

COMETPI

4000 series: thermoplastic solution

- Faster and easier installation.
- Installation with threaded ring and support base without screws.
- Side levers on contact blocks and LED units to allow fast assembling and removal.

Page 4

1000 series: metal strength

- Metal operators ensure maximum mechanical strength.
- Support base and contact blocks are firmly secured by means of screws.

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Accessories

- Plug for unused holes.
- BA9s lamps.
- Protection cups for operators.
- Protection guard for mushroom pushbuttons.
- Nameplates.

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Enclosures with control units

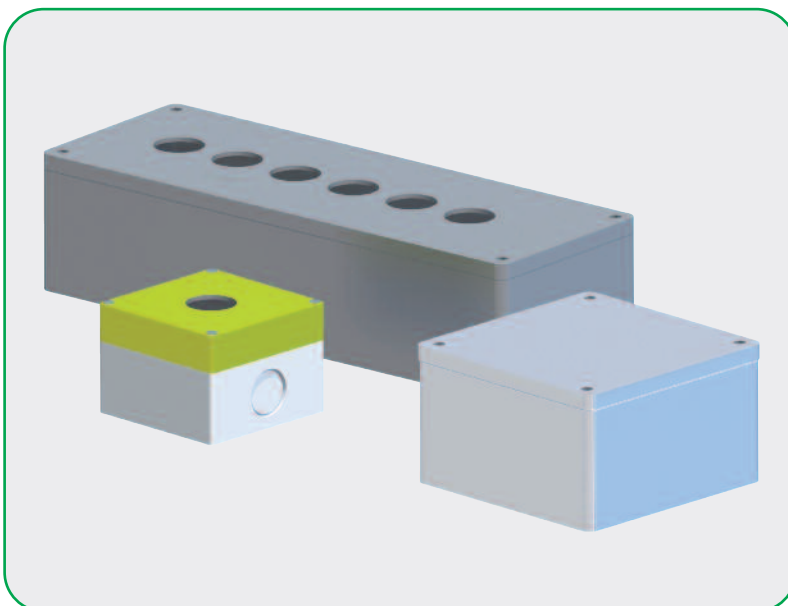
- Wide range of thermoplastic enclosures assembled with control units.
- Foot and palm switches.

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Enclosures

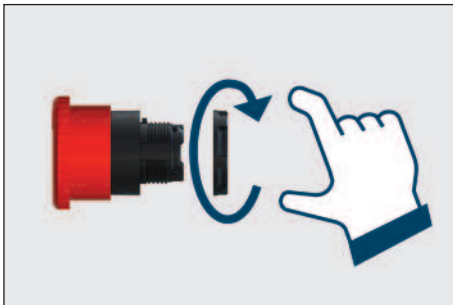
- Double insulation thermoplastic enclosures with lateral knock out conduit entries.
- Aluminium enclosures.
- Up to 12 holes for $\varnothing 22$ control units.

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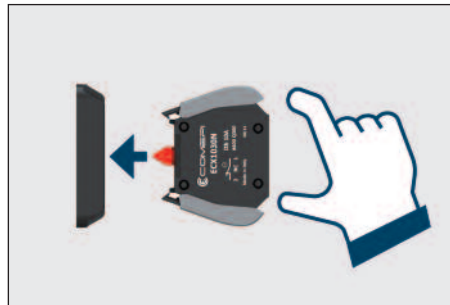


Control units Plastic Series

Main features



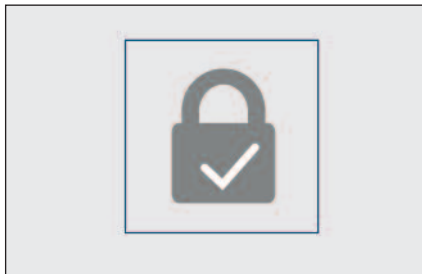
Installation of **4000 SERIES** is easier and faster thanks to the new **THREADED RING** and **SUPPORT BASE WITHOUT SCREWS**.



CONTACT BLOCKS and the **LED LAMP-HOLDER** can be easily installed on the support base by side levers **WITHOUT TOOLS**.



CONTACT BLOCKS must be installed either in the lateral positions of the support base or in the central position (max **TWO** contact blocks stacked on each position). LED lamp-holder must be fixed in the central position.



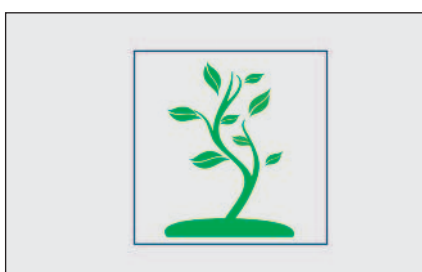
The support base fixing system allows **FAST** and **ACCURATE LATCHING** ensuring maximum **SAFETY** and long-term **RELIABILITY**.



Ambient temperature
 - operating **-25 ... + 70 °C**
 - storage **-40 ... + 80 °C**



Devices certified according to International standards:
EN 60947-5-1 and **UL 508**.

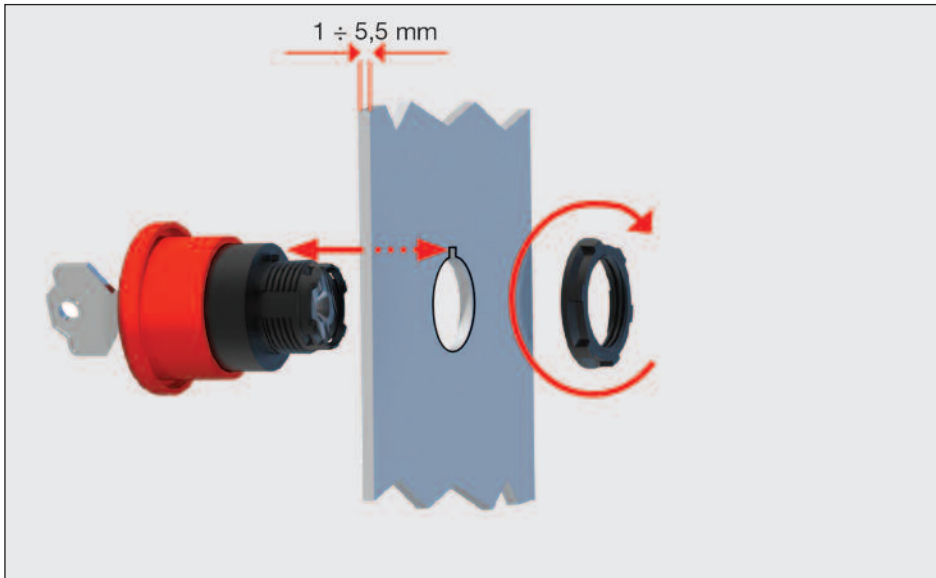


Comepi supports **SAFETY AND ENVIRONMENTAL PROTECTION**, according to European standards and directives.



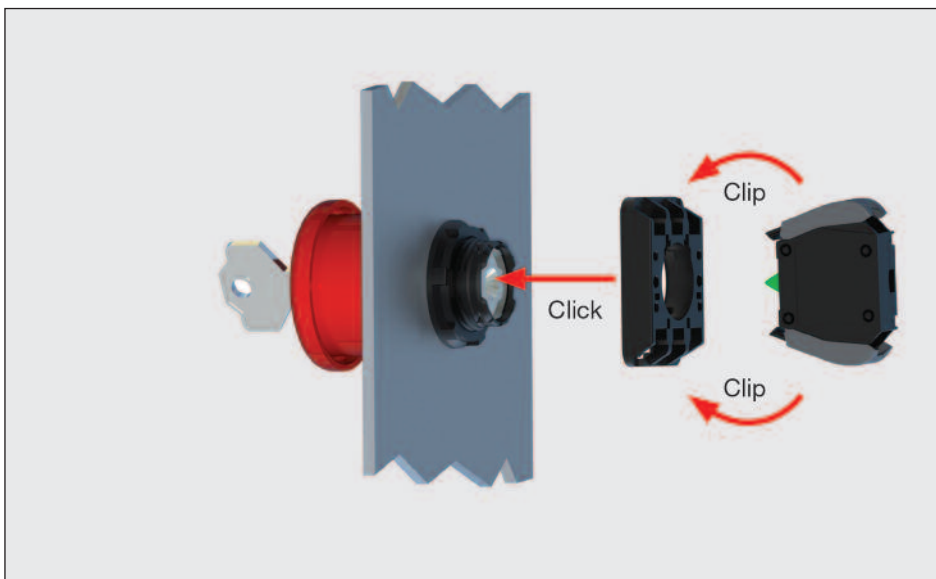
Control units Plastic Series

4000 SERIES: FAST movements and INTUITIVE assembling



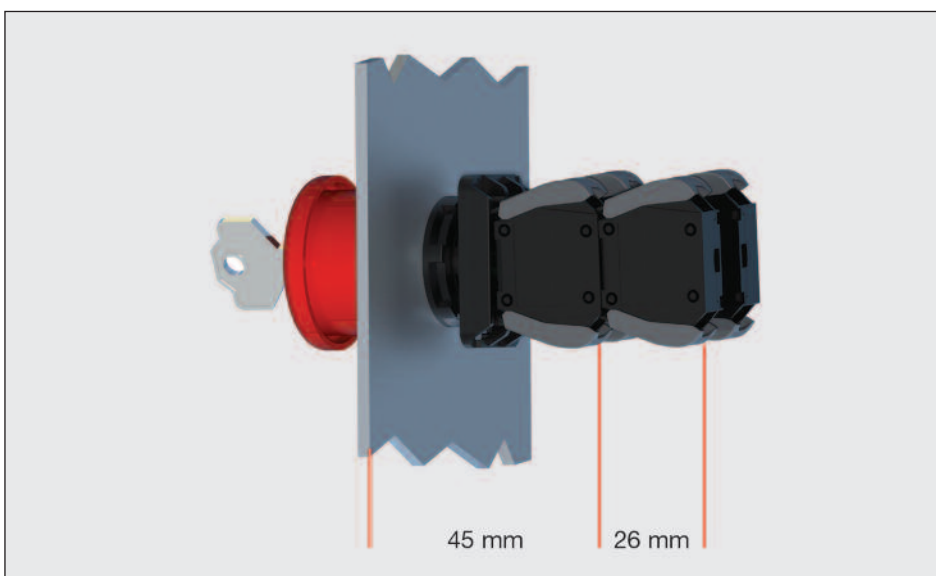
ANTI-ROTATION NOTCH on the body of the control unit.

Threaded ring easily mounted on the control unit.

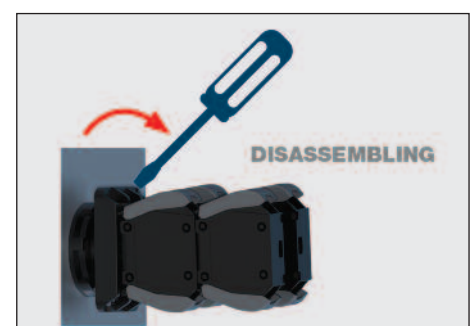


Support base with alignment notches to facilitate installation. **NO NEED OF TOOLS.**

Contact blocks and LED lamp-holders equipped with **SIDE LEVERS** to allow fast assembling and removal.

