



Compact Range  
22mm

# Compact Range, 22mm Pilot devices



The Compact Range is designed to be our most efficient solution when it comes to assembly and cost, suitable for the most demanding environments. It can also be combined with the Modular Range to cover the needs of additional flexibility.

#### General construction

- "All-in-one design"
- Same front as modular
- 42mm built in depth
- Up to 2 electrical separated contacts
- Metal or black plastic look
- UL file #E76003

#### Product features

- Suitable in the toughest environments IP 66, 67 & 69K
- Wiping action gives high performance with low energies
- UL/NEMA Type 1,3R,4,4X,12,13

#### Operators

- Pushbuttons (illuminated & non illuminated)
- Emergency stops (twist, pull & key release)
- Machine stops (twist, pull & key release)
- Selector switches (2 & 3 position)
- Mushrooms

#### Pilot lights

- Integrated LED (wide range of voltages)
- BA9s base for filament bulb or LED

## Pushbuttons

Flush and extended, non-illuminated

### Color codes for pushbuttons

	Red	Green	Yellow	Blue	White	Black	Grey
Δ	R	G	Y	L	W	B	U

### Bezel - How to order

Black Plastic - Standard  
 Chrome Metal - Replace '1' with '3' in  
 Catalog number



Bezel options	Catalog number
Black plastic	CP(X)10X-XX
Chrome metal	CP(X)30X-XX

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Flush pushbutton

### Operator: Flush and extended pushbutton

Description	Catalog number	Weight oz.
<b>Flush pushbutton</b>		
<b>Momentary</b>		
1 NO	CP110Δ-10	0.63
2 NO	CP110Δ-20	0.78
1 NC	CP110Δ-01	0.63
2 NC	CP110Δ-02	0.78
1 NO +1 NC	CP110Δ-11	0.78
<b>Maintained</b>		
1 NO	CP210Δ-10	0.63
2 NO	CP210Δ-20	0.78
1 NC	CP210Δ-01	0.63
2 NC	CP210Δ-02	0.78
1 NO +1 NC	CP210Δ-11	0.78



Extended pushbutton

<b>Extended pushbutton</b>		
<b>Momentary</b>		
1 NO	CP310Δ-10	0.67
2 NO	CP310Δ-20	0.78
1 NC	CP310Δ-01	0.67
2 NC	CP310Δ-02	0.78
1 NO +1 NC	CP310Δ-11	0.78
<b>Maintained</b>		
1 NO	CP410Δ-10	0.67
2 NO	CP410Δ-20	0.78
1 NC	CP410Δ-01	0.67
2 NC	CP410Δ-02	0.78
1 NO +1 NC	CP410Δ-11	0.78



Flush pushbutton with marking

<b>Flush pushbutton</b>		
<b>Momentary, white button with black I</b>		
1 NO	CP1110W-10	0.63
<b>Momentary, white button with black II</b>		
1 NO	CP1210W-10	0.63

<b>Extended pushbutton</b>		
<b>Momentary, black button with white O</b>		
1 NC	CP3310B-01	0.63

## Pushbuttons

### Flush and extended, illuminated

#### Bezel - How to order

Black plastic - Standard  
 Chrome metal - Replace '1' with '3' in  
 Catalog number



Bezel options	Catalog number
Black plastic	CP(X)1XX-XX
Chrome metal	CP(X)3XX-XX



Illuminated pushbutton

#### Operator: Illuminated pushbutton with integrated LED

Description	Catalog number	Weight oz.
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##### Flush pushbutton 24V AC/DC

###### Momentary

Red	1 NC	CP111R-01	0.88
Red	1 NO	CP111R-10	0.88
Green	1 NO	CP111G-10	0.88
Yellow	1 NO	CP111Y-10	0.88

###### Maintained

Red	1 NC	CP211R-01	0.88
Red	1 NO	CP211R-10	0.88
Green	1 NO	CP211G-10	0.88
Yellow	1 NO	CP211Y-10	0.88

##### Extended pushbutton 24V AC/DC

###### Momentary

Red	1 NC	CP311R-01	0.88
Red	1 NO	CP311R-10	0.88
Green	1 NO	CP311G-10	0.88
Yellow	1 NO	CP311Y-10	0.88

