008
	Open cable lug	M4		1.5–2.5	blue	Cu/tin-plated	100	8 781 353 000
		M5		1.5–2.5	blue	Cu/tin-plated	100	8 781 353 001
	Soldered cable lug	M6		up to 3.0		Cu/tin-plated	5	1 901 353 011
				up to 4.0		Cu/tin-plated	5	1 901 353 003
				up to 5.0		Cu/tin-plated	5	1 901 353 004
		M8		up to 5.0		Cu/tin-plated	5	1 901 353 005
				up to 6.0		Cu/tin-plated	5	1 901 353 006
				up to 8.0		Cu/tin-plated	5	1 901 353 007
		M10		up to 8.0		Cu/tin-plated	5	1 901 353 008
				up to 10.0		Cu/tin-plated	5	1 901 353 009
				up to 12.0		Cu/tin-plated	5	1 901 353 010
	Claw-type cable lug	M4		0.5–2.5		CuZn/bright	100	8 781 354 002
		M5		0.5–2.5		CuZn/bright	100	8 781 354 003
		M6		0.5–2.5		CuZn/bright	100	8 781 354 004
		M8		0.5–2.5		CuZn/bright	100	8 781 354 005
		M10		4.0–6.0		CuZn/bright	50	8 781 354 006

*) CuSn = bronze. CuZn = brass

Figure	Design	Contact width mm	Contact thickness mm	For conductor cross section mm ²	Colour	Material/finish*)	Qty. per pack	Part number
	Single blade terminal	M3	6.3	–		CuZn/bright	100	1 901 020 801
		M4	6.3	–		CuZn/bright	100	1 901 020 802
		M5	6.3	–		CuZn/bright	100	1 901 020 803
	Double blade terminal	M6	6.3	–		CuZn/bright	50	8 784 477 005

*) CuSn = bronze. CuZn = brass

Setbox cable connector set, 175 pcs.

	Design	Contact width mm	For conductor cross section mm ²	Qty.	Part number
	Blade terminal	6.3	0.5–1.0	10	1 987 532 100
	Blade terminal	6.3	1.5–2.5	10	
	Blade receptacle	6.3	0.5–1.0	10	
	Blade receptacle	6.3	1.5–2.5	10	
	Cable lug	M3	0.5–1.0	10	
	Cable lug	M4	0.5–1.0	10	
	Cable lug	M5	0.5–1.0	10	
	Cable lug	M3	1.5–2.5	10	
	Cable lug	M4	1.5–2.5	10	
	Cable lug	M5	1.5–2.5	10	
	Cable lug	M5	4.0–6.0	10	
	Cable lug	M6	4.0–6.0	10	
	Open cable lug	M4	0.5–1.0	10	
	Open cable lug	M5	1.5–2.5	10	
	Open cable lug	M4	4.0–6.0	10	
	Butt coupling		0.5–1.0	10	
	Butt coupling		1.5–2.5	10	
Butt coupling		4.0–6.0	5		

Line connectors

Universally applicable – High-performance



Universally applicable. High-performance crimp connectors using shrink sleeve techniques with internal coating
Minimum shrinkage temperature: 100 °C
Permanent application temperature range: -55 °C...+125 °C
100% waterproof

Figure	Design	Contact width	For conductor cross section mm ²	Colour	Sleeve diameter expanded mm ²	Sleeve diameter shrunk mm ²	Qty. per pack	Part number
	Butt coupling		0.1 – 0.5	white/ transparent	3.7	1.0	25	1 987 532 035
			0.5 – 1.5	red/ transparent	4.3	1.4	25	1 987 532 000
			1.5 – 2.5	blue/ transparent	5.0	1.8	25	1 987 532 001
			4.0 – 6.0	yellow/ transparent	6.5	2.2	25	1 987 532 002
	Cable lug	M4	0.5 – 1.5	red/ transparent	4.3	1.4	25	1 987 532 003
		M5	0.5 – 1.5	red/ transparent	4.3	1.4	25	1 987 532 004
		M6	0.5 – 1.5	red/ transparent	4.3	1.4	25	1 987 532 005
		M8	0.5 – 1.5	red/ transparent	4.3	1.4	25	1 987 532 006
		M10	0.5 – 1.5	red/ transparent	4.3	1.4	25	1 987 532 007
	Cable lug	M4	1.5 – 2.5	blue/ transparent	5.0	1.8	25	1 987 532 008
		M5	1.5 – 2.5	blue/ transparent	5.0	1.8	25	1 987 532 009
		M6	1.5 – 2.5	blue/ transparent	5.0	1.8	25	1 987 532 010
		M8	1.5 – 2.5	blue/ transparent	5.0	1.8	25	1 987 532 011
		M10	1.5 – 2.5	blue/ transparent	5.0	1.8	25	1 987 532 012
	Cable lug	M4	4.0 – 6.0	yellow/ transparent	6.5	2.2	25	1 987 532 013
		M5	4.0 – 6.0	yellow/ transparent	6.5	2.2	25	1 987 532 014
		M6	4.0 – 6.0	yellow/ transparent	6.5	2.2	25	1 987 532 015
		M8	4.0 – 6.0	yellow/ transparent	6.5	2.2	25	1 987 532 016
		M10	4.0 – 6.0	yellow/ transparent	6.5	2.2	25	1 987 532 017
	Open cable lug	M4	0.5 – 1.5	red/ transparent	4.3	1.4	25	1 987 532 018
		M5	0.5 – 1.5	red/ transparent	4.3	1.4	25	1 987 532 019
	Open cable lug	M4	1.5 – 2.5	blue/ transparent	5.0	1.8	25	1 987 532 020
		M5	1.5 – 2.5	blue/ transparent	5.0	1.8	25	1 987 532 021
	Open cable lug	M5	4.0 – 6.0	yellow/ transparent	6.5	2.2	25	1 987 532 023



Figure	Design	Contact width mm	Contact thickness mm	For conductor cross section mm ²	Colour	Sleeve diameter expanded mm ²	Sleeve diameter shrunk mm ²	Qty. per pack	Part number
	Blade receptacle	6.3	0.8	0.5–1.5	red/ transp.	6.5	1.4	25	1 987 532 024
		6.3	0.8	1.5–2.5	blue/ transp.	6.5	1.8	25	1 987 532 025
		6.3	0.8	4.0–6.0	yellow/ transp.	6.5	2.2	25	1 987 532 026
	Blade terminal	6.3	0.8	0.5–1.5	red/ transp.	4.3	1.4	25	1 987 532 027
		6.3	0.8	1.5–2.5	blue/ transp.	5.0	1.8	25	1 987 532 028
		6.3	0.8	4.0–6.0	yellow/ transp.	6.5	2.2	25	1 987 532 029

Braided sleeve in dispenser box

Colour: black Length: 10 m Stretch: 1:2 Permanent application temperature range: -55°C...+130°C	diameter nominal mm	diameter stretched mm	Part number
	10	15	1 987 532 032
	15	27	1 987 532 033
	25	34	1 987 532 034



Shrink-sleeve sets

Figure	Design	Part number																																							
<p>Properties of shrink-down tubing:</p> <ul style="list-style-type: none"> - Flexible - Universally applicable - Shrink rate 2:1 - Permanent application temperature range: -55 °C bis 125 °C - Minimum shrinking temperature: 110 °C 																																									
	<p>Shrink-sleeve set, small Internal diameter (mm) 1.2/2.4/4.8/9.5/19.0/38.0 before shrinking Shrink rate: 2:1 Permanent application temperature range: -55 °C...+125 °C Minimum shrinkage temperature: 110 °C</p>	<p>1 987 532 030</p>																																							
	<p>Shrink-sleeve set, large Internal diameter (mm) 1.2/1.6/2.4/3.2/4.8/6.4/9.5/12.7 before shrinking Contents: approx. 30 m (90 ft) Shrink rate: 2:1 Permanent application temperature range: -55 °C...+125 °C Minimum shrinkage temperature: 110 °C</p>	<p>1 987 532 031</p>																																							
	<p>Shrink-sleeve set, with butt coupling as per DIN-VDE-0293-308</p> <table border="1"> <thead> <tr> <th>Colour</th> <th>For conduction cross section mm²</th> <th>Qty.</th> </tr> </thead> <tbody> <tr> <td>transparent</td> <td>0.1-0.5</td> <td>5</td> </tr> <tr> <td>red</td> <td>0.5-1,5</td> <td>5</td> </tr> <tr> <td>blue</td> <td>1.5-2.5</td> <td>20</td> </tr> <tr> <td>yellow</td> <td>4.0-6.0</td> <td>20</td> </tr> </tbody> </table> <p>Thermal-protection shrink-sleeve</p> <table border="1"> <thead> <tr> <th>Length mm</th> <th>Diameter mm</th> <th>Qty.</th> </tr> </thead> <tbody> <tr> <td>70</td> <td>1.6-0,8</td> <td>28</td> </tr> <tr> <td></td> <td>2.4-1,2</td> <td>28</td> </tr> <tr> <td></td> <td>3.2-1.6</td> <td>20</td> </tr> <tr> <td></td> <td>4.8-2.4</td> <td>16</td> </tr> <tr> <td></td> <td>6.4-3.2</td> <td>12</td> </tr> <tr> <td></td> <td>6.4-2.0</td> <td>5</td> </tr> <tr> <td></td> <td>3.2-1.0</td> <td>7</td> </tr> </tbody> </table>	Colour	For conduction cross section mm ²	Qty.	transparent	0.1-0.5	5	red	0.5-1,5	5	blue	1.5-2.5	20	yellow	4.0-6.0	20	Length mm	Diameter mm	Qty.	70	1.6-0,8	28		2.4-1,2	28		3.2-1.6	20		4.8-2.4	16		6.4-3.2	12		6.4-2.0	5		3.2-1.0	7	<p>1 987 532 101</p>
Colour	For conduction cross section mm ²	Qty.																																							
transparent	0.1-0.5	5																																							
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	6.4-3.2	12																																							
	6.4-2.0	5																																							
	3.2-1.0	7																																							

Cables

Product presentation



Materials and markings

- FL** Vehicle cables
- R** Reduced thickness of insulation wall
- Y** PVC insulation
- Sn** Tin-plated conductor
- A** Symmetrical strand layout
- B** Asymmetrical strand layout

Color coding

The cable colors are defined as per DIN 47 002/ DIN IEC 304, short symbols as per IEC 757. The color is controlled by comparison with the RAL color register 840R.

Layout example for copper strands for vehicle cables

Asymmetrical strand layout "B"



Symmetrical strand layout "A"



Strands with a symmetrical layout are used where there are significant requirements for a constant insulation wall thickness (particularly for cables with thin wall insulation).

Example

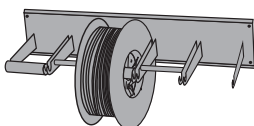
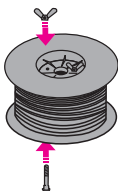
FL	R	Y	A	0.5 Nominal cross section
				Strand layout
				PVC insulation
				Reduced thickness of insulation wall
Vehicle cable				

Design and accessories

Your order is supplied on cardboard rings, diameter Ø 125 mm, width 90 mm.

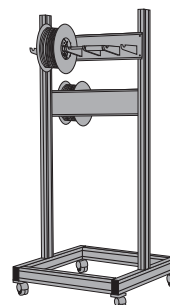
To match the wound rings, we offer:

- ▶ Reusable, standardized two-piece plastic cable drums for easy unwinding of the cables
- ▶ Cable dispenser for up to 5 plastic cable drums. It is possible to store several dispensers on a cable-drum trolley*



The benefits for you

- ▶ No empty drums in warehouse
- ▶ No return transport
- ▶ No waste disposal
- ▶ No freight costs
- ▶ No transport damage



Dispenser trolley can be loaded on both sides.

* Not included in catalog

Vehicle cables

Illustration	Description
<div style="background-color: #0070C0; color: white; padding: 5px; border-radius: 5px; display: inline-block;">i</div> <p>FLRY Vehicle cable with thin-wall PVC insulation</p> 	<p>Conductor: Soft-annealed electrolytic copper Cu-ETP1 as per DIN EN 13602, bare. Conductor structure as per ISO 6722.</p> <p>Insulation: Soft PVC with characteristics as per ISO 6722, Class B, lead-free.</p> <p>Special characteristics: Temperature range: -40°C ... +105°C (3000 h).</p>


Type Description	Conductor cross section mm ²	Insulation color	Part number	
			500m rolls	50m rolls
FLRY (Type A and B) Conductor, bare, with plastic insulation	0.35 (Type A)	White	5 998 340 058	1 987 352 401
		Blue	5 998 340 104	1 987 352 402
		Brown	5 998 340 105	1 987 352 403
		Black	5 998 340 057	1 987 352 404
	0.5 (Type A)	White	5 998 340 003	1 987 352 405
		Yellow	5 998 340 004	1 987 352 406
		Orange	5 998 340 011	1 987 352 407
		Red	5 998 340 016	1 987 352 408
		Blue	5 998 340 010	1 987 352 409
		Green	5 998 340 008	1 987 352 410
		Gray	5 998 340 007	1 987 352 411
		Brown	5 998 340 006	1 987 352 412
		Black	5 998 340 009	1 987 352 413
		0.75 (Type B)	White	5 998 340 174
	Yellow		5 998 340 166	1 987 352 415
	Red		5 998 340 175	1 987 352 416
	Blue		5 998 340 167	1 987 352 417
	Green		5 998 340 168	1 987 352 418
	Gray		5 998 340 165	1 987 352 419
	Brown		5 998 340 176	1 987 352 420
	1.0 (Type B)	White	5 998 340 135	1 987 352 421
		Yellow	5 998 340 136	1 987 352 422
		Red	5 998 340 177	1 987 352 423
		Blue	5 998 340 137	1 987 352 424
		Green	5 998 340 138	1 987 352 425
	1.5 (Type B)	Black	5 998 340 139	1 987 352 426
		White	5 998 340 080	1 987 352 427
		Yellow	5 998 340 140	1 987 352 428
		Red	5 998 340 051	1 987 352 429
		Purple	5 998 340 081	1 987 352 430
		Blue	5 998 340 082	1 987 352 431
		Green	5 998 340 021	1 987 352 432
		Gray	5 998 340 142	1 987 352 433
Brown		5 998 340 052	1 987 352 434	
Black	5 998 340 056	1 987 352 435		

Vehicle cables

Type Description	Conductor cross section mm ²	Insulation color	Part number	
			400m rolls	50m rolls
FLRY (Type B) Conductor, bare, with plastic insulation	2.5 (Type B)	White	5 998 340 153	1 987 352 436
		Yellow	5 998 340 060	1 987 352 437
		Red	5 998 340 024	1 987 352 438
		Blue	5 998 340 088	1 987 352 439
		Green	5 998 340 062	1 987 352 440
		Gray	5 998 340 162	1 987 352 441
		Brown	5 998 340 025	1 987 352 442
		Black	5 998 340 091	1 987 352 443



Type Description	Conductor cross section mm ²	Insulation color	Part number	
			200m rolls	50m rolls
FLRY (Type B) Conductor, bare, with plastic insulation	4.0 (Type B)	White	5 998 340 049	1 987 352 444
		Red	5 998 340 036	1 987 352 445
		Blue	5 998 340 039	1 987 352 446
		Brown	5 998 340 042	1 987 352 447
		Black	5 998 340 044	1 987 352 448

Illustration	Description
<p>FLY Vehicle cable with PVC insulation</p> 	<p>Conductor: Soft-annealed electrolytic copper Cu-ETP1 as per DIN EN 13 602, bare. Conductor structure as per ISO 6722.</p> <p>Insulation: Soft PVC with characteristic as per ISO 6722, Class B, lead-free.</p> <p>Special characteristics: Cables with cross sections >6 mm² can be used as battery cables. Temperature range: -40°C ... +90°C (3000 h).</p>

Type Description	Conductor cross section mm ²	Insulation color	Part number	
			100m rolls	50m rolls
FLY Conductor, bare, with plastic insulation	0.75	White	5 998 343 068	1 987 352 501
		Yellow	5 998 343 081	1 987 352 502
		Red	5 998 343 092	1 987 352 503
		Blue	5 998 343 111	1 987 352 504
		Green	5 998 343 124	1 987 352 505
		Gray	5 998 343 137	1 987 352 506
		Brown	5 998 343 145	1 987 352 507
	1.00	Black	5 998 343 153	1 987 352 508
		Red	5 998 343 016	1 987 352 509
		Green	5 998 343 019	1 987 352 510
		Brown	5 998 343 020	1 987 352 511
		Black	5 998 343 021	1 987 352 512


Cables (continued)

Type Description	Conductor cross section mm ²	Insulation color	Part number		
			100m rolls	50m rolls	
FLY Conductor, bare, with plastic insulation	1.5	White	5 998 343 071	1 987 352 513	
		Yellow	5 998 343 022	1 987 352 514	
		Red	5 998 343 023	1 987 352 515	
		Blue	5 998 343 024	1 987 352 516	
		Green	5 998 343 027	1 987 352 517	
		Gray	5 998 343 028	1 987 352 518	
		Brown	5 998 343 029	1 987 352 519	
		Black	5 998 343 030	1 987 352 520	
		Yellow/red	5 998 343 085	1 987 352 521	
		Gray/red	5 998 343 185	1 987 352 522	
		Gray/black	5 998 343 186	1 987 352 523	
		White/black	5 998 343 079	1 987 352 524	
		Black/red	5 998 343 187	1 987 352 525	
		Black/green	5 998 343 165	1 987 352 526	
	2.5	White	5 998 343 050	1 987 352 527	
		Yellow	5 998 343 183	1 987 352 528	
		Red	5 998 343 001	1 987 352 529	
		Blue	5 998 343 031	1 987 352 530	
		Green	5 998 343 034	1 987 352 531	
		Gray	5 998 343 035	1 987 352 532	
		Brown	5 998 343 036	1 987 352 533	
	4.0	Black	5 998 343 002	1 987 352 534	
		Yellow	5 998 343 184	1 987 352 535	
		Red	5 998 343 097	1 987 352 536	
			Black	5 998 343 157	1 987 352 537


Type Description	Conductor cross section mm ²	Insulation color	Packaging unit	Part number
			m	
FLY Conductor, bare, with plastic insulation	6.0	Red	50	5 998 343 189
		Blue	50	5 998 343 190
		Black	50	5 998 343 196
	10.0	Red	50	5 998 343 188
		Black	50	5 998 343 191
	16.0	Black	50	5 998 343 192
	25.0	Black	50	5 998 343 193

Type Description	Conductor cross section mm ²	Insulation color	Packaging unit	Part number
			m	
FLY Conductor, bare, with plastic insulation	35.0	Black	25	5 998 343 194
	50.0	Black	25	5 998 343 195
	70.0	Black	25	5 998 343 197




Illustration	Description
<p>FLYY-F Plastic hose for vehicles</p> <p>Illustration shows the 3-core cable</p> 	<p>Conductor: Soft-annealed electrolytic copper Cu-ETP1 as per DIN EN 13602, bare. Conductor structure as per ISO 6722.</p> <p>Insulation / Sheath: Soft PVC with characteristics as per ISO 6722, Class B, lead-free.</p> <p>Special characteristics: Sheathed cable in circular (single core) and flat (multiple core) design.</p>

Type Description	Number of cores x nominal cross section mm ²	Sheath wall-thickness specified value mm	Insulation color	Packaging unit m	Part number
FLYY-F	1 x 1.5	0.6	Black	50	5 998 351 003
	1 x 2.5	0.6	Black	50	5 998 351 004
	2 x 1.5	0.6	Black/red	50	5 998 351 101
	3 x 1.5	0.6	Black	50	5 998 351 105

Illustration	Description
<p>FLYY Plastic sheathed cable for vehicles</p> <p>Illustration shows the 7-core cable</p> 	<p>Conductor: Soft-annealed electrolytic copper Cu-ETP1 as per DIN EN 13602, bare. Conductor structure as per ISO 6722, stranded cores.</p> <p>Insulation / Sheath: Soft PVC with characteristics as per ISO 6722, Class B, lead-free.</p>


Type Description	Number of cores x nominal cross section mm ²	Core colors ¹⁾	Color of sheath	Packaging unit m	Part number
FLYY	5 x 1.5	ge, ws, gn, br, sw	Black	50	5 998 352 013
	7 x 1.5	ge, bl, ws, gn, br, rt, sw	Black	25	5 998 352 018
	8 x 1.5	ge, bl, ws, gn, br, rt, sw, vi	Black	25	5 998 352 021

Illustration	Description
<p>FLYZ PVC twin cable</p> 	<p>Conductor: Soft-annealed electrolytic copper Cu-ETP1 as per DIN EN 13602, bare. Conductor structure as per ISO 6722.</p> <p>Insulation: Soft PVC with characteristics as per ISO 6722, Class B, lead-free.</p> <p>Special characteristics: Suitable for use as speaker cable. Temperature range: -40°C ... +105°C (3000 h).</p>

Type Description	Number of cores x nominal cross section mm ²	Insulation color ¹⁾	Packaging unit m	Part number
FLYZ	2 x 0.75	Brown/brown-red	50	7 781 999 939
	2 x 1.50	Black	50	7 781 999 950


¹⁾ Colors: ge = Yellow, bl = Blue, ws = White, gn = Green, br = Brown, rt = Red, sw = Black, gng = Green/yellow, hbl = Light blue, vi = Purple

Cables (continued)


Illustration	Description
	<p>XYMHY-O FLYY 9 x 1.5 + 4 x 2.5 (fine-wire copper cable with light plastic insulation)</p> <p>Conductor: Cu wire, bare, Cu ETP 1 as per EN 13602, stranded cores. Insulation: PVC, lead-free.</p>

Type Description	Cores	Conductor structure nom. mm	Cross section nom. mm ²	Color of sheath	Packaging unit m	Part number
XYMHY-O	1, 2, 4, 5, 6, 7, 8, 11, 12	30 x 0.25	1.5	Black	25	1 987 352 005
	3, 9, 10, 13	50 x 0.25	2.5			

Industrial cables

Illustration	Description
<p>H 05 RR-F Light rubber sheathed cable</p> <p>Illustration shows the 4-core cable</p> 	<p>Conductor: Fine-wire copper cable with light rubber insulation, stranded cores. Insulation / Sheath: Rubber compound as per VDE 0282. Special characteristics: Nominal voltage U_0/U: 300 V/500 V.</p>


Type Description	Number of cores x nominal cross section mm ²	Core colors ¹⁾	Color of sheath	Packaging unit m	Part number
H 05 RR-F	2 x 0.75	br, hbl	Black	50	6 244 001 203
	2 x 1.50	br, hbl	Black	50	6 244 001 205
	3 x 1.50	gnge, br, hbl	Black	50	6 244 002 305
	3 x 2.50	gnge, br, hbl	Black	50	6 244 002 306
	4 x 1.50	gnge, sw, hbl, br	Black	50	6 244 002 405

Illustration	Description
<p>H 05 VV-F Medium PVC sheathed cable</p> <p>Illustration shows the 4-core cable</p> 	<p>Conductor: Fine-wire copper cable with plastic insulation, individual wires bare, stranded cores. Insulation: Thermoplastic PVC, lead-free.</p>

Type Description	Number of cores x nominal cross section mm ²	Core colors ¹⁾	Color of sheath	Packaging unit m	Part number
H 05 VV-F	2 x 1.50	br, hbl	Black	50	6 254 011 205
	3 x 1.50	gnge, br, hbl	Black	50	6 254 012 305
	4 x 0.75	gnge, sw, hbl, br	Black	50	6 254 012 403
	4 x 1.50	gnge, sw, hbl, br	Black	50	6 254 012 405

¹⁾ Colors: ge = Yellow, bl = Blue, ws = White, gn = Green, br = Brown, rt = Red, sw = Black, gnge = Green/yellow, hbl = Light blue, vi = Purple


Industrial cables

Illustration	Description
<p>H 07 RN-F Heavy rubber sheathed cable</p> <p>Illustration shows the 5-core cable</p> 	<p>Conductor: Fine-wire copper cable with rubber insulation, individual wires tin-plated or bare, stranded cores.</p> <p>Insulation / Sheath: Rubber compound as per VDE 0282.</p> <p>Special characteristics: Nominal voltage U_0/U: 300 V/500 V. For connection of commercial tools, equipment and machinery. The cables are suitable for fixed installation e.g. on construction sites.</p>



Type Description	Number of cores x nominal cross section mm ²	Core colors ¹⁾	Color of sheath	Packaging unit m	Part number
H 07 RN-F	3 x 1.5	gnge, br, hbl	Black	50	6 259 002 305
	3 x 2.5	gnge, br, hbl	Black	50	6 259 002 306
	4 x 1.5	gnge, sw, hbl, br	Black	50	6 259 002 405
	4 x 2.5	gnge, sw, hbl, br	Black	50	6 259 002 406
	5 x 2.5	gnge, sw, hbl, br, gr	Black	50	6 259 002 506



¹⁾ Colors: ge = Yellow, bl = Blue, ws = White, gn = Green, br = Brown, rt = Red, sw = Black, gnge = Green/yellow, hbl = Light blue, vi = Purple, gr = grey

Illustration	Description
<p>H 01 N2-D Single-core cable</p> 	<p>Conductor: Ultra-fine-wire copper cable, bare.</p> <p>Insulation / Sheath: Sheath oil-resistant and not-flammable.</p> <p>Special characteristics: Nominal voltage: 200 V. Can be used for welding equipment in industry, e.g. automotive engineering, and for commercial electrodes, e.g. in workshops or on construction sites.</p>

Type Description	Nominal cross section mm ²	Color of sheath	Packaging unit m	Part number
H 01 N2-D	16	Black	50	6 168 910 161
	25	Black	50	6 168 910 251
	35	Black	25	6 168 910 351
	50	Black	25	6 168 910 501
	70	Black	25	6 168 910 701
	95	Black	25	6 168 910 951

Accessories

Illustration	Description	Part number
<p>Plastic cable drum</p>  <p>Application example</p> 	<p>Reusable, two-piece plastic cable drum:</p> <ul style="list-style-type: none"> ▶ Can be attached to cardboard rings ▶ Quick and easy to fit by hand ▶ Screwed together with 2 thumb screws* <p>* Included in scope of delivery</p>	<p>7 781 999 948</p>

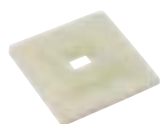
Illustration	Description	Part number
<p>Cable dispenser</p>  <p>Application example</p> 	<p>Cable dispenser for 5 plastic cable drums with mounting elements. Supplied with 5 shafts to allow storage of:</p> <ul style="list-style-type: none"> ▶ Plastic cable drums (shaft Ø 30 mm) ▶ Dispenser rollers* (shaft Ø 10 mm) <p>* Also fits dispenser rollers as delivered up to now</p>	<p>7 781 999 949</p>

Accessories for general use



Cable ties

Dimensions mm	Pack Qty.	Part number black	Part number transparent
390 x 4.8	100	1 987 352 011	7 781 999 596
203 x 4.8	100	1 987 352 010	7 781 999 592
150 x 3.6	100	1 987 352 009	7 781 999 593
102 x 2.5	100	1 987 352 008	7 781 999 594



Mounting plates for cable ties

For securing wiring harness, self-adhesive. Colour white.
Dimensions: 28 x 28 mm

Design	Part number
25 pack qty., screw type	7 781 999 595

Plug-in connectors

13-pole 12 V Plug-in connector ISO 11446

Application

This Plug-in connector is used for the electrical connection between the towing vehicle and the trailer.

Technical data

The Plug-in connector complies with ISO 11446. Tests were carried out in compliance with ISO 4091.

Contact allocation

Plug-in connector N-type according to ISO 1724

Contact no.	Colour	mm ²	Circuit for
1	yellow	1.5	Left-hand direction indicator light
2	blue	1.5	Rear fog light
3 ¹⁾	white	2.5	Earth (for circuit to contact no. 1 bis 8)
4	green	1.5	Right-hand direction indicator light
5	brown	1.5	Right-hand rear position and marker lights, and rear registration-plate illuminating device ²⁾
6	red	1.5	Stop-lights
7	black	1.5	Left-hand rear position and marker lights, and rear registration-plate illuminating device ¹⁾
8	pink	1.5	Reversing light
9	orange	2.5	Power supply (permanent positive)
10	grey	2.5	Power supply (controlled by ignition switch)
11 ¹⁾	white/black	2.5	Earth (for circuit to contact no. 10)
12	–	1.5	Reserved for future allocation
13 ¹⁾	white/red	2.5	Earth (for circuit to contact no. 9)

¹⁾ The three earth cables shall not be connected electrically in the trailer

²⁾ The rear registration-plate illuminating device shall be connected in such that no lamp of the device has a common connection with either contact 5 or 7

7-pole 12 V Plug-in connector ISO 1724/ISO 3732

Application

This Plug-in connector is used for the electrical connection between the towing vehicle and the trailer.

Technical data

The N-type is normed in ISO 1724. The S-type is colour coded in white and corresponds to ISO 3732. The tests were carried out in accordance with ISO 1724 and ISO 3732.