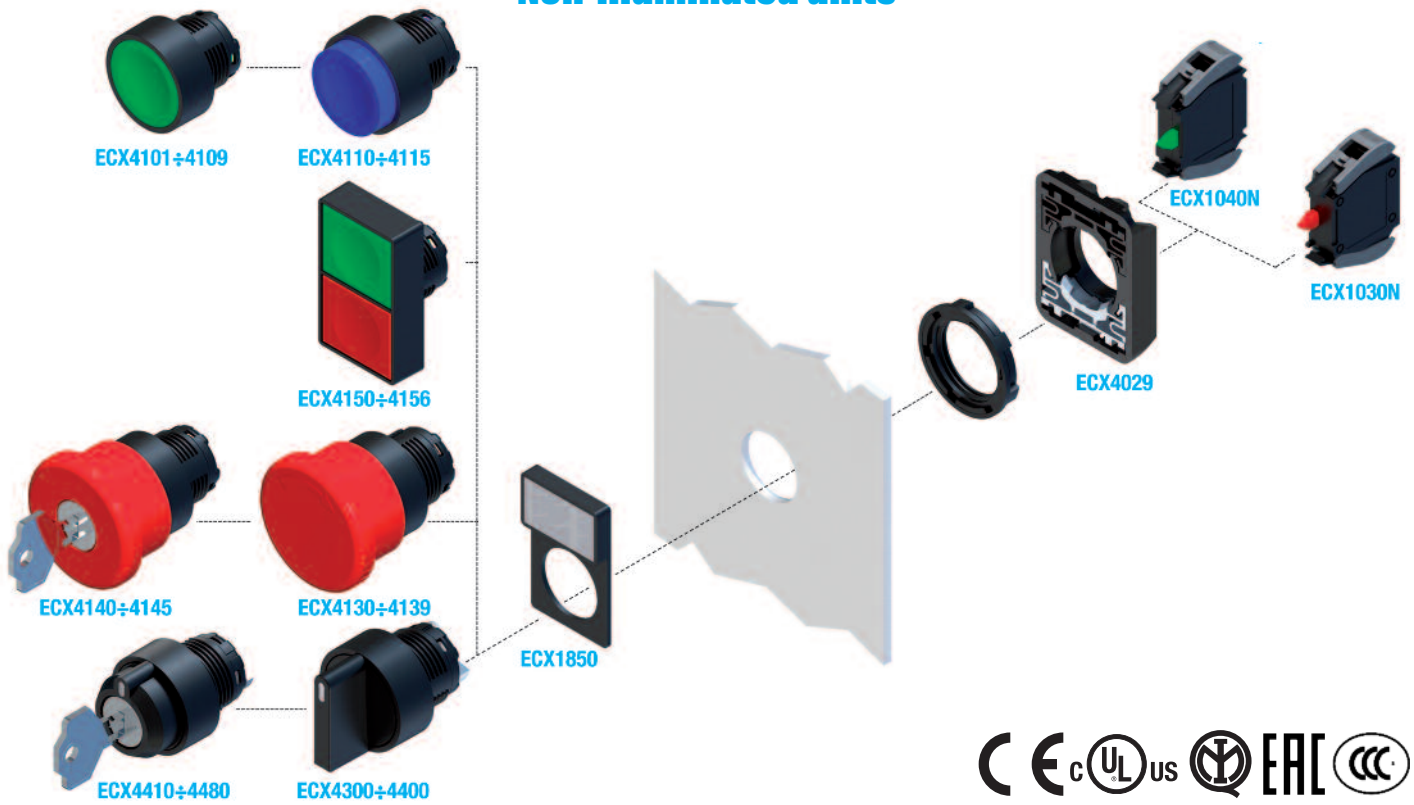


Overall dimensions:
45MM depth from panel only.

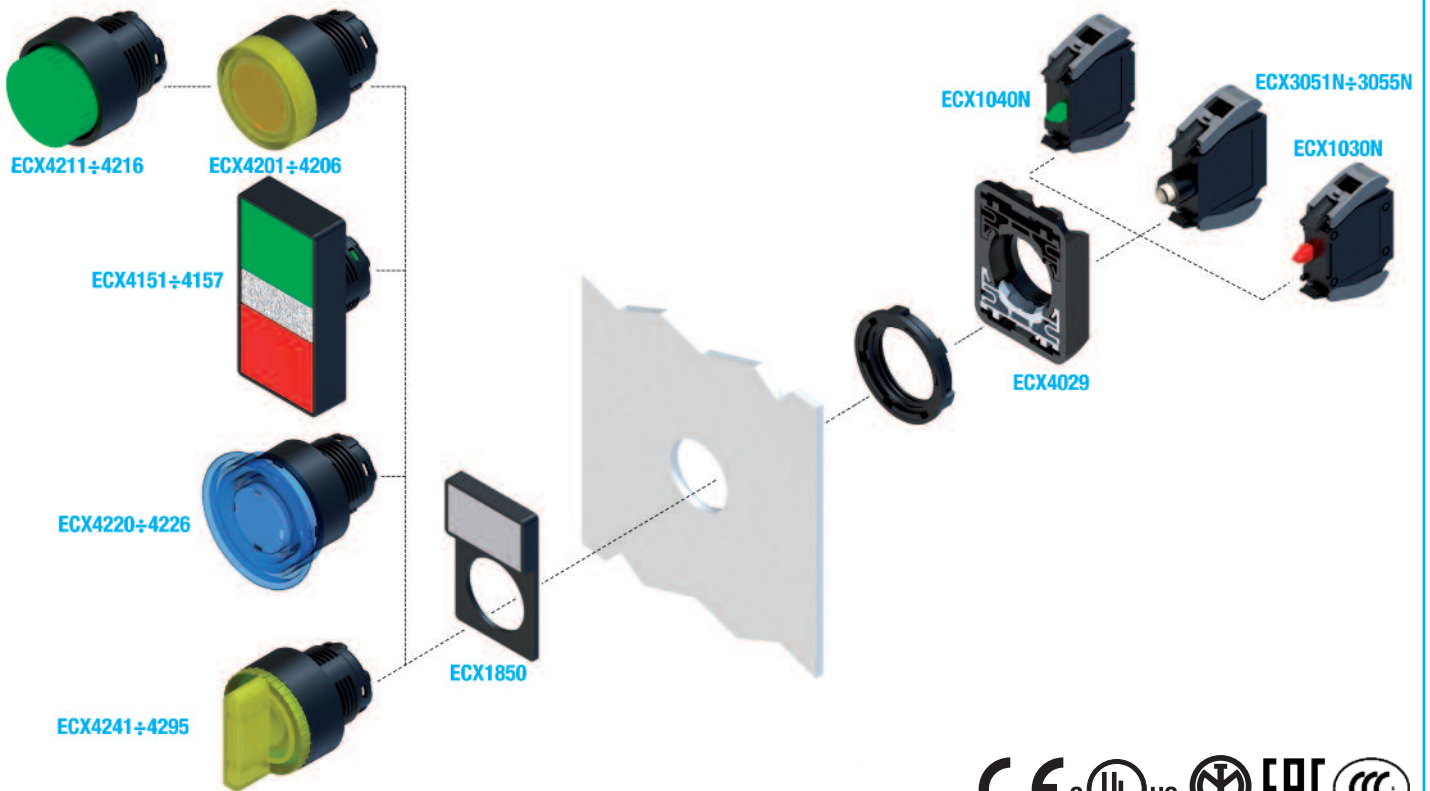


Control units Plastic Series

Non-illuminated units



Illuminated units

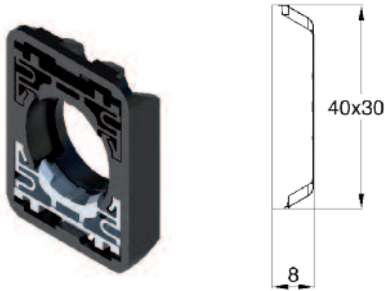


Implementation and utilization precautions: see page 32

Plastic Series

Support base, contact blocks and LED units

Support base



Description

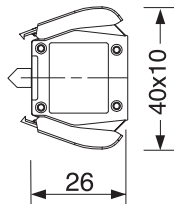
Support base for thermoplastic units ECX4...

Code

ECX 4029

Implementation and utilization precautions: see page 32

Quick coupling contact blocks (IP20)



Description

Operation diagram

Actuating force Positive opening

Code

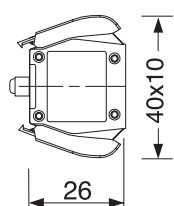
Red		2,1N / 15N	ECX 1030N
Green		2,6N	ECX 1040N
Grey		1,9N / 15N	ECX 1041N*
Brown		2,2N	ECX 1042N**

* Only use on Joy Stick4 positions - ** Only use on illuminated push/push pushbutton

Positive opening (according to IEC 60947-5-1)		Positive opening on all NC contacts
Rated insulation voltage U_i – according to IEC 60947-1 and EN 60947-1 – according to UL 508 and CSA C22-2 n° 14		690V (degree of pollution 3) A600, Q300
Rated impulse withstand voltage U_{imp} U_{imp} (according to IEC 60947-1 and EN 60947-1)		8 kV
Conditional short-circuit current (according to IEC 60947-1 and EN 60947-1)		1 kA
Conventional free air thermal current I_{th} (IEC 60947-5-1 e EN 60947-5-1) $\theta < 40$ °C		10 A
Short-circuit protection $U_e < 500$ V. a.c. – gG (gl) type fuses		10 A
Rated operational current le / AC-15 (according to IEC 60947-5-1)	24 V - 50/60 Hz 240 V - 50/60 Hz 400 V - 50/60 Hz	10 A 6 A 4 A
le / DC-13 (according to IEC 60947-5-1)	24 V - d.c. 125 V - d.c. 250 V - d.c.	2,8 A 0,55 A 0,27 A
Switching frequency		3600 cycles/h
Resistance between contacts		≤ 25 m Ω
Protection degree (according to IEC 60529 and EN 60529)		IP 20
Connecting terminals		On screw with non loosable plate clamp 1 or 2 conductors - 0,5 ...2,5 mm ²

IMQ listed values

Quick coupling LED units (IP20)

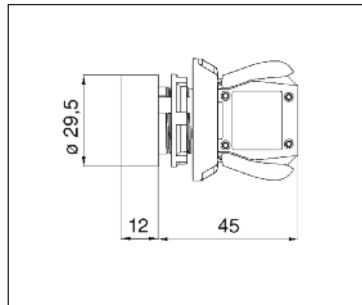


Colour	12V AC/DC	24V AC/DC	110V AC/DC	230V AC
Red	ECX 3051N-12L	ECX 3051N-24L	ECX 3051N-110L	ECX 3051N-230L
Green	ECX 3052N-12L	ECX 3052N-24L	ECX 3052N-110L	ECX 3052N-230L
Yellow	ECX 3053N-12L	ECX 3053N-24L	ECX 3053N-110L	ECX 3053N-230L
Blue	ECX 3054N-12L	ECX 3054N-24L	ECX 3054N-110L	ECX 3054N-230L
White	ECX 3055N-12L	ECX 3055N-24L	ECX 3055N-110L	ECX 3055N-230L

Plastic Series

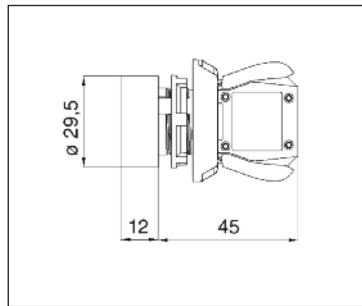
Non-illuminated momentary pushbuttons

Plastic flush pushbutton \varnothing 30



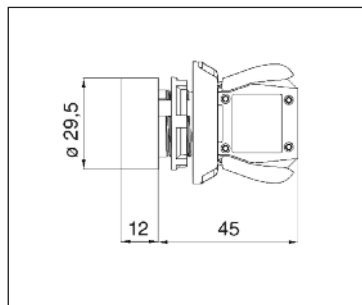
Colour	Code
Black	ECX 4100
Red	ECX 4101
Green	ECX 4102
Yellow	ECX 4103
Blue	ECX 4104
White	ECX 4105

Plastic flush pushbutton - on/off



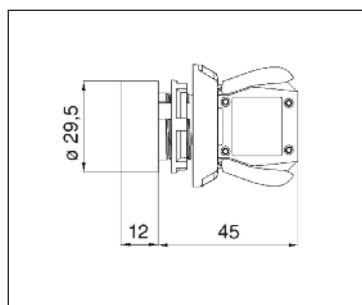
Version	Colour	Code
	Red	ECX 4106
	Green	ECX 4107
	Black	ECX 4106/N
	White	ECX 4107/B

Plastic flush pushbutton - with arrow



Version	Colour	Code
White horizontal arrow	Black	ECX 4108
White vertical arrow	Black	ECX 4109

Pushbutton Start / On

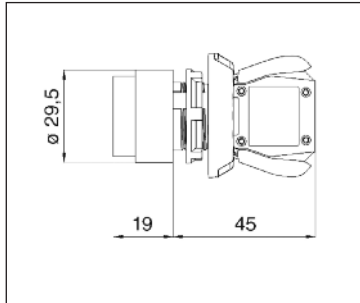


Version	Colour	Code
(flush)	White	ECX 4105-01
(flush)	White	ECX 4105-03

Plastic Series

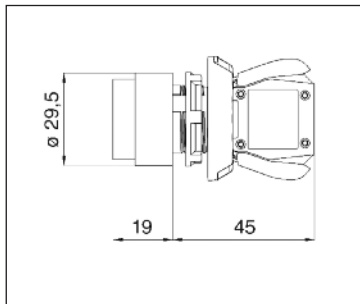
Non-illuminated momentary pushbuttons

Pushbutton Stop / Off



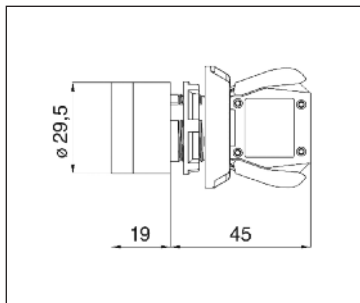
Version	Colour	Code
(extended)	Black	ECX 4110-01
(extended)	Black	ECX 4110-03