###### Maintained

Red	1 NC	CP411R-01	0.88
Red	1 NO	CP411R-10	0.88
Green	1 NO	CP411G-10	0.88
Yellow	1 NO	CP411Y-10	0.88



Illuminated pushbutton  
extended

##### Flush pushbutton 110-130V AC/DC

###### Momentary

Red	1 NC	CP112R-01	0.88
Red	1 NO	CP112R-10	0.88
Green	1 NO	CP112G-10	0.88
Yellow	1 NO	CP112Y-10	0.88

###### Maintained

Red	1 NC	CP212R-01	0.88
Red	1 NO	CP212R-10	0.88
Green	1 NO	CP212G-10	0.88
Yellow	1 NO	CP212Y-10	0.88

##### Extended pushbutton 110-130V AC/DC

###### Momentary

Red	1 NC	CP312R-01	0.88
Red	1 NO	CP312R-10	0.88
Green	1 NO	CP312G-10	0.88
Yellow	1 NO	CP312Y-10	0.88

## Illuminated pushbuttons

### Flush and extended, illuminated



Illuminated pushbutton

#### Operator: Illuminated pushbutton with integrated LED

Description		Catalog number	Weight oz.
<b>Extended pushbutton 110-130V AC/DC</b>			
Maintained			
Red	1 NC	CP412R-01	0.88
Red	1 NO	CP412R-10	0.88
Green	1 NO	CP412G-10	0.88
Yellow	1 NO	CP412Y-10	0.88

#### Flush pushbutton 220V AC/DC

##### Momentary

Red	1 NC	CP113R-01	0.88
Red	1 NO	CP113R-10	0.88
Green	1 NO	CP113G-10	0.88
Yellow	1 NO	CP113Y-10	0.88

##### Maintained

Red	1 NC	CP213R-01	0.88
Red	1 NO	CP213R-10	0.88
Green	1 NO	CP213G-10	0.88
Yellow	1 NO	CP213Y-10	0.88

#### Extended pushbutton 220V AC/DC

##### Momentary

Red	1 NC	CP313R-01	0.88
Red	1 NO	CP313R-10	0.88
Green	1 NO	CP313G-10	0.88
Yellow	1 NO	CP313Y-10	0.88

##### Maintained

Red	1 NC	CP413R-01	0.88
Red	1 NO	CP413R-10	0.88
Green	1 NO	CP413G-10	0.88
Yellow	1 NO	CP413Y-10	0.88



Illuminated pushbutton extended

## Compact mushrooms



Compact mushroom

#### Operator: Compact mushroom

Description		Catalog number	Weight oz.
Red	1 NO + 1 NC	CPM310R-11	1.3
Green	1 NO + 1 NC	CPM310G-11	1.3
Yellow	1 NO + 1 NC	CPM310Y-11	1.3
Black	1 NO + 1 NC	CPM310B-11	1.3
Blue	1 NO + 1 NC	CPM310L-11	1.3

## Emergency stop pushbuttons

### Non-illuminated

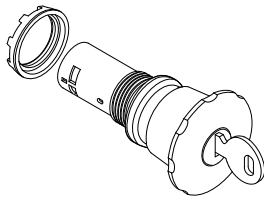
### 30mm and 40mm



Emergency stop pushbutton  
twist release, 30 mm



Emergency stop pushbutton  
pull release, 40 mm



Emergency stop pushbutton  
key release, 40mm

#### Operator: Emergency stop pushbutton

Description	Catalog number	Weight oz.	
<b>Emergency stop pushbutton</b>			
Twist release, Ø 30 mm			
1 NC	CE3T-10R-01	1.1	
2 NO	CE3T-10R-20	1.1	
2 NO	CE4T-10R-20	1.1	
2 NC	CE3T-10R-02	1.1	
1 NO + 1 NC	CE3T-10R-11	1.1	
Key release Ø 30 mm: Ronis 455, Key code 71			
2 NC	CE3K1-10R-02	2.1	
1 NO + 1 NC	CE3K1-10R-11	2.1	
Twist release Ø 40 mm			
1 NC	CE4T-10R-01	1.3	
2 NC	CE4T-10R-02	1.3	
1 NO + NC	CE4T-10R-11	1.3	
Key release Ø 40 mm: Key code 71 = Ronis 455			
2 NC	CE4K1-10R-02	2.3	
1 NO + 1 NC	CE4K1-10R-11	2.3	
"EMO" Marking			
<b>Twist release</b>			
Contacts included:			
2 NC	Red	CE9-1003	0.087