Contact allocation

Plug-in connector N-type according to ISO 1724

Contact no.	Core insulation colour (for information)	mm ²	Circuit for
1 / L	yellow	1.5	Left-hand direction indicator light
2 / 54g	blue	1.5	Rear fog light
3 / 31	white	2.5	Earth
4 / R	green	1.5	Right-hand direction indicator light
5 / 58R	brown	1.5	Right-hand rear position and marker lights, and rear registration-plate illuminating device ¹⁾
6 / 54	red	1.5	Stop-lights
7 / 58L	black	1.5	Left-hand rear position and marker lights, and rear registration-plate illuminating device ¹⁾

Plug-in connector S-type according to ISO 3732

1	yellow	1.5	Reversing light ²⁾
2		1.5	Reserved for future allocation
3	white	2.5	Earth (for circuit to contact no. 4)
4	green	2.5	Power supply (permanent positive)
5	brown	1.5	No allocation
6	red	2.5	Power supply (controlled by ignition switch)
7	black	2.5	Earth (for circuit to contact no. 6)

¹⁾ The rear registration-plate illuminating device shall be connected in such a manner that no lamp of such a device has a common connection with both contacts 2 and 6

²⁾ The earth for the circuit of this contact will normally be by contact no. 3 of the 12N connector according to ISO 1724



Plugs, sockets

Plugs and sockets for trailer connection (12 V program)

Figure	Designation	Description	Part number
	Trailer plug, 3-pole	Plastic, 12 V, for single-axle towing, switch-off contact	0 352 130 001
	Socket (trailer), 3-pole	Plastic, 12 V, for single-axle towing, switch-off contact	0 352 030 002
	Trailer plug, 4-pole	Plastic, 12 V, for narrow-track towing vehicle, commercial vehicles, as additional plug-connection cable	0 352 140 001
	Socket (trailer), 4-pole	Plastic, 12 V, for narrow-track towing vehicle, commercial vehicles, as additional plug-connection cable	0 352 040 002
	Trailer plug, 7-pole	Metal, 12 V, for cars, connecting to ISO 1724, N-version	0 352 170 004
	Socket (trailer), 7-pole	Metal, 12 V, for cars, connecting to ISO 1724, N-version	0 352 070 011
	Socket (trailer), 7-pole	Switch-off contact, plastic, 12 V, for cars, with switch-off contact for fog warning lamp of towing vehicle when trailer plug is inserted	0 986 352 028
	Socket (trailer), 7-pole	Switch-off contact, plastic, 12 V, for cars, with switch-off contact for fog warning lamp of towing vehicle when trailer plug is inserted, with sheet-metal panel, sealing ring	0 986 352 820
	Trailer plug, 7-pole	For cars, connecting to ISO 1724, N-version	0 352 170 003
	Trailer plug, 7-pole	Folding plug, 12 V, for cars, connecting to ISO 1724, N-version	0 986 352 816

Plugs and sockets for trailer connection (12 V program)

Figure	Designation	Description	Part number
	Socket (trailer), 7-pole	Switch-off contact, plastic, 12 V, for cars, with switch-off contact for fog warning lamp of towing vehicle when trailer plug is inserted	0 986 352 029
	Socket (trailer), 7-pole	Switch-off contact, plastic, 12 V, for cars, with switch-off contact for fog warning lamp of towing vehicle when trailer plug is inserted, with sheet-metal panel and seal	0 986 352 819
	Socket (trailer), 7-pole	Switch-off contact, plastic, 12 V, for cars, with switch-off contact for fog warning lamp of towing vehicle when trailer plug is inserted	0 986 352 817
	Trailer plug, 13-pole	Plastic, 12 V, for cars, standard DIN/ISO 11446	0 986 352 814
	Socket (trailer), 13-pole	Plastic, 12 V, for cars, standard DIN/ISO 11446	0 986 352 026
	Short adapter	Plastic, 12 V, for connecting 7-pole and 13-pole, without cable	0 986 352 813
	Parking socket, 13-pole	Plastic, 12 V, to protect against dust and splashwater, for unplugged trailer plugs	0 986 352 030



Plugs, sockets (continued)

Figure	Designation	Description	Part number
	Surface-mounted standard socket	with blade terminal 6,3 mm, fitting for standard and universal sockets, max. 16 A/12–24 V, TÜV tested and controlled, with contacts as per ISO 4165	0 986 352 006
	Surface-mounted standard socket, housing 2-pole	12 A at 6–24 V, Housing (aluminum), socket (plastic), 2 holes, Ø 4,5mm, hole spacing 46 mm, screw terminal for wire and ferrules	0 352 221 001
	Panel-mounted standard socket, 2-pole	12 A at 6–24 V, housing (aluminum), socket (plastic), with hexagonal nut M18x1, SW 22, 1 screw terminal (+)	0 352 222 008
	Panel-mounted standard socket, 2-pole	12 A at 6–24 V, housing (aluminum), socket (plastic), hinged cover olive green, with hexagonal nut M18x1, SW 22, 1 screw terminal (+)	0 352 222 009
	Panel-mounted standard socket to DIN	With 6.3mm flat connection, secured with hexagon nut, suitable for standard and universal plugs, max. 16 A/1–24 V, TÜV tested and monitored, complies with DIN ISO 4165, installation aperture 18 mm	0 986 352 007
	Panel-mounted standard socket to DIN	Water tight, with screw-on cover, 12–24 V, water tight seal, IP 67, 16 A, contacts comply with DIN ISO 4165, pre-assembled with 300mm cable, secured with hexagon nut, installation aperture: 18.4 mm, temperature resistant: –40 °C to 105 °C	0 986 352 823
	Panel-mounted standard socket to DIN	With cover, with 6.3 mm flat connection, cover protects against dust and splashed water, secured with hexagon nut, suitable for standard and universal plugs, max. 16 A/1–24 V, TÜV tested and monitored, complies with DIN ISO 4165, installation aperture 18 mm	0 986 352 804
	Hinged cover	For panel-mounted standard socket, olive green	1 350 500 012
	Hinged cover	For panel-mounted standard socket, black (Lupolen)	1 350 500 001



Figure	Designation	Description	Part number
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Universal plugs for standard socket and cigar lighter socket

	Standard plug	For standard socket, 10 A at 6–24 V, black housing, straight, 2 screw terminals	0 986 352 000
	Standard plug	for standard socket and cigar lighter socket, 8 A at 6–24 V, black housing, straight, 2 screw terminals, with adapter	0 986 352 015
	Standard plug	for standard socket and cigar lighter socket, 8 A at 6–24 V, black housing, straight, 2 screw terminals, with adapter, fuse protection up to 8 A with ceramic or glass fuse	0 986 352 016
	Standard plug	as 0 986 352 016, with green LED function display	0 986 352 812
	Universal plug	for standard socket and cigar lighter socket, 8 A at 6–24 V, black housing, offset, 2 screw terminals with adapter, fuse protection up to 7.5 A, with green LED function display, Lockable adapter	0 986 352 809
	Universal plug	for standard socket and cigar lighter socket, 8 A at 6–24 V, black housing, offset, 2 screw terminals, with adapter, fuse protection up to 8 A, the front and rear of the plug housing can be rotated with respect to each other while at the same time pivoting through 0–70°	0 986 352 818

Extension cable for standard socket and cigar lighter socket

	Extension cable	8 A at 12–24 V, flat cable (2x0.75 mm ²), with safety universal plug (fuse 8 A integrated) and break resistant connection for standard plugs to ISO 4165, length 4 m	0 986 352 825
	Extension cable	8 A at 12–24 V, spiral cable (2x0.75 mm ²) with safety universal plug (fuse 8 A integrated) and connection (inner Ø 21 mm), length 0.6 to 3.0 m	0 986 352 826

Plugs, sockets (continued)

Figure	Designation	Description	Part number
Socket outlet and plug, 2-pole (DIN/ISO 14690)			
	Integral socket, 2-pole	16 A at 6–42 V, housing made of aluminum, captive screw cover with gasket, screw terminals for cable lug M3, 3 holes, Ø 5.5 mm, hole circle Ø 49 mm	0 352 220 001
	Plug	16 A at 6–42 V, Housing made of aluminum, including captive union nut, strain relief and predictive cable sleeve for cable Ø 6–12 mm, screw terminals for wire end ferrules up to Ø 3 mm, with prediction cap	0 352 320 001
Special accessories			
	Adapter cable	8 A to 12–24 V, standard plug according to ISO 4165 and connection (inner Ø 21 mm), length: 0.25 m	0 986 352 824
	Adapter for universal plug	To adapt universal plugs to cigar lighter socket	1 987 352 126
	AC mains socket	With screw thread, for operation of additional equipment in cars, boats and caravans, 20 A load capacity with cable cross-section 2.5 mm ² , 2,15 A load capacity with cable cross-section 1.5 mm ² , internal diameter: 22 mm, installation aperture: 27.8 mm	0 986 352 100
	Coupling	For setting up individual extensions to supply power to electrical equipment and lights, max. 16 A /12–24 V, with contacts complying with DIN ISO 4165	0 986 352 128
	Battery monitor	Protects the battery against total discharge by disconnecting loads in good time, e.g. cool boxes, seat heating, fans and other mobile 12V devices. Automatic reconnection when normal voltage conditions are restored. Suitable for cigarette lighter and standard sockets, with LED function indicator and short circuit protection, 1 m cable with coupling (internal Ø 21 mm), angular design allows adjustment for specific vehicle configuration.	0 986 352 127

Car fuses

Figure	Version	Rated current A	Colour	Qty. per bulk pack	Dimensions mm	Part number
	Torpedo fuses (6 x 25 mm), as per DIN 72581/1	5	yellow	100		1 904 520 015
		8	white	100		1 904 520 016
		16	red	100		1 904 520 018
		25	blue	100		1 904 520 017
	Fuse strips for diesel vehicles as per DIN 72581/2	25	grey	5		1 351 017 010
		30	grey	50		1 191 017 004
		50	grey	25		1 191 017 005
		80	grey	50		1 191 017 003
		100	grey	10		1 191 017 006
	Glas fuses	2	clear	25	5 x 20	1 904 521 441
		3,15	clear	25	5 x 20	1 987 529 011
		5	clear	25	6,35 x 32	1 987 529 901
		6,3	clear	25	6,35 x 32	1 904 522 750
		10	clear	25	6,35 x 32	1 987 529 902
		15	clear	25	6,35 x 32	1 987 529 903
		20	clear	25	6,35 x 32	1 987 529 904
		25	clear	25	6,35 x 32	1 987 529 905
	Screw locking element Midi (small) , as per ISO 8820-5 For BMW, VAG, FORD, Daimler, Renault, Chrysler, Hyundai, KIA, Porsche High current fuse for agricultural machinery manufacturers etc. Screw in fuse with 32 V rated voltage for protection of high current wiring. Transparent cover for easy identification of blown fuses. Fuses are installed between the battery and the starter or alternator, for example.	30	orange	25		1 987 531 018
		40	green	25		1 987 531 017
		50	red	25		1 987 531 016
		60	yellow	25		1 987 531 014
		70	brown	25		1 987 531 013
		80	white	25		1 987 531 012
		100	blue	25		1 987 531 011
		125	pink	25		1 987 531 010
		200	violet	25		1 987 531 008
	Screw locking element Mega , as per ISO 8820-5 For BMW, VAG, FORD, Daimler, Renault, Chrysler, Hyundai, KIA, Porsche Screw in fuses with 32 V rated voltage for protection of high current wiring. Transparent cover for easy identification of blown fuses. Fuses are installed between the battery and the starter or alternator, for example.	100	yellow	10		1 987 531 000
		125	green	10		1 987 531 001
		150	orange	10		1 987 531 002
		175	white	10		1 987 531 003
		200	blue	10		1 987 531 004
		225	brown	10		1 987 531 005
		250	pink	10		1 987 531 006
		300	grey	10		1 987 531 007




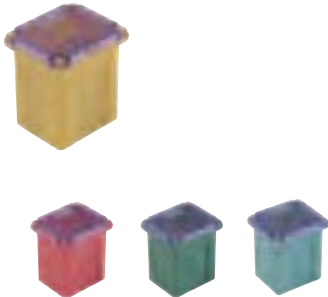
Car fuses (continued)

i	Figure	Version	Rated current A/V	Color	Qty. per bulk pack	Part number
		<p>Fuses Low-Profile Mini Low-profile mini fuses provide similar performance features as standard mini fuses. Designed for open terminals and forked contacts, eliminating the need for additional contact bushing. The low overall height also provides additional weight and material savings. Used in Japanese vehicles.</p>	<p>2/58 3/58 4/58 5/58 7,5/58 10/58 15/58 20/58 25/58 30/58</p>	<p>grey violet pink light brown brown red blue yellow white green</p>	<p>10 10 10 10 10 10 10 10 10 10</p>	<p>1 987 529 041 1 987 529 042 1 987 529 043 1 987 529 044 1 987 529 045 1 987 529 046 1 987 529 047 1 987 529 048 1 987 529 049 1 987 529 077</p>
		<p>Mini flat connection fuses, as per DIN 72581-3, ISO 8820-2 Rapidly becoming the new standard for circuit protection in vehicles. Their compact size enables more circuits to be protected with less space required. Transparent housing for easy identification of blown fuses. Excellent reliability.</p>	<p>2 3 4 5 7,5 10 15 20 25 30</p>	<p>grey violet pink beige brown red blue yellow neutral green</p>	<p>50 50 50 50 50 50 50 50 50 50</p>	<p>1 987 529 025 1 987 529 026 1 987 529 027 1 987 529 028 1 987 529 029 1 987 529 030 1 987 529 031 1 987 529 032 1 987 529 033 1 987 529 034</p>
		<p>Standard flat connection fuses, as per DIN 72581-3, ISO 8820-2 These fuses have become the standard circuit protection for domestic and international passenger cars and trucks. They are easy to identify and replace and can be specified for a wide range of applications in the low voltage range.</p>	<p>3 4 5 7,5 10 15 20 25 30 40</p>	<p>violet pink beige brown red blue yellow neutral green orange</p>	<p>100 100 100 100 100 100 100 100 100 100</p>	<p>1 904 529 901 1 904 529 902 1 904 529 903 1 904 529 904 1 904 529 905 1 904 529 906 1 904 529 907 1 904 529 908 1 904 529 909 1 987 529 036</p>
		<p>Flat connection fuses, as per DIN 72581-3, ISO 8820-2 Standard fuse in maxi design. Transparent housing for easy identification of blown fuses.</p>	<p>20 30 40 50 60 70 80 100</p>	<p>yellow green orange red blue brown white violet</p>	<p>5 5 5 5 5 5 5 5</p>	<p>1 987 529 018 1 987 529 019 1 987 529 020 1 987 529 021 1 987 529 022 1 987 529 023 1 987 529 039 1 987 529 040</p>
		<p>Puller for blade-type fuse links</p>			<p>5</p>	<p>1 987 531 026</p>



Figure	Version	Rated current A/V	Color	Qty. per bulk pack	Part number	
	Blister (Mini)	1 x 5		10	1 987 529 080	
	Blister (Norm)	1 x 7,5		10	1 987 529 081	
	Blister (Low profile)	1 x 25			10	1 987 529 082
		1 x 30				
		2 x 10				
		2 x 15				
	2 x 20					
	Blister (Mini)	1 x 5		10	1 987 529 038	
	Blister (Norm)	1 x 7,5		10	1 987 529 037	
	Blister (Low profile)	1 x 25			10	1 987 529 078
		1 x 30				
		2 x 10				
		2 x 15				
	2 x 20					
	AS series male fuses Delay fuses with highly temperature resistant housing. Used in Japanese, European, American, and Korean vehicles.	20/32	blue	5	1 987 529 062	
		30/32	pink	5	1 987 529 063	
		40/32	green	5	1 987 529 064	
		50/32	red	5	1 987 529 065	
		60/32	yellow	5	1 987 529 066	
	B series male fuses Delay fuses with highly temperature resistant housing. Used in Japanese, European, American, and Korean vehicles.	30/32	pink	5	1 987 529 068	
		40/32	green	5	1 987 529 069	
		50/32	red	5	1 987 529 070	
		60/32	yellow	5	1 987 529 071	
		70/32	brown	5	1 987 529 072	
		80/32	black	5	1 987 529 073	
		100/32	blue	5	1 987 529 074	
		120/32	white	5	1 987 529 075	
		140/32	dark-red	5	1 987 529 076	



Car fuses (continued)

i	Figure	Version	Rated current A/V	Color	Qty. per bulk pack	Part number
		<p>J series fuses With longer time delay, lower voltage drop and better resistance to make currents, they are particularly well suited for circuits with high currents. Used in Japanese, European, American, and Korean vehicles.</p>	20/32 25/32 30/32 40/32 50/32 60/32	light blue white pink green red yellow	5 5 5 5 5 5	1 987 529 056 1 987 529 057 1 987 529 058 1 987 529 059 1 987 529 060 1 987 529 061
		<p>Low profile J series fuses Low profile fuses offer similar performance features to the standard J fuses. The low total height allows the use of shorter blade terminals and saves on space and weight. Used in Japanese, European, American, and Korean vehicles.</p>	20/58 25/58 30/58 40/58 50/58 60/58	light blue white pink green red yellow	5 5 5 5 5 5	1 987 529 050 1 987 529 051 1 987 529 052 1 987 529 053 1 987 529 054 1 987 529 055

Setbox
Flat connection fuses (251 pcs.), as per DIN 72581-3

	Description	Nominal voltage A	Qty.	Part number
	Mini flat connection fuses,	3 5 7,5 10 15 20 25 30	5 15 15 30 30 30 15 15	1 987 529 079
	Standard flat connection fuses,	3 5 7,5 10 15 20 25 30	5 10 10 15 15 10 10	
	Maxi flat connection fuses,	30 40 50 60	2 2 1 1	


Fuse holder and accessories

Figure	Description	Connection	Rated current	Included fuses Part number	Part number
	Double, for cylindrical fuses Fastening: 2 holes, Ø 5.3 mm, hole spacing 55 mm.	Screw terminal	1 x 25 A	1 351 017 010	0 354 120 003
			1 x 50 A	1 191 017 005	
			2 x 50 A	1 191 017 005	0 354 120 004
			2 x 80 A	1 191 017 003	0 354 120 005
					0 354 120 006
	For 3 flat fuses. Fastening: 2 holes, Ø 6.4 mm, hole spacing 112 mm.	Screw terminal	1 x 50 A	1 191 017 005	0 354 130 003
			1 x 80 A	1 191 017 003	
			1 x 100 A	1 191 017 006	






Spare cover for fuse boxes

Part number
Fuse box
0 354 120 003
0 354 120 004
0 354 120 005
0 354 130 003

Figure	Description	Conductor cross section mm ²	Color	Material / finish *)	Qty. per pack	Part number
	Fuse holder for connection fuses	0,5–1,5	blue	CuZn/brass / bright	6	8 781 324 028

*) CuZn = Brassing

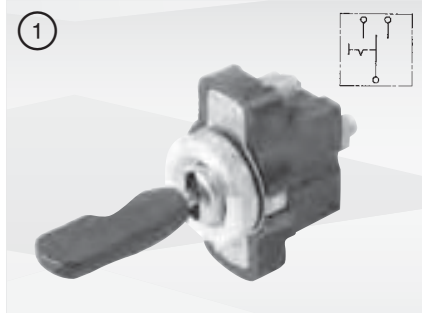
Battery cable terminals with zinc plated surface for securely fastening the starter cables to the starter battery

Figure	Conductor cross section mm ²	Pole	Part number
① 	16.0–70.0	+	1 901 315 100 ¹⁾
		-	1 901 315 102 ¹⁾
		- +	1 901 315 120 ¹⁾
② 	16.0–70.0	+	1 901 315 104 ¹⁾
		-	1 901 315 105 ¹⁾
③ 	70.0–120.0	+	1 901 315 101 ¹⁾
		-	1 901 315 103 ¹⁾

¹⁾ DIN 72331

Universal switches

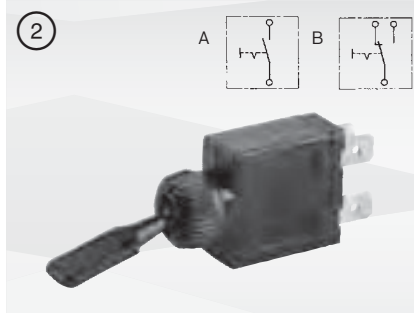
For wipers, signal equipment, fog lamps, power-window drives, etc.



1 **Lever switch**
Change-over switch (two-way contact with neutral position)

Switching capacity: 48 W/24 V.
Fastening: with knurled nut M 12 x 1.
Fitting: Ø 12.5 mm. For wall thicknesses up to 3 mm.
Connection: screw terminals.

0 986 340 100



2 **Lever switch**
On-off switch (NO contact)

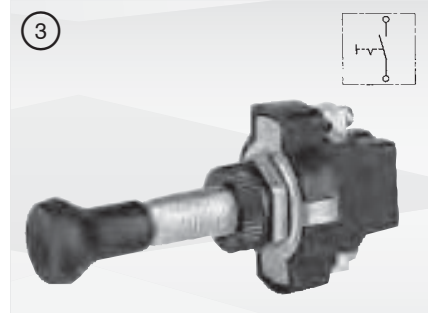
Switching capacity: 75 W/24 V.
Fastening: with round nut M 12 x 1.
Fitting: Ø 12 mm. For wall thicknesses up to 6 mm. Connection: blade terminals.

Diagram A **0 341 500 801**

as ..801, but

change-over switch (change-over contact)

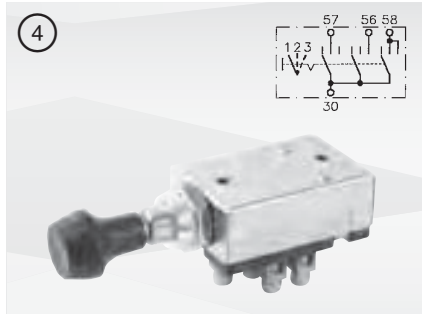
Diagram B **0 341 500 803**



3 **Push-pull switch**
On-off switch (NO contact)

Knob, black.
Switching capacity: 60 W/24 V.
Fastening: with knurled nut M 8 x 0.75.
Fitting: Ø 8.5 mm. For wall thicknesses up to 5 mm.
Connection: screw terminals.

0 986 340 001



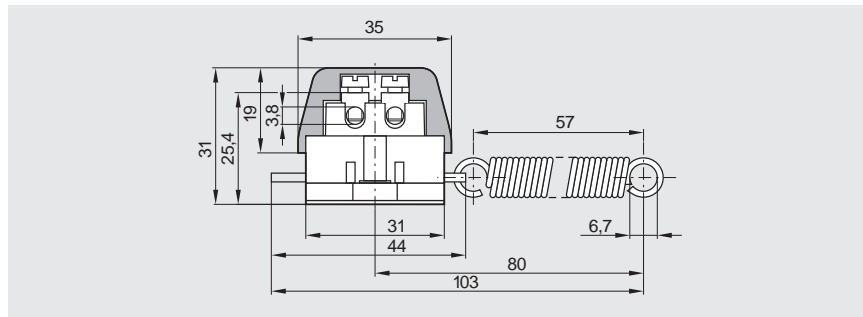
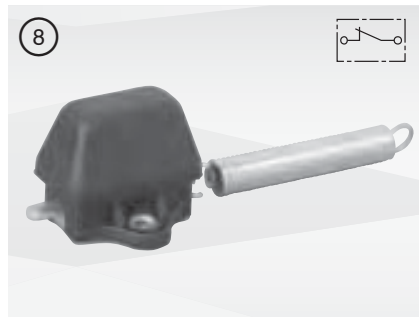
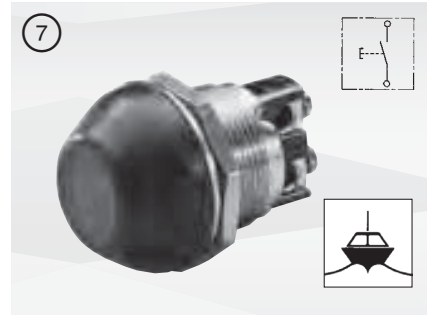
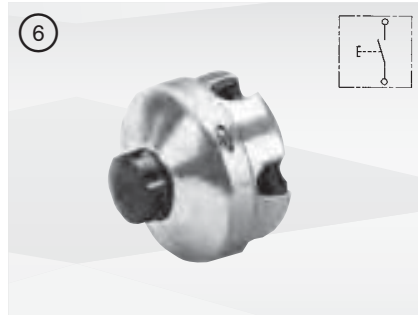
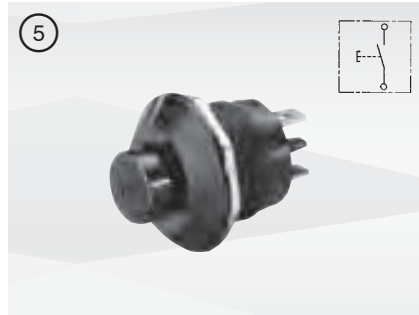
4 **Push-pull switch**
multi-position switch

Switching capacity: 100 W 24 V.
Switch positions: 1 Off, 2 Blower stage I, 3 Blower Stage II.
Fastening: with round nut M 10 x 1.
Fitting: Ø 10.5 mm. For wall thicknesses up to 2 mm.
Connection: screw terminals.

0 986 340 120

Degrees of protection (complies with IEC 60529 and DIN 40050, page 9)

Designation	Protection against contact	Protection against foreign bodies	Protection against water
IP 40	with tools etc. thickness Ø > 1 mm	Ø > 1 mm	no protection
IP 54	complete	dust-protected	Splashed water, from all directions
IP 64	complete	dust-protected	Splashed water, from all directions



5 Momentary push-button NO contact

Switching capacity: 30 A/6 V, 20 A/12 V,
15 A/24 V. (On-time 10 s each)
Fastening: with octagon nut.
Fitting: \varnothing 22.5 mm. For wall thicknesses
up to 6 mm.
Connection: screw terminals.

0 343 003 001

as ..001, but

Connection: blade terminals.

0 343 003 004

as ..001, but

Connection: blade terminals. Push-button and
cover grey.

0 343 003 007

as ..001, but

Connection: blade terminals. Push-button ivory
colored, polished aluminum.

0 343 003 005

6 Momentary push-button NO contact

Push-button black, housing polished alu-
minum.
Switching capacity: 15 A/12 V, 7.5 A/24 V.
(On-time 10 s each)
Fastening: 2 holes with \varnothing 3.7 mm.
Hole spacing 17 mm, external \varnothing 26 mm.
Connection: 1 screw terminal.

0 343 007 001

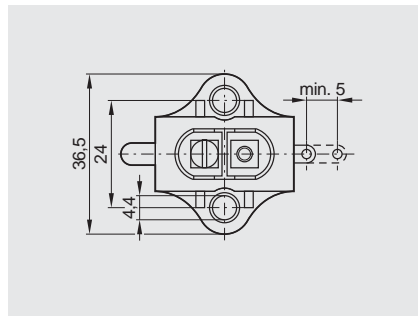
as ..007 001, but

Fastening: 2 holes with \varnothing 4.2 mm.

Hole spacing 23 mm, external \varnothing 35 mm.

Connection: 2 screw terminals.

0 343 013 001



7 Momentary push-button NO contact

Protective rubber cap on knob side: Metal parts
made of brass. Seawater-resistant. Degree of
protection IP 54.

Switching capacity:

400 W/24 V (on-time 1 s).

250 W/24 V (on-time 2 min).

Fastening: with hexagon nut.

Fitting: \varnothing 22.5 mm. For wall thicknesses
up to 9 mm.

Connection: screw terminals.

0 340 000 001

8 Mechanical brake-light switch - Push-pull switch

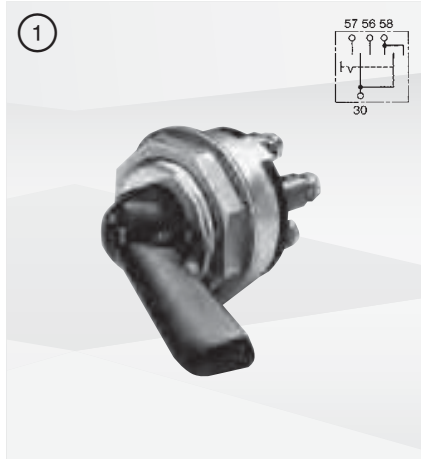
Switched-on in neutral position,
2 screw-type M 4 terminals,
permissible loading: 7 A/12 V

4 x 21 W/12 V

permissible ambient temperature: $-40...+120^{\circ}\text{C}$

0 986 340 010

Light switches



1 Rotary switch. Two-way contact with neutral position

For side-marker lamps and upper/lower beam. With black switch lever.
 Switching capacity: 10 W/12 V (terminal 57)
 90 W/12 V (terminals 56, 58).
 Fastening: with octagon nut M 26 x 1.
 Fitting: Ø 26.5 mm. For wall thicknesses up to 2 mm.
 Connection: screw terminals.

0 341 100 001

Spare parts

Fastening nut **1 343 300 002**



2 Push-pull switch On-off switch (NO contact)

For fog warning lamp. With safety knob, black, made of soft PVC, and indicator lamp. Green lens fitted, red and yellow lenses enclosed.
 Switching capacity: 100 W/24 V.
 Fastening: with knurled nut M 12 x 1.
 Fitting: Ø 12.5 mm. For wall thicknesses up to 6 mm.
 Connection: blade or screw terminals.
 12 V bulb fitted.

0 340 006 012

Bulb (shape W)

12 V 1.2 W **1 987 302 208**
 24 V 1.2 W **1 987 302 504**



3 Foot-operated switch Change-over contact, with detent

For upper and lower beam. Switches with-out break. Corrosion-protected finish.
 Switching capacity: 120 W/24 V. For cables up to 4 mm² with or without cable lug.
 Fastening: from above with 2 oval-head screws, hole Ø 5.3 mm, with hole spacing 38 mm.
 Connection: screw terminals.

0 340 603 001

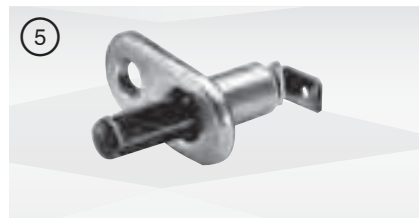
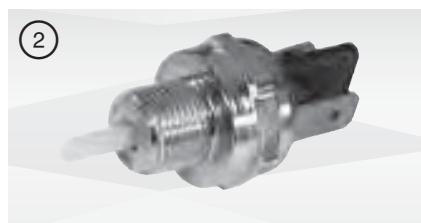
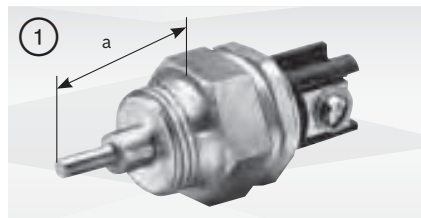


4 Foot-operated switch Change-over contact, with detent

For upper and lower beam. Switches with-out break. Corrosion-protected finish.
 Switching capacity: 120 W/24 V. For cables up to 6 mm² without cable lug.
 Fastening: from below with 4 screws, hole Ø 6.4 mm, with hole spacing 44.5 and 67 mm.
 Fitting: Ø 23 mm.
 Connection: screw terminals, accessible from below.

0 340 604 001

Hazard-warning switches, alarm switch, backup lamp switches, door-contact switch



Backup lamp switches

1 Plunger switch/NO contact
For screwing into gearbox cover.
Contact travel approx. 6 mm. For switching on the backup lamp when reverse gear is engaged.
Switching capacity: 60 W/24 V.
Fastening: screw thread M 18 x 1.5.
Connection: screw terminals.
a = 24 mm

0 343 102 015

2 Plunger switch/NO contact
For screwing into gearbox cover.
Contact travel approx. 2.2 mm. For switching on the backup lamp when reverse gear is engaged.
Switching capacity: 5 W/12 V.
Fastening: screw thread M 12 x 1.
Connection: 2 blade terminals.

0 343 102 008

as ..008, but
Connection: 1 blade terminal, ground return through switch housing.

0 343 102 010

3 Plunger switch/NO contact
For screwing into gearbox cover.
Rated voltage: 12 V/24 V DC.
Perm. load: 2 x 21 W.
Insulation strength: 500 V ~ or 700 V=(2 sec).
Electr. connection: blade terminal to EN ISO 8092-3 1.5x0.8.
Operating temperature: -30 °C to +100 °C.
Contact: 1.5 +1/-0.5 mm.
Actuation distance: 6.1 ± 0.2 mm.
Actuation force after contact min. 2 N /max. 5 N, to end point 8 N +/-25 %.
Max. tightening torque 30 Nm.
Contact compartment oil-tight to 1 bar.
Oil-resistant to transmission fluid and engine oil.
Steel housing, galvanized and with thick film passivation (CrVI-free).

0 343 102 030

4 Plunger switch/NO contact
For screwing into gearbox cover.
Rated voltage: 12 V/24 V DC.
Perm. load: 2 x 21 W.
Insulation strength: 500 V ~ or 700 V=(2 sec).
Electr. connection: blade terminal to EN ISO 8092-3 2.8x0.8 Ms, silver-plated.
Operating temperature: -30 °C to +100 °C.
Contact: 1.5 +1/-0.5 mm.
Actuation distance: 6.1 ± 0.2 mm.
Actuation force after contact min. 2 N /max. 5 N, to end point 8 N +/-25 %.
Max. tightening torque 30 Nm.
Steel housing, galvanized and with thick film passivation (CrVI-free).