Extended pushbutton



Colour	Code
Black	ECX 4110
Red	ECX 4111
Green	ECX 4112
Yellow	ECX 4113
Blue	ECX 4114
White	ECX 4115

Plastic ring shrouded

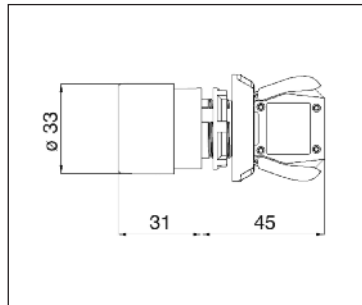


Colour	Code
Black	ECX 4000
Red	ECX 4001
Green	ECX 4002
Yellow	ECX 4003
Blue	ECX 4004
White	ECX 4005

Plastic Series

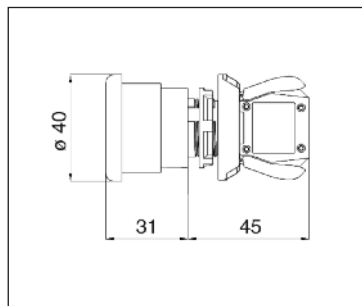
Mushroom pushbuttons

Mushroom pushbutton \varnothing 33



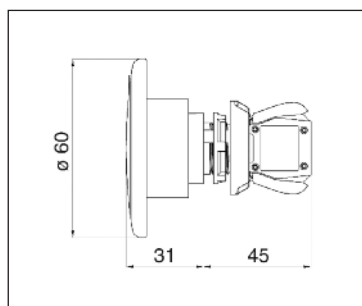
Version	Colour	Code
With latch - twist to release	Black	ECX 4160
	Red	ECX 4161
	Yellow	ECX 4168
Without latch	Black	ECX 4164
	Red	ECX 4165
	Yellow	ECX 4169

Mushroom pushbutton \varnothing 40



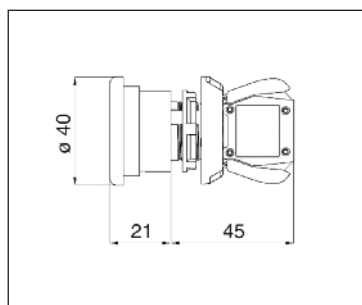
Version	Colour	Code
With latch - twist to release	Black	ECX 4130
	Red	ECX 4131
	Yellow	ECX 4138
Without latch	Black	ECX 4134
	Red	ECX 4135
	Yellow	ECX 4139

Mushroom pushbutton \varnothing 60



Version	Colour	Code
With latch - twist to release	Black	ECX 4132
	Red	ECX 4136
Without latch	Black	ECX 4133
	Red	ECX 4137

Illuminated mushroom pushbutton \varnothing 40

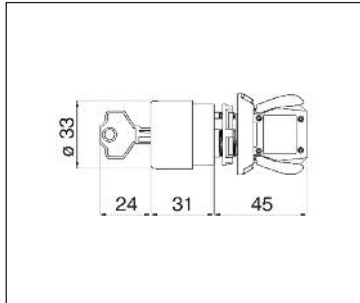


Version	Colour	Code
Without latch	White	ECX 4220
	Red	ECX 4221
	Green	ECX 4222
	Yellow	ECX 4223
	Blue	ECX 4224
	Transparent	ECX 4225
With latch - twist to release	Red	ECX 4226

Plastic Series

Mushroom key operated pushbuttons - Pilot lights

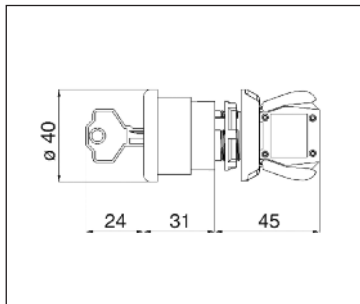
Mushroom key operated pushbutton (key n° G.513) \varnothing 33



Version	Colour	Code
With latch - turn key to release	Black	ECX 4170
	Red	ECX 4171
Without latch	Black	ECX 4174
	Red	ECX 4175

Replacement keys: see page 35

Mushroom key operated pushbutton (key n° G.513) \varnothing 40



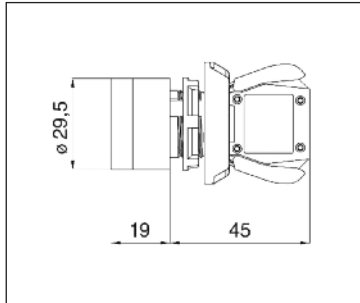
Version	Colour	Code
With latch - turn key to release	Black	ECX 4140
	Red	ECX 4141
Without latch	Black	ECX 4144
	Red	ECX 4145

Replacement keys: see page 35

Plastic Series

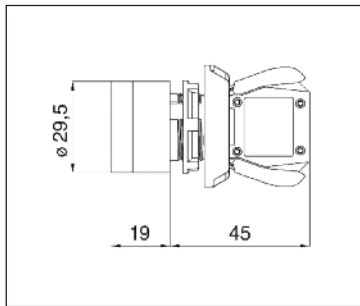
Illuminated momentary and push pushbuttons

Illuminated flush pushbutton



Colour	Code
Red	ECX 4201
Green	ECX 4202
Yellow	ECX 4203
Blue	ECX 4204
Transparent	ECX 4205
White	ECX 4206

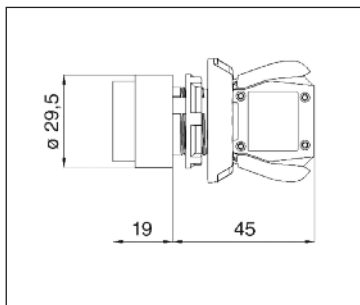
Illuminated flush push/push button



Version	Colour	Code
	Red	ECX 4191
	Green	ECX 4192
	Yellow	ECX 4193
	Blue	ECX 4194
	Transparent	ECX 4195
	White	ECX 4196
Not illuminated	Black	ECX 4190

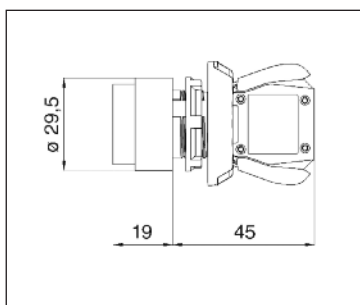
Attention: to be used with NO contact block ECX 1042 (brown colour)

Illuminated pushbutton - extended type



Colour	Code
Red	ECX 4211
Green	ECX 4212
Yellow	ECX 3213
Blue	ECX 4214
Transparent	ECX 4215
White	ECX 4216

Illuminated push/push button - extended type



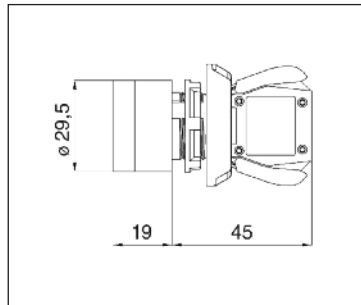
Version	Colour	Code
	Red	ECX 4181
	Green	ECX 4182
	Yellow	ECX 4183
	Blue	ECX 4184
	Transparent	ECX 4185
	White	ECX 4186
Not illuminated	Black	ECX 4180

Attention: to be used with NO contact block ECX 1042 (brown colour)

Plastic Series

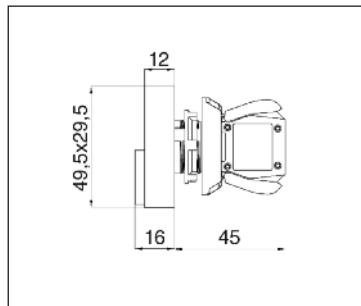
Illuminated momentary pushbuttons - two-way pushbuttons

Illuminated shrouded pushbutton



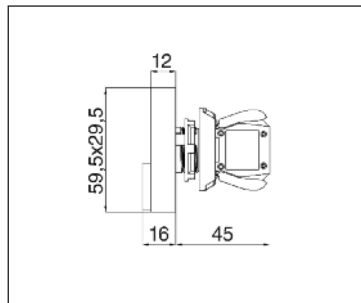
Colour	Code
Red	ECX 4011
Green	ECX 4012
Yellow	ECX 4013
Blue	ECX 4014
Transparent	ECX 4015
White	ECX 4016

Two - way pushbutton



Version	Code
Flush pushbutton	ECX 4150
Same as above with symbols	ECX 4152
Extended red Button	ECX 4154
Same as above with symbols	ECX 4156
Upon request with black and white buttons	ECX /BN

Two - way pushbutton with pilot light (IP40)



Version	Code
Flush pushbutton	ECX 4151
Same as above with symbols	ECX 4153
Extended red Button	ECX 4155
Same as above with symbols	ECX 4157
Upon request with black and white buttons	ECX /BN

Plastic Series

Selector switches

Type of selector		Description	2 POS.		3 POS.			3 POS.		
			$\overset{0}{\circ} \overset{1}{\circ}$	$\overset{0}{\circ} \overset{1}{\circ}$	$\overset{1}{\circ} \overset{0}{\circ}$	$\overset{1}{\circ} \overset{2}{\circ}$	$\overset{1}{\circ} \overset{2}{\circ}$	$\overset{1}{\circ} \overset{2}{\circ}$	$\overset{1}{\circ} \overset{2}{\circ}$	$\overset{1}{\circ} \overset{2}{\circ}$
 <p>• Contacts on the left side</p> <p>X = Closed contact</p> <p>• Contacts on the right side</p> <p>X = Closed contact</p>	 <p>ECX 1030N 1 2</p>  <p>ECX 1040N 3 4</p>  <p>ECX 1041N 1 2</p>	X			X	X	-	-	-	
			X	X					X	
									X	
		X		X	X		-	-	-	
			X			X			X	
							X			
<p>Short lever selector switch</p>   <p>\varnothing 29,5</p> <p>27 45</p>		ECX 4300								
		ECX 4310								
			ECX 4320	GCX 4320S*						
			ECX 4330	GCX 4330S*						
			ECX 4340							
			ECX 4345							
<p>Long lever selector switch</p>   <p>39</p> <p>27 45</p>		ECX 4350								
		ECX 4360								
			ECX 4370	GCX 4370S*						
			EC 4380	GCX 4380S*						
			ECX 4390							
			ECX 4400							
<p>Key selector switch (key n° G. 513)</p>   <p>\varnothing 29,5</p> <p>24 24 45</p>		ECX 4410								
		ECX 4420								
		ECX 4430								
			ECX 4440	GCX 4440S*						
			ECX 4450							
			ECX 4460							
<p>Illuminated selector switch (1)</p>   <p>\varnothing 29,5</p> <p>27 45</p>		ECX 424•								
		ECX 425•								
			ECX 426•							
			ECX 427•							
			ECX 428•							
			ECX 429•							

* Supplied with contacts (2NO+2NC)

(1) Replace the symbol • with the number of the desired color:

1: Red 2: Green 3: Yellow 4: Blue 5: Transparent

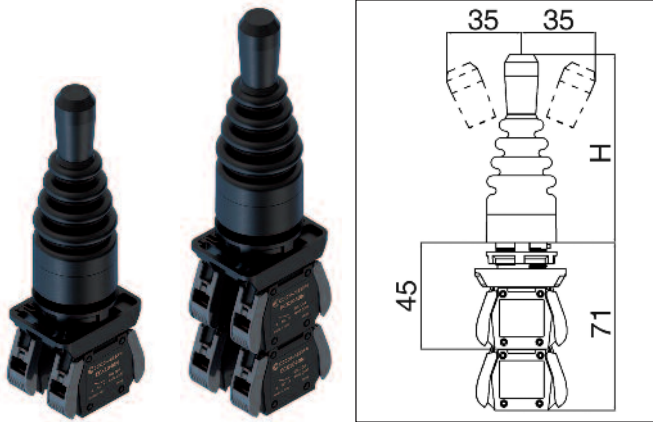
 Maintained positions

 Spring Return positions

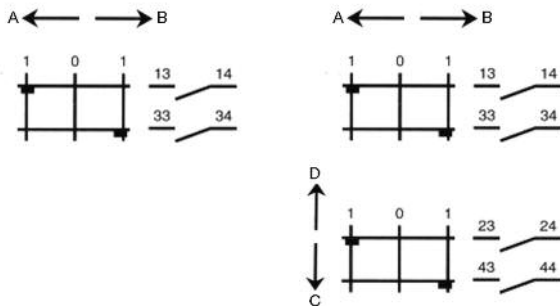
 Key extraction positions

Other versions are available on request: please contact our commercial department.