## Twist, pull or key release operators

### Non-illuminated

### 30mm and 40 mm

#### Operator: Twist, pull or key release



Machine stop pushbutton  
twist release 30 mm

Description	Catalog number	Weight oz.
<b>Machine stop pushbutton</b>		
Twist release Ø 30 mm		
1 NO + 1 NC	CE3T-10B-11	1.1
Pull release Ø 30 mm		
1 NO + 1 NC	CE3P-10B-11	1.1
Key release Ø 30 mm: Key code 71 = Ronis 455		
1 NO + 1 NC	CE3K1-10B-11	2.1
Twist release Ø 40 mm		
1 NO + 1 NC	CE4T-10B-11	1.1
Pull release Ø 40 mm		
1 NO + 1 NC	CE4P-10B-11	1.1
Key release Ø 40 mm: Key code 71 = Ronis 455		
1 NO + 1 NC	CE4K1-10B-11	2.3
Pull release Ø 30 mm		
2 NC	CE3P-10R-02	1.1
1 NO + 1 NC	CE3P-10R-11	1.1
Pull release Ø 40 mm		
2 NC	CE4P-10R-02	1.3
1 NO + 1 NC	CE4P-10R-11	1.3

## Selector switches

### Two and three position, non-illuminated

#### Color codes for switches

	Red	Black	Grey
Δ	R	B	U

#### Bezel - How to order

Black plastic - Standard  
Chrome metal - Replace '1' with '3' in Catalog number



Bezel options	Catalog number
Black plastic	C(X)SS(X)10X-XX
Chrome metal	C(X)SS(X)30X-XX

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Selector switch

#### Operator: Selector switches

Description	Catalog number	Weight oz.	
<b>Two-position</b>			
<b>Maintained</b>			
	1 NO	C2SS110Δ-10	0.71
	2 NO	C2SS110Δ-20	0.85
	1 NC	C2SS110Δ-01	0.71
	2 NC	C2SS110Δ-02	0.85
	1 NO + 1 NC	C2SS110Δ-11	0.85
<b>Maintained</b>			
	1 NO	C2SS210Δ-10	0.71
	2 NO	C2SS210Δ-20	0.85
	1 NC	C2SS210Δ-01	0.71
	2 NC	C2SS210Δ-02	0.85
	1 NO + 1 NC	C2SS210Δ-11	0.85
<b>Momentary</b>			
	1 NO	C2SS310Δ-10	0.71
	2 NO	C2SS310Δ-20	0.85
	1 NC	C2SS310Δ-01	0.71
	2 NC	C2SS310Δ-02	0.85
	1 NO + 1 NC	C2SS310Δ-11	0.85

#### Contacts actuated

Two position selector switch contacts included,

	actuated in position C			
	NC	NO	NC	NO
	11	13	21	23
	12	14	22	24
1NO	-	1	-	-
2NO	-	1	-	1
1NC	1	-	-	-
2NC	1	-	1	-
1NO + 1NC	-	1	1	-

Three position selector switch contacts included,

	actuated in position: A				actuated in position: C			
	NC	NO	NC	NO	NC	NO	NC	NO
	21	23	11	13	11	13	21	23
	22	24	12	14	12	14	22	24
2NO	-	1	-	1	-	1	-	1
2NC	1	-	1	-	1	-	1	-
1NO + 1NC	1	-	-	1	1	-	-	1

#### Three-position

<b>Maintained</b>			
	2 NO	C3SS110Δ-20	0.85
	2 NC	C3SS110Δ-02	0.85
	1 NO + 1 NC	C3SS110Δ-11	0.85
<b>Momentary</b>			
	2 NO	C3SS210Δ-20	0.85
	2 NC	C3SS210Δ-02	0.85
	1 NO + 1 NC	C3SS210Δ-11	0.85
<b>Momentary</b>			
	2 NO	C3SS310Δ-20	0.85
	2 NC	C3SS310Δ-02	0.85
	1 NO + 1 NC	C3SS310Δ-11	0.85
<b>Momentary</b>			
	2 NO	C3SS710Δ-20	0.85
	2 NC	C3SS710Δ-02	0.85
	1 NO + 1 NC	C3SS710Δ-11	0.85

