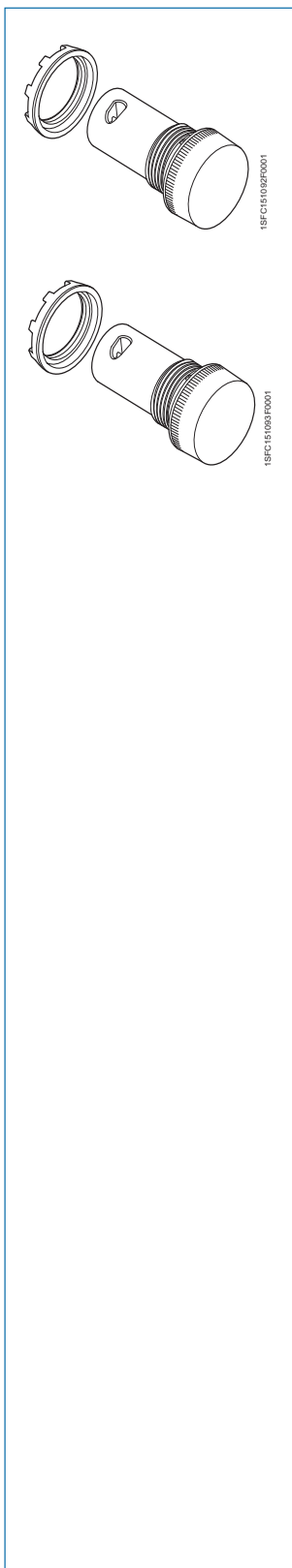


Pilot devices - Compact range

Pilot lights/Pilot lights with integrated LED



Pilot light Ba 9s base, bulb not included

Description	Type	Order Code	Weight, kg
Color:			
Red	CL-100R	1SFA 619 402 R1001	0.018
Green	CL-100G	1SFA 619 402 R1002	0.018
Yellow	CL-100Y	1SFA 619 402 R1003	0.018
Blue	CL-100L	1SFA 619 402 R1004	0.018
White	CL-100W	1SFA 619 402 R1005	0.018
Clear	CL-100C	1SFA 619 402 R1008	0.018

Pilot light with integrated LED Service life >50 000 hours

Color	Rated current mA	Lumi- nance mcd	Wave- length nm	Type	Order Code	Weight, kg
Rated voltage 12 V, DC ¹⁾						
Red	30	60	625	CL-501R	1SFA 619 402 R5011	0.023
Green	15	126	520	CL-501G	1SFA 619 402 R5012	0.023
Yellow	30	60	590	CL-501Y	1SFA 619 402 R5013	0.023
Blue	30	22	470	CL-501L	1SFA 619 402 R5014	0.023
White	30	88	x=0.31 y=0.32	CL-501W	1SFA 619 402 R5015	0.023
Rated voltage 24 V, AC/DC						
Red	15	60	625	CL-502R	1SFA 619 402 R5021	0.023
Green	15	126	520	CL-502G	1SFA 619 402 R5022	0.023
Yellow	15	60	590	CL-502Y	1SFA 619 402 R5023	0.023
Blue	15	22	470	CL-502L	1SFA 619 402 R5024	0.023
White	15	88	x=0.31 y=0.32	CL-502W	1SFA 619 402 R5025	0.023
Rated voltage 48 V, AC/DC						
Red	15	60	625	CL-504R	1SFA 619 402 R5041	0.023
Green	15	126	520	CL-504G	1SFA 619 402 R5042	0.023
Yellow	15	60	590	CL-504Y	1SFA 619 402 R5043	0.023
Blue	15	22	470	CL-504L	1SFA 619 402 R5044	0.023
White	15	88	x=0.31 y=0.32	CL-504W	1SFA 619 402 R5045	0.023
Rated voltage 60 V, AC/DC						
Red	15	60	625	CL-505R	1SFA 619 402 R5051	0.023
Green	15	126	520	CL-505G	1SFA 619 402 R5052	0.023
Yellow	15	60	590	CL-505Y	1SFA 619 402 R5053	0.023
Blue	15	22	470	CL-505L	1SFA 619 402 R5054	0.023
White	15	88	x=0.31 y=0.32	CL-505W	1SFA 619 402 R5055	0.023
Rated voltage 110-130 V, AC						
Red	15	60	625	CL-513R	1SFA 619 402 R5131	0.023
Green	15	126	520	CL-513G	1SFA 619 402 R5132	0.023
Yellow	15	60	590	CL-513Y	1SFA 619 402 R5133	0.023
Blue	15	22	470	CL-513L	1SFA 619 402 R5134	0.023
White	15	88	x=0.31 y=0.32	CL-513W	1SFA 619 402 R5135	0.023
Rated voltage 110-130 V, DC ¹⁾						
Red	15	60	625	CL-515R	1SFA 619 402 R5151	0.023
Green	15	126	520	CL-515G	1SFA 619 402 R5152	0.023
Yellow	15	60	590	CL-515Y	1SFA 619 402 R5153	0.023
Blue	15	22	470	CL-515L	1SFA 619 402 R5154	0.023
White	15	88	x=0.31 y=0.32	CL-515W	1SFA 619 402 R5155	0.023
Rated voltage 220 V, DC ¹⁾						
Red	15	60	625	CL-515R	1SFA 619 402 R5201	0.023
Green	15	126	520	CL-515G	1SFA 619 402 R5202	0.023
Yellow	15	60	590	CL-515Y	1SFA 619 402 R5203	0.023
Blue	15	22	470	CL-515L	1SFA 619 402 R5204	0.023
White	15	88	x=0.31 y=0.32	CL-515W	1SFA 619 402 R5205	0.023
Rated voltage 230 V, AC						
Red	15	60	625	CL-523R	1SFA 619 402 R5231	0.023
Green	15	126	520	CL-523G	1SFA 619 402 R5232	0.023
Yellow	15	60	590	CL-523Y	1SFA 619 402 R5233	0.023
Blue	15	22	470	CL-523L	1SFA 619 402 R5234	0.023
White	15	88	x=0.31 y=0.32	CL-523W	1SFA 619 402 R5235	0.023