0 343 102 031

Door-contact switch

5 Plunger switch NC contact
For switching interior lighting on and off.
Switching capacity: 12 W/24 V.
Fastening: screw Ø 4 mm.
Connection: 1-pole blade terminal.

0 343 107 002

Hazard-warning switches, alarm switch, backup lamp switches, door-contact switch



Warning light switch

Selector switch

For electronic hazard warning light flasher

With indicator lamp and installed 12 V bulb.

Mounting: With knurled nut.

Installation dia. 30 mm. For wall thicknesses up to 8 mm.

Connection: Blade terminal.

Pushbutton with symbol:

1	Washer system	0 340 302 102
2	Gear change	0 340 302 103
3	Rotating beacon	0 340 302 104
4	High-beam headlights	0 340 302 105
5	Light	0 340 302 106
6	Rotating beacon	0 340 302 107
7	Neutral	0 340 302 108
8	4WD	0 340 302 109
9	Stop	0 340 302 110
10	Warning light	0 340 302 111
11	Raising & lowering	0 340 302 112
12	Horn	0 340 302 113
13	Start	0 340 302 114
14	Raising & lowering	0 340 302 115



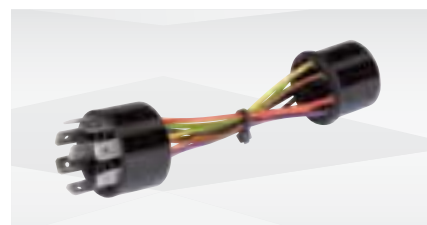
Accessories (order separately)

Plug housing **0 340 302 100**



Accessories (order separately)

Bulb (W shape) 12 V 1,2 W **0 340 302 101**

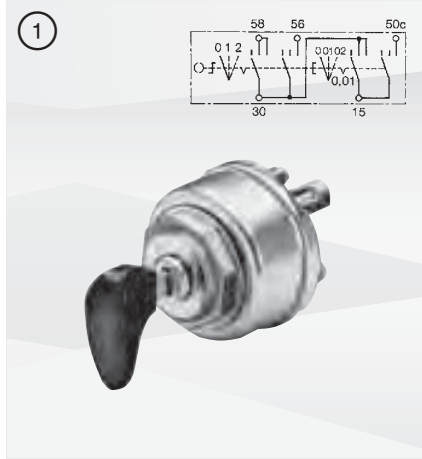


Accessories (order separately)

Adaptor **0 340 302 150**

Headlamp-ignition switches

Up to 24 V. For motor vehicles with spark-ignition or diesel engines (driving switch)



1 Key-operated switch up to 24 V, housing Ø 48 mm

Key can be removed in any position.
 Design: Housing and U-disk galvanized.
 Switching capacity: 100 A/24 V, 2 min (terminal 15).
 Fastening: polished aluminum octagon nut M 26 x 1.
 Fitting: Ø 26.5 mm with cutout 33.5 x 7.5 mm (twist-proof).
 For wall thicknesses up to 2 mm.

Nickel-plated key. Key with grip in plastic jacket. Colour black.
 Additional function: On/off switching of battery relay.
 Switching capacity: 20 W (terminal 50 c), 100 W (terminal 56), 180 W (terminal 58), 250 W (terminal 15).
 Switch positions: 0 Off / 01 Daytime loads / 02 Battery relay energized / 1 Side-marker lamp / 2 Headlamps.

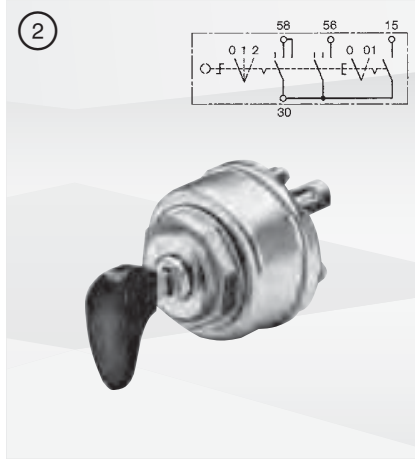
Terminals connected:

key inserted	key removed
0 -	-
01 30-15	-
02 30-15-50c	-
1 30-15, 30-58	30-58
2 30-15, 30-56-58	30-56-58

Connection: screw terminals.
 with 1 key **0 342 307 001**

as ..307 001, but

Design: Housing, octagon nut and U-disk black.
 with 1 key **0 342 307 002**



2 Key-operated switch up to 24 V, housing Ø 48 mm

Key can be removed in any position.
 Switching capacity: 100 A/24 V, 2 min (terminal 15).
 Fastening: polished aluminum octagon nut M 26 x 1.
 Fitting: Ø 26.5 mm with cutout 33.5 x 7.5 mm (twist-proof). For wall thicknesses up to 2 mm.

Zinc-plated steel key. Key grip in black plastic jacket.
 Switching capacity: 250 W (terminal 15), 150 W (terminal 56), 200 W (terminal 58).
 Switch positions: 0 Off / 01 Daytime loads / 1 Side-marker lamp / 2 Headlamps.

Terminals connected:

key inserted	key removed
0 -	-
01 30-15	-
02 30-15-58	30-58
2 30-15-56-58	30-56-58 ¹⁾

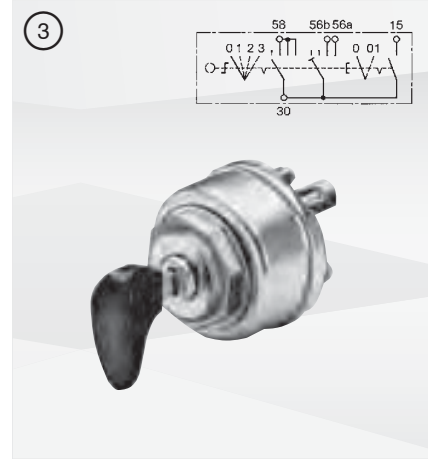
Connection: screw terminals 15, 30; blade terminals 30, 56, 58.
 with 1 key **0 342 106 012**

as ..106 012, but nickel-plated key:

50 W (terminal 15), 100 W (terminal 56), 200 W (terminal 58).
 Connection: screw terminals
 with 1 key **0 342 106 004**

as ..106 012, but nickel-plated key:
 Switching capacity: 50 W (terminal 15), 100 W (terminal 56), 200 W (terminal 58).
 Connection: screw terminals 30, 56, 58; M 4, 15, 30: M 6.
 Terminals protected against contact.

For cables up to 16 mm².
 with 1 key **0 342 106 005**



3 Key-operated switch up to 24 V, housing Ø 48 mm

Key can be removed in any position.
 Switching capacity: 100 A/24 V, 2 min (terminal 15).
 Fastening: polished aluminum octagon nut M 26 x 1.
 Fitting: Ø 26.5 mm with cutout 33.5 x 7.5 mm (twist-proof). For wall thicknesses up to 2 mm.

Nickel-plated key. Key with grip in black plastic jacket.

Switching capacity: 250 W (terminal 15), 100 W (terminal 56a, 56b), 150 W (terminal 58).
 Switch positions: 0 Off / 01 Daytime loads / 1 Side-marker lamp / 2 Low beam / 3 High beam.

Terminals connected:

key inserted	key removed
0 -	-
01 30-15	-
1 30-15-58	30-58
2 30-15-56b-58	30-56b-58 ²⁾
3 30-15-56a-58	30-56a-58 ²⁾

Connection: screw terminals 15, 30; blade terminal 30, 56a, 56b, 58.
 with 1 key **0 342 201 010**

as ..201 010, but nickel-plated key.

Key grip in plastic jacket. Colour black.
 Switching capacity: 100 W (terminals 56a, 56b), 150 W (terminal 58), 250 W (terminal 15).
 with 1 key **0 342 201 009**

Spare parts

Octagon nut	1 343 300 002
Washer	3 340 102 000

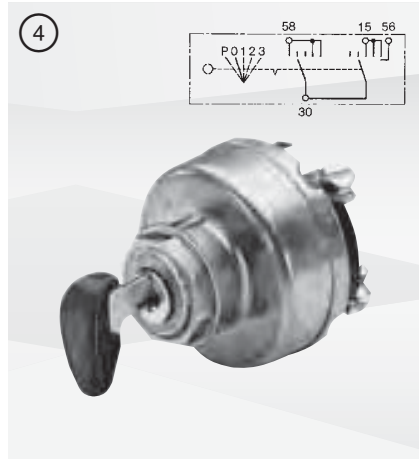
Spare parts

Switch key for 0 342 106 004, ..005	3 341 981 010
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¹⁾ only on 0 342 106 012

²⁾ only on 0 342 201 009

Ignition switches



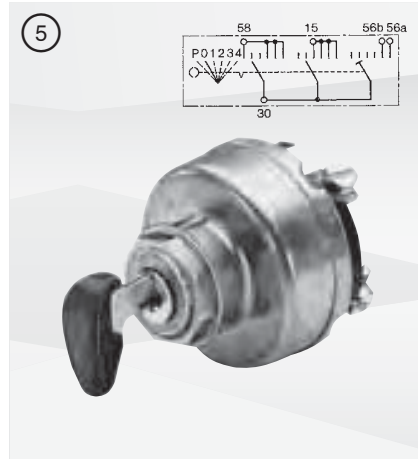
- 4** Key-operated switch up to 24 V, housing Ø 62 mm
Key can be removed only in position 0 or P.
Switching capacity: 100 A/24 V, 2 min (terminal 15).
Fastening: polished aluminum octagon nut M 26 x 1.
Fitting: Ø 26.5 mm with cutout 33.5 x 7.5 mm (twist-proof).
For wall thicknesses up to 2 mm.

Nickel-plated key. Key with grip in plastic jacket. Colour black.
Lock No. E 30.
Switching capacity: 100 W (terminals 56, 58), 150 W (terminal 15).
Switch positions: P Parking lamps / 0 Off / 1 Daytime loads / 2 Side-marker lamp / 3 Headlamps.
Terminals connected:

	key inserted	key removed
P	30-58	30-58
0	-	-
1	30-15	-
2	30-15-58	-
3	30-15-56-58	-

Connection: screw terminals 15, 30, 58; blade terminals 15, 30, 56
with 2 keys **0 342 202 001**

as ..202 001, but key with grip in plastic jacket.
Lock No. U 39.
with 2 keys **0 342 202 002**



- 5** Key-operated switch up to 24 V, housing Ø 62 mm
Key can be removed only in position 0 or P.
Switching capacity: 100 A/24 V, 2 min (terminal 15).
Fastening: polished aluminum octagon nut M 26 x 1.
Fitting: Ø 26.5 mm with cutout 33.5 x 7.5 mm (twist-proof).
For wall thicknesses up to 2 mm.

Nickel-plated key. Key with grip in plastic jacket. Colour black. Lock No. K 30.
Switching capacity: 100 W (terminals 56a, 56b, 58), 150 W (terminal 15).
Switch positions: P Parking lamps / 0 Off / 1 Daytime loads / 2 Side-marker lamp / 3 Headlamps / 4 High beam.
Terminals connected:

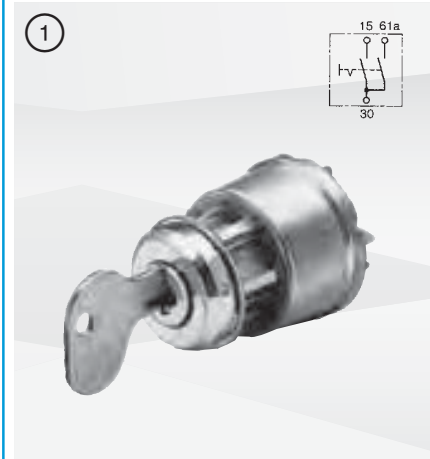
	key inserted	key removed
P	30 - 58	30 - 58
0	-	-
1	30-15	-
2	30-15-58	-
3	30-15-56b-58	-
4	30-15-56a-58	-

Connection: screw terminals 15, 30, 58; blade terminals 15, 30, 56a, 56b.
with 2 keys **0 342 203 001**

Spare parts

Switch key U 39	3 341 980 338
Octagon nut	1 343 300 002

Regarding spare keys for headlamp-ignition switches, please contact your authorized representative (address, see back cover).



- 1** Key-operated switch up to 24 V, with safety lock.
Key can be removed only in "off" position. Lock No. E 1 ... E 50.
Switching capacity: 20 A/24 V, 60 W (terminal 15), 5 W (terminal 61a).
Fastening: with unpolished aluminum round nut M 22 x 1.
Fitting: Ø 22.5 mm, with cutout (twist-proof) For wall thicknesses up to 3 mm.
Connection: blade terminals.
with 2 keys **0 342 006 001**

as ..006 001, but with polished round nut, lock No. E 30.
with 3 keys **0 342 006 003**

as ..006 001, but key with grip in plastic jacket, lock No. K 3.
with 2 keys **0 342 006 007**

as ..006 001, but lock No. E 41.
with 2 keys **0 342 006 009**

Spare parts

Washer	1 330 140 000
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Ignition switches



2 Key-operated switch up to 24 V, with safety lock.

Key can be removed only in "off" position. Lock No. E 1 ... E 50.
 Switching capacity: 20 A/24 V, 60 W (terminal 15), 5 W (terminal 61a).
 Fastening: with unpolished aluminum round nut M 22 x 1.
 Fitting: Ø 22.5 mm, with cutout (twist-proof)
 For wall thicknesses up to 3 mm.
 Connection: blade terminals.

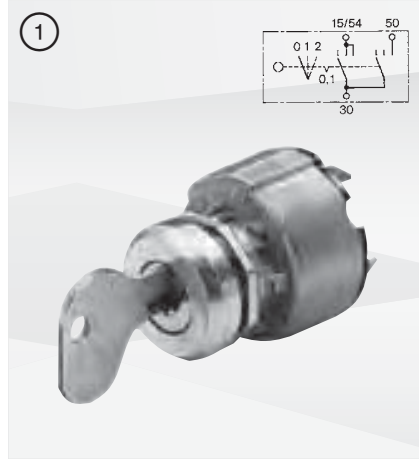
Plastic housing **0 342 006 020**

Spare parts

Switch key **3 341 982 400**

Ignition and starting switches

Up to 24 V



1 Key-operated starting switch with start-repeating block

Key can be removed only in "off" position. Nickel-plated key.
 Key lock No. E 1...E 50.
 Switching capacity: 90 W (terminals 15, 54) 12 A/12 V (terminal 50), 9 A/24 V (terminal 50).
 Fastening: octagon and round nut M 22 x 1.
 Fitting: Ø 22.5 mm (twist-proof). For wall thicknesses up to 9 mm.
 Switch positions: 0 Off, 1 On, 2 Start.
 Connection: blade terminals.

with 2 keys **0 342 311 003**

as ..311 003, but lock No. K 11.
 with 2 keys **0 342 311 004**

as ..311 003, but lock No. E 11.
 without key **0 342 311 006**

as ..311 003, but lock No. E 30.
 with 2 keys **0 342 311 007**

Spare parts

Switch key E 11 **3 341 980 260**

Switch key K 11 **3 341 982 210**

Regarding spare keys for headlamp-ignition switches, please contact your authorized representative (address, see back cover).



2 Key-operated starting switch without start-repeating block

Key can be removed only in "off" position. Key with grip in plastic jacket.
 Key lock E 80.
 Switching capacity: 150 W (terminal 15), 16 A/12 V (terminal 50a), 8 A/24 V (terminal 50a).
 Fastening: octagon and round nut M 22 x 1.
 Fitting: Ø 22.5 mm (twist-proof).
 For wall thicknesses up to 6 mm.
 Switch positions: 0 Off, 1 On, 2 Start.
 Connection: blade terminals.

with 2 keys **0 342 309 008**

Spare parts

Switch key E 80 **3 341 980 379**

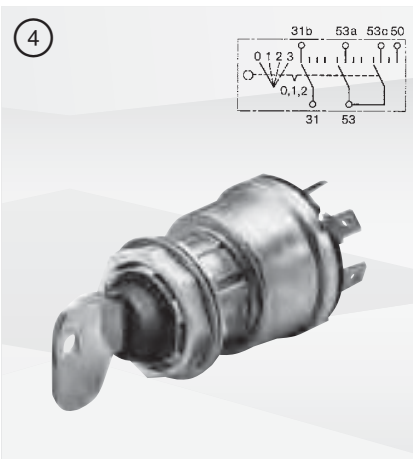
Washer **1 330 140 000**





- 3 Key-operated starting switch without start-repeating block**
 Key can be removed only in "off" position.
 Key with grip in plastic jacket.
 Key lock E 80.
 Switching capacity: 150 W (terminal 15),
 16 A/12 V (terminal 50a),
 8 A/24 V (terminal 50a).
 Fastening: octagon and round nut M 22 x 1.
 Fitting: Ø 22.5 mm (twist-proof).
 For wall thicknesses up to 6 mm.
 Switch positions: 0 Off, 1 On, 2 Start.
 Connection: blade terminals.
- | | |
|-----------------|----------------------|
| Plastic housing | 0 342 309 020 |
|-----------------|----------------------|

Spare parts	
Switch key	3 341 982 400



- 4 Key-operated light/starting switch without start-repeating block**
 Key can be removed only in "off" position. Nickel-plated key. Key lock No. E 1...E 50.
 Switching capacity: 80 W (terminals 53, 53c)
 16 A/12 V (terminal 50),
 8 A/24 V (terminal 50).
 Fastening: two octagon nuts M 26 x 1.
 Fitting: Ø 26.5 mm (twist-proof). For wall thicknesses up to 6 mm.
 Switch positions: 0 Off, 1 Night driving,
 2 Daytime driving, 3 Start.
 Connection: blade terminals.
- | | |
|-------------|----------------------|
| with 2 keys | 0 342 309 007 |
|-------------|----------------------|

Spare parts	
Octagon nut outside	1 343 300 002
Washer outside	3 340 102 000

For all key-operated switches
DIN 40 050
Housing IP 30
Connection IP 00

Accessories (order separately)

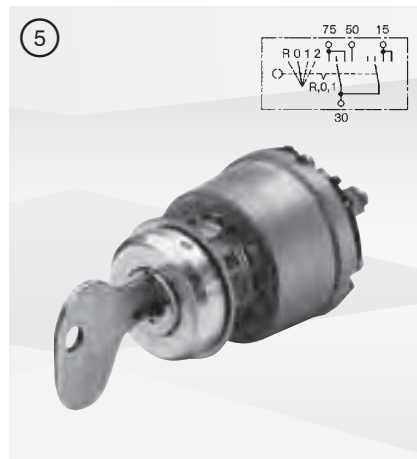
Hinged cover

For key-operated switches, protects against dust and moisture.

Material: Polyamide 6 (cover),

Fastening: with nut of switch.

for thread M 22 x 1	3 347 000 032
for thread M 26 x 1	3 347 000 030



- 5 Key-operated radio/starting switch without start-repeating block**
 Key can be removed only in "off" position. Nickel-plated key. Key lock No. E 1...E 50.
 Switching capacity: 150 W (terminals 15, 75)
 9.5 A/12 V (terminal 50),
 4.5 A/24 V (terminal 50).
 Fastening: octagon and round nut M 22 x 1.
 Fitting: Ø 22.5 mm (twist-proof). For wall thicknesses up to 7 mm.
 Switch positions: R Radio / 0 Off / 1 On / 2 Start
 Connection: screw terminals.
- | | |
|-------------|----------------------|
| with 2 keys | 0 342 309 003 |
|-------------|----------------------|
- as ..309 003, but lock No. E 30.
- | | |
|-------------|----------------------|
| with 2 keys | 0 342 309 006 |
|-------------|----------------------|
- as ..309 003, key with grip in plastic jacket.
 Lock No. U 39.
 Connection: blade terminals.
- | | |
|-------------|----------------------|
| with 2 keys | 0 342 309 009 |
|-------------|----------------------|

as ..309 003, but key with grip in plastic jacket.

Lock No. K 1...50.

Connection: blade terminals.

with 2 keys	0 342 309 011
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as ..309 003, but lock No. K 10

Connection: blade terminals.

with 2 keys	0 342 309 012
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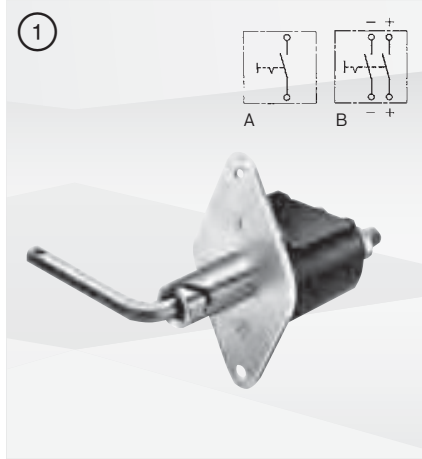
as ..309 005, but lock No. K 30

with 2 keys	0 342 309 010
-------------	----------------------

Spare parts

Switch key K 10	3 341 982 209
Switch key K 30	3 341 982 229
Switch key U 39	3 341 980 338
Washer	1 330 140 000

Battery master switches



1 **Lever switch with switch-on detent**
 Lever: removable.
 Switching capacity: 250 A/24 V, 2500 A (5 s)
 Fitting: Ø 23.5 mm, 2 holes Ø 6.4 mm.
 Hole spacing 100 mm. For wall thicknesses up to 25 mm.
 Degree of protection: on handle side IP 00, on housing side IP 54, terminals IP 00.
 Connection: threaded terminal for cable lug.
 1-pole, diagram A **0 341 002 003**

as ..002 003, but for two-pole cutoff, e.g. of combined 12-V and 24-V battery systems.
 Fitting: Ø 23.5 mm, 2 holes Ø 8.4 mm.
 Hole spacing 120 mm.
 2-pole, diagram B **0 341 003 004**



2 **Lever switch with switch-on detent**
 Galvanized housing. Lever: galvanized and removable.
 Switching capacity: 100 A/24 V, 500 A (5 s)
 Fitting: Ø 23 mm, 2 holes Ø 6.4 mm.
 Hole spacing 38 mm. For wall thicknesses up to 14 mm.
 Degree of protection: terminals IP 00, housing IP 50.
 Connection: threaded terminal for cable lug.
0 341 001 001

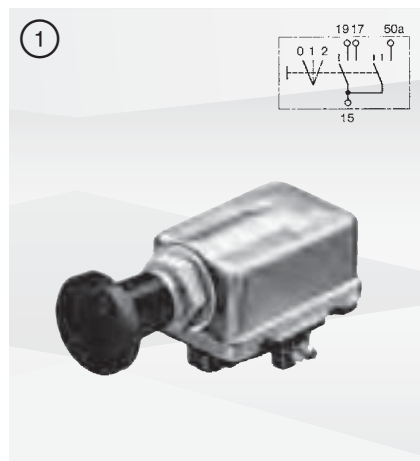


Spare parts	
Protective cap	1 342 026 003
Protective cap without key	1 342 026 004

Degrees of protection (complies with IEC 60529 and DIN 40050, page 9)

Designation	Protection against contact	Protection against foreign bodies	Protection against water
IP 00	No protection	No protection	No protection
IP 30	With tools etc. thickness Ø > 2.5 mm	Ø > 2.5 mm	No protection
IP 50	Complete	Dust-protected	No protection
IP 54	Complete	Dust-protected	Splashwater, from all directions

Glow-plug and starting switches



1 Push-pull starting switch

Galvanized steel housing. With black knob, enclosed loose.
Switching capacity: 50 A/12 V (term. 17, 19) 27 A/24 V (terminals 17, 19), 12 A/12 V (terminal 50a), 9 A/24 V (terminal 50a).
Fastening: with hexagon nut M 10 x 1.
Fitting: Ø 10.5 mm. For wall thicknesses up to 3 mm.
Switch positions: knob must be held in position 1 (preheating) and 2 (start); returns automatically to position 0 (off).
Connection: screw terminals.

0 343 008 006

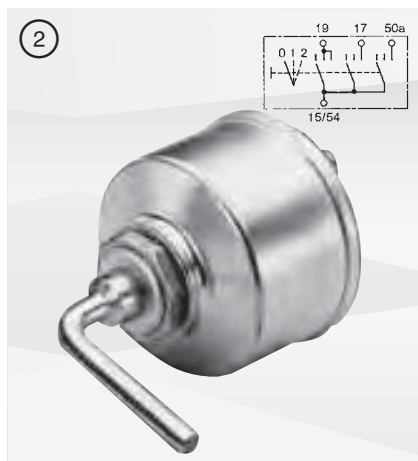
as ..008 006, but

Connection: blade terminals, without knob

0 343 008 009

Spare parts

Knob **3 343 231 070**



2 Rotary starting switch

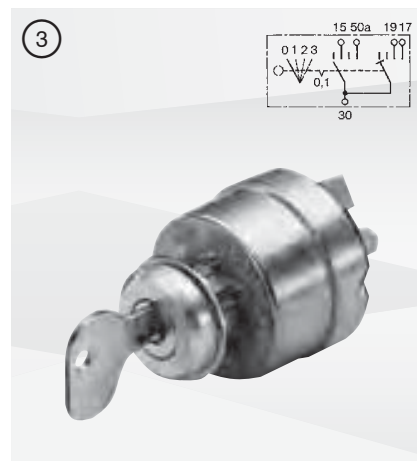
Galvanized steel housing and switch lever.
Switching capacity: 12 A/12 V (terminal 50a) 9 A/24 V (terminal 50a), 100 A/24 V (terminals 17, 19), On-time 2 min.
Fastening: with pickled aluminum octagon nut.
Fitting: Ø 26.5 mm, with cutout (twist-proof). For wall thicknesses up to 2 mm.
Switch positions: switch handle must be held in position 1 (preheating) and 2 (start); it returns automatically to position 0 (off); cannot be removed.
Connection: screw terminals.

0 343 401 001

Spare parts

Octagon nut **1 343 300 002**

Washer **3 340 102 000**



3 Key-operated starting switch

With safety lock.
Key can be removed only in "off" position. Nickel-plated key. Key lock No. E 30.
Switching capacity: 13 A/24 V continuous duty (terminal 15), 33 A/24 V (terminals 17, 19).
On-time 2 min.
150 W/24 V (terminal 15), 18 A/12 V (terminal 50a), 9 A/24 V (terminal 50a).
Fastening: with octagon nut and unpolished aluminum round nut.
Fitting: Ø 22.5 mm, with cutout (twist-proof). For wall thicknesses up to 6 mm.
Switch positions: 0 Off / 1 On / 2 Preheating / 3 Start.
Connection: screw terminals.
with 2 keys **0 342 315 001**

as ..315 001, but

key with grip in plastic jacket, lock No. U 39

with 2 keys **0 342 315 004**

Spare keys

The key formula consists of the key designation (letter) and the key number.

The key designation informs about the type of key or its type of protection. Keys with the same key number, but with different designation, are interchangeable.

Regarding spare keys for headlamp-ignition switches, please contact your authorized representative (address, see back cover).

E key, nickel-plated
K key with grip in plastic jacket
N nickel-silver
U key with grip in plastic jacket

E 11 **3 341 980 260**

E 80 **3 341 980 379**

K 10 **3 341 982 209**

K 30 **3 341 982 229**

K 80 **3 341 982 279**

N 30 **3 341 980 329**

U 39 **3 341 980 338**



Glow-plug and starting switches



4 Key-operated light/starting switch

With safety lock. Key can be removed only in "off" position. Nickel-plated key.
Key lock No. E 51-E 100.
Switching capacity: 13 A/24 V continuous duty (terminal 15), 33 A/24 V (terminals 17, 19).
On-time 2 min.
18 A/12 V (terminal 50a), 9 A/24 V (terminal 58).
Fastening: with octagon nut and unpolished aluminum round nut M 22 x 1.
Fitting: Ø 22.5 mm, with cutout (twist-proof). For wall thicknesses up to 6 mm.
Switch positions: P Parking lamp / 0 Off / 1 On / 2 Preheating / 3 Start.
Connection: for terminals 17, 19, 30, connect both terminals if current above 45 A.
0 342 316 002
with 2 keys

as ..316 002, but
key with grip in plastic jacket and round nut painted black. Lock No. K 80.
0 342 316 003
with 2 keys

Spare parts for ③ ④

Switch keys for lock Nos.	
K 80	3 341 982 279
N 30	3 341 980 329
U 39	3 341 980 338
Washer	1 330 140 000

Regarding spare keys for headlamp-ignition switches, please contact your authorized representative (address, see back cover).

Glow-plug switches



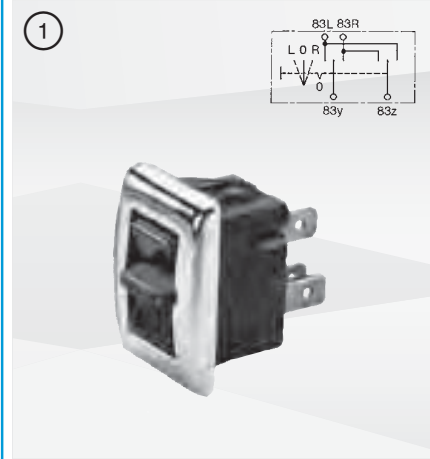
1 Preheat lever switch

Galvanized steel housing. Chrome-plated switch lever, not removable.
Switching capacity: 100 A/12 V (on-time 2 min).
Fastening: flush installation.
Fitting: Ø 22 mm. 2 holes Ø 6.4 mm, hole spacing 38 mm.
Switch positions: 0 Off, 1 Preheating, switch lever must be held in preheating position, returns automatically to position 0 (Off).
Connection: terminal stud (for cables with cable lug).
0 343 405 001

Note:

If this glow-plug switch is used, a special ignition switch, or headlamp-ignition switch, or ignition and starting switch is necessary, see Pages A 98...A 101.

Motor and equipment switches



1 Rocker switch Reversing changeover switch 12 V

With reset, for power-windows, sunroofs etc.
With chrome-plated cover, black switch handle.
Dual changeover switch
72 W/12 V (30 A for on-time 5 sec).
Fastening: with clamping spring, with or without mounting frame.
Connection: blade terminals.

0 343 302 003

Wiper switches

Up to 24 V



1 Rotary switch, wiper pulse generator, soft rubber knob, black

For self-parking wiper motors. For intermittent wiping. Continuously adjustable from 2 to 25 pulses/min.

Pulse length approx. 0.4 s independent of load. Fastening: with round nut M 10 x 1.

Fitting: Ø 10.5 mm. For wall thicknesses up to 9 mm.

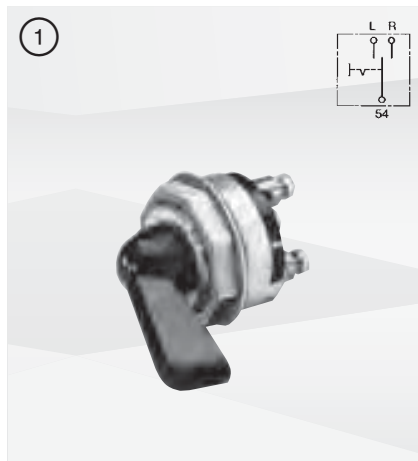
Connection: blade terminals.

6 V/12 V **0 336 920 004**

24 V ¹⁾ **0 336 920 003**

¹⁾ Use a relay for wiper motors with more than 3.2 A current consumption.

Turn-signal switches



1 Rotary, single-circuit switch without indicator lamp

Housing black, switch lever black.

Switching capacity: 45 W/12 V (term. L, R)

Fastening: with polished aluminum octagon nut M 26 x 1.