## Pilot lights with integrated LED



Pilot light with integrated LED,  
with leakage current protection

### Operator: Pilot light with integrated LED

Description	Rated Current mA	Wavelength nm	Luminance mcd	Catalog number	Weight oz.
<b>Pilot light with integrated LED service life &gt;50 000 hours</b>					
<b>Rated voltage 12 V, DC <sup>1)</sup></b>					
Red	30	625	60	CL-501R	0.81
Green	15	520	126	CL-501G	0.81
Yellow	30	590	60	CL-501Y	0.81
Blue	30	470	22	CL-501L	0.81
White	30	<sup>2)</sup>	88	CL-501W	0.81
<b>Rated voltage 24 V, AC/DC</b>					
Red	15	625	60	CL-502R	0.81
Green	15	520	126	CL-502G	0.81
Yellow	15	590	60	CL-502Y	0.81
Blue	15	470	22	CL-502L	0.81
White	15	<sup>2)</sup>	88	CL-502W	0.81
<b>Rated voltage 48 V, AC/DC</b>					
Red	15	625	60	CL-504R	0.81
Green	15	520	126	CL-504G	0.81
Yellow	15	590	60	CL-504Y	0.81
Blue	15	470	22	CL-504L	0.81
White	15	<sup>2)</sup>	88	CL-504W	0.81
<b>Rated voltage 60 V, AC/DC</b>					
Red	15	625	60	CL-505R	0.81
Green	15	520	126	CL-505G	0.81
Yellow	15	590	60	CL-505Y	0.81
Blue	15	470	22	CL-505L	0.81
White	15	<sup>2)</sup>	88	CL-505W	0.81
<b>Rated voltage 110-130 V, AC</b>					
Red	15	625	60	CL-513R	0.81
Green	15	520	126	CL-513G	0.81
Yellow	15	590	60	CL-513Y	0.81
Blue	15	470	22	CL-513L	0.81
White	15	<sup>2)</sup>	88	CL-513W	0.81
<b>Rated voltage 110-130 V, DC <sup>1)</sup></b>					
Red	15	625	60	CL-515R	0.81
Green	15	520	126	CL-515G	0.81
Yellow	15	590	60	CL-515Y	0.81
Blue	15	470	22	CL-515L	0.81
White	15	<sup>2)</sup>	88	CL-515W	0.81
<b>Rated voltage 220 V, DC <sup>1)</sup></b>					
Red	15	625	60	CL-520R	0.81
Green	15	520	126	CL-520G	0.81
Yellow	15	590	60	CL-520Y	0.81
Blue	15	470	22	CL-520L	0.81
White	15	<sup>2)</sup>	88	CL-520W	0.81

**Note:** <sup>1)</sup> Care should be taken for DC supply where + and - must be correctly connected. This is marked X1 (+) and X2 (-) on the product.

<sup>2)</sup> X=0.31, Y=0.32 according to the ICI Chromaticity Diagram.

## Pilot lights with integrated LED



Pilot light with integrated LED,  
with leakage current protection

**Operator: Pilot light with integrated LED - Service life 750,000 hours**

Description	Rated current mA	Wavelength nm	Luminance mcd	Catalog number	Weight oz.
<b>Rated voltage 230 V, AC</b>					
Red	15	625	60	CL-523R	0.81
Green	15	520	126	CL-523G	0.81
Yellow	15	590	60	CL-523Y	0.81
Blue	15	470	22	CL-523L	0.81
White	15	<sup>2)</sup>	88	CL-523W	0.81
<b>Rated voltage 380 V, AC</b>					
Red	15	625	60	CL-530R	0.81
Green	15	520	126	CL-530G	0.81
Yellow	15	590	60	CL-530Y	0.81
Blue	15	470	22	CL-530L	0.81
White	15	<sup>2)</sup>	88	CL-530W	0.81
<b>Rated voltage 415 V, AC</b>					
Red	15	625	60	CL-541R	0.81
Green	15	520	126	CL-541G	0.81
Yellow	15	590	60	CL-541Y	0.81
Blue	15	470	22	CL-541L	0.81
White	15	<sup>2)</sup>	88	CL-541W	0.81