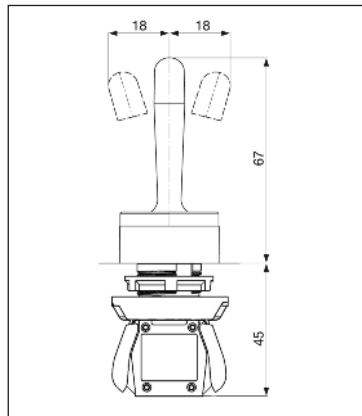
Plastic Series



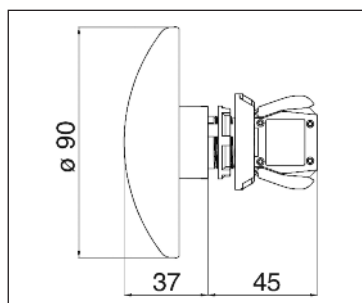
Operation diagrams



Upon request Joysticks are available in other additional settings. These items are supplied with contact blocks.



\varnothing 90 Wobble mushroom



Joystick - Wobble Joystick and Mushroom

1 position Joystick

Code	Code	Description
H = 79	H = 55	
ECX 4515N	ECX 4545N	A unstable
ECX 4516N	ECX 4546N	A stable

2 positions Joystick

Code	Code	Description
H = 79	H = 55	
ECX 4510N	ECX 4540N	A-B unstable
ECX 4511N	ECX 4541N	A stable / B unstable
ECX 4512N	ECX 4542N	A-B stable

4 positions Joystick

Code	Code	Description
H = 79	H = 55	
ECX 4520N	ECX 4550N	A-B-C-D unstable
ECX 4521N	ECX 4551N	A stable / B-C-D unstable
ECX 4522N	ECX 4552N	A-B stable / C-D unstable
ECX 4523N	ECX 4553N	A-B-C stable / D unstable
ECX 4524N	ECX 4554N	A-B-C-D stable

Wobble Joystick

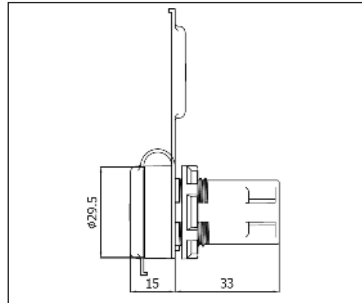
Code	Description
ECX 4530	Contacts (supplied separately) are actuated by a lever movement in any direction.

Version	Colour	Code
Contacts (supplied separately) are actuated by wobble movement in any direction.	Black	ECX 4570
	Red	ECX 4571
	Green	ECX 4572

Plastic Series

USB / RJ45 connectors - Potentiometer knob - Pilot light

USB connector



Description

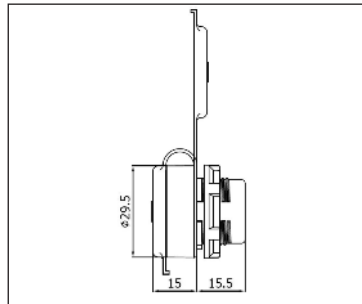
USB 2.0 connector black type "A"
 USB 3.0 connector black type "A"

Code

ECX 4620
ECX 4630

Connection cables and gaskets: see page 35

RJ45 connector



Description

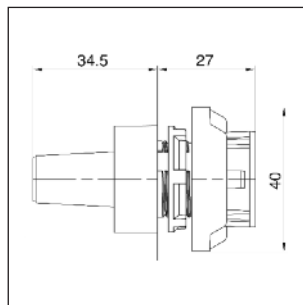
RJ45 connector black CAT. 6

Code

ECX 4645

Connection cables and gaskets: see page 35

Potentiometer knob



Description

Suitable for \varnothing 6 shaft potentiometers

With graduated scale

ECX 4560

With variable index

ECX 4561

Suitable for \varnothing 6,3 shaft potentiometers

With graduated scale

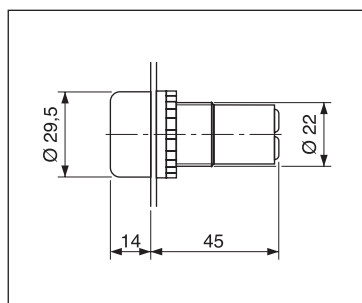
ECX 4562

With variable index

ECX 4563

Support base included - Shaft length 44...51 mm

Pilot light (IP 20, IP 65 after installation)



Version

For Ba9s lamps

Colour

Red

ECX 1051

Green

ECX 1052

Yellow

ECX 1053

Blue

ECX 1054

Transparent

ECX 1055

White

ECX 1056



Led pilot light - Buzzers

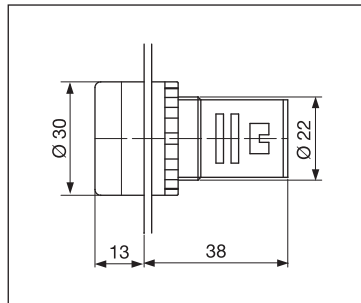
Applications

These products series ECX 205•, thanks to the Led illumination device, are characterized by long service life and low power consumption.

Main Technical Data

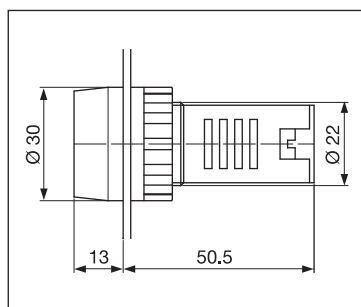
Rated Current: 12mA~140mA
Insulation Resistance: > 2 M Ω
Service Life: > 30.000 h
Luminous Flux: > 60 cd/m ²
Protection Degree: IP20 (IP65 after installation, except ECX 207• : IP64)
Pollution Degree: 3

Led pilot light Led \varnothing 22



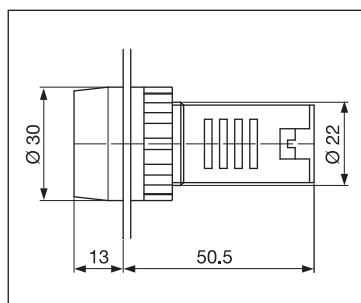
Version	Colour	Code
12 V AC/DC	Red	ECX 2051-12L
24 V AC/DC	Red	ECX 2051-24L
127 V AC/DC	Red	ECX 2051-127L
220 V AC	Red	ECX 2051-220L
12 V AC/DC	Green	ECX 2052-12L
24 V AC/DC	Green	ECX 2052-24L
127 V AC/DC	Green	ECX 2052-127L
220 V AC	Green	ECX 2052-220L
12 V AC/DC	Yellow	ECX 2053-12L
24 V AC/DC	Yellow	ECX 2053-24L
127 V AC/DC	Yellow	ECX 2053-127L
220 V AC	Yellow	ECX 2053-220L
12 V AC/DC	Blue	ECX 2054-12L
24 V AC/DC	Blue	ECX 2054-24L
127 V AC/DC	Blue	ECX 2054-127L
220 V AC	Blue	ECX 2054-220L
12 V AC/DC	White	ECX 2055-12L
24 V AC/DC	White	ECX 2055-24L
127 V AC/DC	White	ECX 2055-127L
220 V AC	White	ECX 2055-220L

Non-illuminated buzzer \varnothing 22



Version	Colour	Code
12 V AC/DC	Black	ECX 2070-12
24 V AC/DC	Black	ECX 2070-24
127 V AC/DC	Black	ECX 2070-127
220 V AC	Black	ECX 2070-220

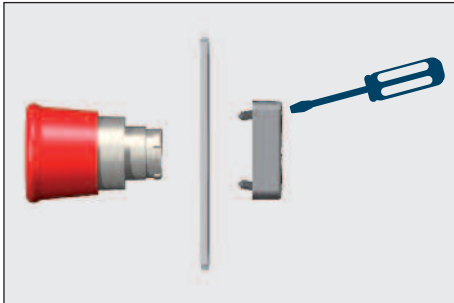
Illuminated flashing buzzer \varnothing 22



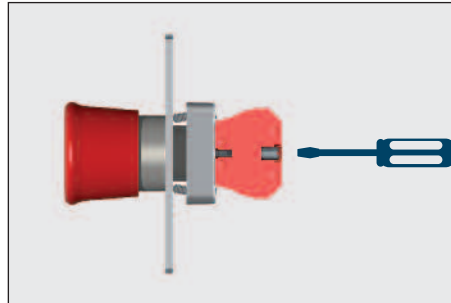
Version	Colour	Code
12 V AC/DC	Red	ECX 2071-12R
24 V AC/DC	Red	ECX 2071-24R
127 V AC/DC	Red	ECX 2071-127R
220 V AC	Red	ECX 2071-220R

Control units Metal Series

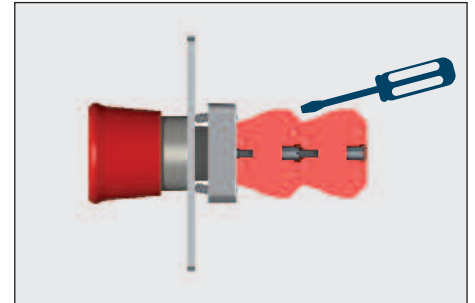
Main features



Installation of **1000 SERIES** is made by means of two **METAL SCREWS**.



CONTACT BLOCKS is installed by means of a **METAL SCREW** on the support base.



CONNECTING TERMINALS are easily and always **ACCESSIBLE**.



METAL OPERATORS and installation by means of **METAL SCREWS** ensure **MAXIMUM MECHANICAL STRENGTH**.



Ambient temperature
 - operating **-25 ... + 70 °C**
 - storage **-40 ... + 80 °C**



Devices certified according to International standards:
EN 60947-5-1 and **UL 508**.

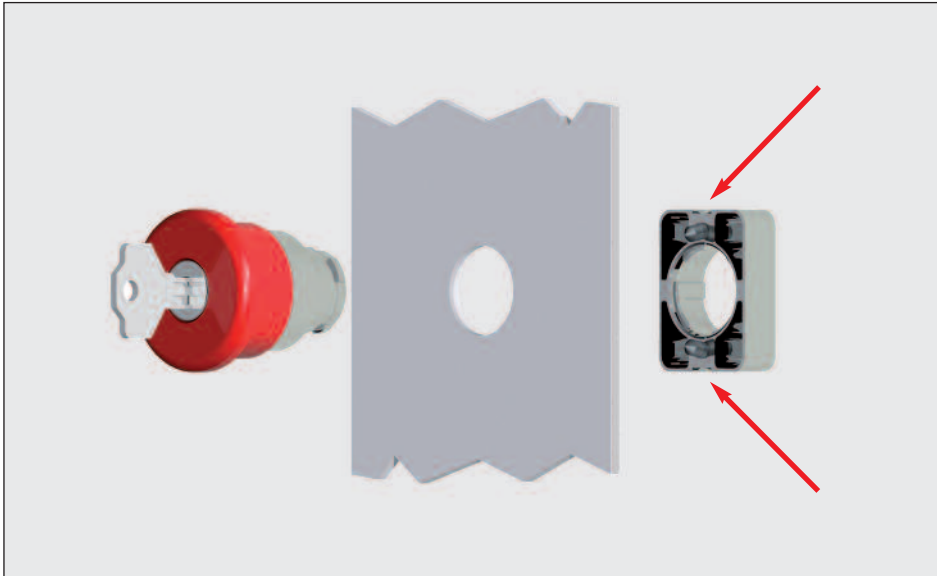


Comepi supports **SAFETY AND ENVIRONMENTAL PROTECTION**, according to European standards and directives.