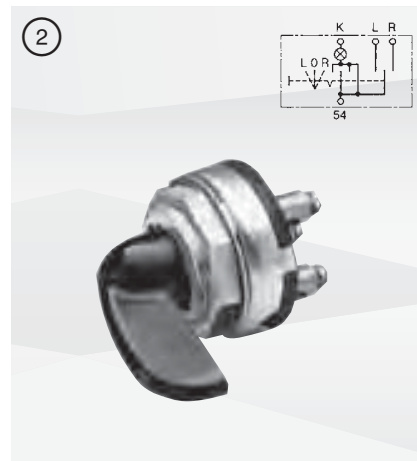
Fitting: Ø 26.5 mm with cutout (twist-proof). For wall thicknesses up to 2 mm.

Connection: screw terminals.

0 341 101 001

Spare parts

Octagon nut	1 343 300 002
Washer	3 340 102 000



2 Rotary, single-circuit switch with indicator lamp

Without bulb, housing galvanized, switch lever black, lens red.

Switching capacity: 60 W/12 V (terminals L, R), 5 W/12 V (terminal K).

Fastening: with polished aluminum octagon nut M 26 x 1.

Fitting: Ø 26.5 mm with cutout (twist-proof). For wall thicknesses up to 2 mm.

Connection: screw terminals.

0 341 300 002

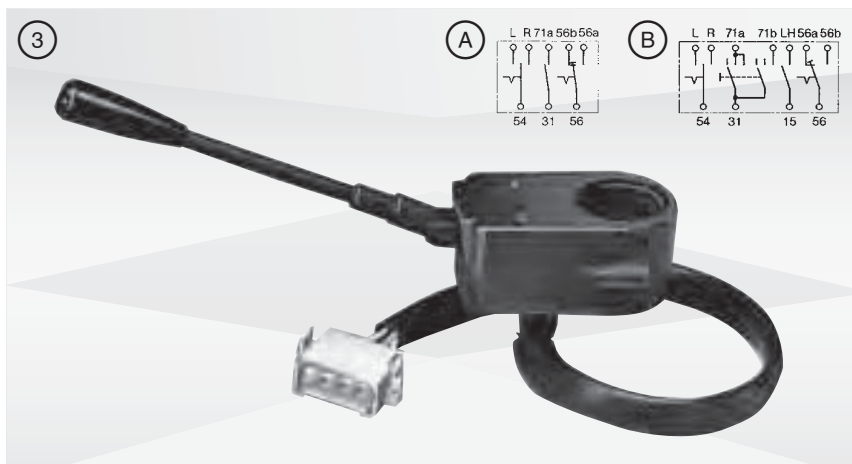
Spare parts

Octagon nut	1 343 300 002
Washer	3 340 102 000

Bulb (shape H)

12 V 2.0 W	1 987 302 212
24 V 2.0 W	1 987 302 508

Turn-signal and combi-switches



1 Lever-type turn-signal switch without headlamp-flasher contact
 For mounting in steering column.
 Knob and housing black. Switch lever galvanized with transparent chromated finish. Switch lever 82 mm long.
 Switching capacity: 60 W/24 V (term. L, R).
 Fastening: 2 holes Ø 4.2 mm.
 Hole spacing 42 mm.
 Fitting: aperture 32 x 21 mm.
 Connection: screw terminals.
0 341 600 001

2 Lever-type turn-signal switch with headlamp-flasher contact
 For mounting in steering column. Housing, handle and switch lever black.
 Switch lever 5°. Length 109 mm.
 Switching capacity: 80 W/24 V (term. L, R), 100 W/24 V (terminal 56 d).
 Fastening: on steering column with clamping band. Clamping range Ø 45 to Ø 55 mm.
0 341 810 013

3 Lever-type combi-switch
 Diagram ☉:
 For turn-signal indicators, change-over switch for high and low beam, with horn button. Housing and handle black.
 With switch lever angled at 11°. Length 220 mm.
 Switching capacity: 110 W/24 V (terminals L, R, 56a, 56b, LH), 60 W/24 V (terminal 71a), 85 W/24 V (terminal 71b).
 Fastening: with clamping ring Ø 45 mm.
 Connection: 8-pole flat-pin plug. Cables 400 mm.
0 341 810 007

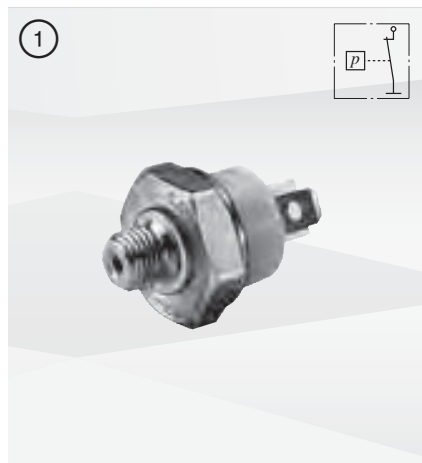
as ..810 007, but switch lever angled at 20°. Length 180 mm.
0 341 810 008

as ..810 007, but cables 430 mm long and switch lever angled 20°. Length 239 mm.
0 341 810 009

as ..810 007, but diagram ☉:
 Horn button with 2 switch positions for supertone horn. With headlamp flasher. Switch lever angled at 20°. Length 180 mm.
 Connection: one 8-pole plug, one 3-pole plug.
0 341 810 010

Multi-purpose pressure switches

Pneumatically and hydraulically actuated



1 Pressure switch. NO contact On-off switch, two-chamber system.

For use in vehicle as check switch. Hydraulically or pneumatically actuated. Switching capacity: 2 W/24 V (lamp load). Permissible pressure agents: mineral oil, air (details of other agents upon request). Permissible operating temperature: -40...+130 °C.

Fastening: screw-in thread M 12 x 1.5.

Connection: blade terminals.

Switching range (gauge press.): 1.8...2.3 bar

Permissible operating pressure (gauge pressure):

6 bar. Permissible max. pressure

(gauge pressure): 10 bar.

1-pole **0 986 345 202**

as ..202, but

Switching capacity: 5 W/24 V (lamp load).

Permissible operating temperature: -25...+85 °C

Fastening: screw-in thread M 10 x 1.

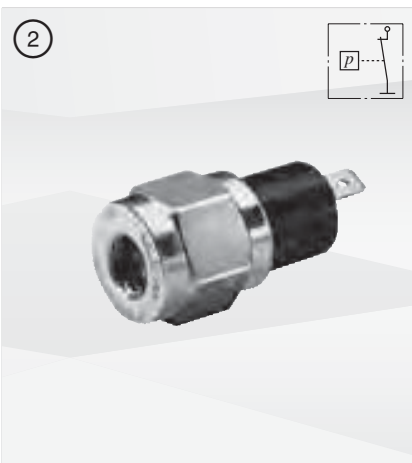
Switching range (gauge press.): 0.1...0.5 bar.

Permissible operating pressure (gauge pressure):

8 bar. Permissible max. pressure.

(gauge pressure): 15 bar

1-pole **0 986 345 203**



2 Pressure switch. NC contact

On-off switch, two-chamber system. For use in vehicle as check switch.

Pneumatically actuated.

Switching capacity: 5 W/24 V (lamp load).

Permissible operating temperature:

-40...+100 °C.

Fastening: screw-in thread M 12 x 1.5.

Connection: blade terminals.

Switching range (gauge press.):

4.4...5.1 bar

Permissible operating pressure (gauge pressure):

8 bar.

Proof against excess pressure up to 12 bar

1-pole **0 986 345 501**

as ..501, but

Switching range (gauge press.):

5.6...6.6 bar.

Permissible operating pressure (gauge pressure):

12 bar.

Proof against excess pressure up to 15 bar.

1-pole **0 986 345 503**

Accessories (order separately)

for pressure switches 0 986 345 501, ..502, ..503.



3 Protective cap

For multi-purpose pressure switches with blade terminals.

Protects electrical connections against moisture.

Material: black neoprene.

Fastening: self-clamping.

3 340 524 012



Universal pressure switch

with DIN bayonet connector



1 Mechanical pressure switch with bayonet connector

Operating forces:
 -at switch point ~ 16 N
 -at final position ~ 32 N
 (other values upon request)

Operating temperature: -30 °C +130 °C

Operating voltage: 5 V – 32 V

Switching current: max. 5 A

Switching capacity: max. 135 W

Endurance test: up to 1,500,000 cycles

Switch type: Normally open contact or Normally closed contact

Electrical connection: acc. to ISO 15170 (DIN 72585)

Hexagon: 27

Connecting thread: M16x1,5 / M18x1,5 (other connecting threads upon request)

Material characteristics:
 -Housing: Brass / zinc-plated steel (CrVI-free) / stainless steel

-Socket: PA66-GF30

-Plunger: Zinc-plated steel (CrVI-free) / stainless steel; hardened

-Electrical contacts: Silver (other contacts upon request)

Tightening Torque: max. 50 Nm

Degree of protection: up to IP6K9K with suitable connector installed

2-pole **0 986 346 800**

2 Pressure switch with bayonet connector

Set pressure: Adjustment range from 0,15 bar to 10 bar

Hysteresis: average value 10 % depending on type, not adjustable

Working pressure: max. 12 bar

Overpressure safety: 16 bar

Bursting pressure: > 50 bar

Medium: Air

Operating temperature: -40 °C +100 °C

Operating voltage: 12/24 V DC

Switching capacity: max. 30 W (at ohmic load)

Endurance test: 1.000.000 cycles

Switch type: Normally open contact or Normally closed contact

Electrical connection: acc. to ISO 15170 (DIN 72585)

Hexagon: 24 or 27

Connecting thread: M10x1 / M10x1 con. / M12x1,5 / M16x1,5 (other connecting threads upon request)

Material characteristics:
 -Housing: Brass / zinc-plated steel (CrVI-free) / stainless steel

-Socket: PA66-GF30

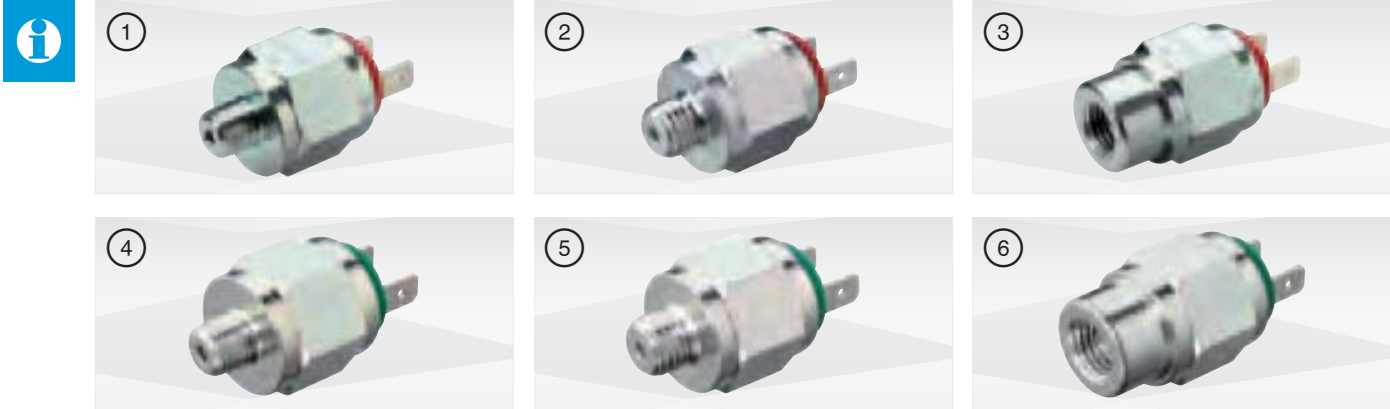
-Electrical contacts: Silver (other contacts upon request)

Degree of protection: up to IP6K9K with suitable connector installed

2-pole **0 986 346 700**

Pressure switch up to 24 V/15 A

for engine coolings fans
(-40°C...+140°C)



Type of actuation	Fastening screw-in thread	Operating pressure range/ Temperature range bar / °C	Connection 2-pole	Fig.	Part number
Pressure switch NC contact	M12 x 1.5	2.0 ± 0.2 bar	Blade terminal 6.3 mm		0 986 346 001
	M12 x 1.5	4.0 ± 0.4 bar	Bimetal rivets		0 986 346 002
	M12 x 1.5	0.5 ± 0.15 bar	DIN 46244		0 986 346 004
	M12 x 1.5	6.0 ± 0.6 bar			0 986 346 005
	M12 x 1.5	2.5 ± 0.3 bar		2	0 986 346 006
	M12 x 1.5	1.0 ± 0.2 bar			0 986 346 007
	M12 x 1.5	4.5 ± 0.5 bar			0 986 346 008
	M12 x 1.5	5.0 ± 0.5 bar			0 986 346 009
	M12 x 1.5	3.0 ± 0.3 bar			0 986 346 011
	M12 x 1.5	5.5 ± 0.6 bar			0 986 346 012
	M12 x 1.5 (internal thread)	0.15 ± 0.1 bar		3	0 986 346 021
	M12 x 1.5 (internal thread)	0.5 ± 0.15 bar			0 986 346 022
	M12 x 1.5 (internal thread)	4.0 ± 0.4 bar			0 986 346 023
	M10 x 1 (tapered short)	2.0 ± 0.2 bar		1	0 986 346 032
M10 x 1 (tapered short)	3.0 ± 0.3 bar			0 986 346 033	
M10 x 1 (tapered short)	4.0 ± 0.4 bar			0 986 346 034	
Pressure switch NO contact	M12 x 1.5	5.5 ± 0.6 bar	Blade terminal 6.3 mm	5	0 986 346 051
	M12 x 1.5	2.0 ± 0.2 bar	Bimetal rivets		0 986 346 052
	M12 x 1.5	0.3 ± 0.1 bar	AGNi 20a/E-Cu,		0 986 346 053
	M12 x 1.5	3.5 ± 0.4 bar	DIN 46244		0 986 346 054
	M12 x 1.5	4.1 ± 0.4 bar			0 986 346 055
	M12 x 1.5	4.5 ± 0.5 bar			0 986 346 056
	M12 x 1.5	5.0 ± 0.5 bar			0 986 346 057
	M12 x 1.5	1.2 ± 0.2 bar			0 986 346 058
	M12 x 1.5	6.0 ± 0.6 bar			0 986 346 059
	M12 x 1.5	5.2 ± 0.5 bar			0 986 346 060
	M12 x 1.5	6.6 ± 0.6 bar			0 986 346 062
	M12 x 1.5 (internal thread)	4.5 ± 0.5 bar		6	0 986 346 071
	M12 x 1.5 (internal thread)	5.5 ± 0.6 bar			0 986 346 072
	M10 x 1 (tapered short)	4.2 ± 0.4 bar		4	0 986 346 081
M10 x 1 (tapered short)	2.0 ± 0.2 bar			0 986 346 082	

Temperature switch up to 24 V/15 A

for engine coolings fans
(-40 °C...+140 °C)



Type of actuation	Fastening screw-in thread	Temperature range bar / °C	Connection 2-pole	Fig.	Part number
Temperature switch	M 22 x 1,5-6g	92 °C–87 °C	Blade terminal 6.3 mm	7	0 986 347 005
	M 22 x 1,5-6g	88 °C–79 °C	Bimetal rivets		0 986 347 003
	M 22 x 1,5-6g	95 °C–86 °C	AGNi 20a/E-Cu,		0 986 347 004
	M 22 x 1,5-6g	82 °C–68 °C	DIN 46 244		0 986 347 002

Oil-pressure warning switches

Hydraulically actuated
Up to 24 V



For European vehicles
Two-chamber system



Fastening screw-in thread	Operating pressure range Gauge pressure bar	Connection 1-pole	Fig.	Part number	Vehicle makes ¹⁾
M 10 x 1	0.3–0.5	Blade terminals	1	0 986 344 085 ²⁾	Cesab, Itma Trattori, VM, VW
	0.5–0.8	Blade terminals	1	0 986 344 090	Fendt
M 10 x 1 (tapered short) DIN 158	0.05–0.15	Blade terminals	1	0 986 344 055	BMW
	0.15–0.45	Blade terminals	1	0 986 344 044 ²⁾	Alfa Romeo, Audi, Porsche, VW
	0.2–0.49	Blade terminals	2	0 986 344 032	Audi, Massey-Ferguson-Hanomag
	0.2–0.5	Blade terminals	1	0 986 344 058 ²⁾	ABG, Atlas, Hanomag, Massey-Ferguson, Steyr
	0.5–0.8	Screw terminals M 4	3	0 986 344 084	MAN
	0.3–0.6	Blade terminals	1	0 986 344 056 ²⁾	Audi, Porsche, VW
	0.5–0.8	Screw terminals M 4	3	0 986 344 052	–
	0.5–0.8	Blade terminals	1	0 986 344 033 ³⁾	Hanomag-Henschel, MAN, Schilter, Volvo
M 12 x 1,5	0.2–0.5	Blade terminals	1	0 986 344 040 ²⁾	IF, Itma Trattori, Lamborghini, Mosa, Muzzi, Palmieri, Steyr, VM
	0.05–0.15	Blade terminals	1	0 986 344 035	BMW, FIAT, Lamborghini, UNIC
M 12 x 1,75	1.2–1.7	Blade terminals	1	0 986 344 077 ²⁾	Huerlimann, Lamborghini, Same, VM
M 14 x 1,5	0.15–0.45	Blade terminals	1	0 986 344 046 ²⁾	Alfa Romeo
	0.3–0.55	Blade terminals	1	0 986 344 036	Opel, Peugeot, Renault, Vauxhall, Volvo
¼"-18 NPTF	0.2–0.6	Threaded pins ³⁾	4	0 986 344 086	Ford, SAAB
⅜"-27 PTF-	0.3–0.6	Blade terminals	1	0 986 344 076 ²⁾	DAF, Ford, Case IH, IH
	0.15–0.45	Blade terminals	1	0 986 344 087	Ford, John Deere
SAE short	0.5–0.8	Blade terminals	1	0 986 344 054 ²⁾	DAF, Ford, John Deere, SAAB
⅜"-27 NPTF	0.4–0.7	Blade terminals	1	0 986 344 074 ²⁾	Volvo

Technical data for European and Japanese oil-pressure warning switches

On-off switch, NC contact. Steel housing, for European vehicles galvanized and yellow chromated.
Switching capacity (lamp load): 5 W to 24 V.
Permissible operating temperature: –40 °C ... +140 °C.

Permitted operating pressure (gauge pressure): 6 bar.
Maximum pressure (gauge pressure): 10 bar.
Degree of protection according to DIN 40050 (Page 9):
IP 66 if suitable protective cap is used, i.e.: complete protection against contact, protection against penetration by dirt and dust and penetration by water during temporary submersion.

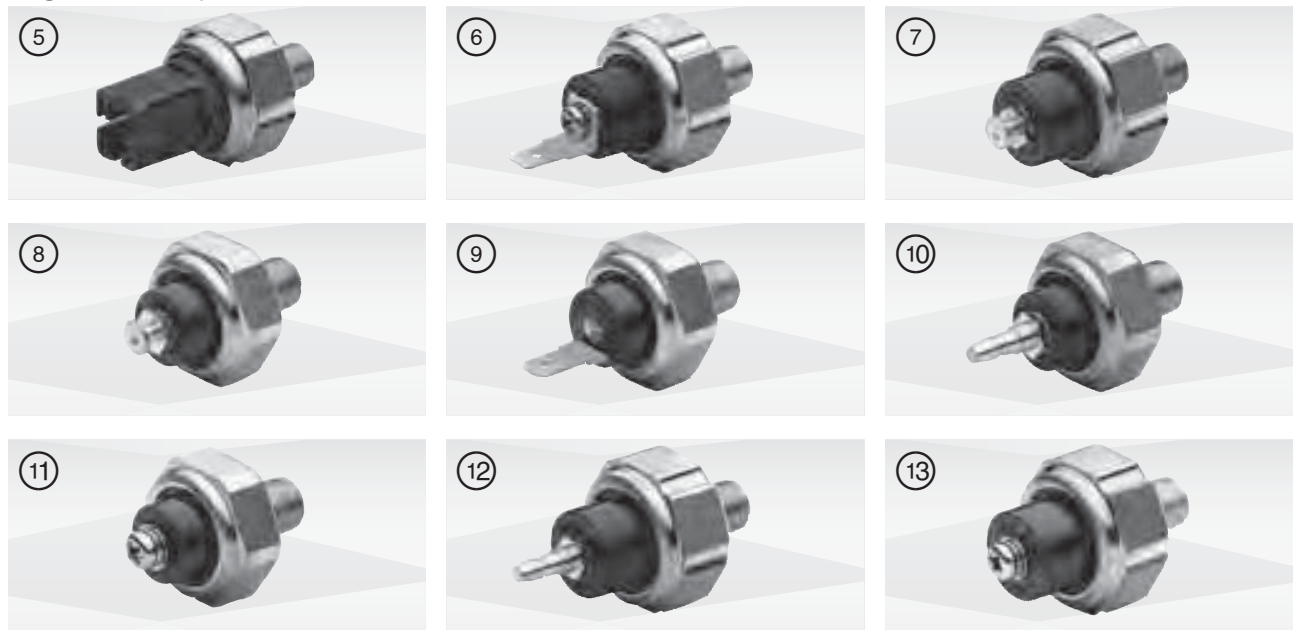
¹⁾ See application recommendation for vehicle models

²⁾ Interior parts with special corrosion protection

³⁾ Threaded pin 8-32 UNC-2 A



For Japanese vehicles Single-chamber system



Fastening screw-in thread	Operating pressure range Gauge pressure bar	Connection 1-pole	Fig.	Part number	Vehicle makes ¹⁾
R 1/8"-28 BSP (tapered)	0.16-0.18	Blade terminals	5	0 986 345 007	Nissan
	0.25-0.35	Blade terminals	6	0 986 345 001	Daihatsu, Suzuki, Toyota
		Plate terminals	7	0 986 345 017	Mitsubishi, Suzuki
	0.28-0.38	Plate terminals	8	0 986 345 000	Toyota
		Plate terminals	8	0 986 345 005	Daihatsu, Mazda
	0.28-0.34	Blade terminals	9	0 986 345 008	Daihatsu, Subaru, Suzuki
	0.30-0.32	Pin terminals	10	0 986 345 009	Honda
	0.30-0.38	Screw	11	0 986 345 006	Honda, Mazda, Subaru
	0.30-0.40	Pin terminals	12	0 986 345 003	Nissan
	0.35-0.45	Screw terminals	13	0 986 345 004	Mazda

¹⁾ See application recommendations for vehicle models



Important installation note

Before installing the new oil-pressure warning switch, check that the pressure range (can be read off on housing) and thread of the replacement switch match those of the original switch.

Stop lamp switches

Pneumatically or hydraulically actuated



Type of actuation	Fastening screw-in thread	Operating pressure range Gauge pressure bar	Connection 2-pole	Fig.	Part number
Pneumatic	M 12 x 1,5	0.1–0.3	Pin terminals	1	0 986 345 413 ¹⁾
		0.1–0.5	Blade terminals	2	0 986 345 408
			Blade terminals 6,3 mm	2	0 986 345 409
			Pin terminals	1	0 986 345 410
Hydraulic	M 10 x 1 (tapered short) DIN 158	1.0–1.4	Pin terminals	1	0 986 345 411 ¹⁾
		2–4	Blade terminals	3	0 986 345 112
			Blade terminals	3	0 986 345 114 ²⁾
		2–5	Pin terminals	4	0 986 345 115 ¹⁾
			Blade terminals	3	0 986 345 116 ²⁾
		3–6	Blade terminals	3	0 986 345 110
			Blade terminals	3	0 986 345 113 ²⁾
		2–4	Pin terminals	4	0 986 345 117 ¹⁾
			Blade terminals	3	0 986 345 119
		3–6	Blade terminals	3	0 986 345 111
Blade terminals	3		0 986 346 110		
Oil-pressure switches	M 10 x 1 (tapered short) DIN 158	2–4	Blade terminals	3	0 986 346 112
		2–5	Pin terminals	4	0 986 346 115
		2–4	Blade terminals	3	0 986 346 119
		2–4	Blade terminals	3	0 986 346 119

Technical data

Pneumatic pressures: Permissible operating pressure (gauge pressure) 8 bar. Max. permissible pressure (gauge pressure) 12 bar. Overload capacity 15 bar (max. 2 s). Permissible operating temperature: –40...+100 °C. Hydraulic pressures (pressure medium: brake fluid).

Permissible operating pressure (gauge pressure) 200 bar. Max. permissible pressure (gauge pressure) 350 bar. Permissible operating temperature: –40...+80 °C. On-off switch, NO contact, two-chamber system. Galvanized steel housing with yellow chromated finish. Electrical connections silver-plated. Switching capacity (lamp load): 150 W/12 V or 100 W/24 V.

¹⁾ With thread M 27 x 1 (on plug side) for splashwater protection

²⁾ With two blade-terminal connections supplied loose

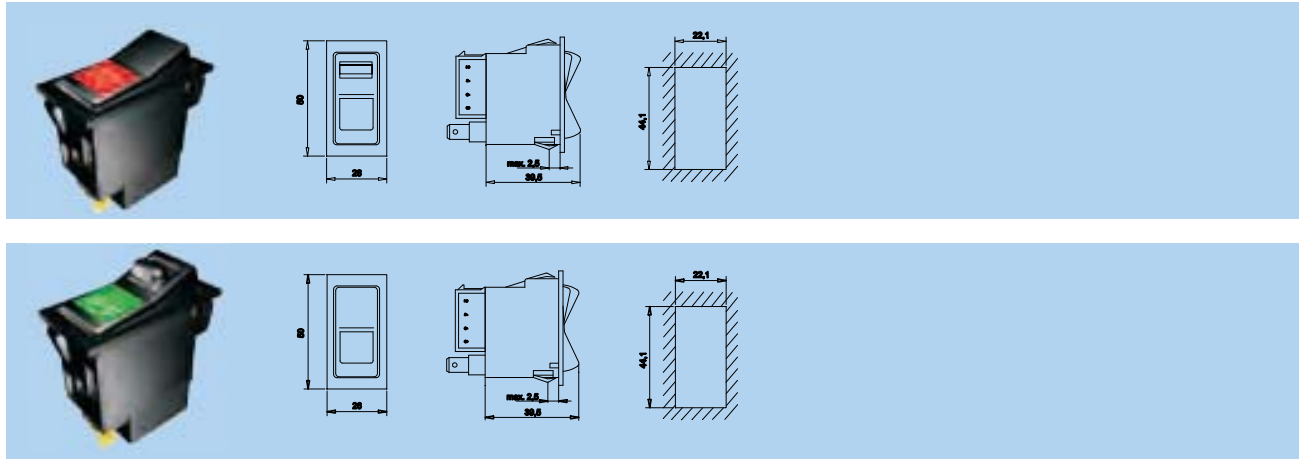


Type of actuation	Fastening screw-in thread	Operating pressure range Gauge pressure bar	Connection 1-pole	Fig.	Part number
Oil-pressure switches/NC contact	M 14 x 1,5	0,30-0,55	Blade terminals as per	1	0 986 346 370
	M 10 x 1,0	0,30-0,55	ISO 8092-3	2	0 986 346 371
	M 10 x 1,0	0,20-0,40		3	0 986 346 372
	M 10 x 1,0	0,10-0,30	1,5 x 0,8	4	0 986 346 373
	M 12 x 1,5	0,20-0,40	Brass, silver-plated	5	0 986 346 374
	M 16 x 1,5	0,45-0,75		6	0 986 346 375
	M 14 x 1,5	0,45-0,75		7	0 986 346 376
	M 10 x 1,0	1,80-2,20		8	0 986 346 377
	M 10 x 1,0	0,55-0,85		8	0 986 346 378
	M 16 x 1,5	0,40-0,60		6	0 986 346 379

O.E.	Bosch	O.E.	Bosch	O.E.	Bosch
ALFA ROMEO		93190643	0 986 346 371	OPEL	
60808371	0 986 346 370	24 461 314	0 986 346 372	12 52 557	0 986 346 370
6ZL 003 259-491	0 986 346 370	97 375 663	0 986 346 373	12 52 562	0 986 346 370
6ZL 008 780-011	0 986 346 371	90337836	0 986 346 375	12 52 570	0 986 346 370
DAEWOO		24 461 315	0 986 346 377	12 52 572	0 986 346 370
90336039	0 986 346 370	HOLDEN		12 52 578	0 986 346 370
96281689	0 986 346 370	90336039	0 986 346 370	48 03 551	0 986 346 370
96494264	0 986 346 370	90507539	0 986 346 370	45 04 585	0 986 346 370
96647339	0 986 346 370	HYUNDAI		12 38 696	0 986 346 371
FIAT		V40-73-0001	0 986 346 370	12 52 555	0 986 346 371
7606596	0 986 346 370	V40-73-0006	0 986 346 371	12 52 573	0 986 346 371
7705830	0 986 346 370	V V40-73-0014	0 986 346 372	62 40 261	0 986 346 372
7706596	0 986 346 370	V40-73-0005	0 986 346 375	12 52 577	0 986 346 373
7708168	0 986 346 370	ISUZU		12 52 566	0 986 346 375
55354325	0 986 346 371	8-97375-663-0	0 986 346 373	62 40 262	0 986 346 377
7710823	0 986 346 374	8-90336-039-0	0 986 346 375	SAAB	
7710824	0 986 346 374	IVECO		45 04 585	0 986 346 370
504026706	0 986 346 376	J5610900	0 986 346 370	90 569 684	0 986 346 370
98442879	0 986 346 376	98442879	0 986 346 376	95 44 610	0 986 346 370
G.M.		MAZDA		47 70 186	0 986 346 376
90336039	0 986 346 370	70541060	0 986 346 370	VAUXHALL	
90507539	0 986 346 370	70541077	0 986 346 371	93190643	0 986 346 371
90534902	0 986 346 371				

Flush-mounted and indicator switches

Product range „Classic design“ Type 1



Symbol illumination options



Version A

Applications: Non-illuminated switches or switches with direct illumination by lighting element.



Version B

Applications: Illuminated switches (light shines through plastic diaphragm, diffuse light).



Version C

Applications: Illuminated switches. When not switched on, the switch is only dimly lit (diffuse light: position of switch can be seen). It is more brightly lit when switched on (switch set to ON: bright light).

Key to circuit diagram symbols



Switch (On/Off)

This switch can be set to different positions.



Rocker switch

This switch returns to its original position after being actuated.



Double locking

Status is retained until switch is actuated again.



Single locking

Switch engages.



Non-locking switch

Switch function in the form of a button.



Non-locking switch

Switch function in the form of a button on both sides.

Protection class IP53.