**Note:** <sup>2)</sup>X=0.31, Y=0.32 according to the ICI Chromaticity Diagram.

## Pilot lights



Pilot light

**Operator: Pilot light – Ba 9s base, bulb not included**

Description	Catalog number	Weight oz.
<b>Pilot light BA 9s base, bulb not included</b>		
Red	CL-100R	0.018
Green	CL-100G	0.018
Yellow	CL-100Y	0.018
Blue	CL-100L	0.018
White	CL-100W	0.018
Clear	CL-100C	0.018



## Buzzers



Buzzer, green



Buzzer, red



Buzzer, yellow



Buzzer, black

Description		Luminance mcd	Catalog number	Package quantity	Weight kg
<b>Non-illuminated</b>					
<b>Rated voltage 24V, AC/DC</b>					
Black	Continuous		CB1-620B	10	0.021
Black	Pulsation		CB1-630B	10	0.021
<b>Rated voltage 110-130 V, AC</b>					
Black	Continuous		CB1-621B	10	0.021
Black	Pulsation		CB1-631B	10	0.021
<b>Rated voltage 110-130 V, DC</b>					
Black	Continuous		CB1-622B	10	0.021
Black	Pulsation		CB1-632B	10	0.021
<b>Rated voltage 230 V, AC</b>					
Black	Continuous		CB1-623B	10	0.021
Black	Pulsation		CB1-633B	10	0.021
<b>illuminated</b>					
<b>Rated voltage 24V, AC/DC</b>					
Green	Continuous	126	CB1-600G	10	0.021
Red	Pulsation	60	CB1-610R	10	0.021
Yellow	Pulsation	60	CB1-610Y	10	0.021
<b>Rated voltage 110-130 V, AC</b>					
Green	Continuous	126	CB1-601G	10	0.021
Red	Pulsation	60	CB1-611R	10	0.021
Yellow	Pulsation	60	CB1-611Y	10	0.021
<b>Rated voltage 110-130 V, DC</b>					
Green	Continuous	126	CB1-602G	10	0.021
Red	Pulsation	60	CB1-612R	10	0.021
Yellow	Pulsation	60	CB1-612Y	10	0.021
<b>Rated voltage 230 V, AC</b>					
Green	Continuous	126	CB1-603G	10	0.021
Red	Pulsation	60	CB1-613R	10	0.021
Yellow	Pulsation	60	CB1-613Y	10	0.021