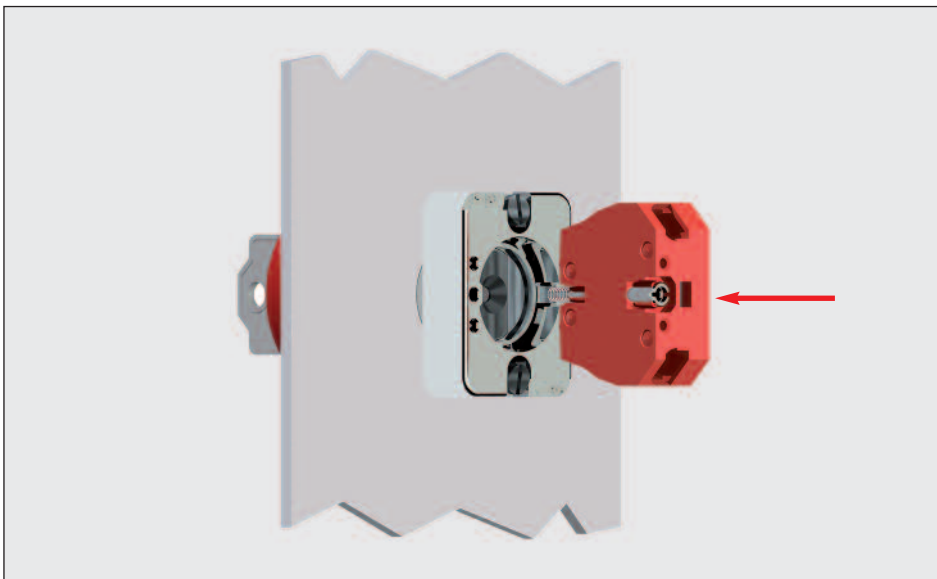


Control units Metal Series

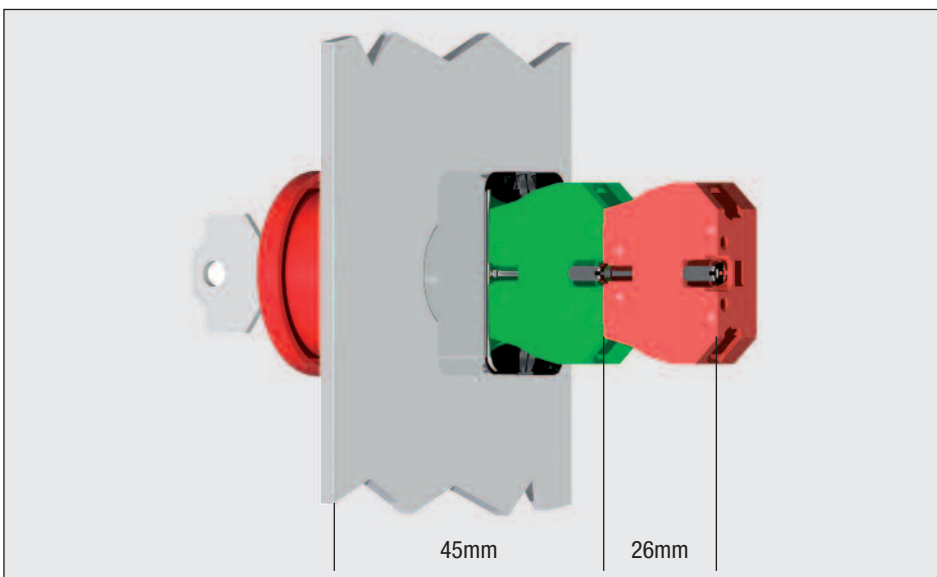
1000 SERIES: MAXIMUM MECHANICAL STRENGTH



Metal screws of the support base guarantee no rotation of the operators without need of anti-rotation notch



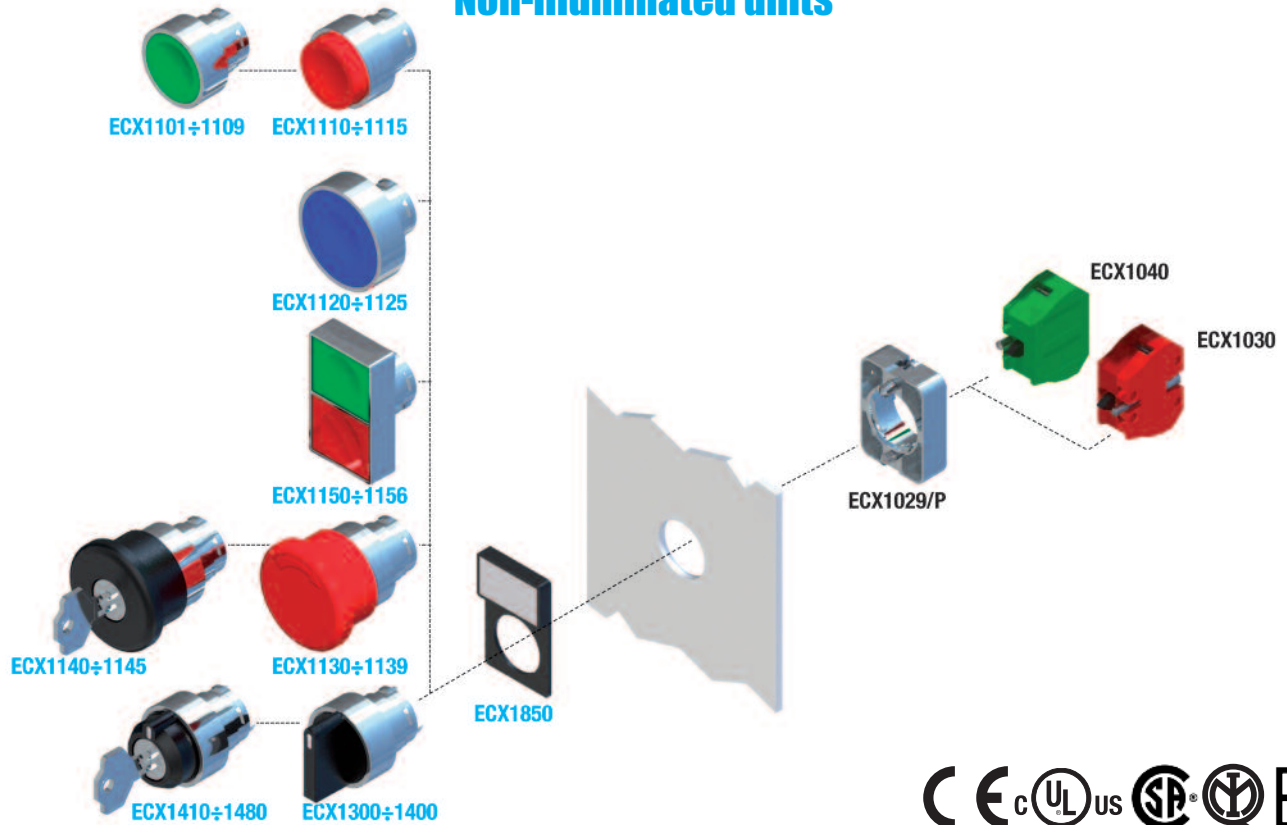
The screw on the contact block secures firmly the electrical contact to the support base and the operator



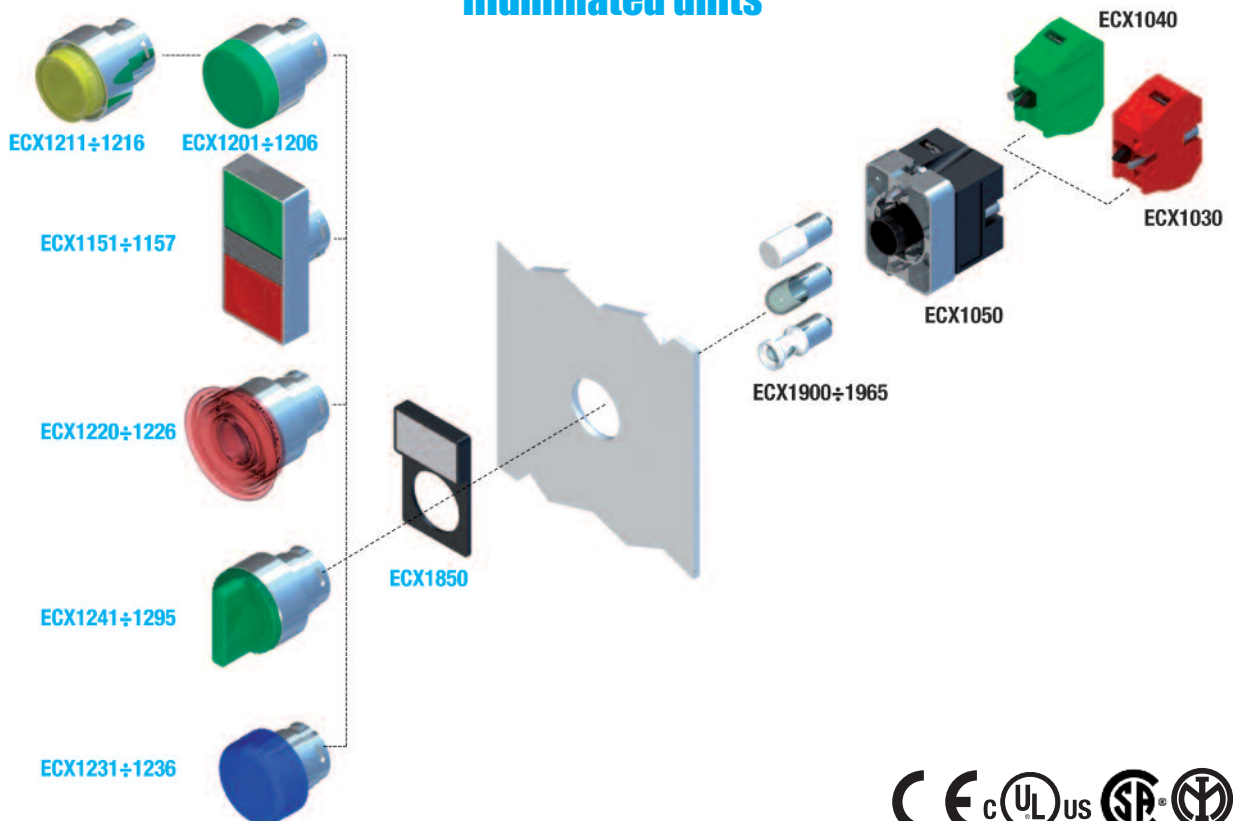
Overall dimensions:
45MM depth from panel only.
(See page 33 for overall dimensions of all models).

Control units Metal Series

Non-illuminated units



Illuminated units

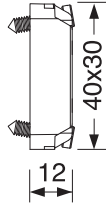
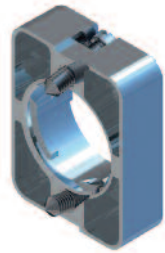


Implementation and utilization precautions: see page 33

Metal Series

Support base, contact blocks and BA9s lampholder

Metal support base



Description

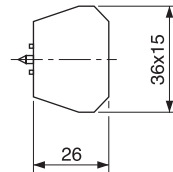
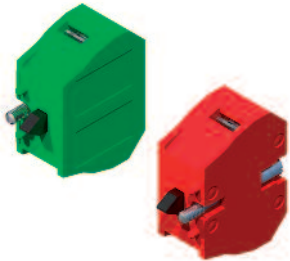
Support base for metal control units ECX1...