¹⁾ Care should be taken for DC supply where + and - must be correctly connected.
(this is marked on the product, X1 (+) and X2 (-)).

Minimum order quantity: 10 pieces
Packing: 10 pieces/plastic bag, 10 bags/box

Pilot devices - Compact range

Accessories



Filament bulbs Ba 9s base Type of current: AC/DC. A lamp changing tool is required for changing bulb.

Description					Type	Order Code	Weight, kg
Rated voltage V	Rated current mA	Rated output W	Service life h	Lumi-nance mcd			
6	200	1.2	10 000	350		5911 086-11	0.002
12	100	1.2	10 000	230		5911 086-12	0.002
24	50	1.2	10 000	280		5911 086-13	0.002
30	40	1.2	10 000	250		5911 086-4	0.002
48	42	2	6 000	500		5911 086-5	0.002
60	20	1.2	5 000	190		5911 086-14	0.002
110	18	2	7 500	250		5911 086-7	0.002
130	15	2	7 500	120		5911 086-15	0.002

LEDs

With one diode chip mounted on a Ba 9s base. Choose the same color for the LED and the lamp cap or else use a clear lamp cap.

For white light use white LED with clear lamp cap. At DC the lamp base have to be connected to cathode (-) and the bottom contact to anode (+).

Color	Rated mA	Wave-current nM	Lumi-length mcd	nance	Order Code	Weight, kg
Rated voltage 12 V, DC Service life >50 000 h						
Red	15	630	250	KA2-2011	1SFA 616 921 R2011	0.005
Green	15	525	1000	KA2-2012	1SFA 616 921 R2012	0.005
Yellow	15	592	250	KA2-2013	1SFA 616 921 R2013	0.005
Blue	15	470	450	KA2-2014	1SFA 616 921 R2014	0.005
White	15	x=0.31 y=0.32	600	KA2-2015	1SFA 616 921 R2015	0.005
Rated voltage 24 V, (AC/DC ¹⁾) Service life >50 000 h						
Red	15	630	250	KA2-2021	1SFA 616 921 R2021	0.005
Green	15	525	800	KA2-2022	1SFA 616 921 R2022	0.005
Yellow	15	592	250	KA2-2023	1SFA 616 921 R2023	0.005
Blue	15	470	400	KA2-2024	1SFA 616 921 R2024	0.005
White	15	x=0.31 y=0.32	500	KA2-2025	1SFA 616 921 R2025	0.005
Rated voltage 48 V, (AC/DC ¹⁾) Service life >50 000 h						
Red	12	630	200	KA2-2041	1SFA 616 921 R2041	0.005
Green	12	525	1700	KA2-2042	1SFA 616 921 R2042	0.005
Yellow	12	592	240	KA2-2043	1SFA 616 921 R2043	0.005
Blue	12	470	720	KA2-2044	1SFA 616 921 R2044	0.005
White	12	x=0.31 y=0.32	1200	KA2-2045	1SFA 616 921 R2045	0.005
Rated voltage 60 V, (AC/DC ¹⁾) Service life >50 000 h						
Red	10	630	160	KA2-2051	1SFA 616 921 R2051	0.005
Green	10	525	1400	KA2-2052	1SFA 616 921 R2052	0.005
Yellow	10	592	200	KA2-2053	1SFA 616 921 R2053	0.005
Blue	10	470	600	KA2-2054	1SFA 616 921 R2054	0.005
White	10	x=0.31 y=0.32	1000	KA2-2055	1SFA 616 921 R2055	0.005
Rated voltage 110-130 V, AC ¹⁾) Service life 25 000 h						
Red	4-6	630	60-100	KA2-2131	1SFA 616 921 R2131	0.005
Green	4-6	525	500-850	KA2-2132	1SFA 616 921 R2132	0.005
Yellow	4-6	592	70-120	KA2-2133	1SFA 616 921 R2133	0.005
Blue	4-6	470	220-350	KA2-2134	1SFA 616 921 R2134	0.005
White	4-6	x=0.31 y=0.32	350-600	KA2-2135	1SFA 616 921 R2135	0.005
Rated voltage 110-130 V, AC/DC ¹⁾) Service life 25 000 h						
Red	4-6	630	60-100	KA2-2141	1SFA 616 921 R2141	0.005
Green	4-6	525	500-850	KA2-2142	1SFA 616 921 R2142	0.005
Yellow	4-6	592	70-120	KA2-2143	1SFA 616 921 R2143	0.005
Blue	4-6	470	220-350	KA2-2144	1SFA 616 921 R2144	0.005
White	4-6	x=0.31 y=0.32	350-600	KA2-2145	1SFA 616 921 R2145	0.005
Rated voltage 230 V, AC ¹⁾) Service life 25 000 h						
Red	4	630	60	KA2-2221	1SFA 616 921 R2221	0.005
Green	4	525	500	KA2-2222	1SFA 616 921 R2222	0.005
Yellow	4	592	70	KA2-2223	1SFA 616 921 R2223	0.005
Blue	4	470	220	KA2-2224	1SFA 616 921 R2224	0.005
White	4	x=0.31 y=0.32	350	KA2-2225	1SFA 616 921 R2225	0.005