## Accessories

### LED Bulbs



LED bulbs

Description	Rated Current mA	Wavelength nm	Luminance mcd	Catalog number	Weight oz.
<b>LED Bulbs</b>					
With one diode chip inserted on Ba9s base, choose the same color for the LED and the lamp cap or else use a clear lamp cap. For white light, use a LED clear lens cap.					
Rated voltage 12 V, AC service life >50 000 h					
Red	15	630	250	KA2-2011	0.18
Green	15	525	1000	KA2-2012	0.18
Yellow	15	592	250	KA2-2013	0.18
Blue	15	470	450	KA2-2014	0.18
White	15	<sup>1)</sup>	600	KA2-2015	0.18
Rated voltage 24 V, (AC)/DC service life >50 000 h					
Red	15	630	250	KA2-2021	0.18
Green	15	525	800	KA2-2022	0.18
Yellow	15	592	250	KA2-2023	0.18
Blue	15	470	400	KA2-2024	0.18
White	15	<sup>1)</sup>	500	KA2-2025	0.18
Rated voltage 36 V, (AC)/DC service life >50 000 h					
Red	12	630	200	KA2-2031	0.18
Green	12	525	2000	KA2-2032	0.18
Yellow	12	592	200	KA2-2033	0.18
Blue	12	470	750	KA2-2034	0.18
White	12	<sup>1)</sup>	1400	KA2-2035	0.18
Rated voltage 48 V, (AC)/DC service life >50 000 h					
Red	12	630	200	KA2-2041	0.18
Green	12	525	1700	KA2-2042	0.18
Yellow	12	592	240	KA2-2043	0.18
Blue	12	470	720	KA2-2044	0.18
White	12	<sup>1)</sup>	1200	KA2-2045	0.18
Rated voltage 60 V, (AC)/DC service life >50 000 h					
Red	10	630	160	KA2-2051	0.18
Green	10	525	1400	KA2-2052	0.18
Yellow	10	592	200	KA2-2053	0.18
Blue	10	470	600	KA2-2054	0.18
White	10	<sup>1)</sup>	1000	KA2-2055	0.18
Rated voltage 110-130 V, AC service life 25 000 h					
Red	4-6	630	60-100	KA2-2131	0.18
Green	4-6	525	500-850	KA2-2132	0.18
Yellow	4-6	592	70-120	KA2-2133	0.18
Blue	4-6	470	220-350	KA2-2134	0.18
White	4-6	<sup>1)</sup>	350-600	KA2-2135	0.18
Rated voltage 110-130 V, AC/DC service life 25 000 h					
Red	4-6	630	60	KA2-2141	0.18
Green	4-6	525	500	KA2-2142	0.18
Yellow	4-6	592	70	KA2-2143	0.18
Blue	4-6	470	220	KA2-2144	0.18
White	4-6	<sup>1)</sup>	350	KA2-2145	0.18
Rated voltage 230 V, AC service life 25 000 h					
Red	4	630	60	KA2-2221	0.18
Green	4	525	500	KA2-2222	0.18
Yellow	4	592	70	KA2-2223	0.18
Blue	4	470	220	KA2-2224	0.18
White	4	<sup>1)</sup>	350	KA2-2225	0.18

**Note:** Care should be taken for DC supply where + and - must be correctly connected. This is marked X1 (+) and X2 (-) on the product.

Choose the same color on the LED as on the lamp cap.

<sup>1)</sup>X=0.31, Y=0.32 according to the ICI Chromaticity Diagram.

## Accessories

### LED and filament bulbs



LED bulbs

Description	Rated Current mA	Wave-length nm	Luminance mcd	Catalog number	Weight oz.
<b>LED bulbs continued</b>					
Rated voltage 230 V, AC/DC service life 25 000 h					
Red	4	630	60	KA2-2231	0.18
Green	4	525	500	KA2-2232	0.18
Yellow	4	592	70	KA2-2233	0.18
Blue	4	470	220	KA2-2234	0.18
White	4	<sup>1)</sup>	350	KA2-2235	0.18

**Note:** Care should be taken for DC supply where + and - must be correctly connected. This is marked X1 (+) and X2 (-) on the product.

Choose the same color on the LED as on the lamp cap.

<sup>1)</sup>X=0.31, Y=0.32 according to the ICI Chromaticity Diagram.



Filament bulb

Rated voltage V	Rated current mA	Rated output W	Service life h	Luminance mcd	Catalog number	Weight oz.
<b>Filament bulbs BA 9s base</b>						
6	200	1.2	10 000	350	5911 086-11	0.071
12	100	1.2	10 000	230	5911 086-12	0.071
24	50	1.2	10 000	280	5911 086-13	0.071
30	40	1.2	10 000	250	5911 086-4	0.071
48	42	2	6 000	500	5911 086-5	0.071
60	20	1.2	5 000	190	5911 086-14	0.071
110	18	2	7 500	250	5911 086-7	0.071
130	15	2	7 500	120	5911 086-15	0.071

**Note:** Catalog number of current: AC/DC. A Lamp Changing Tool is required for changing Bulb.

#### Lamp changing tool

For LED and filament bulbs	KA1-8072	0.071
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Lamp changing tool