Code

ECX 1029/P

Implementation and utilization precautions: see page 33

Contact blocks (IP 20)



Operation Diagram

Colour

Code

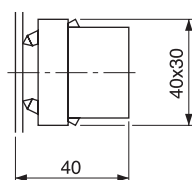
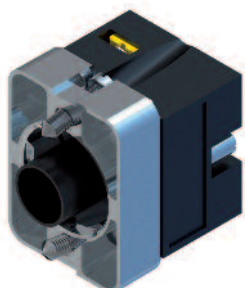
EN 01	1 — 2 \oplus	Red	ECX 1030
EN 10	3 — 4	Green	ECX 1040
EN 10	3 — 4	Grey	ECX 1041*
EN 10	3 — 4	Brown	ECX 1042**

* Only use on Joy Stick4 positions - ** Only use on illuminated push/push pushbutton

Positive opening (according to IEC 60947-5-1)	Positive opening on all NC contacts
Rated insulation voltage U_i – according to IEC 60947-1 and EN 60947-1 – according to UL 508 and CSA C22-2 n° 14	660V (degree of pollution 3) A300, Q300
Rated impulse withstand voltage U_{imp} (according to IEC 60947-1 and EN 60947-1)	6 kV
Conventional free air thermal current I_{th} (IEC 60947-5-1 e EN 60947-5-1) $\theta < 40^\circ\text{C}$	10 A
Short-circuit protection $U_e < 500\text{ V. a.c.}$ – gG (gl) type fuses	10 A
Rated operational current Ie / AC-15 (according to IEC 60947-5-1)	10 A 6 A 4 A
Ie / DC-13 (according to IEC 60947-5-1)	2,8 A 0,55 A 0,27 A
Switching frequency	3600 cycles/h
Resistance between contacts	$\leq 25\text{ m}\Omega$
Protection degree (according to IEC 60529 and EN 60529)	IP 20
Connecting terminals	On screw with non loosable plate clamp 1 or 2 conductors - 0,75...2,5 mm ²

 IMQ listed values

BA9s lampholder with support base (IP 20)



Description

BA9s direct feed
400V ~ (Max)
(lamp not included)



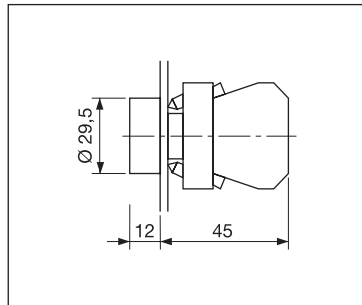
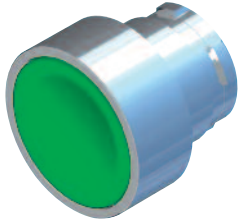
Code

ECX 1050

Metal Series

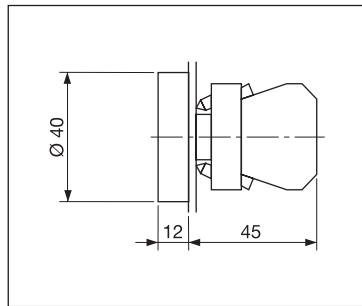
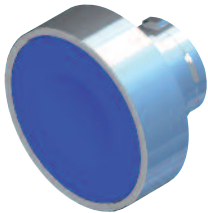
Non-illuminated momentary pushbuttons

Flush pushbutton - Button \varnothing 30



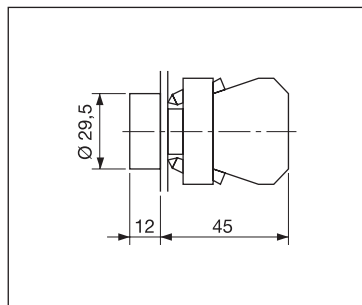
Colour	Code
Black	ECX 1100
Red	ECX 1101
Green	ECX 1102
Yellow	ECX 1103
Blue	ECX 1104
White	ECX 1105

Flush pushbutton - Button \varnothing 40



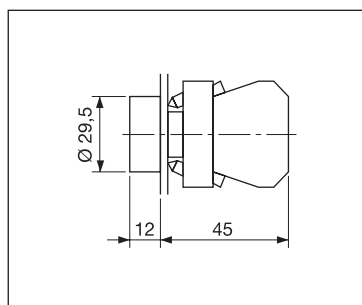
Colour	Code
Black	ECX 1120
Red	ECX 1121
Green	ECX 1122
Yellow	ECX 1123
Blue	ECX 1124
White	ECX 1125

Flush pushbutton - on/off



Version	Colour	Code
	Red	ECX 1106
	Green	ECX 1107
	Black	ECX 1106/N
	White	ECX 1107/B

Flush pushbutton - with arrow

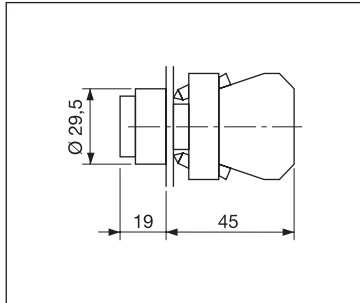


Version	Colour	Code
White horizontal arrow	Black	ECX 1108
White vertical arrow	Black	ECX 1109

Metal Series

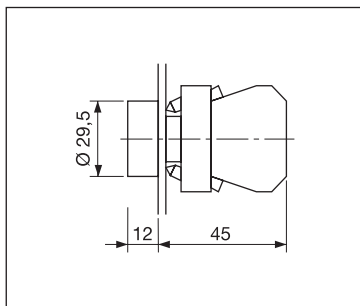
Non-illuminated momentary pushbuttons

Extended pushbutton



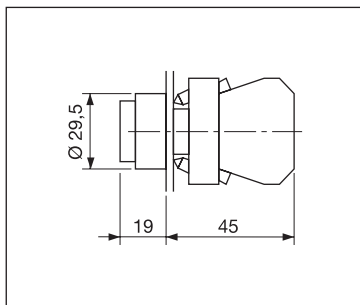
Colour	Code
Black	ECX 1110
Red	ECX 1111
Green	ECX 1112
Yellow	ECX 1113
Blue	ECX 1114
White	ECX 1115

Pushbutton Start / On



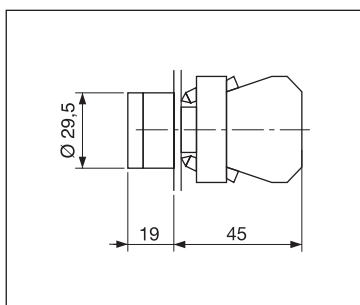
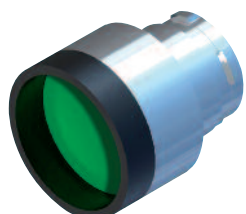
Version	Colour	Code
(flush)	White	ECX 1105-01
(flush)	White	ECX 1105-03

Pushbutton Stop / Off



Version	Colour	Code
(extended)	Black	ECX 1110-01
(extended)	Black	ECX 1110-03

Shrouded pushbuttons

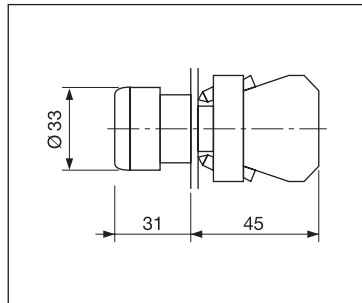


Colour	Code
Black	ECX 1000
Red	ECX 1001
Green	ECX 1002
Yellow	ECX 1003
Blue	ECX 1004
White	ECX 1005

Metal Series

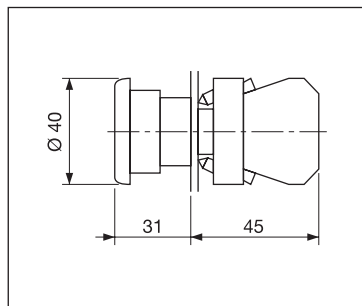
Non-illuminated mushroom pushbuttons

Mushroom pushbutton \varnothing 33



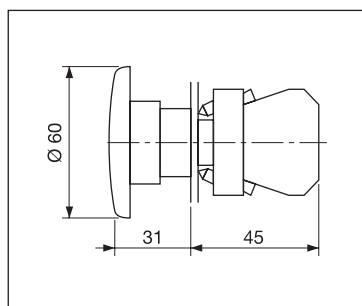
Version	Colour	Code
With latch - twist to release	Black	ECX 1160
	Red	ECX 1161
	Yellow	ECX 1168
Without latch	Black	ECX 1164
	Red	ECX 1165
	Yellow	ECX 1169

Mushroom pushbutton \varnothing 40



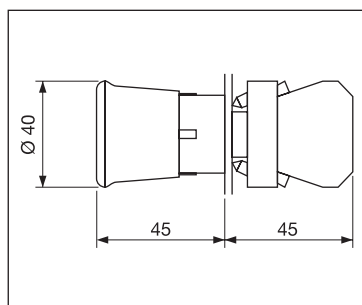
Version	Colour	Code
With latch - twist to release	Black	ECX 1130
	Red	ECX 1131
	Yellow	ECX 1138
Without latch	Black	ECX 1134
	Red	ECX 1135
	Yellow	ECX 1139

Mushroom pushbutton \varnothing 60



Version	Colour	Code
With latch - twist to release	Black	ECX 1132
	Red	ECX 1136
Without latch	Black	ECX 1133
	Red	ECX 1137

Mushroom pushbutton \varnothing 40 snap action

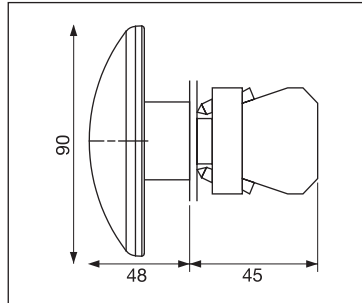


Version	Colour	Code
Snap action with latch-pull to release	Red	ECX 1146

Metal Series

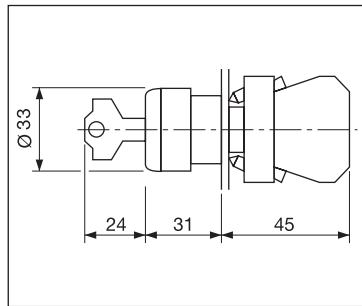
Mushroom pushbuttons

Mushroom pushbutton \varnothing 90 snap action



Version	Colour	Code
Snap action with latch-pull to release	Red	ECX 1147

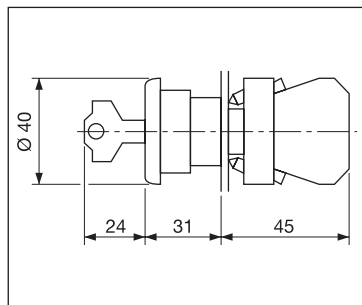
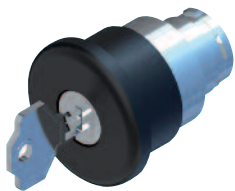
Mushroom key operated pushbutton (key n° G.513) \varnothing 33



Version	Colour	Code
With latch - turn key to release	Black	ECX 1170
	Red	ECX 1171
Without latch	Black	ECX 1174
	Red	ECX 1175

Replacement keys: see page 35

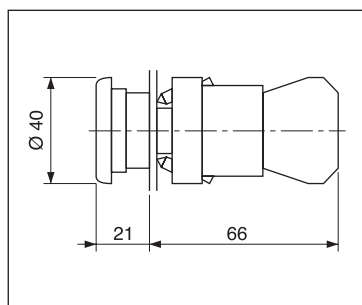
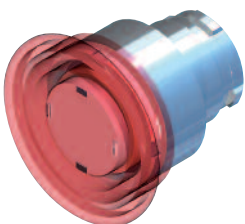
Mushroom key operated pushbutton (key n° G.513) \varnothing 40



Version	Colour	Code
With latch - turn key to release	Black	ECX 1140
	Red	ECX 1141
Without latch	Black	ECX 1144
	Red	ECX 1145

Replacement keys: see page 35

Illuminated mushroom pushbutton \varnothing 40

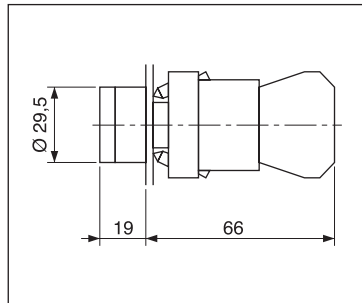
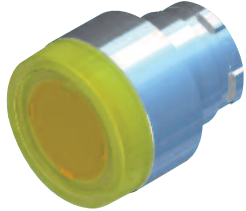


Version	Colour	Code
Without latch	White	ECX 1220
	Red	ECX 1221
	Green	ECX 1222
	Yellow	ECX 1223
	Blue	ECX 1224
	Transparent	ECX 1225
With latch - twist to release	Red	ECX 1226

Metal Series

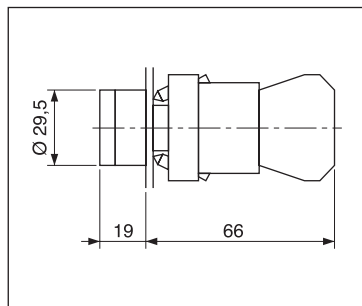
Illuminated momentary and push push buttons

Illuminated flush pushbutton



Colour	Code
Red	ECX 1201
Green	ECX 1202
Yellow	ECX 1203
Blue	ECX 1204
Transparent	ECX 1205
White	ECX 1206

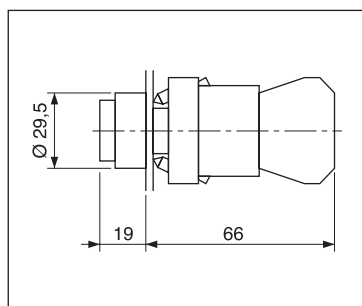
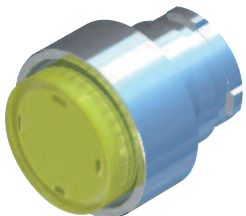
Illuminated flush push/push button