¹⁾ At AC the luminance is decreased with 30 % and there is also a slight flickering.

Pilot devices - Compact range

Accessories



Lamp changing tool

Description	Type	Order Code	Weight, kg
For LEDs and for bulbs	KA1-8072	1SFA 616 920 R8072	0.002

Mounting tool

Description	Type	Order Code	Weight, kg
Used for tightening the locking nut	KA1-8015	1SFA 616 920 R8015	0.021

Membrane of silicone

Of transparent, heat and cold resistant silicon rubber. Does not harden at low temperature. Gives IP 67 degree of protection. When membrane is used, remove the gasket.

For operator with	Type	Order Code	Weight, kg
Flush button	KA1-8052	1SFA 616 920 R8052	0.002
Extended button	KA1-8002	1SFA 616 920 R8002	0.002

Emergency stop shroud

For 30 mm Emergency Stop Pushbuttons.

Color	Type	Order Code	Weight, kg
To prevent inadvertant operation Yellow	KA1-8053	1SFA 616 920 R8053	0.020

Protective ring

Description	Type	Order Code	Weight, kg
For flush and extended pushbutton To prevent inadvertant operation. Not together with legend plate holder.		SK 615 512-1	0.002

Protective cover

Description	Type	Order Code	Weight, kg
For flush button. To prevent inadvertant operation. Not together with legend plate holder.	KA1-8010	1SFA 616 920 R8010	0.008

Button

Description	Type	Order Code	Weight/1 pc, kg
Grey, flush (Packing unit 10 pieces)	KA1-8087	1SFA 616 920 R8087	0.001
Grey, extended (Packing unit 10 pieces)	KA1-8097	1SFA 616 920 R8097	0.001

Bezel

Description	Type	Order Code	Weight/1 pc, kg
For pushbutton			
Grey (Packing unit 10 pieces)	KA1-8079	1SFA 616 920 R8079	0.001
Black (Packing unit 10 pieces)	KA1-8022	1SFA 616 920 R8022	0.001
Chrome plastic (Packing unit 10 pieces)	KA1-8020	1SFA 616 920 R8020	0.001
Metal (Packing unit 10 pieces)	KA1-8021	1SFA 616 920 R8021	0.005
For selector switch			
Grey (Packing unit 10 pieces)	KA1-8078	1SFA 616 920 R8078	0.001
Black (Packing unit 10 pieces)	KA1-8125	1SFA 616 920 R8125	0.001
Chrome plastic (Packing unit 10 pieces)	KA1-8126	1SFA 616 920 R8126	0.001
Metal (Packing unit 10 pieces)	KA1-8127	1SFA 616 920 R8127	0.005

Pilot devices - Compact range

Accessories



30 mm adaptors

For use when fitting the 22 mm pilot devices in 30 mm mounting holes. (1.5 – 4 mm panels)

