



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

Emergency stop pushbuttons

Non-illuminated

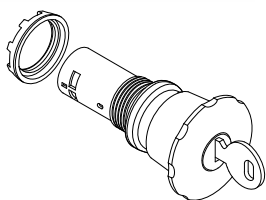
30mm and 40mm



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.	
Emergency stop pushbutton			
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			
Twist release			
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.
Machine stop pushbutton		
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

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 ² / 1 x AWG22 max. 2 x 1.5 mm ² / 2 x AWG14
Pilot Light Buzzer	Connectable area: min. 1 x 0.5 mm ² / 1 x AWG20 max. 2 x 2.5 mm ² / 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

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 _i		300 V	
Rated Thermal Current, I _{th}		5 A	
Rated impulse withstand voltage U _{imp}		4 kV	
Rated frequency		50-60 Hz	
Sound level db		>90 db	
Rated Operational Current, I _o Utilization category AC-15	at: 240 V	1 A	
Rated Operational Current, I _o 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

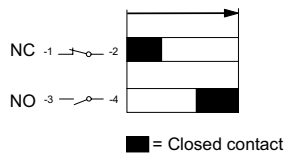
Max. fuse at 1 kA	gG 10A
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Minimum switching capacity

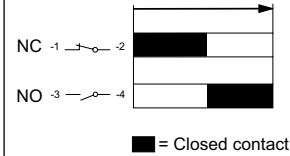
5 V DC	1 mA
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Make-and-break contacts

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