Illustration	Circuit diagram	Light	Volts	Lock		Part number
				On	Off	
		-	12/24	○	○	0986 348 000
		A	12	○	○	0986 348 001
		A	24	○	○	0986 348 002
		B	12	○	○	0986 348 003
		B	24	○	○	0986 348 004
		C	12	○	○	0986 348 005
		-	12/24	○	○	0986 348 007
		A	12	○	○	0986 348 008
		A	24	○	○	0986 348 009
		B	12	○	○	0986 348 010
		B	24	○	○	0986 348 011
		-	12/24	●	○	0986 348 155
		A	12	●	○	0986 348 156
		A	24	●	○	0986 348 157
		B	12	●	○	0986 348 158
		B	24	●	○	0986 348 159
		C	12	●	○	0986 348 160
		C	24	●	○	0986 348 161
		-	12/24	●	○	0986 348 148
		A	12	●	○	0986 348 149
		A	24	●	○	0986 348 150
		B	12	●	○	0986 348 151
		B	24	●	○	0986 348 152
		C	12	●	○	0986 348 153
		C	24	●	○	0986 348 154
		-	12/24	●	●	0986 348 162
		A	12	●	●	0986 348 163
		A	24	●	●	0986 348 164
		B	12	●	●	0986 348 165
		B	24	●	●	0986 348 166
		C	12	●	●	0986 348 167
		C	24	●	●	0986 348 168
		-	12/24	○	○	0986 348 012
		A	12	○	○	0986 348 013
		A	24	○	○	0986 348 014
		B	12	○	○	0986 348 015
		B	24	○	○	0986 348 016
		C	12	○	○	0986 348 017
		C	24	○	○	0986 348 018
		-	12/24	○	○	0986 348 126
		A	12	○	○	0986 348 127
		A	24	○	○	0986 348 128
		B	12	○	○	0986 348 129
		B	24	○	○	0986 348 130
		-	12/24	○	○	0986 348 019
		A	12	○	○	0986 348 020
		A	24	○	○	0986 348 021
		B	12	○	○	0986 348 022
		B	24	○	○	0986 348 023
		C	12	○	○	0986 348 024
		C	24	○	○	0986 348 025
		-	12/24	○	○	0986 348 109
		A	12	○	○	0986 348 110
		A	24	○	○	0986 348 111
		B	12	○	○	0986 348 112
		B	24	○	○	0986 348 113
		C	12	○	○	0986 348 114
		C	24	○	○	0986 348 115
		-	12/24	○	○	0986 348 182
		A	12	○	○	0986 348 183
		A	24	○	○	0986 348 184
		B	12	○	○	0986 348 185
		B	24	○	○	0986 348 186



Illustration	Circuit diagram	Light	Volts	Lock		Part number
				On	Off	
		-	12/24	●	○	0986 348 204
		A	12	●	○	0986 348 205
		A	24	●	○	0986 348 206
		B	12	●	○	0986 348 207
		B	24	●	○	0986 348 208
		C	12	●	○	0986 348 209
		-	12/24	●	●	0986 348 169
		A	12	●	●	0986 348 170
		A	24	●	●	0986 348 171
		B	12	●	●	0986 348 172
		B	24	●	●	0986 348 173
		C	12	●	●	0986 348 174
		-	12/24	○	○	0986 348 210
		A	12	○	○	0986 348 033
		A	24	○	○	0986 348 034
		B	12	○	○	0986 348 035
		B	24	○	○	0986 348 036
		C	12	○	○	0986 348 037
		C	24	○	○	0986 348 038
		C	24	○	○	0986 348 039
		-	12/24	○	○	0986 348 040
		A	12	○	○	0986 348 041
		A	24	○	○	0986 348 042
		B	12	○	○	0986 348 043
		B	24	○	○	0986 348 044
		-	12/24	○	○	0986 348 235
		A	12	○	○	0986 348 236
		A	24	○	○	0986 348 237
		B	12	○	○	0986 348 238
		B	24	○	○	0986 348 239
		C	12	○	○	0986 348 240
		C	24	○	○	0986 348 241
		-	12/24	○	○	0986 348 243
		A	12	○	○	0986 348 244
		A	24	○	○	0986 348 245
		B	12	○	○	0986 348 246
		B	24	○	○	0986 348 247
		-	12/24	○	○	0986 348 026
		A	12	○	○	0986 348 027
		A	24	○	○	0986 348 028
		B	12	○	○	0986 348 029
		B	24	○	○	0986 348 030
		C	12	○	○	0986 348 031
		C	24	○	○	0986 348 032
		-	12/24	●	○	0986 348 187
		A	12	●	○	0986 348 188
		A	24	●	○	0986 348 189
		B	12	●	○	0986 348 190
		B	24	●	○	0986 348 191
		C	12	●	○	0986 348 192
		C	24	●	○	0986 348 193
		-	12/24	○	○	0986 348 099
		A	12	○	○	0986 348 100
		A	24	○	○	0986 348 101
		B	12	○	○	0986 348 102
		B	24	○	○	0986 348 103
		-	12/24	○	○	0986 348 087
		A	12	○	○	0986 348 088
		A	24	○	○	0986 348 089
		B	12	○	○	0986 348 090
		B	24	○	○	0986 348 091
		C	12	○	○	0986 348 092
		C	24	○	○	0986 348 093

Note: With elastic spring I-II for single-speed wipers and washer system


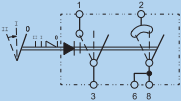

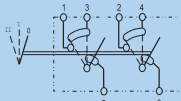

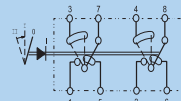



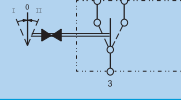

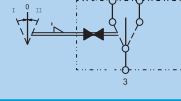

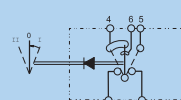



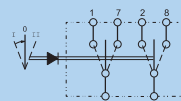

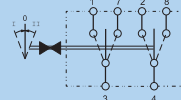

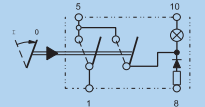

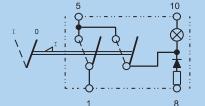

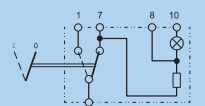

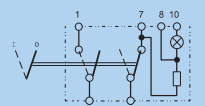

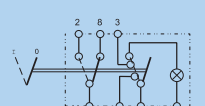


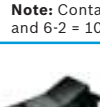

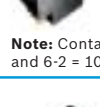
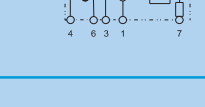
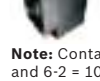
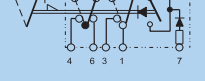


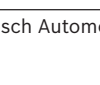

Illustration	Circuit diagram	Light	Volts	Lock		Part number
				On	Off	
 <p>Note: With elastic spring I-II</p>		-	12/24	●	○	0986 348 228
		A	12	●	○	0986 348 229
		A	24	●	○	0986 348 230
		B	12	●	○	0986 348 231
		B	24	●	○	0986 348 232
		C	12	●	○	0986 348 233
		-	12/24	●	●	0986 348 131
		A	12	●	●	0986 348 132
		A	24	●	●	0986 348 133
		B	12	●	●	0986 348 134
		B	24	●	●	0986 348 135
		C	12	●	●	0986 348 136
 <p>Note: With elastic spring I-II</p>		-	12/24	○	○	0986 348 211
		A	12	○	○	0986 348 212
		A	24	○	○	0986 348 213
		B	12	○	○	0986 348 214
		B	24	○	○	0986 348 215
		C	12	○	○	0986 348 216
		-	12/24	○	○	0986 348 138
		A	12	○	○	0986 348 139
		A	24	○	○	0986 348 140
		B	12	○	○	0986 348 141
		B	24	○	○	0986 348 142
				-	12/24	○
A	12			○	○	0986 348 066
A	24			○	○	0986 348 067
B	12			○	○	0986 348 068
B	24			○	○	0986 348 069
				-	12/24	○
		A	12	○	○	0986 348 249
		A	24	○	○	0986 348 250
		B	12	○	○	0986 348 251
		B	24	○	○	0986 348 252
		 <p>Note: With elastic spring I-II</p>		-	12/24	○
A	12			○	○	0986 348 144
A	24			○	○	0986 348 145
B	12			○	○	0986 348 146
B	24			○	○	0986 348 147
 <p>Note: With elastic spring I-II</p>				-	12/24	○
		A	12	○	○	0986 348 051
		A	24	○	○	0986 348 052
		B	12	○	○	0986 348 053
		B	24	○	○	0986 348 054
		 <p>Note: With elastic spring I-II</p>		-	12/24	○
A	12			○	○	0986 348 061
A	24			○	○	0986 348 062
B	12			○	○	0986 348 063
B	24			○	○	0986 348 064
				-	12/24	○
		A	12	○	○	0986 348 056
		A	24	○	○	0986 348 057
		B	12	○	○	0986 348 058
		B	24	○	○	0986 348 059



Illustration	Circuit diagram	Light	Volts	Lock		Part number
				On	Off	
		-	12/24	<input type="radio"/>	<input type="radio"/>	0986 348 070
		A	12	<input type="radio"/>	<input type="radio"/>	0986 348 071
		A	24	<input type="radio"/>	<input type="radio"/>	0986 348 072
		B	12	<input type="radio"/>	<input type="radio"/>	0986 348 073
		B	24	<input type="radio"/>	<input type="radio"/>	0986 348 074
		-	12/24	<input type="radio"/>	<input type="radio"/>	0986 348 194
		A	12	<input type="radio"/>	<input type="radio"/>	0986 348 195
		A	24	<input type="radio"/>	<input type="radio"/>	0986 348 196
		B	12	<input type="radio"/>	<input type="radio"/>	0986 348 197
		B	24	<input type="radio"/>	<input type="radio"/>	0986 348 198
		C	12	<input type="radio"/>	<input type="radio"/>	0986 348 199
		C	24	<input type="radio"/>	<input type="radio"/>	0986 348 200
		-	12/24	<input type="radio"/>	<input type="radio"/>	0986 348 219
		A	12	<input type="radio"/>	<input type="radio"/>	0986 348 220
		A	24	<input type="radio"/>	<input type="radio"/>	0986 348 221
		B	12	<input type="radio"/>	<input type="radio"/>	0986 348 222
		B	24	<input type="radio"/>	<input type="radio"/>	0986 348 223
		C	12	<input type="radio"/>	<input type="radio"/>	0986 348 224
		C	24	<input type="radio"/>	<input type="radio"/>	0986 348 225
		-	12/24	<input type="radio"/>	<input type="radio"/>	0986 348 045
		A	12	<input type="radio"/>	<input type="radio"/>	0986 348 046
		A	24	<input type="radio"/>	<input type="radio"/>	0986 348 047
		B	12	<input type="radio"/>	<input type="radio"/>	0986 348 048
		B	24	<input type="radio"/>	<input type="radio"/>	0986 348 049
Note: For two-speed wipers						
		-	12/24	<input type="radio"/>	<input type="radio"/>	0986 348 116
		A	12	<input type="radio"/>	<input type="radio"/>	0986 348 117
		A	24	<input type="radio"/>	<input type="radio"/>	0986 348 118
		B	12	<input type="radio"/>	<input type="radio"/>	0986 348 119
		B	24	<input type="radio"/>	<input type="radio"/>	0986 348 120
Note: With elastic spring I-II for single-speed wipers and washer system						
		-	12/24	<input type="radio"/>	<input type="radio"/>	0986 348 080
		A	12	<input type="radio"/>	<input type="radio"/>	0986 348 081
		A	24	<input type="radio"/>	<input type="radio"/>	0986 348 082
		B	12	<input type="radio"/>	<input type="radio"/>	0986 348 083
		B	24	<input type="radio"/>	<input type="radio"/>	0986 348 084
		-	12/24	<input type="radio"/>	<input type="radio"/>	0986 348 085
		C	12	<input type="radio"/>	<input type="radio"/>	0986 348 086
		C	24	<input type="radio"/>	<input type="radio"/>	0986 348 087
		-	12/24	<input type="radio"/>	<input type="radio"/>	0986 348 094
		A	12	<input type="radio"/>	<input type="radio"/>	0986 348 095
		A	24	<input type="radio"/>	<input type="radio"/>	0986 348 096
		B	12	<input type="radio"/>	<input type="radio"/>	0986 348 097
		B	24	<input type="radio"/>	<input type="radio"/>	0986 348 098
		-	12/24	<input type="radio"/>	<input type="radio"/>	0986 348 121
		A	12	<input type="radio"/>	<input type="radio"/>	0986 348 122
		A	24	<input type="radio"/>	<input type="radio"/>	0986 348 123
		B	12	<input type="radio"/>	<input type="radio"/>	0986 348 124
		B	24	<input type="radio"/>	<input type="radio"/>	0986 348 125
		-	12/24	<input type="radio"/>	<input type="radio"/>	0986 348 075
		A	12	<input type="radio"/>	<input type="radio"/>	0986 348 076
		A	24	<input type="radio"/>	<input type="radio"/>	0986 348 077
		B	12	<input type="radio"/>	<input type="radio"/>	0986 348 078
		B	24	<input type="radio"/>	<input type="radio"/>	0986 348 079
		-	12/24	<input type="radio"/>	<input type="radio"/>	0986 348 104
		A	12	<input type="radio"/>	<input type="radio"/>	0986 348 105
		A	24	<input type="radio"/>	<input type="radio"/>	0986 348 106
		B	12	<input type="radio"/>	<input type="radio"/>	0986 348 107
		B	24	<input type="radio"/>	<input type="radio"/>	0986 348 108
		X	24	<input type="radio"/>	<input type="radio"/>	0986 348 201

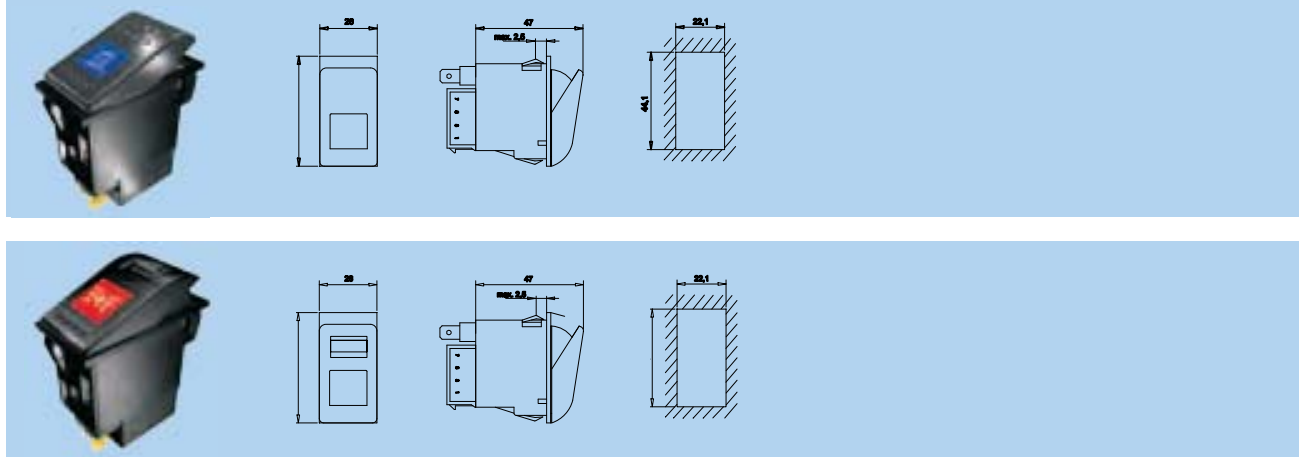
X = Switch for warning functions with function symbols for lighting and hazard warning system

Illustration	Circuit diagram	Light	Volts	Lock		Part number
				On	Off	
		X	24	○	○	0986 348 203
 Note: 10 A		X	24	●	○	0986 348 202
 Note: 10 A		X	12	○	○	0986 348 218
 Note: 10 A		X	12	○	○	0986 348 226
 Note: 10 A		X	24	○	○	0986 348 227
 Note: Contacts 6-8 and 6-2 = 10 A Others = 5 A		X	12	○	○	0986 348 176
 Note: Contacts 6-8 and 6-2 = 10 A Others = 5 A		X	24	○	○	0986 348 177
 Note: Contacts 6-8 and 6-2 = 10 A Others = 5 A		X	12	○	○	0986 348 178
 Note: Contacts 6-8 and 6-2 = 10 A Others = 5 A		X	24	○	○	0986 348 179
 Note: Contacts 6-8 and 6-2 = 10 A Others = 5 A		X	12	○	○	0986 348 180
 Note: Contacts 6-8 and 6-2 = 10 A Others = 5 A		X	24	○	○	0986 348 181
 Note: Contacts 6-8 and 6-2 = 10 A Others = 5 A		X	24	●	○	0986 348 182

X = Switch for warning functions with function symbols for lighting and hazard warning system

Flush-mounted and indicator switches

Product range „Modern design“ Type 2



Symbol illumination options



Version A

Applications: Non-illuminated switches or switches with direct illumination by lighting element.



Version B

Applications: Illuminated switches (light shines through plastic diaphragm, diffuse light).



Version C

Applications: Illuminated switches. When not switched on, the switch is only dimly lit (diffuse light: position of switch can be seen). It is more brightly lit when switched on (switch set to ON: bright light).

Key to circuit diagram symbols

Switch (On/Off)
This switch can be set to different positions.

Rocker switch
This switch returns to its original position after being actuated.

Double locking
Status is retained until switch is actuated again.

Single locking
Switch engages.

Non-locking switch
Switch function in the form of a button.

Non-locking switch
Switch function in the form of a button on both sides.

Protection class IP53.

Illustration	Circuit diagram	Light	Volts	Lock		Part number
				On	Off	
		-	12/24	○	○	0986 348 300
		A	12	○	○	0986 348 301
		A	24	○	○	0986 348 302
		B	12	○	○	0986 348 303
		B	24	○	○	0986 348 304
		C	12	○	○	0986 348 305
		-	12/24	○	○	0986 348 307
		A	12	○	○	0986 348 308
		A	24	○	○	0986 348 309
		B	12	○	○	0986 348 310
		B	24	○	○	0986 348 311
		-	12/24	●	○	0986 348 455
		A	12	●	○	0986 348 456
		A	24	●	○	0986 348 457
		B	12	●	○	0986 348 458
		B	24	●	○	0986 348 459
		C	12	●	○	0986 348 460
		-	12/24	●	○	0986 348 461
		A	12	●	○	0986 348 448
		A	24	●	○	0986 348 449
		A	24	●	○	0986 348 450
		B	12	●	○	0986 348 451
		B	24	●	○	0986 348 452
		-	12/24	●	○	0986 348 453
		C	12	●	○	0986 348 454
		C	24	●	○	0986 348 454
		-	12/24	●	●	0986 348 462
		A	12	●	●	0986 348 463
		A	24	●	●	0986 348 464
		B	12	●	●	0986 348 465
		B	24	●	●	0986 348 466
		C	12	●	●	0986 348 467
		C	24	●	●	0986 348 468
		-	12/24	○	○	0986 348 312
		A	12	○	○	0986 348 313
		A	24	○	○	0986 348 314
		B	12	○	○	0986 348 315
		B	24	○	○	0986 348 316
		C	12	○	○	0986 348 317
		C	24	○	○	0986 348 318
		-	12/24	○	○	0986 348 426
		A	12	○	○	0986 348 427
		A	24	○	○	0986 348 428
		B	12	○	○	0986 348 429
		B	24	○	○	0986 348 430
		-	12/24	○	○	0986 348 319
		A	12	○	○	0986 348 320
		A	24	○	○	0986 348 321
		B	12	○	○	0986 348 322
		B	24	○	○	0986 348 323
		C	12	○	○	0986 348 324
		C	24	○	○	0986 348 325
		-	12/24	○	○	0986 348 409
		A	12	○	○	0986 348 410
		A	24	○	○	0986 348 411
		B	12	○	○	0986 348 412
		B	24	○	○	0986 348 413
		C	12	○	○	0986 348 414
		C	24	○	○	0986 348 415
		-	12/24	○	○	0986 348 482
		A	12	○	○	0986 348 483
		A	24	○	○	0986 348 484
		B	12	○	○	0986 348 485
		B	24	○	○	0986 348 486




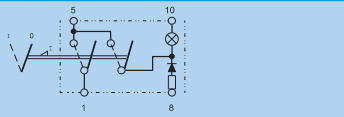

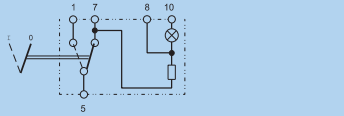

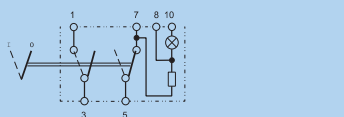

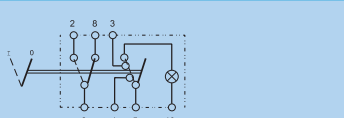

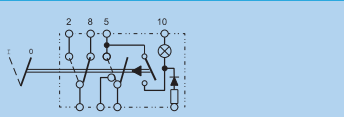

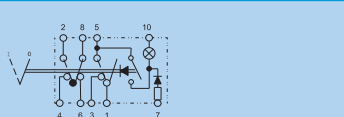

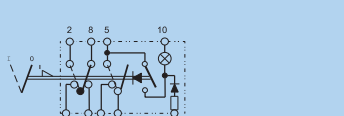
Illustration	Circuit diagram	Light	Volts	Lock		Part number
				On	Off	
		-	12/24	●	○	0986 348 504
		A	12	●	○	0986 348 505
		A	24	●	○	0986 348 506
		B	12	●	○	0986 348 507
		B	24	●	○	0986 348 508
		C	12	●	○	0986 348 509
		-	12/24	●	●	0986 348 469
		A	12	●	●	0986 348 470
		A	24	●	●	0986 348 471
		B	12	●	●	0986 348 472
		B	24	●	●	0986 348 473
		C	12	●	●	0986 348 474
		-	12/24	○	○	0986 348 333
		A	12	○	○	0986 348 334
		A	24	○	○	0986 348 335
		B	12	○	○	0986 348 336
		B	24	○	○	0986 348 337
		C	12	○	○	0986 348 338
		-	12/24	○	○	0986 348 339
		A	12	○	○	0986 348 340
		A	24	○	○	0986 348 341
		B	12	○	○	0986 348 342
		B	24	○	○	0986 348 343
		B	24	○	○	0986 348 344
		-	12/24	○	○	0986 348 345
		A	12	○	○	0986 348 346
		A	24	○	○	0986 348 347
		B	12	○	○	0986 348 348
		B	24	○	○	0986 348 349
		B	24	○	○	0986 348 350
		-	12/24	○	○	0986 348 351
		A	12	○	○	0986 348 352
		A	24	○	○	0986 348 353
		B	12	○	○	0986 348 354
		B	24	○	○	0986 348 355
		C	12	○	○	0986 348 356
		-	12/24	○	○	0986 348 357
		A	12	○	○	0986 348 358
		A	24	○	○	0986 348 359
		B	12	○	○	0986 348 360
		B	24	○	○	0986 348 361
		C	12	○	○	0986 348 362
		-	12/24	○	○	0986 348 363
		A	12	○	○	0986 348 364
		A	24	○	○	0986 348 365
		B	12	○	○	0986 348 366
		B	24	○	○	0986 348 367
		C	12	○	○	0986 348 368
		-	12/24	○	○	0986 348 369
		A	12	○	○	0986 348 370
		A	24	○	○	0986 348 371
		B	12	○	○	0986 348 372
		B	24	○	○	0986 348 373
		C	12	○	○	0986 348 374
		-	12/24	○	○	0986 348 375
		A	12	○	○	0986 348 376
		A	24	○	○	0986 348 377
		B	12	○	○	0986 348 378
		B	24	○	○	0986 348 379
		C	12	○	○	0986 348 380
		-	12/24	○	○	0986 348 381
		A	12	○	○	0986 348 382
		A	24	○	○	0986 348 383
		B	12	○	○	0986 348 384
		B	24	○	○	0986 348 385
		C	12	○	○	0986 348 386
		-	12/24	○	○	0986 348 387
		A	12	○	○	0986 348 388
		A	24	○	○	0986 348 389
		B	12	○	○	0986 348 390
		B	24	○	○	0986 348 391
		C	12	○	○	0986 348 392
		-	12/24	○	○	0986 348 393
		A	12	○	○	0986 348 394
		A	24	○	○	0986 348 395
		B	12	○	○	0986 348 396
		B	24	○	○	0986 348 397
		C	12	○	○	0986 348 398
		-	12/24	○	○	0986 348 399
		A	12	○	○	0986 348 400
		A	24	○	○	0986 348 401
		B	12	○	○	0986 348 402
		B	24	○	○	0986 348 403
		C	12	○	○	0986 348 404
		-	12/24	○	○	0986 348 405
		A	12	○	○	0986 348 406
		A	24	○	○	0986 348 407
		B	12	○	○	0986 348 408
		B	24	○	○	0986 348 409
		C	12	○	○	0986 348 410
		-	12/24	○	○	0986 348 411
		A	12	○	○	0986 348 412
		A	24	○	○	0986 348 413
		B	12	○	○	0986 348 414
		B	24	○	○	0986 348 415
		C	12	○	○	0986 348 416
		-	12/24	○	○	0986 348 417
		A	12	○	○	0986 348 418
		A	24	○	○	0986 348 419
		B	12	○	○	0986 348 420
		B	24	○	○	0986 348 421
		C	12	○	○	0986 348 422
		-	12/24	○	○	0986 348 423
		A	12	○	○	0986 348 424
		A	24	○	○	0986 348 425
		B	12	○	○	0986 348 426
		B	24	○	○	0986 348 427
		C	12	○	○	0986 348 428
		-	12/24	○	○	0986 348 429
		A	12	○	○	0986 348 430
		A	24	○	○	0986 348 431
		B	12	○	○	0986 348 432
		B	24	○	○	0986 348 433
		C	12	○	○	0986 348 434
		-	12/24	○	○	0986 348 435
		A	12	○	○	0986 348 436
		A	24	○	○	0986 348 437
		B	12	○	○	0986 348 438
		B	24	○	○	0986 348 439
		C	12	○	○	0986 348 440

Note: With elastic spring I-II for single-speed wipers and washer system

Illustration	Circuit diagram	Light	Volts	Lock		Part number
				On	Off	
		-	12/24	●	○	0986 348 528
		A	12	●	○	0986 348 529
		A	24	●	○	0986 348 530
		B	12	●	○	0986 348 531
		B	24	●	○	0986 348 532
		C	12	●	○	0986 348 533
Note: With elastic spring I-II						
		-	12/24	○	○	0986 348 431
		A	12	○	○	0986 348 432
		A	24	○	○	0986 348 433
		B	12	○	○	0986 348 434
		B	24	○	○	0986 348 435
		C	12	○	○	0986 348 436
		-	12/24	○	○	0986 348 437
		A	12	○	○	0986 348 511
		A	24	○	○	0986 348 512
		B	12	○	○	0986 348 513
		B	24	○	○	0986 348 514
		C	12	○	○	0986 348 515
		-	12/24	○	○	0986 348 516
		A	12	○	○	0986 348 517
		A	24	○	○	0986 348 438
		A	12	○	○	0986 348 439
		A	24	○	○	0986 348 440
		B	12	○	○	0986 348 441
		B	24	○	○	0986 348 442
		-	12/24	○	○	0986 348 365
		A	12	○	○	0986 348 366
		A	24	○	○	0986 348 367
		B	12	○	○	0986 348 368
		B	24	○	○	0986 348 369
		-	12/24	○	○	0986 348 548
		A	12	○	○	0986 348 549
		A	24	○	○	0986 348 550
		B	12	○	○	0986 348 551
		B	24	○	○	0986 348 552
		Note: Lock 0-II				
		-	12/24	○	○	0986 348 443
		A	12	○	○	0986 348 444
		A	24	○	○	0986 348 445
		B	12	○	○	0986 348 446
		B	24	○	○	0986 348 447
				-	12/24	○
A	12			○	○	0986 348 350
A	24			○	○	0986 348 351
B	12			○	○	0986 348 352
B	24			○	○	0986 348 353
B	24			○	○	0986 348 354
		-	12/24	○	○	0986 348 360
		A	12	○	○	0986 348 361
		A	24	○	○	0986 348 362
		B	12	○	○	0986 348 363
		B	24	○	○	0986 348 364
				-	12/24	○
A	12			○	○	0986 348 356
A	24			○	○	0986 348 357
B	12			○	○	0986 348 358
B	24			○	○	0986 348 359
				-	12/24	○
		A	12	○	○	0986 348 371
		A	24	○	○	0986 348 372
		B	12	○	○	0986 348 373
		B	24	○	○	0986 348 374









Illustration	Circuit diagram	Light	Volts	Lock		Part number
				On	Off	
		-	12/24	<input type="radio"/>	<input type="radio"/>	0986 348 494
		A	12	<input type="radio"/>	<input type="radio"/>	0986 348 495
		A	24	<input type="radio"/>	<input type="radio"/>	0986 348 496
		B	12	<input type="radio"/>	<input type="radio"/>	0986 348 497
		B	24	<input type="radio"/>	<input type="radio"/>	0986 348 498
		C	12	<input type="radio"/>	<input type="radio"/>	0986 348 499
		-	12/24	<input type="radio"/>	<input type="radio"/>	0986 348 519
		A	12	<input type="radio"/>	<input type="radio"/>	0986 348 520
		A	24	<input type="radio"/>	<input type="radio"/>	0986 348 521
		B	12	<input type="radio"/>	<input type="radio"/>	0986 348 522
		B	24	<input type="radio"/>	<input type="radio"/>	0986 348 523
		C	12	<input type="radio"/>	<input type="radio"/>	0986 348 524
		-	12/24	<input type="radio"/>	<input type="radio"/>	0986 348 345
		A	12	<input type="radio"/>	<input type="radio"/>	0986 348 346
		A	24	<input type="radio"/>	<input type="radio"/>	0986 348 347
		B	12	<input type="radio"/>	<input type="radio"/>	0986 348 348
		B	24	<input type="radio"/>	<input type="radio"/>	0986 348 349
		-	12/24	<input type="radio"/>	<input type="radio"/>	0986 348 416
		A	12	<input type="radio"/>	<input type="radio"/>	0986 348 417
		A	24	<input type="radio"/>	<input type="radio"/>	0986 348 418
		B	12	<input type="radio"/>	<input type="radio"/>	0986 348 419
		B	24	<input type="radio"/>	<input type="radio"/>	0986 348 420
		-	12/24	<input type="radio"/>	<input type="radio"/>	0986 348 380
		A	12	<input type="radio"/>	<input type="radio"/>	0986 348 381
		A	24	<input type="radio"/>	<input type="radio"/>	0986 348 382
		B	12	<input type="radio"/>	<input type="radio"/>	0986 348 383
		B	24	<input type="radio"/>	<input type="radio"/>	0986 348 384
		C	12	<input type="radio"/>	<input type="radio"/>	0986 348 385
		-	12/24	<input type="radio"/>	<input type="radio"/>	0986 348 386
		A	12	<input type="radio"/>	<input type="radio"/>	0986 348 394
		A	24	<input type="radio"/>	<input type="radio"/>	0986 348 395
		B	12	<input type="radio"/>	<input type="radio"/>	0986 348 396
		B	24	<input type="radio"/>	<input type="radio"/>	0986 348 397
		B	24	<input type="radio"/>	<input type="radio"/>	0986 348 398
		-	12/24	<input type="radio"/>	<input type="radio"/>	0986 348 421
		A	12	<input type="radio"/>	<input type="radio"/>	0986 348 422
		A	24	<input type="radio"/>	<input type="radio"/>	0986 348 423
		B	12	<input type="radio"/>	<input type="radio"/>	0986 348 424
		B	24	<input type="radio"/>	<input type="radio"/>	0986 348 425
		-	12/24	<input type="radio"/>	<input type="radio"/>	0986 348 375
		A	12	<input type="radio"/>	<input type="radio"/>	0986 348 376
		A	24	<input type="radio"/>	<input type="radio"/>	0986 348 377
		B	12	<input type="radio"/>	<input type="radio"/>	0986 348 378
		B	24	<input type="radio"/>	<input type="radio"/>	0986 348 379
		-	12/24	<input type="radio"/>	<input type="radio"/>	0986 348 404
		A	12	<input type="radio"/>	<input type="radio"/>	0986 348 405
		A	24	<input type="radio"/>	<input type="radio"/>	0986 348 406
		B	12	<input type="radio"/>	<input type="radio"/>	0986 348 407
		B	24	<input type="radio"/>	<input type="radio"/>	0986 348 408
		▲	24	<input type="radio"/>	<input type="radio"/>	0986 348 501
		▲	24	<input type="radio"/>	<input type="radio"/>	0986 348 503