Description	Type	Order Code	Weight, kg
For use with emergency stop push-button			
Black plastic.	KA1-8027	1SFA 616 920 R8027	0.007
Metal.	KA1-8028	1SFA 616 920 R8028	0.021
For use with pushbuttons, selector switches and pilot lights			
Black plastic.	KA1-8029	1SFA 616 920 R8029	0.010
Metal.	KA1-8030	1SFA 616 920 R8030	0.035
For flush mounted pushbutton	KA1-8073	1SFA 616 920 R8073	0.050
For flush mounted selector switches	CA1-8075	1SFA 619 920 R8075	0.046

Extra key

Description	Type	Order Code	Weight, kg
Ronis 455 (key code 71)		SK 616 021-71	0.007

Pilot devices - Compact range

Technical data



Approvals

The pushbuttons, selector switches and pilot lights are approved by:
- National approval agencies: UL and China Compulsory Product Certification

For detail information please contact ABB

Standards

IEC 60947-1	Low-voltage switchgear and controlgear - Part 1: General rules
IEC 60947-5-1	Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices
IEC 60947-5-5	Low-voltage switchgear and controlgear - Part 5-5: Control circuit devices and switching elements - Electrical emergency stop device with mechanical latching function
IEC 60073	Basic and safety principles for man-machine interface, marking and identification - Coding principles for indicators and actuators
IEC 60529	Degrees of protection provided by enclosures (IP Code)
EN 60947-1	Low-voltage switchgear and controlgear - Part 1: General rules
EN 60947-5-1	Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices
EN 60947-5-5	Low-voltage switchgear and controlgear - Part 5-5: Control circuit devices and switching elements - Electrical emergency stop device with mechanical latching function
EN 60073	Basic and safety principles for man-machine interface, marking and identification - Coding principles for indication devices and actuators
EN 60529	Degrees of protection provided by enclosures (IP Code)
EN 50013	Low-voltage switchgear and controlgear for industrial use - Terminal marking and distinctive number for particular control switches
UL 508	Industrial Control Equipment
CSA C22.2 No 14	Industrial Control Equipment

Degrees of protection

Pilot device:	IP	UL/CSA
Compact pushbutton, type CP1, CP2, CP3, CP4	IP66	1, 3R, 4, 4X, 12, 13
Compact selector switch, type C2SS, C3SS		
Compact pilot light, type CL		
Compact emergency stop pushbutton, type CE3T, CE3P, CE4T, CE4P, CE3K1, CE4K1		
Terminals	IP20	

Temperature

Ambient temperature during operation	-25 to +70 °C
Exception: All pilot devices with 2 W continuously lit filament bulb	-25 to +40 °C
Storage temperature	-30 to +85 °C

Tightening torque

Locking nut, M22	Min. 2 Nm Max. 2.3 Nm
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Contacts

Ratings as per UL, CSA, NEMA	C300	R300
Rated insulation voltage	250 V	250 V
Rated thermal current	2.5 A	1 A
Rated operational current		
at 120 V	1.5 A	
125 V		0.22 A
240 V	0.75 A	
250 V		0.11 A

Ratings as per IEC 60947-5-1

Rated insulation voltage, U_i	300 V
Rated thermal current, I_{th}	5 A
Rated operational current, I_e , utilisation category AC-15	
at 120 V	1.5 A
240 V	1 A
Rated operational current, I_e , utilisation category DC-13,	
at 24 V	0.3 A
125 V	0.2 A

Short circuit protection

Max. fuse at 1 kA	16 A ordinary 10 A delayed
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Tightening torque

compact pushbutton & selector switch	0.8 Nm (M3)
compact pilot light	0.9 Nm (M3.5)
compact emergency stop pushbutton	0.8 Nm (M3)

Terminals

Plus-minus Pozidriv No. 2	
Compact pushbutton	
Compact selector switch	
Compact emergency stop	
Connectable area	min. 1 x 0.5 mm ² /1 x AWG22 max. 2 x 1.5 mm ² /2 x AWG14
Compact pilot light	
Connectable area	min. 1 x 0.5 mm ² /1 x AWG20 max. 2 x 2.5 mm ² /2 x AWG14

Material

No ozone depleting substances in the products.

All front parts are made of polycarbonate

Material	Characteristics
PC Polycarbonate	High impact strength, good outdoor resistance. Can withstand light acid solutions, aliphatic hydrocarbons, paraffin, alcohols, animal and vegetable greases.
PA Polyamide	Can withstand high temperatures, aliphatic, aromatic and chlorinated hydrocarbons, esters, ketone-aldehydes, alcohols and basic solutions.
PBT	Can withstand temperature, aliphatic and aromatic hydrocarbons, acids, basic solutions, alcohols, grease and oils
Zinc	Good corrosion resistance in inland-, sea and industrial atmosphere.
Light-alloy	Good corrosion resistance in inland-, sea and industrial atmosphere.
Rubber	Chloroprene Nitrile