Version	Colour	Code
	Red	ECX 1191
	Green	ECX 1192
	Yellow	ECX 1193
	Blue	ECX 1194
	Transparent	ECX 1195
	White	ECX 1196
Not illuminated	Black	ECX 1190

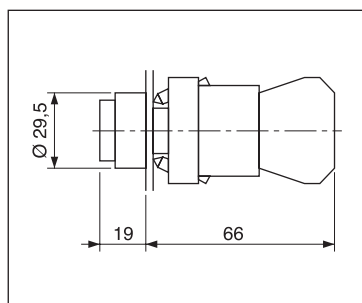
Attention: to be used with NO contact block ECX 1042 (brown colour)

Illuminated pushbutton - extended type



Colour	Code
Red	ECX 1211
Green	ECX 1212
Yellow	ECX 1213
Blue	ECX 1214
Transparent	ECX 1215
White	ECX 1216

Illuminated push/push button - extended type



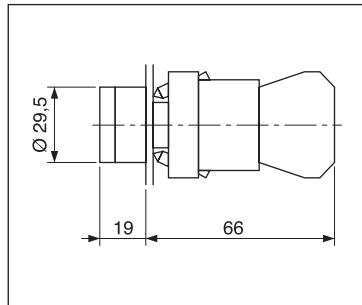
Version	Colour	Code
	Red	ECX 1181
	Green	ECX 1182
	Yellow	ECX 1183
	Blue	ECX 1184
	Transparent	ECX 1185
	White	ECX 1186
Not illuminated	Black	ECX 1180

Attention: to be used with NO contact block ECX 1042 (brown colour)

Metal Series

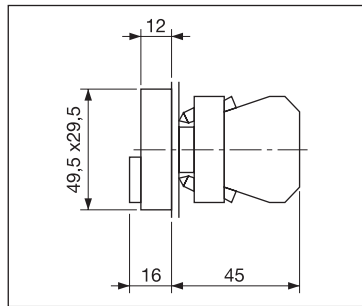
Illuminated momentary pushbuttons - two-way pushbuttons

Illuminated shrouded pushbutton



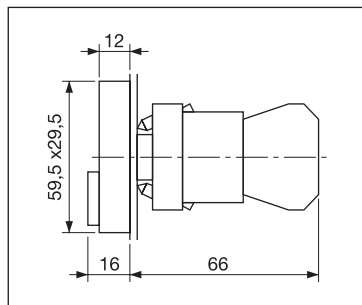
Colour	Code
Red	ECX 1011
Green	ECX 1012
Yellow	ECX 1013
Blue	ECX 1014
Transparent	ECX 1015
White	ECX 1016

Two-way pushbutton



Version	Code
Flush pushbutton	ECX 1150
Same as above with symbols	ECX 1152
Extended red button	ECX 1154
Same as above with symbols	ECX 1156
Upon request with black and white	ECX /BN

Two-way pushbutton with pilot light (IP40)



Version	Code
Flush pushbutton	ECX 1151
Same as above with symbols	ECX 1153
Extended red button	ECX 1155
Same as above with symbols	ECX 1157
Upon request with black and white	ECX /BN

Metal Series

Selector switches

Type of selector		Description	2 POS.		3 POS.			3 POS.		
			$\overset{0}{\circ} \overset{1}{\circ}$	$\overset{0}{\circ} \overset{1}{\circ}$	$\overset{1}{\circ} \overset{0}{\circ}$	$\overset{1}{\circ} \overset{2}{\circ}$	$\overset{1}{\circ} \overset{2}{\circ}$	$\overset{1}{\circ} \overset{2}{\circ}$	$\overset{1}{\circ} \overset{2}{\circ}$	$\overset{1}{\circ} \overset{2}{\circ}$
<p>• Contacts on the left side</p> <p>X = Closed contact</p> <p>• Contacts on the right side</p> <p>X = Closed contact</p>	<p>ECX 1030 1 — 2</p>	X			X	X	-	-	-	
	<p>ECX 1040 3 — 4</p>		X	X					X	
	<p>ECX 1041 3 — 4</p>	-	-	-	-	-		X		
	<p>ECX 1030 1 — 2</p>	X		X	X		-	-	-	
	<p>ECX 1040 3 — 4</p>		X			X			X	
	<p>ECX 1041 3 — 4</p>	-	-	-	-	-	X			
Short lever selector switch 		ECX 1300								
		ECX 1310								
					ECX 1320		GCX 1320S*			
					ECX 1330		GCX 1330S*			
					ECX 1340					
					ECX 1345					
Long lever selector switch 		ECX 1350								
		ECX 1360								
					ECX 1370		GCX 1370S*			
					ECX 1380		GCX 1380S*			
					ECX 1390					
					ECX 1400					
Key selector switch (key n° G. 513) 		ECX 1410								
		ECX 1420								
		ECX 1430								
					ECX 1440		GCX 1440S*			
					ECX 1450					
					ECX 1460					
					ECX 1470		GCX 1470S*			
					ECX 1480		GCX 1480S*			

* Supplied with contacts (2NO+2NC)

Metal Series

Selector switches

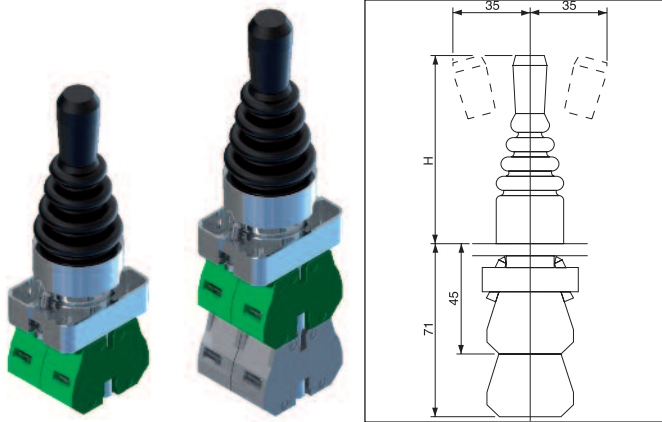
Type of selector		Description	2 POS.		3 POS.			3 POS.		
	• Contacts on the left side X = Closed contact	ECX 1030 1 — 2	X			X	X			
		ECX 1040 3 — 4		X	X					
		ECX 1041 3 — 4	-	-	-	-	-			
	• Contacts on the right side X = Closed contact	ECX 1030 1 — 2	X		X	X				
		ECX 1040 3 — 4		X			X			
		ECX 1041 3 — 4	-	-	-	-	-			
Lighted selector switch (1) 				ECX 124•						
				ECX 125•						
						ECX 126•				
						ECX 127•				
						ECX 128•				
						ECX 129•				

(1) Replace the symbol • with the number of the desired color:
 1: Red 2: Green 3: Yellow 4: Blue 5: Transparent

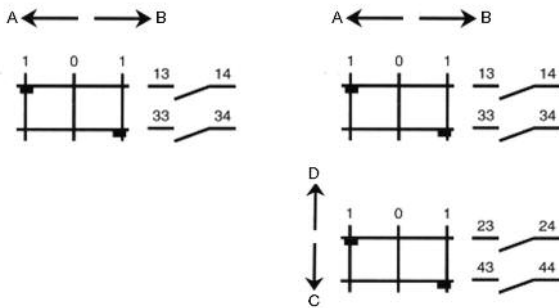
- Maintained positions
- Spring return positions
- Key extraction positions

Other versions are available on request: please contact our commercial department.

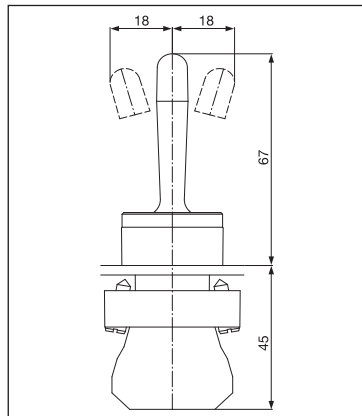
Metal Series



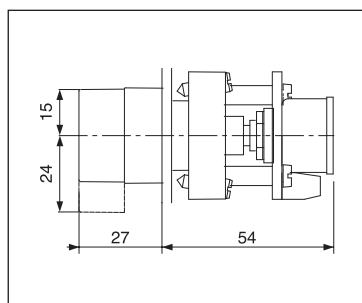
Operating diagrams



Upon request Joysticks are available in other additional settings.
These items are supplied with contact blocks.



Potentiometer with knob operator



Joystick - Wobble Joystick - Potentiometer

1 position Joystick

Code	Code	Description
H = 79	H = 55	
ECX 1515	ECX 1545	A unstable
ECX 1516	ECX 1546	A stable

2 positions Joystick

Code	Code	Description
H = 79	H = 55	
ECX 1510	ECX 1540	A-B unstable
ECX 1511	ECX 1541	A stable / B unstable
ECX 1512	ECX 1542	A-B stable

4 positions Joystick

Code	Code	Description
H = 79	H = 55	
ECX 1520	ECX 1550	A-B-C-D unstable
ECX 1521	ECX 1551	A stable / B-C-D unstable
ECX 1522	ECX 1552	A-B stable / C-D unstable
ECX 1523	ECX 1553	A-B-C stable / D unstable
ECX 1524	ECX 1554	A-B-C-D stable

Wobble Joystick

Code	Description
ECX 1530	Contacts (supplied separately) are actuated by a lever movement in any direction.

Code	Description
ECX 2300-1K	1000 Ohm
ECX 2300-5K	5000 Ohm
ECX 2300-10K	10000 Ohm
ECX 2300-20K	20000 Ohm
ECX 2300-25K	25000 Ohm

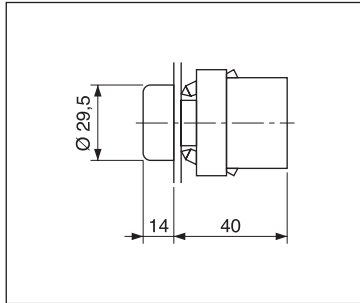
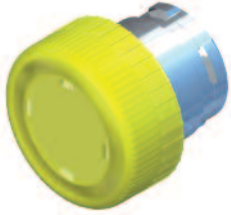
Rated Voltage: 250V - 47±63Hz
Rated power: 2W at 25°C

Potentiometer legend plate see page 36



Metal Series

Pilot light



Colour

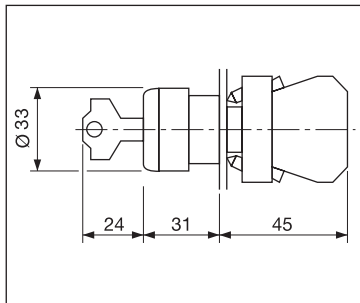
Code

Red	ECX 1231
Green	ECX 1232
Yellow	ECX 1233
Blue	ECX 1234
Transparent	ECX 1235
White	ECX 1236

Special application pushbutton

Code

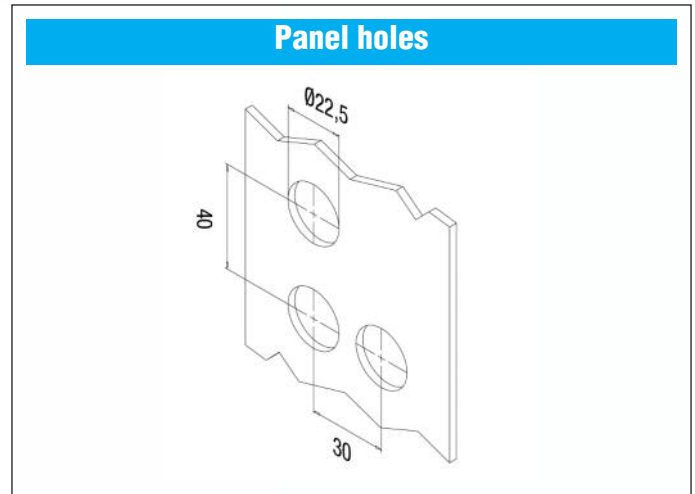
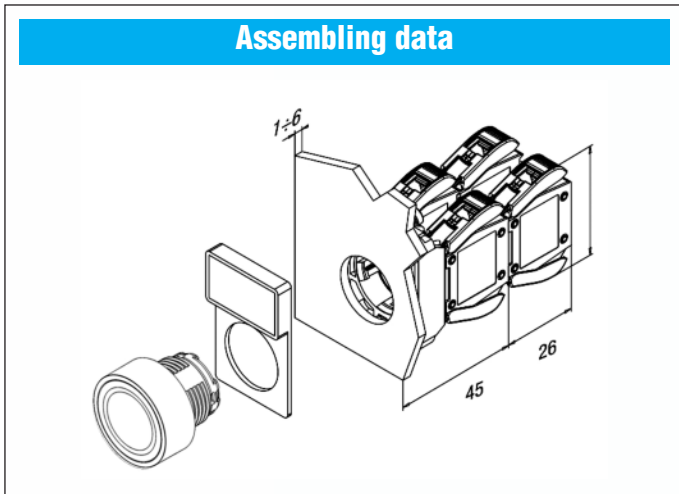
ECX 1177



This special pushbutton has been developed to fulfill all the requests coming from applications which require an **intentional operation** in order to consent actions (as adjustments, maintenance, inspection etc.) that may cause risks. Such an operation must be therefore carried out by authorized staff. The pushbutton working depends to the connection and rotation of the codified key; the pushbutton turns back to the free position when the operator releases the pression on the device.