## Accessories



DIN-rail adaptor with pushbutton



Lamp changing tool



Mounting tool



Mounting tool for power tool



Protective cover



Bezels



Square bezels



Blanking plugs



Adaptor

Description	Catalog number	Weight oz.
<b>DIN-rail adaptor</b>		
DIN-rail adaptor	CA1-8080	0.99
Dummy block	MDB-2	0.11
<b>Note:</b> Two dummy blocks are included with the DIN-rail Adaptor to make it possible to mount any Compact Device		
<b>Lamp changing tool</b>		
For LED bulbs and for bulbs	KA1-8072	0.071
<b>Mounting tool</b>		
Used for tightening the locking nut	MA1-8015	0.74
Mounting tool for power tool	MA1-8149	5.5
<b>Membrane</b>		
Flush button	KA1-8052	0.071
Extended button	KA1-8002	0.071
<b>Note:</b> Made of transparent, heat and cold resistant silicon rubber. Does not harden at low temperature. Remove the gasket when using membrane.		
<b>Protective ring</b>		
Protective ring	SK 615 512-1	0.071
<b>Note:</b> For flush and extended pushbutton to prevent inadvertent operation. Cannot be used together with legend plate holder.		
<b>Protective cover</b>		
Protective cover	KA1-8010	0.28
<b>Note:</b> For flush pushbutton. To prevent accidental operation. Cannot be used together with legend plate holder.		
<b>Button</b>		
Grey, flush	KA1-8087	0.035
Grey, extended	KA1-8097	0.035
<b>Bezel</b>		
<b>For pushbutton</b>		
Black	KA1-8022	0.071
Metal	KA1-8021	0.53
<b>For selector switch</b>		
Black	CA1-8077	0.035
Metal	CA1-8078	0.35
<b>Square bezel</b>		
Black, plastic	SK 616 016-2	0.035
Grey, plastic	MA1-8124	0.035
<b>Light diffusing lens</b>		
Light diffusing lens	KA1-8005	0.035
<b>Note:</b> To improve illumination. Cannot be used with text cap. The lens is used instead of text cap		
<b>Blanking plug</b>		
Light grey	MA1-8136	0.18
Grey	MA1-8129	0.18
Black	MA1-8130	0.18
<b>Adaptors 30 mm</b>		
Black plastic	KA1-8029	0.35
Metal	KA1-8030	1.2
<b>Note:</b> For use when fitting the 22 mm pilot devices in 30 mm mounting holes (1.5 - 4 mm panels). For use with pushbuttons, selector switches, emergency stop pushbutton and pilot lights.		
<b>Adaptors</b>		
For flush mounted pushbutton	KA1-8073	1.8
For flush mounted selector switches	CA1-8075	1.6
<b>Extra key</b>		
Key code 71=Ronis 455	SK 616 021-71	0.25

## Technical data

Pilot Devices  
Compact Range  
22mm

### Standards and approvals

IEC / EN 60947-1	Low-Voltage Switchgear and Controlgear - Part 1: General rules
IEC / EN 60947-5-1	Low-Voltage Switchgear and Controlgear - Part 5-1: Control circuit devices and switching elements - Electro-mechanical control circuit devices
IEC / 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
IEC / EN 60073	Basic and safety principles for man-machine interface, marking and identification - Coding principles for indicators and actuators
IEC / 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
DIN 40050-9	Road vehicles; Degrees of Protection (IP-code); protection against foreign objects; water and contact; electrical equipment
UL 508	Industrial Control Equipment
CSA C22.2 No 14	Industrial Control Equipment

### Environmental data

#### Degrees of protection

Pilot device:	IEC/EN DIN	UL/CSA
Pushbuttons	IP66, IP67 and IP69K	Catalog number 1, 3R, 4, 4X, 12, 13
Selector Switches	IP66, IP67 and IP69K	Catalog number 1, 3R, 4, 4X, 12, 13
Pilot Lights	IP66, IP67 and IP69K	Catalog number 1, 3R, 4, 4X, 12, 13
Buzzers	IP66, IP67 and IP69K	Catalog number 1, 3R, 4, 4X, 12, 13
Emergency Stops	IP66, IP67 and IP69K	Catalog number 1, 3R, 4, 4X, 12, 13
Terminals	IP20	

#### Temperature

Ambient temperature during operation	-25 to +70 °C
Storage temperature	-40 to +85 °C

### Technical data

#### Cable connections

Operator	Cable terminal
Pushbutton Selector Switch Emergency Stop	Plus-minus Pozidriv No. 2 Connectable area: min. 1 x 0.5 mm <sup>2</sup> / 1 x AWG22 max. 2 x 1.5 mm <sup>2</sup> / 2 x AWG14
Pilot Light Buzzer	Connectable area: min. 1 x 0.5 mm <sup>2</sup> / 1 x AWG20 max. 2 x 2.5 mm <sup>2</sup> / 2 x AWG14