Illustration	Circuit diagram	Light	Volts	Lock		Part number
				On	Off	
 Note: 10 A		▲	24	●	○	0986 348 502
 Note: 10 A		▲	12	○	○	0986 348 518
 Note: 10 A		▲	12	○	○	0986 348 526
		▲	24	○	○	0986 348 527
 Note: Contacts 6-8 and 6-2 = 10 A Others = 5 A		▲	12	○	○	0986 348 476
		▲	24	○	○	0986 348 477
 Note: Contacts 6-8 and 6-2 = 10 A Others = 5 A		▲	12	○	○	0986 348 478
		▲	24	○	○	0986 348 479
 Note: Contacts 6-8 and 6-2 = 10 A Others = 5 A		▲	12	○	○	0986 348 480
		▲	24	○	○	0986 348 481
 Note: Contacts 6-8 and 6-2 = 10 A Others = 5 A		▲	24	●	○	0986 348 542

▲ = Switch (Version A) with flasher function

Overview of function symbols

Symbol	Description	Part number
	Green	0 986 348 711
	Red	0 986 348 707
	Orange	0 986 348 705
	Wipers	0 986 348 708
	Wipers/washer system	0 986 348 706
	Dipped beam	0 986 348 710

Symbol	Description	Part number
	Main beam	0 986 348 703
	Floodlamp	0 986 348 700
	Hazard warning system	0 986 348 704
	Turbo blower	0 986 348 709
	Adjustment of blower speed	0 986 348 701
	Cylinder setting	0 986 348 702

Accessories

Symbol	Description	Part number
	Mounting frame	0 986 348 618
	Mounting frame	0 986 348 617
	Mounting frame	0 986 348 616
	Mounting frame	0 986 348 615
	Mounting frame	0 986 348 600
	Screen	0 986 348 621
	Socket	12 V incl. 1 bulb 0 986 348 601
		24 V incl. 1 bulb 0 986 348 602
		12 V incl. 2 bulbs 0 986 348 603
		24 V incl. 2 bulbs 0 986 348 604
	Socket	12 V incl. 1 bulb 0 986 348 608
		24 V incl. 1 bulb 0 986 348 610
		12 V incl. 2 bulbs 0 986 348 609
		24 V incl. 2 bulbs 0 986 348 611
	Plug-in lamp	12 V 0 986 348 624
		24 V 0 986 348 623

Symbol	Description	Part number
	Plug-in lamp	12 V 0 986 348 619
		24 V 0 986 348 620
	Plug-in lamp (LED)	12 V 0 986 348 606
		24 V 0 986 348 607
	Socket	0 986 348 622
	Socket	0 986 348 605



Mini-relays

Good for 250,000 switching cycles

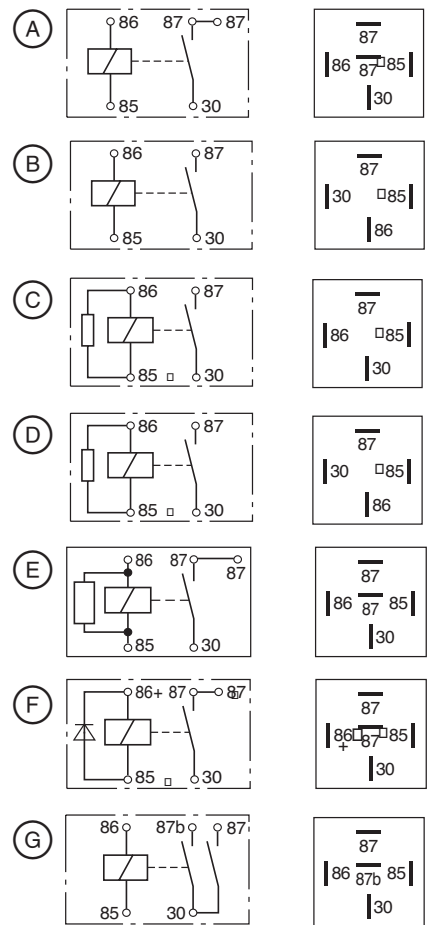
NO-contact relays

12 V/24 V



Version	Rated voltage Rated current (terminal 87)	Mounting bracket	Fig.	Part number
Basic version	12 V 30 A	with	2 A	0 332 019 150
		without	2 A	0 332 019 801 □
	24 V 20 A	with	1 A	0 332 019 151
		without	1 A	0 332 019 213
Basic version	12 V 40 A	with	2 B	0 332 019 157
	12 V	without	1 B	0 332 019 166
	24 V	without	1 B	0 332 019 205
	Shunt resistor for suppressing inductive interference- voltage peaks.	12 V 30 A	without	1 C
12 V 30 A		with	2 C	0 332 019 110
12 V 30 A		T-bar	1 C	0 332 019 456
12V40A		without	1 C	0 332 019 457
		detend	1 C	0 986 332 040
without		1 C	0 986 332 071	
T-bar		1 C	0 986 332 072	
12 V 60 A		without	1 C	0 986 332 030
12 V 70 A		without	1 C	0 986 332 002
T-bar		1 C	0 986 332 050	
Shunt resistor for suppressing inductive interference-voltage peaks. Decay diode for suppressing inductive interference- voltage peaks.	12 V 20 A	with	2 D	0 332 019 453
	24 V 30 A	without	1 E	0 332 019 204
12 V 30 A		with	2 F	0 332 019 155
	without	1 F	0 332 019 109	
No contacts with two makes	12 V, 2 x 15 A	with	3 G	0 332 015 001
		without	1 G	0 332 015 006
	24 V, 2 x 10 A	with	3 G	0 332 015 002
		without	1 G	0 332 015 008

□ Self-service pack



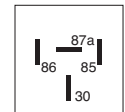
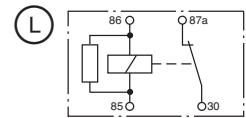
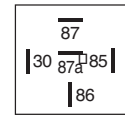
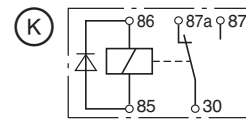
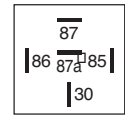
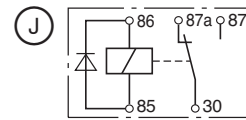
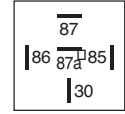
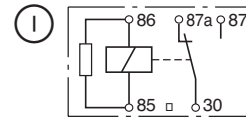
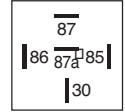
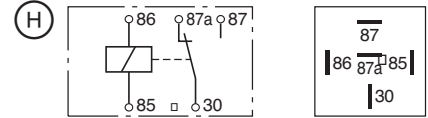
Change-over contact relays (can also be used as NC contacts)

6 V/12 V/24 V

Version	Rated voltage Rated current (terminal 87)	Mounting bracket	Fig.	Part number
Basic version.	12 V 40 A/60 A	without	1 H	0 986 332 022
	12 V 30 A/20 A	with	2 H	0 332 209 150
		without	1 H	0 332 209 138
	24 V 20 A/10 A	with	2 H	0 332 209 151
		without	1 H	0 332 209 211
Shunt resistor for suppressing inductive interference- voltage peaks.	12 V 30 A/20 A	without	1 I	0 332 209 159
	12 V 40 A/40 A	detend	1 I	0 986 332 041
	12 V 40 A/60 A	T-bar	1 I	0 986 332 053
				1 I
	24 V 20 A	T-bar	1 I	0 332 209 216
24 V 20 A/10 A	with	2 I	0 332 209 207	
	without	1 I	0 332 209 206	
Decay diode for suppressing inductive interference- voltage peaks.	12 V 30 A/20 A	with	2 K	0 332 209 158
		without	1 K	0 332 209 152
Blade terminal silver-plated.	24 V 20 A/10 A	without	1 J	0 332 209 204

NC Contacts

Version	Rated voltage Rated current (terminal 87/87a)	Mounting bracket	Fig.	Part number
Shunt resistor for suppressing inductive interference- voltage peaks.	12 V 10 A	without	1 L	0 332 109 011



Accessories

For mini-relays, time-lag relays, turn-signal flashers, pulse generators, and vehicular hazard-warning-signal flashers



1 Socket housing (5-pole) with mounting bracket

For relays and sensors without mounting bracket. For single and multiple mounting. Design: Glass-fiber-reinforced polyamide. The blade receptacles engage with their locking lance and are locked firmly in position. The plug-in bases are provided with groove and tongue and can therefore be assembled in rows; it is necessary only to secure 2 bases (hole diameter 5.3 mm, distance from base to base mount 30.5 mm).

3 334 485 008 ¹⁾

¹⁾ Qty. in pack: 5

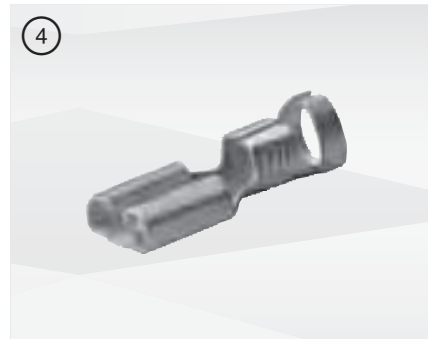
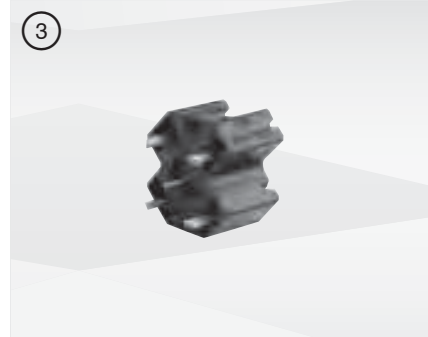


2 Socket housing (5-pole) without mounting bracket

For relays and hazard-warning flasher units with mounting bracket. Design: glass-fiber-reinforced polyamide.

The blade receptacles engage with their locking lance and are locked firmly in position.

3 334 485 007 ¹⁾



3 Plug housing

as ... 007, but for soldering onto printed circuit board.

3 334 485 041

4 Blade receptacles with locking lance

For socket housing. Terminal size: 6.3 x 0.8 mm, as per DIN 46 340/3. Qty. in pack: 25. For conductor cross-section: 1,5–2,5 mm².

1 901 355 975

Note

Relays not only reduce the loading imposed on control switches, but also reduce the voltage drops in the wiring. Furthermore, interlock circuits are a simple matter with relays. In case of cramped installation conditions, mini-relays can provide the solution.

In the case of pre-tested wiring harnesses, multiple connectors facilitate simple assembly and lower failure rates. The following mini-relay versions are available:

- Mini-relay without mounting bracket. Easily inserted in buttable screw-fastening plug-in base.
- Mini-relay with mounting bracket. Electrical connection through 5-pole socket.

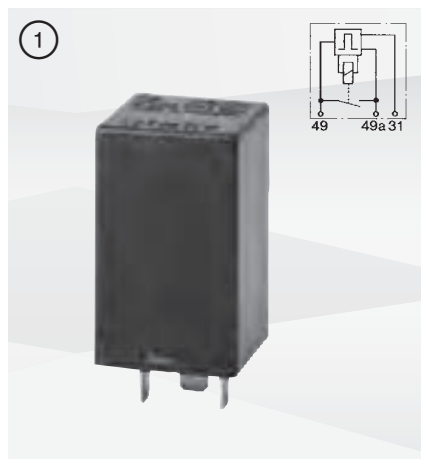
Blade-terminal connection

Blade-terminal size: 6.3 x 0.8 mm to ISO 7588

Degree of protection:

When using multiple connectors: Housing IP 34 to IEC 60529, contact with tools etc. thickness $\varnothing > 2.5$ mm. Splashwater from all directions (terminals pointing downwards).

Pulse generators



① Pulse generators, electronically controlled **12 V/24 V**

For intermittent switching of devices or lamps, e.g. to improve the warning effect of indicator lamps.

Circuitry: load-independent, starts with on phase.

Load: according to service life in hours, max.
50 W for 100 h, 100 W for 36 h.

Frequency 90 ±15 pulses/min.

Fastening: on plug-in base (accessory).

Connection: blade terminals.

12 V	0 335 322 001
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Load: max. 8 x 21 W for 100 h.

24 V	0 335 323 003
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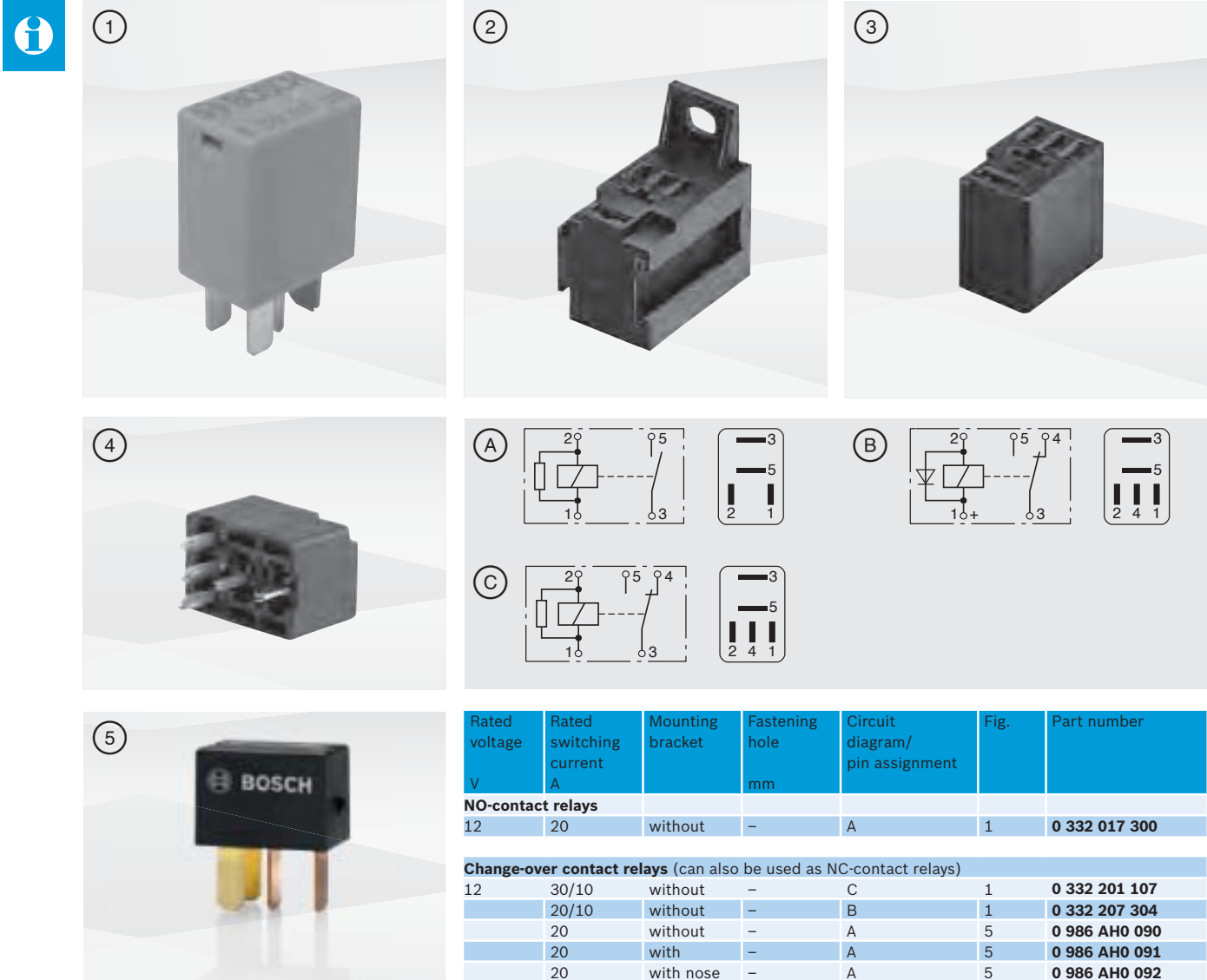


Micro-relays

Compact, and high making and/or breaking capacity

Note:

Please refer to relay catalog 1 987 721 076.



Many loads can be switched with micro relays with a lower power than the customary 30 A mini-relays. The micro relays which can be loaded with a rated current of up to 20 A are compact and have a low power loss.

Terminal designation cross-reference

Micro-relay	Mini-relay	Recommended polarity
1	86	+
2	30	+
3	87a	
4	87	

Blade terminal sizes

Connections 1, 2, 4	4.8 x 0.8 mm
Connections 3, 5	6.3 x 0.8 mm

Rated voltage V	Rated switching current A	Mounting bracket	Fastening hole mm	Circuit diagram/ pin assignment	Fig.	Part number
NO-contact relays						
12	20	without	-	A	1	0 332 017 300
Change-over contact relays (can also be used as NC-contact relays)						
12	30/10	without	-	C	1	0 332 201 107
	20/10	without	-	B	1	0 332 207 304
	20	without	-	A	5	0 986 AH0 090
	20	with	-	A	5	0 986 AH0 091
	20	with nose	-	A	5	0 986 AH0 092
24	10/5	without	-	B	1	0 332 207 402
	10/5	without	-	C	2	0 332 207 405

Accessories (order separately)

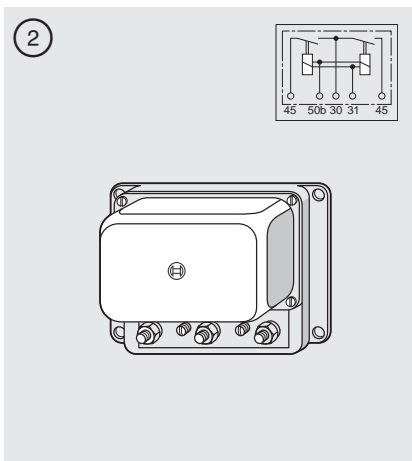
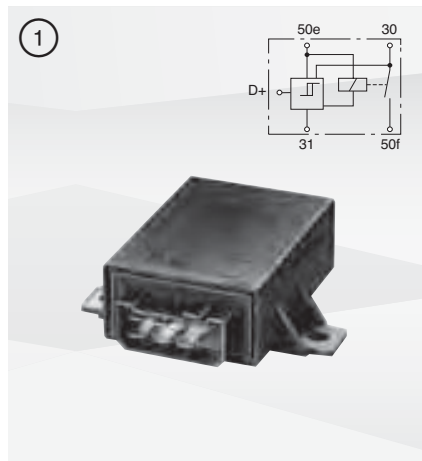
Socket housing

Version	Fastening hole mm	Fig.	Part number
Mounting bracket with hole	Ø 5.3	3	3 334 485 045
without mounting bracket	-	4	3 334 485 046
for soldering onto printed circuit board	-	5	3 334 485 049 ¹⁾

¹⁾ Note: When soldering, insert relays into the socket housing; the receptacles will then be adjusted to the correct position

Relays for starters

For commercial vehicles, buses and assemblies of equipment.
Preferred for engines where starting cannot be heard.



1 Start-locking relay
Protects the starter, the pinion and the flywheel ring gear against overload.
Start-locking function:
– Switches off the starter when the engine starts to run on its own.
– Prevents actuation of the starter when the engine is running.
– Prevents actuation of the starter after the start command has been interrupted, until the starter and engine have stopped.
Fitting: vertical on a vibration-free wall, protected against water and dirt.

**2 Start-locking/
start-repeating relay**
Start-locking function:
– Switches off the starter when the engine starts to run on its own.
– Prevents actuation of the starter when the engine is running.
– Prevents actuation of the starter after the start command has been interrupted, until the starter and engine have stopped.
Start-repeating function:
– Automatic repetition of the engagement process in the event of problems with starting, until the starter pinion engages.
Fitting: vertical on a vibration-free wall, protected against water and dirt.

Rated voltage Rated current	Type of current	Switching	Connection	Fastening mm	Dimensions L x w x H mm	fig.	Part number
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Start-locking/Start-repeating relay

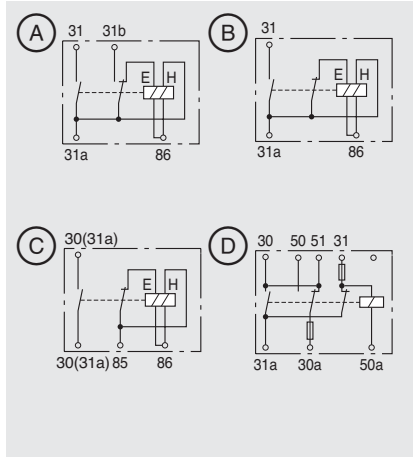
24 V*	AC	electrical	blade terminals	2x hole Ø 6,4	100 x 95 x 35	2	0 331 802 100
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* Terminal 50f – max. 15 amps.

Dual starting relay

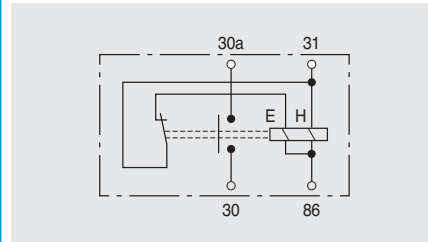
24 V	DC	V	screws M8	4x hole Ø 8,4	232 x 180 x 45	3	0 333 500 001
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Battery relays



1 Cutoff and switching relay, battery changeover relay

Design: open construction. With protective cover.
 Fitting: the terminals must point downwards.
 Fastening: 4 holes Ø 8.4 mm.
 Connection: screw terminals.
 Dimensions: 124 x 110 x 160 mm.



2 Cut-off and switching relay 24 V

Open construction: Without protective cover.

Fitting: Terminals must point downwards.
 Fastening: 4 holes, Ø 8.4 mm.
 Connection: Screw terminals.
 Dimensions: 114 x 78 x 141 mm.
 Operating temperature range: -30...+100°C.

Data for excitation side
 Max. operating voltage: 30 V.
 Response voltage: ≤ 16 V.
 Dropout voltage: ≥ 0.5 V.
 Max. make current (at rated voltage) ≤ 4.5 A.
 Max. holding voltage (at rated voltage) ≤ 0.4 V.
 Data for contacts side
 Permissible contact loading on terminal 30/30a.
 Current: ≤ 2,500 A.
 Current-flow time: ≤ 1 s.
 Repeat time: ≥ 60 s.
 Continuous current: 200 A.
 Voltage drop: ≤ 10 mV.
 Test current: 10 A.

Rated voltage V	Fig.	Switching poles	Circuit diagramm	Switching current		Part number
				continuous duty ¹⁾ A	short-time duty A	

Cutoff and switching relay for disconnecting battery voltage (ground cable)

12	①	2	A	60/200	2500 ²⁾	0 333 301 007
24	②	1	B	200	2500 ²⁾	0 333 301 009
	①		C	300	3500 ²⁾	0 333 301 010

¹⁾ max. 2 min, ²⁾ max. 1 s

Change-over relay for series and parallel connection of two 12 V batteries in 12 V systems with 24 V starter. For short-time duty.

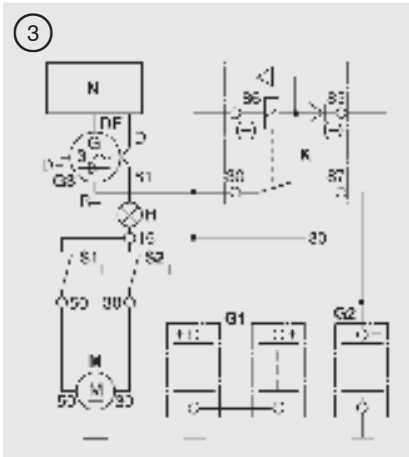
12	①	2	D	75	1500 ³⁾	0 333 300 003
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³⁾ max. 5 s

Cable dimensions	Cable length up to	Cable cross-section
IA voltage drop in the control line (ignition switch terminal 86 of cutoff relay) must not exceed 0.5 V. The cable cross-section must be matched to the cable length.	3.2 m	1.5 mm ²
	5.3 m	2.5 mm ²
	8.5 m	4 mm ²
	13.0 m	6 mm ²

Note:
 Battery relays should be installed as close to the batteries as possible, in order to keep the connection cables short.

0 333 301 015



3 Battery cutoff relay
Normally open relay

Protects the starter battery against discharge. For disconnection of an additional second battery from the starter battery when the alternator is delivering no charge.

Design: seawater-protected. Relay with reversed-polarity-protective diode and decay diode for suppressing inductive voltage peaks.

Switching capacity: 12 V 75 A (400 A, 1 s).
Fastening: 2 holes Ø 5.3 mm.

Connection: screw terminals and blade terminals.

Dimensions: 75 x 35 mm, height 55 mm.

Circuit diagram ③.

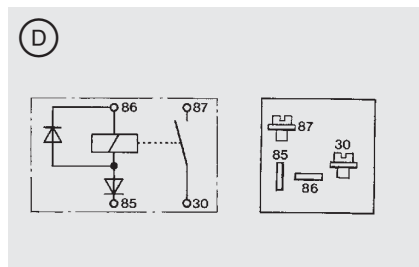
0 332 002 156 □

as ..002 156, but 24 V 50 A

(250 A, 1 s) Circuit diagram ③.

0 332 002 256 □

□ Self-service pack

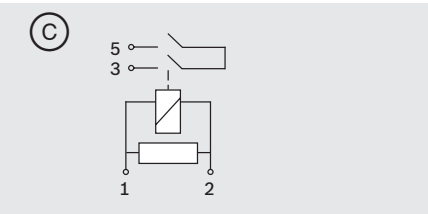
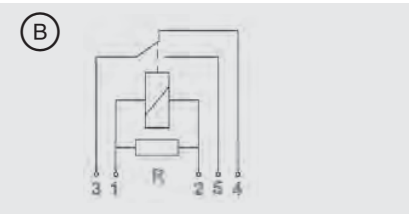
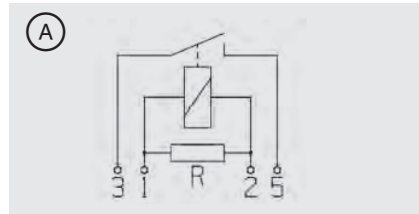


- G1 Battery for auxiliary equipment
- G2 Starter battery
- G3 Alternator
- H Charge-indicator lamp
- K Battery-cutoff relays
- M Starting
- N Voltage regulators
- S1 Ignition switches
- S2 Driving switches
- S1/S2 Combination of S1 and S2
- 30 Auxiliary equipment

Normally open relay



Nominal voltage (switching and excitation circuit)	12 VDC	12 VDC	24 VDC
Switching current	130 A	130 A	130 A
Degree of protection of housing / Terminals	IP 67	IP 67	IP 67
Overall resistance	$R_{total} = (32,5 \pm 3,3)$	$R_{total} = (32,5 \pm 3,3)$	$R_{total} = (116,8 \pm 11,7)$
Illustration	④	⑤	⑥
Circuit diagram	④	⑤	⑥
	0 986 332 086	0 986 332 087	0 986 332 091



Relays for headlamps and auxiliary lamps



①

① **Step-by-step relay (stepping relay)** **up to 24 V**

For switching high/low beam, headlamp flasher and other loads.

Operation: switching relay with changeover contact (for high and low beams). Switching is carried out by a short current pulse. The NO contact (for headlamp flasher) closes only as long as the relay is energized.

Design: galvanized housing.

Connection: blade terminals 6.3 x 0.8 mm, pointing downwards.

Dimensions: 58 x 45 mm, height 72 mm, with mounting bracket, height 52 mm with clip.

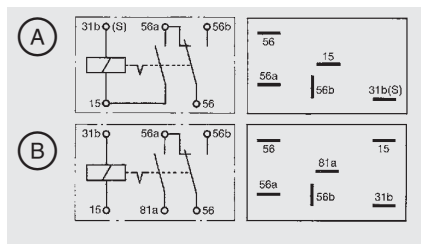
Ⓐ **NO contact/changeover contact**

Fastening: mounting bracket, hole diameter 6.8 mm, center of hole to lower edge of relay 52 mm, without terminal 81a.

12 V 150 W	0 332 515 009
24 V 150 W	0 332 515 012

Ⓑ with terminal 81a, monostable; terminal 56, bistable.

12 V 150 W	0 332 515 022
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Power relays

For switching starters, automatic preheating systems, motors.
Equipment of forklift trucks and for controlling hydraulic units.