#### Tightening torque

Operators Locking Nut	Min. 2 Nm / Max. 2.3 Nm
Cable Terminals M3	0.8 Nm
Cable Terminals M3.5	0.9 Nm

#### Short circuit protection

Max. fuse at 1 kA	gG 10A
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#### Mechanical life

Pushbuttons, Selector Switches	500 000 operations
Emergency Stop Pushbutton	50 000 operations

### Material

No ozone depleting substances in the products.  
All front of panel plastic components are made of polycarbonate

PC Polycarbonate	High impact strength, good outdoor resistance. Chemical resistance (see table below)
PSU Polysulphone	Can withstand high temperatures, acids, basic solutions, alkaline compounds, oils, alcohols.
PA Polyamide	Can withstand high temperatures, aliphatic, aromatic and chlorinated hydrocarbons, esters, ketone-aldehydes, alcohols and basic solutions.
PBT	Can withstand high 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.

### Chemical resistance for polycarbonate

Chemical class	Effects
Acids	No significant effect under most typical conditions of concentration and temperature
Alcohols and Alkalis	Generally compatible at low concentration and room temperature. Higher concentrations and elevated temperatures can result in etching and attack evidenced by decomposition.
Aliphatic Hydrocarbons	Generally compatible
Amines	Surface crystallization and chemical attack. Avoid.
Aromatic Hydrocarbons	Partial solvents and severe stress cracking agents (i.e., xylene, toluene). Avoid.
Detergents and Cleaners	Mild soap solutions are generally compatible. Strong alkaline materials should be avoided.
Esters	Cause severe crystallization. Partial solvents. Avoid.
Greases and Oils	Pure petroleum Catalog numbers generally compatible. Many additives used with them are not.
Halogenated Hydrocarbons	Solvents. Avoid.
Ketones	Cause severe crystallization and stress cracking. Partial solvents. Avoid.
Silicone Oil and Greases	Generally compatible up to 85 °C.

Please note that specified degree of protection is for operator mounted on panel. If other items are mounted in between, please make sure that they are correctly sealed.

## Technical data

### Electrical data

#### Contacts

#### Ratings as per IEC 60947-5-1

Rated Insulation Voltage, U <sub>i</sub>		300 V	
Rated Thermal Current, I <sub>th</sub>		5 A	
Rated impulse withstand voltage U <sub>imp</sub>		4 kV	
Rated frequency		50-60 Hz	
Sound level db		>90 db	
Rated Operational Current, I <sub>o</sub> Utilization category AC-15	at: 240 V	1 A	
Rated Operational Current, I <sub>o</sub> Utilization category DC-13,	at: 24 V at: 125 V	0.3 A 0.2 A	

#### Ratings as per UL, CSA, NEMA

		C300 AC	R300 DC
Rated Insulation Voltage		250 V	250 V
Rated Thermal Current		2.5 A	1 A
Rated Operational Current	at: 120 V at: 125 V at: 240 V at: 250 V	1.5 A 0.75 A	0.22 A 0.11 A

#### Short circuit protection

Max. fuse at 1 kA	gG 10A
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#### Minimum switching capacity

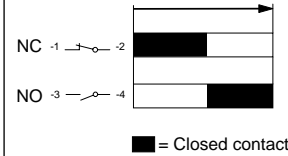
5 V DC	1 mA
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#### Make-and-break contacts

##### Pushbutton



##### Emergency Stop Pushbutton



### LED Bulbs

Service Life for LED Bulbs means number of service hours until the brightness has been reduced down 50 %. Service Life 50 000 h

Color of white LED	x=0.31 Y=0.32 means the position of color in the ICI Chromaticity Diagram
Voltage Tolerance on LED Bulbs	-30 to +10 % Voltage is acceptable without affecting the Service Life
Voltage Peaks on LED Bulbs	Voltage peaks up to 1000 V Current peaks up to 500 mA during a few msec
Glowing Light	All integrated LED Bulbs have a function built in to cut leakage currents