Rated voltage V	Fig.	Circuit diagram	Switching poles	Switching current		Switch function (main relay)			Connection		Dimensions L/W/H mm	Part number
				S1 ¹⁾ A	S2 ²⁾ A	NC	NO	Change-over	Screw	Blade		
Power relay (some with preliminary contact, therefore less contact burn-off).												
Closed construction (polyamide housing); fastening 2 x Ø 5.3 mm.												
12	1	A	–	75	250		•		•	•	75 x 35 x 55	0 332 002 168
	6	A	–	70	–		•		•	•	28 x 28 x 25	0 986 AH0 080
	6	A	–	70	–		•		•	•	28 x 28 x 25	0 986 AH0 082
24	1	A	–	50	–		•		•	•	75 x 35 x 55	0 332 002 258
	6	A	–	50	120		•		•	•	43,5 x 34,5 x 32,5	0 986 332 080
	6	A	–	30	–		•		•	•	28 x 28 x 25	0 986 AH0 081
	6	A	–	30	–		•		•	•	28 x 28 x 25	0 986 AH0 083
Power relay, closed construction (metal housing); fastening 2 x Ø 5.3 mm.												
12	2	B	1	80	800		•		•	•	110 x 55 x 60	0 333 006 004
	3	B	1	150	1000		•		•	•	104 x 56 x 57	0 333 009 004
	3	B	1	150	1000		•		•	•	110 x 55 x 60	0 333 009 010 ³⁾
24	2	B	1	80	800		•		•	•	110 x 55 x 60	0 333 006 006 ³⁾
	4	C	2	100	800	•	•		•	•	105 x 50 x 55	0 333 006 010 ³⁾
	3	B	1	150	1000		•		•	•	104 x 56 x 57	0 333 009 002
	3	B	1	150	1000		•		•	•	104 x 56 x 57	0 333 009 005
	3	B	1	150	1000		•		•	•	104 x 56 x 57	0 333 009 009 ³⁾
	3	B	1	150	1000		•		•	•	106 x 56 x 57	0 333 009 011
Power relay, closed construction (metal housing); fastening 2 x Ø 5.3 mm.												
24	5	D	2	250 (3 Min.)			• Single contact		•	•	87 x 62 x 102	0 333 007 002

Degrees of protection according to IEC 60529

Designation	Protection against contact	Protection against foreign bodies	Protection against water
IP 00	no protection	no protection	no protection
IP 30	with tools etc. Thickness Ø > 2.5 mm	Ø > 2,5 mm	no protection
IP 33	with tools etc. Thickness Ø > 2.5 mm	Ø > 2,5 mm	Spraywater, at angles up 60° from the perpendicular
IP 53	complete	dust-protected	Spraywater, at angles up 60° from the perpendicular
IP 54	complete	dust-protected	Splashwater from all directions
IP 6K9K	complete	dust proof	High pressure/steam jet cleaning

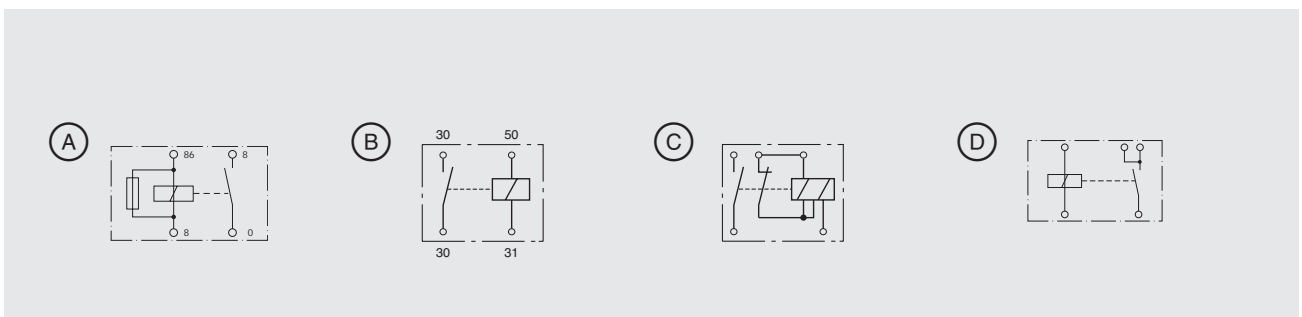
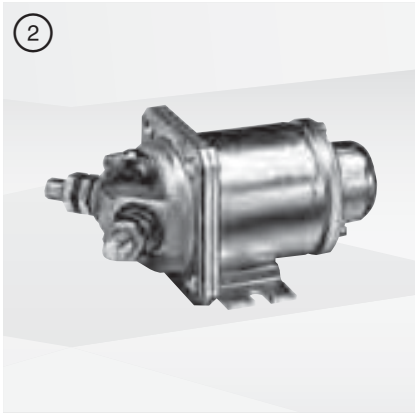
¹⁾ S1 – Continuous duty

²⁾ S2 – Short-time duty (1 s)

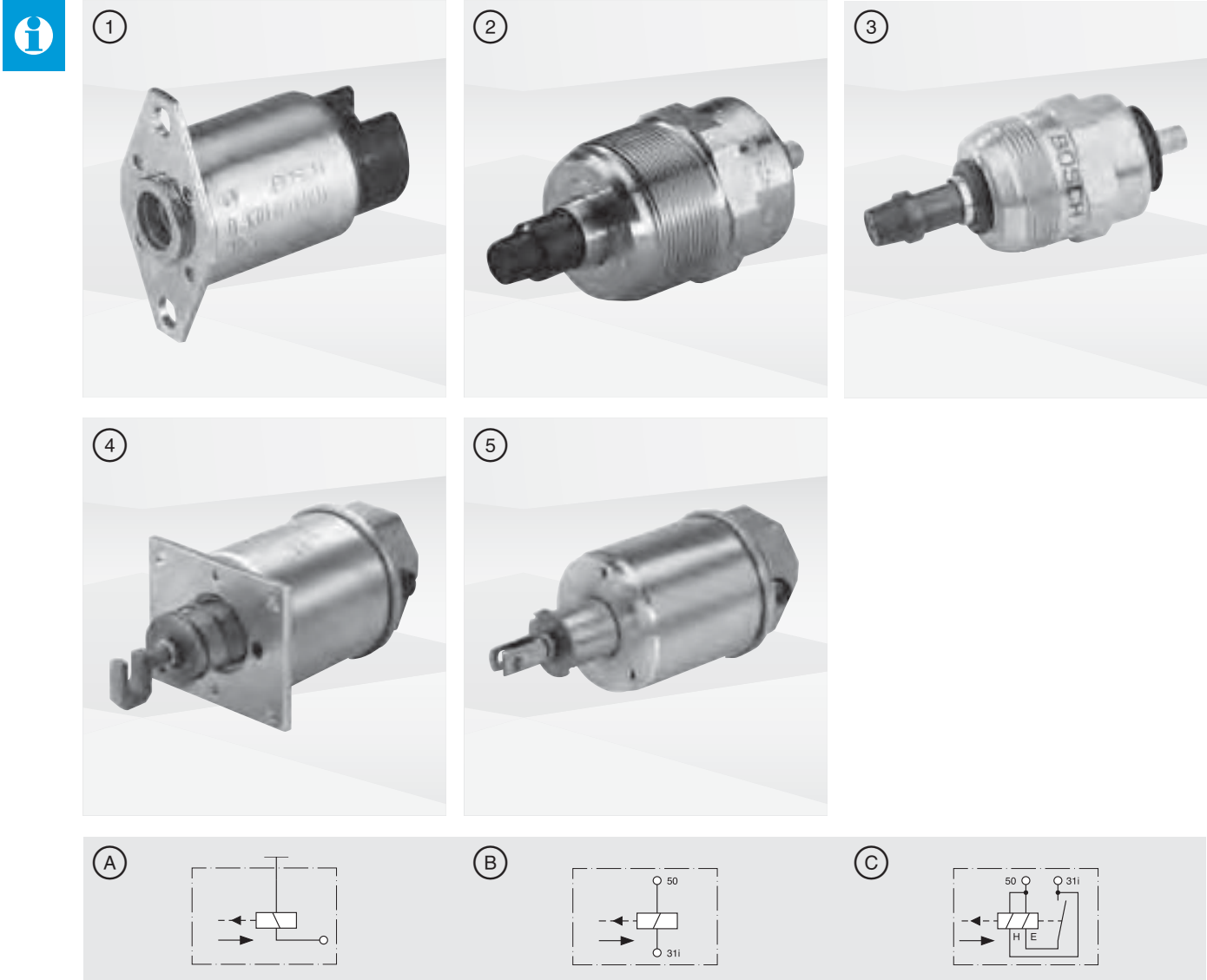
³⁾ Degree of protection

Relay	Housing	Terminals
0 333 006 006	IP 54	IP 00
0 333 006 010	IP 54	IP 00
0 333 009 009	IP 54	IP 00
0 333 009 010	IP 54	IP 00

The connection terminals must not be exposed to water and dirt.
Power relays must be mounted with the terminals at the bottom.



Pulling electromagnets 12 V/24 V



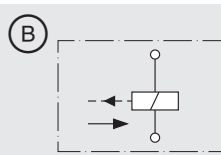
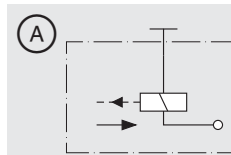
Nominal voltage	Working stroke	Nominal wattage ¹⁾	Operating mode ²⁾	Forces Working stroke ³⁾	Forces With armature pulled in ³⁾	Forces Return spring	Weight	Fig.	Connection and circuit diagram	Part number
V	mm	W		N	N	N	kg			
12	4	69	Short-time duty	≤ 14	≤ 70	4±1	0.11	1	A	0 330 001 004
12	1.3	14	Contin. duty	13	15	2.3±0.5	0.103	2	A	0 330 001 020
12	1.3	≤ 21	Contin. duty	≥ 8	≥ 11	2.3±0.5	0.074	3	A	0 330 001 040
12	15.3	277	Short-time duty	≤ 95	≤ 200	4.5±0.5	1.11	4	B	0 330 003 002
12	15.3	960/12.5 ⁴⁾	Contin. duty	≤ 110	≤ 270		1.1	5	C	0 330 003 007

1) With armature pulled in

2) Short-time duty, after 45 sec. of operation there should be a break of 4.5 min.

3) At nominal voltage and winding temperature 23±5 °C

4) Pull-in winding/hold-in winding



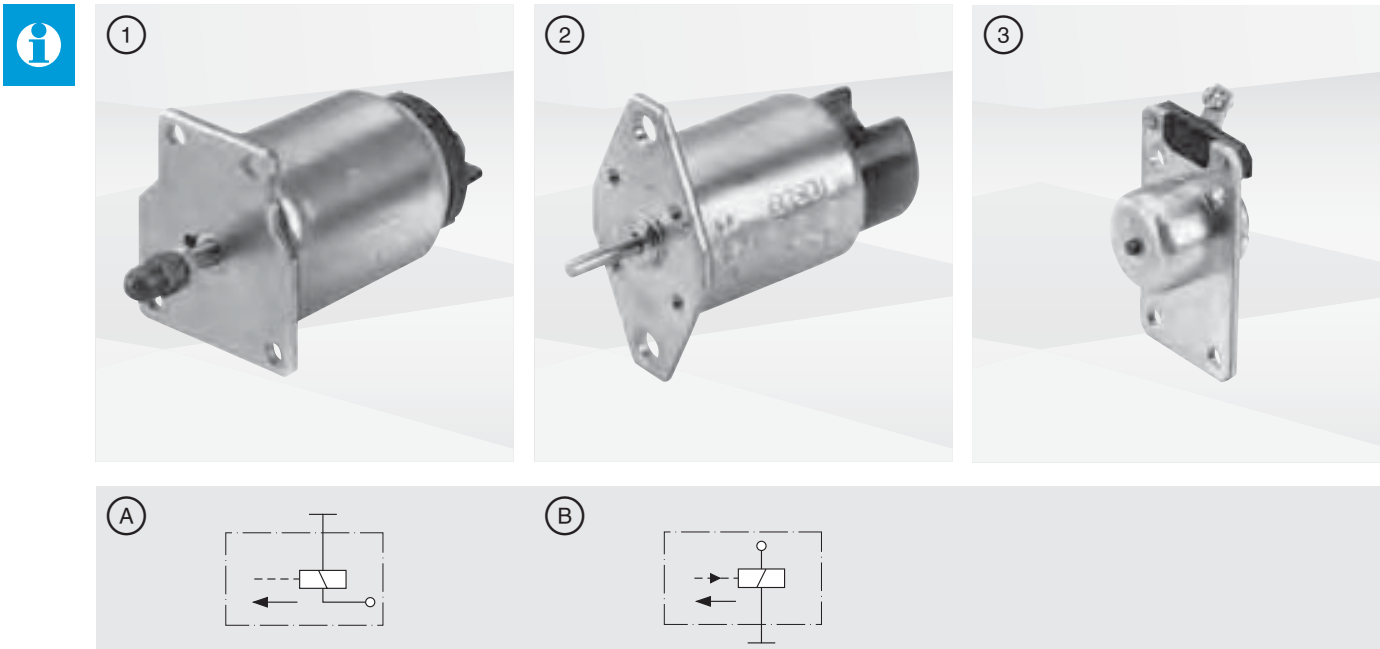
Nominal voltage	Working stroke	Nominal wattage ¹⁾	Operating mode ²⁾	Forces Working stroke ³⁾	Forces With armature pulled in ³⁾	Forces Return spring	Weight	Fig.	Connection and circuit diagram	Part number
V	mm	W		N	N	N	kg			
24	4	75	Short-time duty	≤ 14	≤ 70	4±1	0.11	1	B	0 330 001 003
24	1.3	14	Contin. duty	13	15	2.3±0.5	0.103	2	A	0 330 001 021
24	1.3	≤ 21	Contin. duty	≤ 8	≤ 11	2.3±0.5	0.076	3	A	0 330 001 047

¹⁾ With armature pulled in

²⁾ Short-time duty, after 45 sec. of operation there should be a break of 4.5 min.

³⁾ At nominal voltage and winding temperature 23±5°C

Pushing electromagnets 12 V/24 V

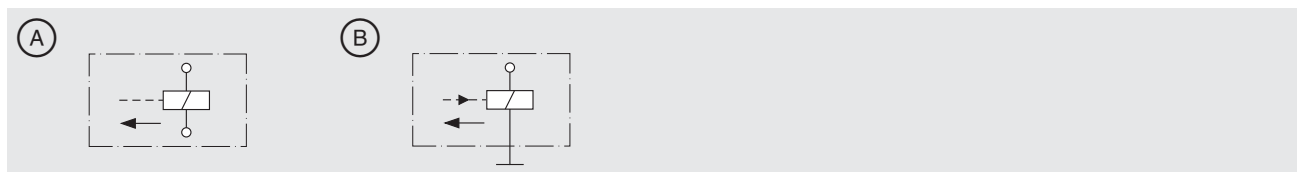


Nominal voltage	Working stroke	Nominal wattage ¹⁾	Operating mode ²⁾	Forces Working stroke ³⁾	Forces With armature pulled in ³⁾	Forces Return spring	Weight	Fig.	Connection and circuit diagram	Part number
V	mm	W		N	N	N	kg			
12	7	137	Short-time duty	≤ 50	≤ 120		0.4	1	A	0 330 101 012
12	3	42.5	Short-time duty	≤ 12	≤ 60	0.9±0.2	0.14	2	B	0 330 106 001
12	2.6	42.5	Short-time duty	≤ 20	≤ 30		0.19	3	A	0 330 106 006

¹⁾ With armature pulled in

²⁾ Short-time duty, after 45 sec. of operation there should be a break of 4.5 min.

³⁾ At nominal voltage and winding temperature 23±5 °C



Nominal voltage	Working stroke	Nominal wattage ¹⁾	Operating mode ²⁾	Forces Working stroke ³⁾	Forces With armature pulled in ³⁾	Forces Return spring	Weight	Fig.	Connection and circuit diagram	Part number
V	mm	W		N	N	N	kg			
24	7	152	Short-time duty	≤ 50	≤ 120		0.4	1	A	0 330 101 026
24	3	48	Short-time duty	≤ 12	≤ 60	0.9±0.2	0.14	2	B	0 330 106 003

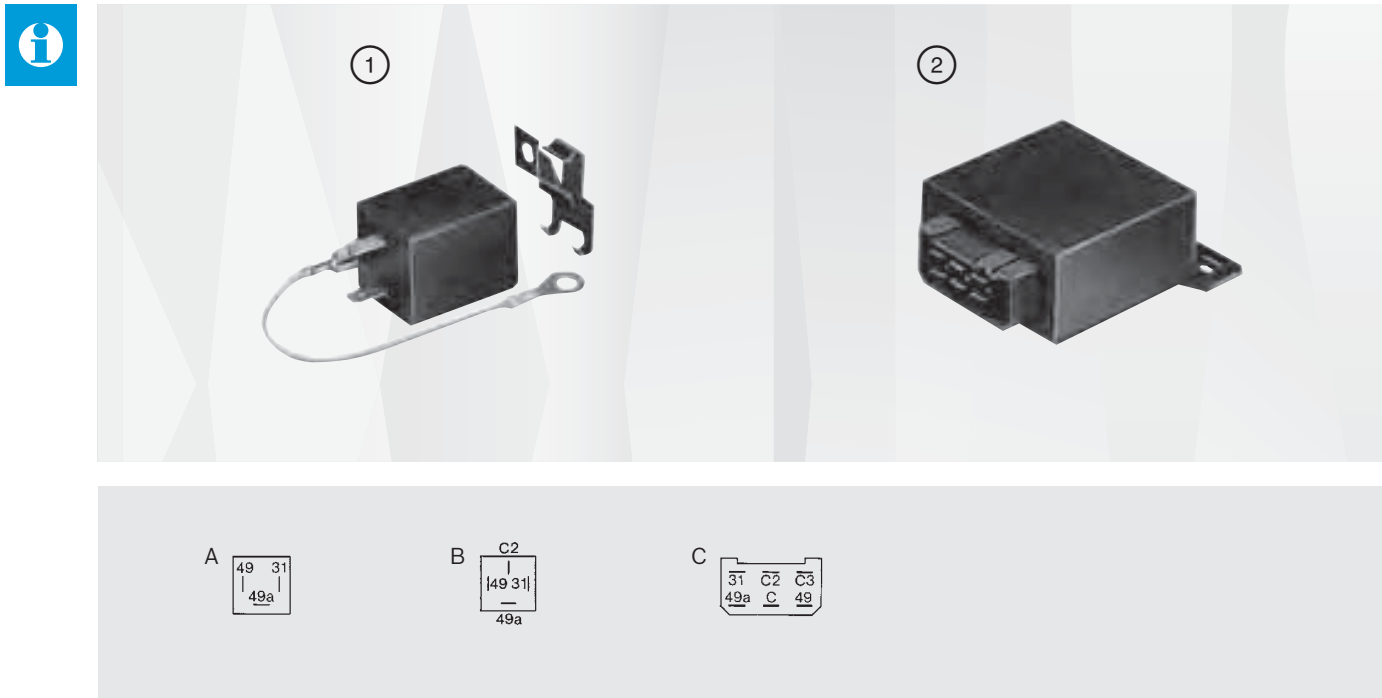
¹⁾ With armature pulled in

²⁾ Short-time duty, after 45 sec. of operation there should be a break of 4.5 min.

³⁾ At nominal voltage and winding temperature 23±5°C

Electronic hazard-warning and turn-signal flashers

Turn-signal and hazard-warning flashing



Load	Fastening	Fig.	Part number	Vehicle makes ¹⁾
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For commercial vehicles 12 V

For vehicles without trailer hitch

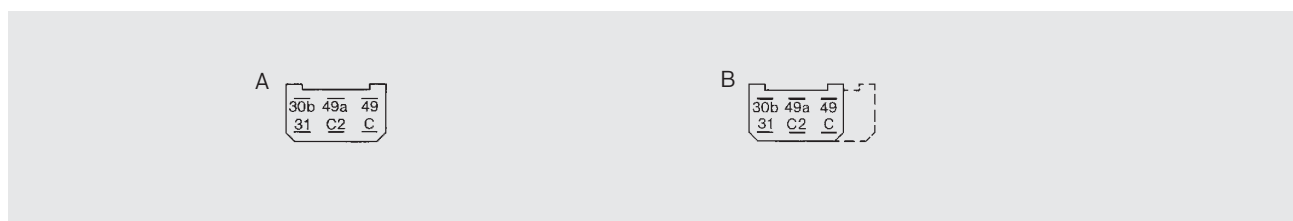
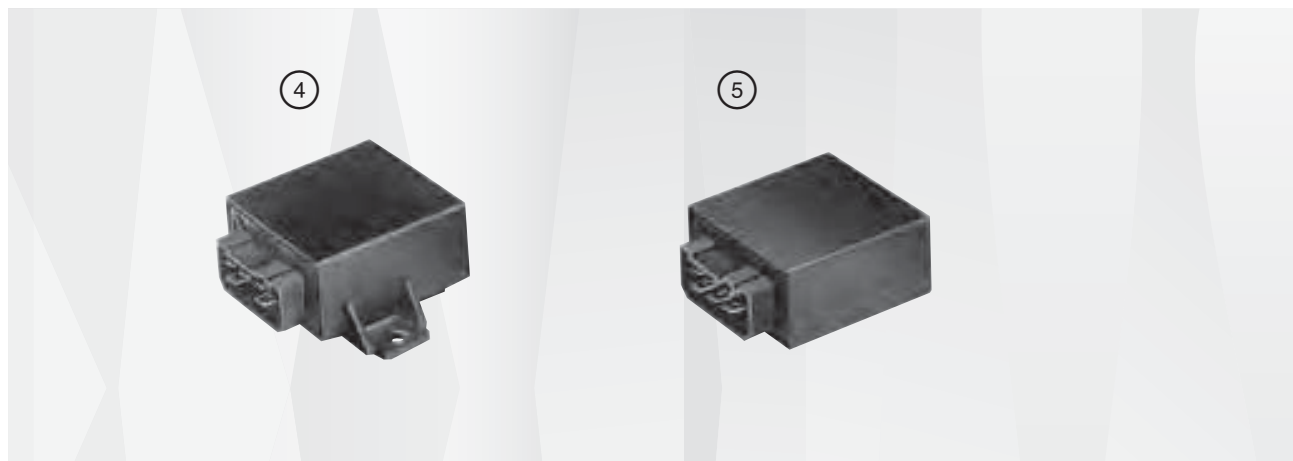
2 (4)x 21 W+ 0-4 W	Haltekralle mit Loch-Ø 6,4 mm	1 A	0 335 200 038 ²⁾	Ford, Mercedes-Benz, Volvo, VW
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For vehicles with trailer hitch

2+ 1(6)x 21 W	Mounting claw with hole Ø 6.4 mm	1 B	0 335 200 041 ²⁾	Ford, Mercedes-Benz, Volvo, VW
2+1+ 1(8)x 21 W+ 1,2-2 W	Bracket at top, 1 hole Ø 6.4 mm	2 C	0 335 200 160	Huerlimann, John Deere, Lamborghini, Same, Schilter, Steyr
2+1+ 1 x 21 W(8)/ LED	Bracket at top, 1 hole Ø 6.4 mm	2 C	0 335 200 161	

¹⁾ See application recommendations for vehicle models

²⁾ Ground cable supplied



Load	Fastening	Fig.	Part number	Vehicle makes ¹⁾
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For commercial vehicles 24 V

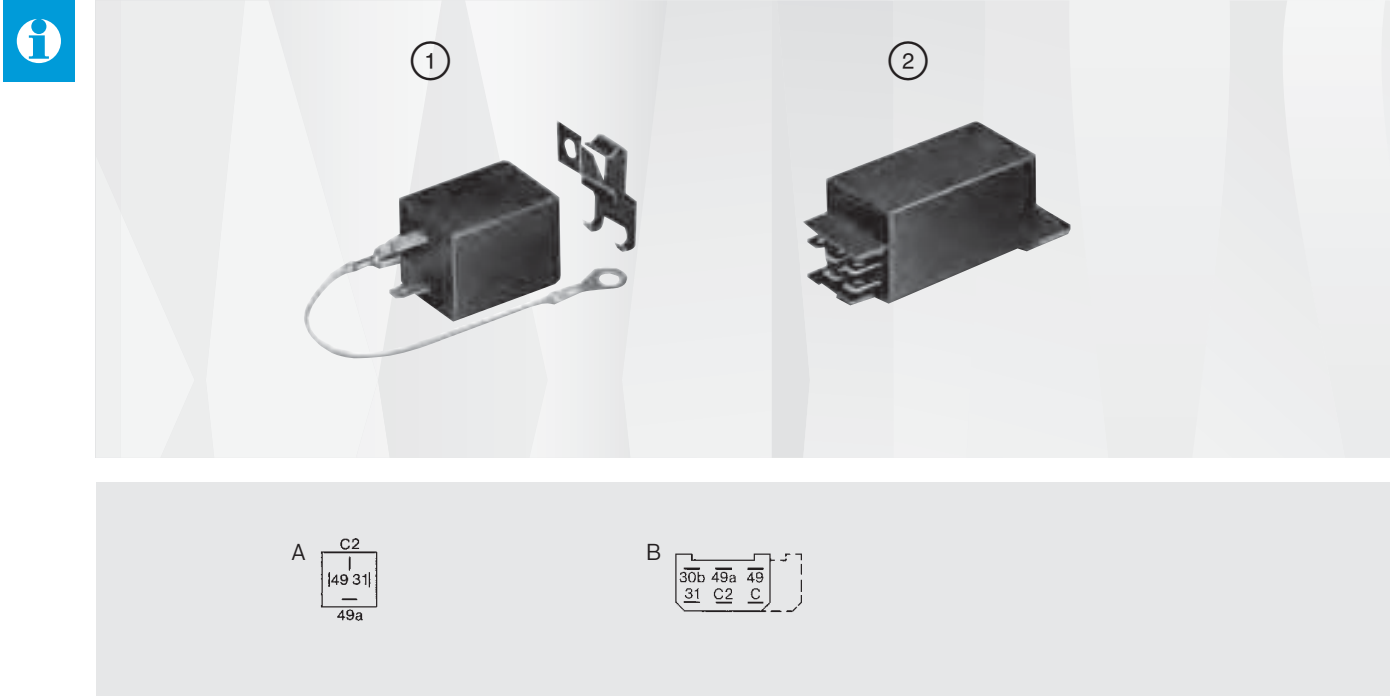
For vehicles without trailer hitch

3+1(8)x 21 W	Bracket on both sides, 2 holes Ø 6.4 mm	4 B	0 335 215 154	Berna, Faun, Kaelble, Saurer, Steyr
3+1(8)x 21 W+ 2-4 W	on plug-in base	5 A	0 335 215 155	Steyr, Volvo

¹⁾ See application recommendations for vehicle models

Electronic hazard-warning and turn-signal flashers for LED

Turn-signal and hazard-warning flashing



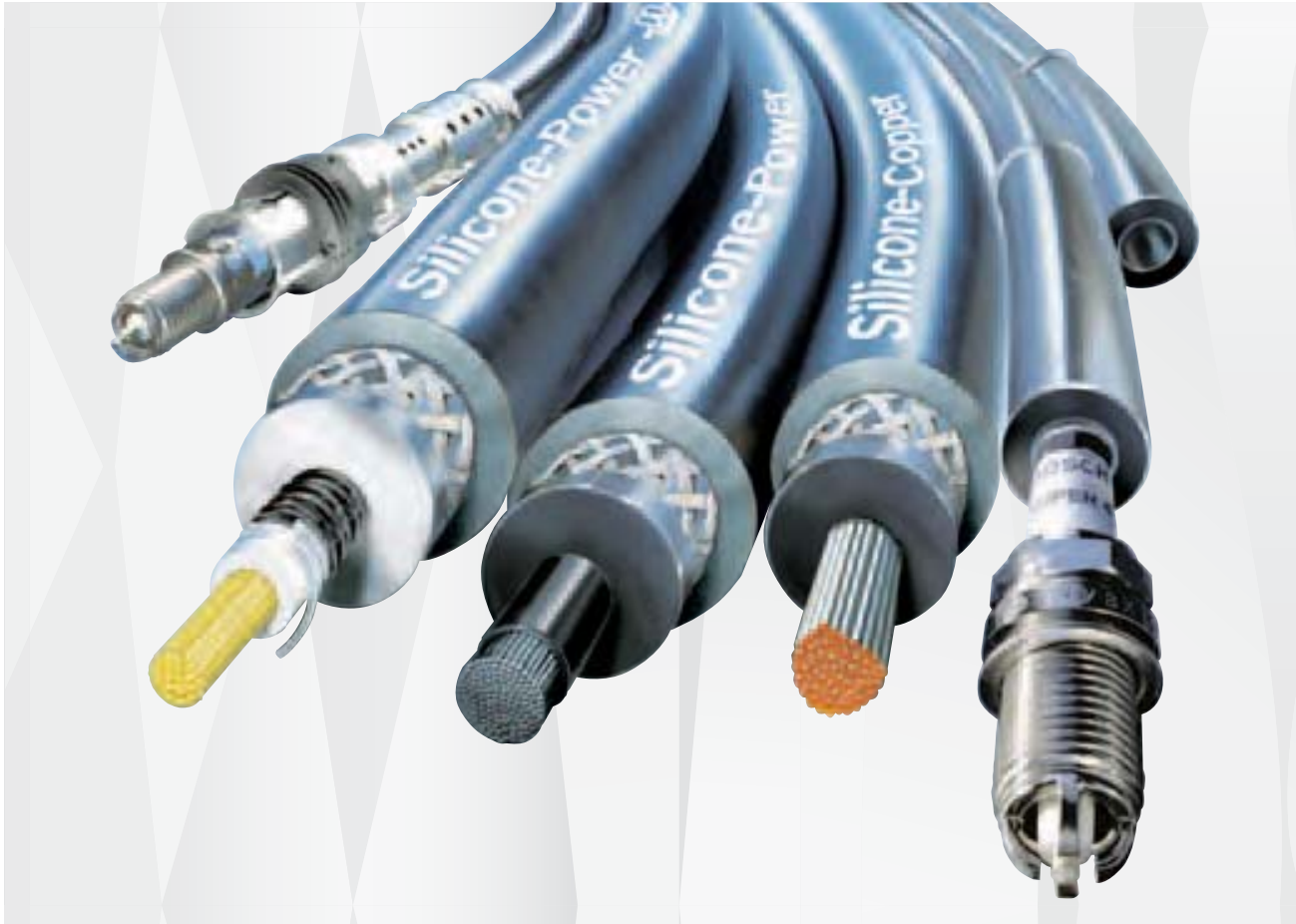
Load	Fastening	Fig.	Part number	Application
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For commercial vehicles 24 V

For vehicles with trailer hitch

3+ 1(8)x21 W	no strap	1 A	0 335 215 168	LED
4+ 1(10)x21 W	no strap	1 A	0 335 215 169	LED
2+1+ 1(8)x 21 W+ 1,2-2 W	Bracket at top, 1 hole Ø 6,4 mm	2 B	0 335 200 161	LED

**Guaranteed full power.
100 % silicone ignition cables from Bosch.**

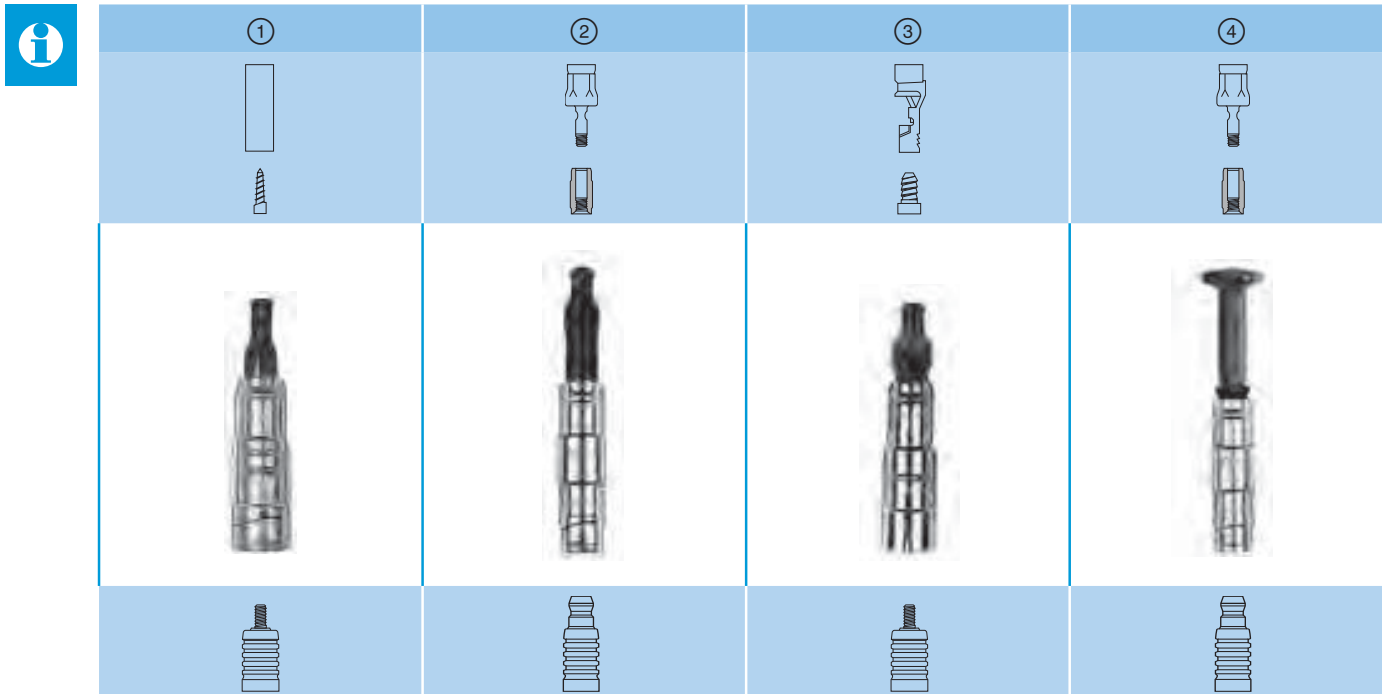


**Greatly extended range featuring
high-voltage ignition cables for a perfect fit**

- ▶ Bosch original equipment quality
- ▶ Outer ignition cable insulation made of 100 % silicone, no PVC
- ▶ Resistant to extreme temperatures between -60 °C and above +200 °C
- ▶ Not susceptible to chemical and mechanical influences
- ▶ Outstanding interference suppression and insulation
- ▶ Protection of engine and catalytic converter

Spark-plug connectors

Interference-suppressed, partially screened



For ignition cable – 7 mm dia.

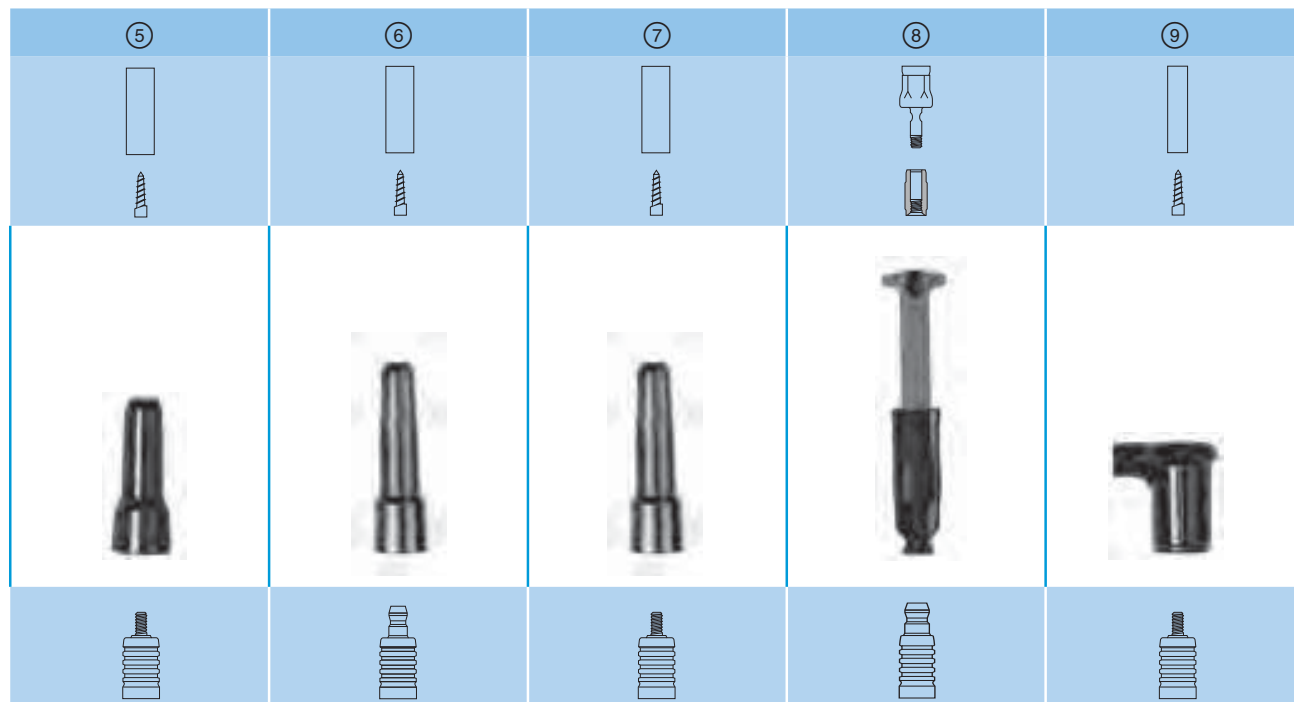
Fig.	Connections cable end/ spark plug	Spark plugs A/F ¹⁾	Length ³⁾ mm	Resistance kΩ	Material ²⁾	Characteristics	Splash guards	Part number	Application
1	Wood screw/ pin M4	21	105	1	UP/silicone	up to 120 °C	on both ends	0 356 301 022	Mercedes-Benz, general
2	Female thread M3/ DIN (ISO)	16	130	1	UP/silicone	up to 150 °C	on both ends	0 356 301 028	Mercedes-Benz, general
3	Saw-tooth thread/ pin M4	21	118	5	UP/silicone	up to 150 °C	on both ends	0 356 301 036	Audi, VW, Volvo, general
4	Female thread M3/ DIN (ISO)	16	150	2	UP/silicone	up to 150 °C	plug end	0 356 351 053	Mercedes-Benz, general

¹⁾ Width across flats

²⁾ PF polyester, UP bakelite

³⁾ Up to middle of diameter, spark plug / cable side

Spark-plug connectors Interference-suppressed



For ignition cable – 7 mm dia.

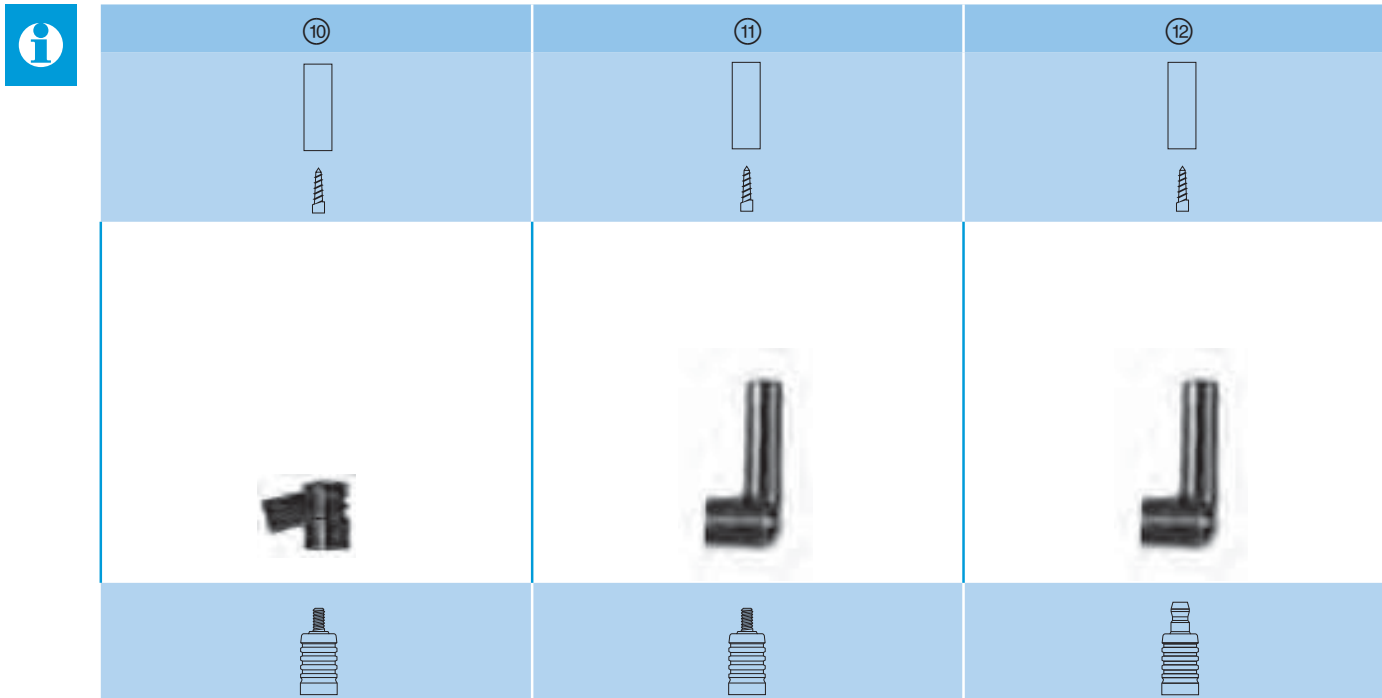
Fig.	Connections cable end/ spark plug	Spark plugs A/F ¹⁾	Length ³⁾ mm	Resistance kΩ	Material ²⁾	Characteristics	Splash guards	Part number	Application
5	Wood screw/ pin M4	21	52	–	PF	up to 120°C	–	0 356 002 001	General
6	Wood screw/ DIN (ISO)	21	63	1	UP	up to 150°C	–	0 356 100 021	General
				5	UP	up to 150°C	–	0 356 100 006	Volvo, general
7	Wood screw/ pin M4	21	63	1	UP	up to 150°C	–	0 356 100 014	Mercedes-Benz, VW, general
			109	1.4	UP	up to 150°C	–	0 356 100 030	BMW, general
8	Female thread M3/ DIN (ISO)	16	140	2	UP/silicone	up to 150°C	plug end	0 356 150 022	Mercedes-Benz
9	Wood screw/ pin M4	21	32/33	–	PF	up to 120°C	–	0 356 050 001	General

¹⁾ Width across flat

²⁾ PF polyester, UP bakelite, PPS polyphenylene sulfide

³⁾ Up to middle of diameter, spark plug / cable side

Spark-plug connectors (continued)
Interference-suppressed



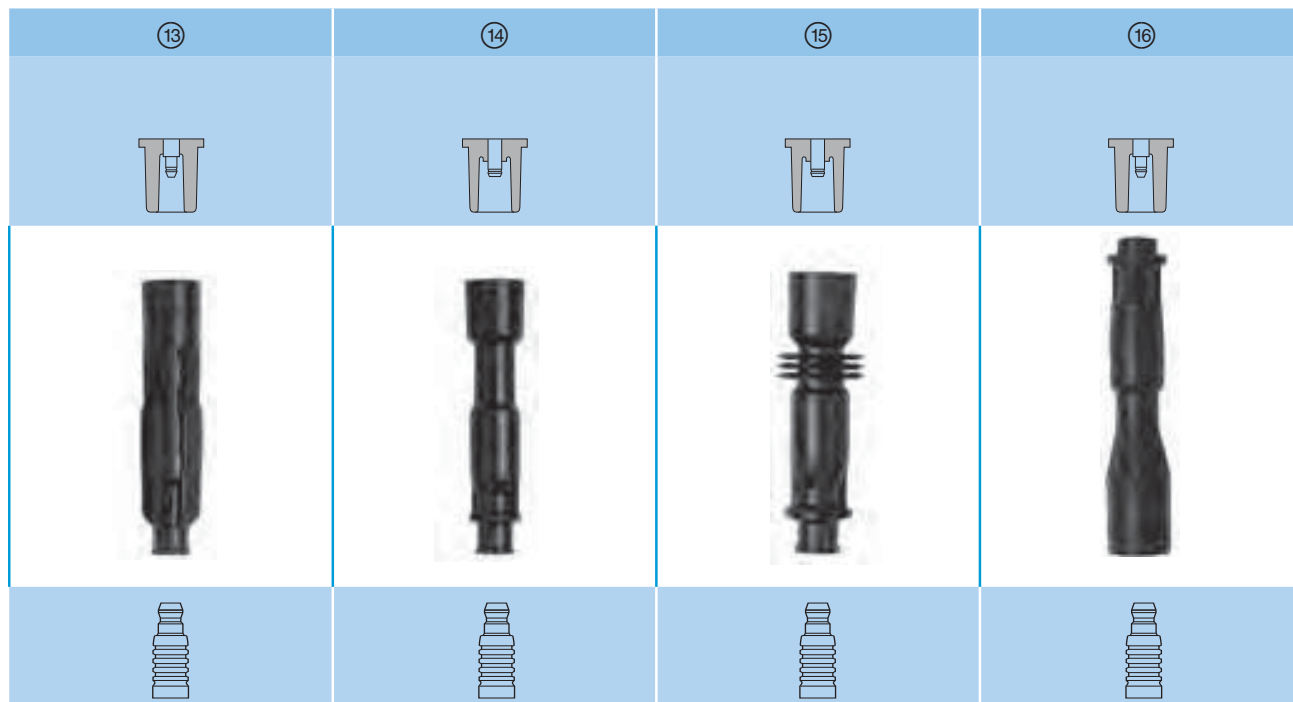
For ignition cable – 7 mm dia.

Fig.	Connections cable end/ spark plug	Spark plugs A/F ¹⁾	Length ³⁾ mm	Resistance kΩ	Material ²⁾	Characteristics	Splash guards	Part number	Application
10	Wood screw/ pin M4	21	24/23	–	Silicone	up to 200 °C, for ignition cable 5 mm dia.	on both ends	0 356 050 009	
11	Wood screw/ pin M4	21	50/21	1.4	PF	up to 120 °C	–	0 356 150 005	General
12	Wood screw/ DIN (ISO)	21	50/21	1.4	PF	up to 120 °C	–	0 356 150 007	General

¹⁾ Width across flat

²⁾ PF polyester, UP bakelite, PPS polyphenylene sulfide

³⁾ Up to middle of diameter, spark plug / cable side



Plug connectors for installation between ignition-module coil and spark plug

Fig.	Connections cable end/ spark plug	Spark plugs A/F ¹⁾	Length ³⁾ mm	Resistance kΩ	Material ²⁾	Characteristics	Splash guards	Part number	Application
13	Detent pin 4 mm dia./ DIN (ISO)	16	114	2	UP/silicone	up to 150°C	on both ends	0 356 100 100	Mercedes-Benz
14	Detent pin 5 mm dia./ DIN (ISO)	16	109	2	UP/silicone	up to 150°C	on both ends	0 356 100 104	Audi
15	Detent pin 5 mm dia./ DIN (ISO)	16	100	2	UP/silicone	up to 150°C	on both ends	0 356 100 107	Alfa Romeo
16	Detent pin 4 mm dia./ DIN (ISO)	16	121	1	UP/silicone	up to 150°C	on both ends	1 354 489 085	BMW

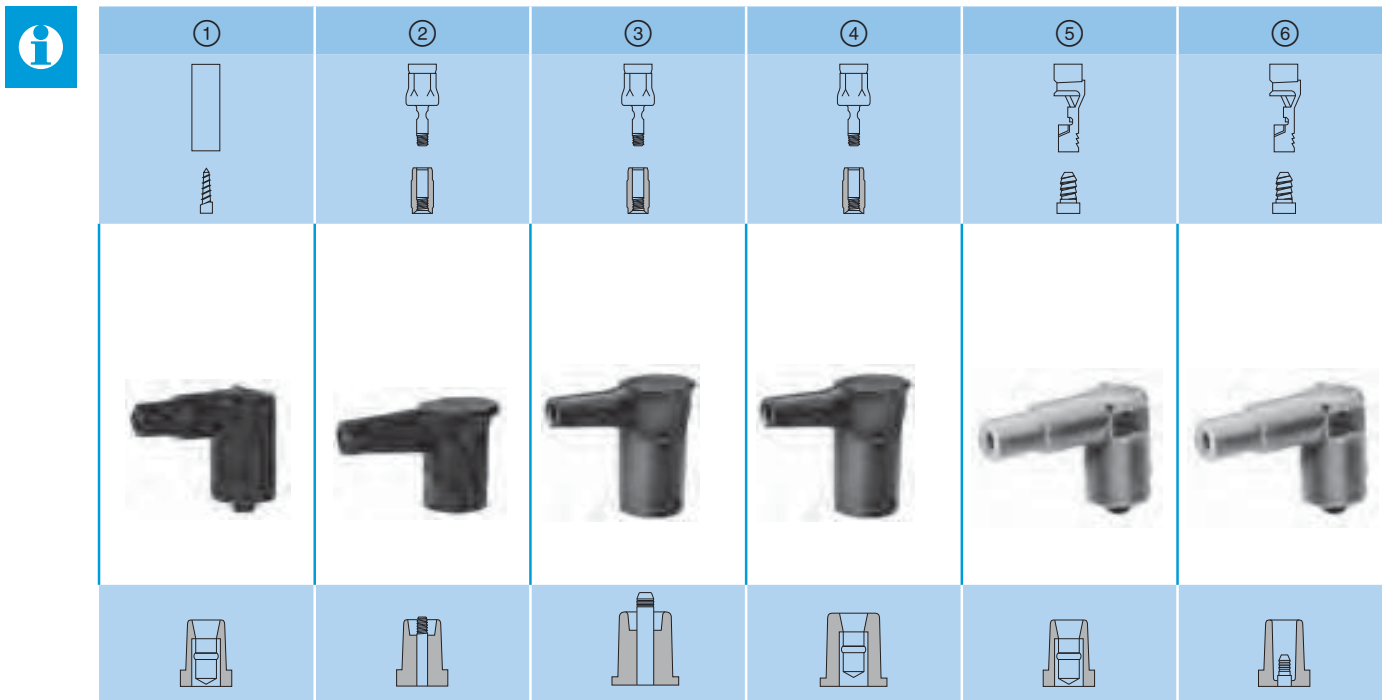
¹⁾ Width across flats

²⁾ UP bakelite

³⁾ Up to middle of diameter, spark plug / cable side

Ignition-coil connectors/Ignition-distributor connectors

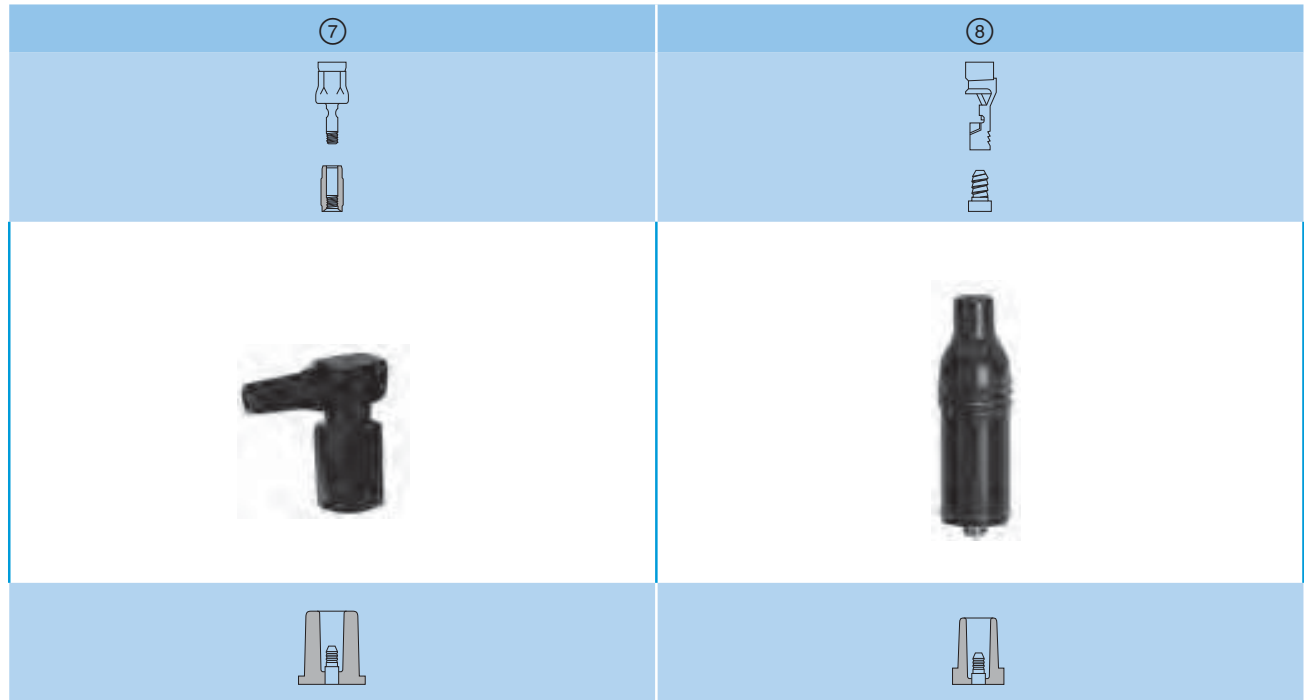
Interference-suppressed



For ignition cable – 7 mm dia.

Fig.	Connections cable end/ignition coil, ign. distributor	Length ¹⁾ mm	Resistance kΩ	Material	Characteristics	Splash guards	Part number	Application
1	Wood screw/ DIN (ISO)	30/23	1	Silicone	for 27 kV domes, up to 120 °C	on both ends	0 356 250 019	Audi, BMW, VW, general
2	Female thread M3/pin M4	24/37	–	Silicone	for 27 kV domes, up to 120 °C	on both ends	0 356 250 024	Mercedes-Benz
3	Female thread M3/detent pin 6.4 mm dia.	37/37	–	Silicone	for 30 kV domes, up to 120 °C	on both ends	0 356 250 027	Mercedes-Benz, Porsche
4	Female thread M3/DIN (ISO)	42/37	–	Silicone	for 30 kV domes, up to 120 °C	on both ends	0 356 250 029	Mercedes-Benz, Porsche
5	Saw-tooth thread/ DIN (ISO)	30/41	1	Silicone	for 27 kV domes, up to 120 °C	on both ends	0 356 250 031	Audi, BMW, VW
6	Saw-tooth thread/ detent pin 4 mm dia.	29/41	1	Silicone	for 27 kV domes, up to 120 °C	on both ends	0 356 250 033	Alfa Romeo, Audi, BMW, VW

¹⁾ Up to middle of diameter on each connector side



For ignition cable – 7 mm dia.

Fig.	Connections cable end/ignition coil, ign. distributor	Length ¹⁾ mm	Resistance kΩ	Material	Characteristics	Splash guards	Part number	Application
7	Female thread M3/ detent pin 4 mm dia.	43/38 ¹⁾	1	Silicone	for 30 kV domes, up to 120 °C	on both ends	0 356 250 035	Mercedes-Benz
8	Saw-tooth thread/ detent pin 4 mm dia.	68	1	Silicone ²⁾	for 27 kV domes, up to 120 °C	on both ends	0 356 200 013	Audi, VW, general

¹⁾ Up to middle of diameter on each connector side

²⁾ CR neoprene



Copper-core ignition cables, unscreened

① ... ③ By the meter

Fig.	Ignition cable dia. mm	Conductor cross-section mm ²	Version	Part number 50 m in cardboard box
1	5	1	Black PVC	6 181 190 100
			Black PVC	6 181 090 100
2	7	1	Black/Hypalon, low capacity, heat-resistant to 150 °C	6 180 190 100
			Transparent PVC	6 181 001 100
3	7	1	Black silicone	5 956 569 015
			Red silicone	5 956 563 015

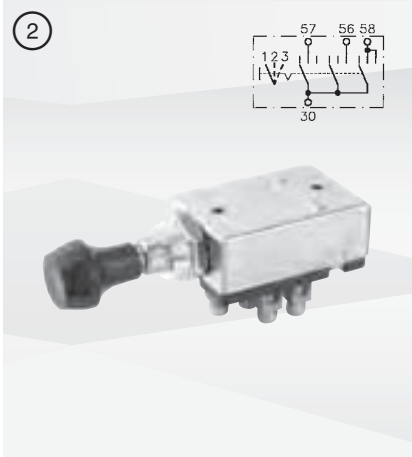
Accessories for vehicle heaters

For with water-cooled engines vehicles



① **Water cock for pipe connection**
(Quantity required: 2)

1 147 415 000



② **Pull switch, multi-position switch.**
Ivory-colored switch knob.

Load: 100 W 24 V.

Switch positions: 1 off, 2 blower stage I,
3 blower stage II.

Fastening: With M 10 x 1 round nut.

Installation: Ø 10.5 mm. Wall thickness
up to 2 mm.

Connection: screw terminals.

0 986 340 120



③ **Electric water pump**
(without fastening materials)

Application for heating systems in construction
machines etc. with thermosiphon cooling. Water
connection Ø 14 mm.

24 V

0 392 020 027

Fastening materials

for electric water pump












Spring washer Ø 5 mm












2 916 699 131

























Part-number overview

(complete)












										
0 189 ...			0 320 226 010 A84	0 332 019 801 A160	0 336 ...			0 342 202 002 A129		
0 189 999 01M A94		0 320 226 011 A84	0 332 109 011 A162	0 336 920 003 A135		0 342 203 001 A129		0 342 307 001 A128		
0 189 999 03M A94		0 320 226 012 A84	0 332 201 107 A164	0 336 920 004 A135		0 342 307 002 A128		0 342 307 002 A128		
0 189 999 07M A95		0 320 226 016 A85	0 332 207 304 A164	0 340 ...		0 342 309 003 A131		0 342 309 005 A131		
0 189 999 130 A94		0 320 226 017 A85	0 332 207 402 A164	0 340 000 001 A123		0 342 309 006 A131		0 342 309 007 A131		
0 189 999 130 A94		0 328 ...	0 332 207 405 A164	0 340 006 012 A124		0 342 309 008 A130		0 342 309 010 A131		
0 189 999 170 A95		0 328 003 024 A90	0 332 209 138 A162	0 340 302 100 A127		0 342 309 011 A131		0 342 309 012 A131		
0 305 002 001 A26		0 328 003 025 A90	0 332 209 150 A162	0 340 302 101 A127		0 342 309 012 A131		0 342 309 020 A131		
0 306 ...		0 328 006 002 A90	0 332 209 151 A162	0 340 302 102 A126		0 342 309 013 A131		0 342 311 003 A130		
0 306 003 002 A15		0 328 100 002 A92	0 332 209 152 A162	0 340 302 103 A126		0 342 311 004 A130		0 342 311 006 A130		
0 306 003 003 A15		0 330 ...		0 340 302 104 A126		0 342 311 007 A130		0 342 315 001 A133		
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0 306 003 009 A15		0 330 001 021 A173	0 332 209 204 A162	0 340 302 108 A126		0 343 003 005 A123		0 343 003 007 A123		
0 306 055 001 A20		0 330 001 040 A172	0 332 209 206 A162	0 340 302 109 A126		0 343 007 001 A123		0 343 008 006 A133		
0 306 080 003 A54		0 330 001 047 A173	0 332 209 207 A162	0 340 302 110 A126		0 343 008 006 A133		0 343 008 009 A133		
0 306 382 001 A55		0 330 003 002 A172	0 332 209 211 A162	0 340 302 111 A126		0 343 013 001 A123		0 343 102 008 A125		
0 306 407 001 A19		0 330 003 007 A172	0 332 209 216 A162	0 340 302 112 A126		0 343 102 010 A125		0 343 102 015 A125		
0 306 407 901 A19		0 330 101 012 A174	0 332 515 009 A168	0 340 302 113 A126		0 343 102 030 A125		0 343 102 031 A125		
0 306 481 001 A47		0 330 101 026 A175	0 332 515 012 A168	0 340 302 114 A126		0 343 107 002 A125		0 343 107 002 A125		
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Part-number overview (complete)
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5 998 343 197	A106		6 259 002 306	A109	7 782 324 020	A65	8 781 353 131	A98	8 785 620 110	A67
5 998 351 003	A107		6 259 002 405	A109	7 782 324 021	A70	8 781 353 132	A98	8 785 620 111	A64
5 998 351 004	A107		6 259 002 406	A109	7 782 324 220	A65	8 781 353 133	A98	8 785 620 111	A65
5 998 351 101	A107		6 259 002 506	A109	7 782 324 420	A65	8 781 354 002	A98	8 785 620 111	A67
5 998 351 105	A107				7 782 328 002	A60	8 781 354 003	A98	8 785 620 112	A64
5 998 352 013	A107		7 781 ...		7 782 328 004	A61	8 781 354 004	A98	8 785 620 112	A65
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5 998 352 021	A107		7 781 700 006	A96	7 782 332 020	A64	8 781 354 006	A98	8 785 620 200	A66
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6 033 ...			7 781 700 008	A96	7 782 332 022	A69	8 781 355 800	A97	8 785 620 203	A66
6 033 FB1 193	A87		7 781 700 009	A96	7 782 332 220	A64	8 781 355 810	A96	8 785 620 204	A66
6 033 FB1 194	A87		7 781 700 010	A96	7 782 332 420	A64	8 781 355 811	A96	8 785 620 300	A68
6 033 FB1 195	A87		7 781 700 013	A97	7 782 334 020	A64	8 781 360 800	A97	8 785 620 300	A69
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6 033 FB1 214	A87		7 781 700 015	A97	7 782 334 022	A69			8 785 620 300	A71
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6 033 FB1 510	A88		7 781 700 020	A98	7 782 362 220	A66	8 784 477 005	A99	8 785 620 301	A71
6 033 FB2 011	A87		7 781 700 021	A98	7 782 362 420	A66	8 784 477 008	A96		
6 033 FB2 012	A87		7 781 700 022	A98	7 782 364 020	A66	8 784 478 014	A96	8 787 ...	
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6 033 FB4 147	A83		7 781 700 025	A98	7 782 364 420	A66	8 784 479 005	A97	8 787 010 011	A73
6 033 FB4 174	A83		7 781 700 026	A98	7 782 372 020	A67	8 784 479 006	A97	8 787 010 015	A67
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6 168 ...			7 781 700 029	A96	7 782 372 420	A67	8 784 480 009	A97	8 787 022 013	A64
6 168 910 161	A109		7 781 700 030	A96	7 782 374 020	A67	8 784 480 010	A96	8 787 022 013	A73
6 168 910 251	A109		7 781 700 031	A96	7 782 374 021	A71	8 784 480 011	A96	8 787 022 016	A60
6 168 910 351	A109		7 781 700 032	A98	7 782 374 220	A67	8 784 485 000	A97	8 787 022 016	A64
6 168 910 501	A109		7 781 999 001	A65	7 782 374 420	A67	8 784 485 001	A97	8 787 022 016	A73
6 168 910 701	A109		7 781 999 001	A66			8 784 485 023	A97	8 787 022 019	A60
6 168 910 951	A109		7 781 999 001	A72	8 780 ...		8 784 485 024	A97	8 787 022 019	A64
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6 180 ...			7 781 999 001	A65	8 780 206 048	A66	8 784 485 034	A98		
6 180 190 100	A186		7 781 999 015	A66	8 780 206 048	A74			8 790 ...	
			7 781 999 015	A72	8 780 223 011	A65	8 785 ...		8 790 451 002	A96
6 181 ...			7 781 999 015	A72	8 780 223 012	A66	8 785 110 068	A65		
6 181 001 100	A186		7 781 999 592	A110	8 780 223 012	A66	8 785 110 068	A72		
6 181 090 100	A186		7 781 999 593	A110	8 780 422 000	A98	8 785 110 068	A74		
6 181 190 100	A186		7 781 999 594	A110	8 780 499 002	A98	8 785 110 077	A74		
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6 244 ...			7 781 999 596	A110	8 781 ...		8 785 110 077	A74		
6 244 001 203	A108		7 781 999 939	A107	8 781 324 028	A121	8 785 110 109	A65		
6 244 001 205	A108		7 781 999 948	A110	8 781 353 000	A98	8 785 110 109	A75		
6 244 002 305	A108		7 781 999 949	A110	8 781 353 001	A98	8 785 110 127	A65		
6 244 002 306	A108		7 781 999 950	A107	8 781 353 007	A98	8 785 110 128	A66		
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			7 782 ...		8 781 353 008	A98	8 785 411 296	A67		
6 254 ...			7 782 319 052	A72	8 781 353 009	A98	8 785 411 297	A66		
6 254 011 205	A108		7 782 319 054	A72	8 781 353 119	A98	8 785 510 170	A72		
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