Installation precautions

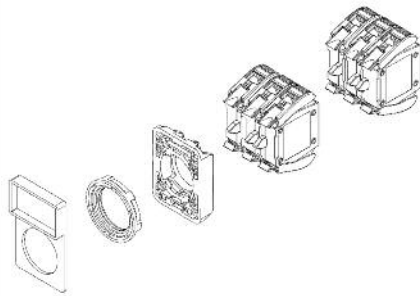
Plastic Series



Installation precautions

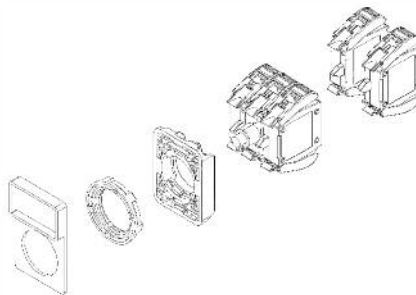
- Insert the operating device into the panel hole and fix it through the provided fixing ring; use the optionally provided tool (ECX 1608) to optimize the operation.
- Depending on necessity, assemble the contact blocks to the support base according to the instructions shown below.
- Apply the contact group on the installed operating device.
- Contact blocks and led units can be easily removed from their support by acting on the side levers (figure 2). This makes circuit wiring and control operations easier.

NON-ILLUMINATED MOMENTARY PUSHBUTTONS
(ECX4000-4005, ECX 4100-4115)
NON-ILLUMINATED MUSHROOM PUSHBUTTONS
(ECX 4130-4177)
WOBBLE DEVICES
(ECX 4530, ECX 4570-4572)



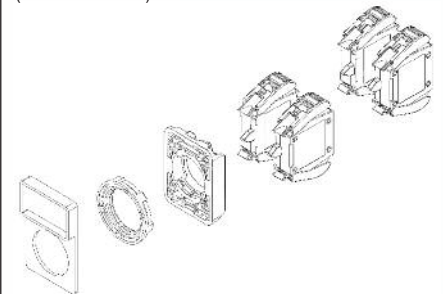
MAX 2 contact blocks stacked on each position.

ILLUMINATED MOMENTARY PUSHBUTTONS
(ECX 4011-4016, ECX 4201-4216)
PUSH/PUSH PUSHBUTTONS
(ECX 4180-4196)
TWO-WAY PUSHBUTTONS WITH PILOT LIGHT
(ECX 4151-4157)
ILLUMINATED MUSHROOM PUSHBUTTONS
(ECX 4220-4226)
ILLUMINATED SELECTORS
(ECX 4241-4295)



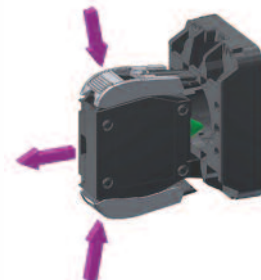
Contact blocks must be installed in the lateral positions of the support base.
MAX 2 contact blocks stacked on each position.
LED lamp-holder must be fixed in the central position.

TWO-WAY PUSHBUTTONS
(ECX 4150-4156)
SELECTORS
(ECX 4300-4480)



MAX 2 contact blocks stacked on each position.

Figure 2

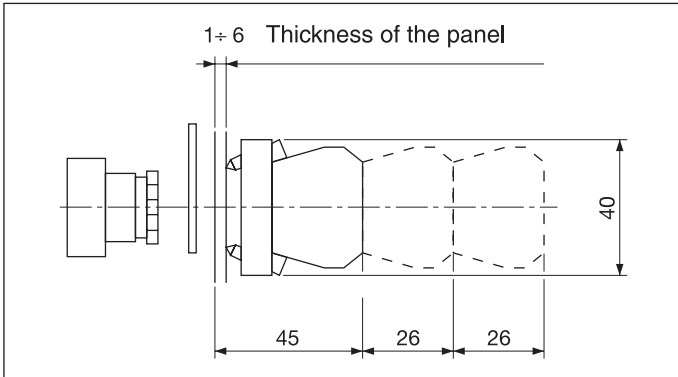


Installation precautions

Metal Series

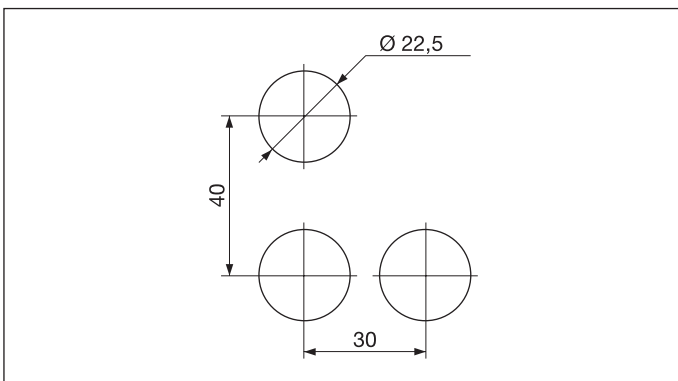
Assembling data

Pushbuttons and selector switches



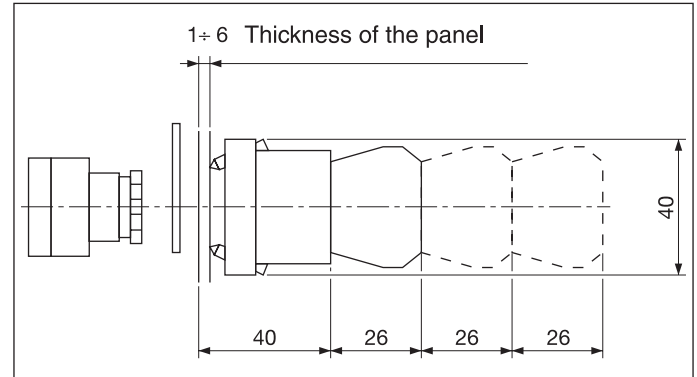
Panel holes

Suitable up to 230V and same polarity



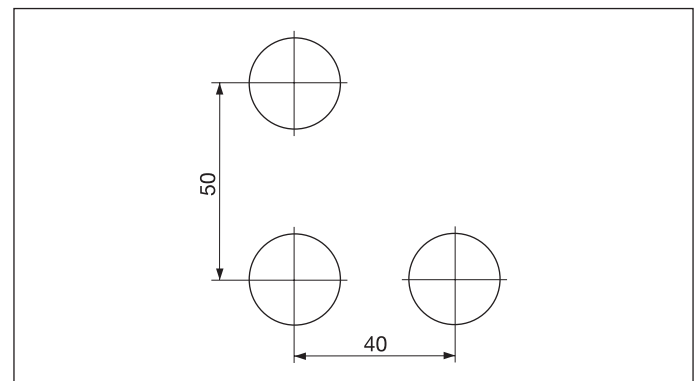
Assembling data

Illuminated pushbuttons and selector switches - Pilot lights



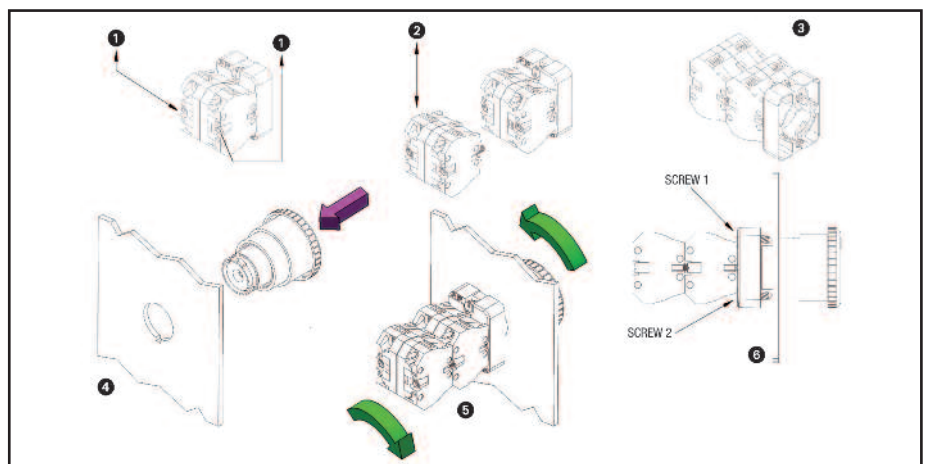
Panel holes

Suitable up to 400V and different polarity



Installation precautions


- 1 Assemble the contacts block on the support base tightening the screws as shown in picture 1.
- 2 Assemble others eventual switches depending on necessity.
- 3 Assembled switch-support base group.
- 4 Insert the operating device into the panel hole.
- 5 Assemble the switch-support base group on the operating device engaging the bayonets and rotating the two groups in contrasting directions till to the reaching of the correct positioning.
- 6 Draw near the screw 1 till to the contact with the panel, tighten the screw 2 and at last tighten the screw 1.
Make sure that the groups are fixed and straight.
Avoid unnecessary forcings to not damage the components (see tab. 1).





	Metal Series	
	Recommended Nm	Maximum Nm
Fixing screws of the contact block	0,3	0,5
Fixing screws of the support base	0,5	0,8

Accessories and spare parts

Fixing ring	Description	Code	Fixing key	Description	Code
	Suitable for 4000 Series	PL2727PI		Suitable for 4000 Series	ECX 1608

Plug for unused holes	Colour	Code
	Black Supplied with O-ring and mounting screw	ECX 1490

Lamp BA9s 10 x 28	Description	Rated	Power	Code
	Incandescent lamp	6 V	1,2 W	ECX 1900
		12 V	2 W	ECX 1901
		24 V	2 W	ECX 1902
		48 V	2 W	ECX 1903
		130 V	2,6 W	ECX 1904
	Neon lamp	110 V		ECX 1905
		220 V		ECX 1906
		380 V		ECX 1907

LED Lamp BA9s	Colour	24V AC/DC	115V AC/DC	230V AC
	Red	ECX 1911	ECX 1921	ECX 1961
	Green	ECX 1912	ECX 1922	ECX 1962
	Yellow	ECX 1913	ECX 1923	ECX 1963
	Blue	ECX 1914	ECX 1924	ECX 1964
	White	ECX 1915	ECX 1925	ECX 1965

Accessories and spare parts

Coloured keys



Colour	Key n°	Package	Code
Red	G.501	2 pcs	ECX 1061
Green	G.502	2 pcs	ECX 1062
Yellow	G.503	2 pcs	ECX 1063
Blue	G.504	2 pcs	ECX 1064
Black	G.505	2 pcs	ECX 1065
Grey	G.506	2 pcs	ECX 1066
Key without coloured cup	G.513	2 pcs	ECX 1067

Connection cables



Description	Code
USB 2.0 type A - 1m	XX20010MM
USB 3.0 type A - 1m	XX30010MM
RJ45 Cat. 6 - 1m	XX45010MM

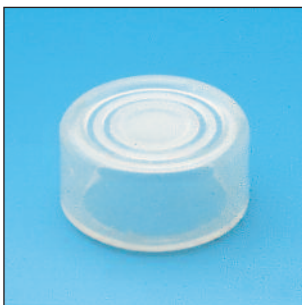


Gaskets



Description	Code
USB 2.0	GU1216PE
USB 3.0	GU1217PE
RJ45	GU1215PE

Cap for pushbuttons



Description	Colour	Material	Code
Protection cup for metal ring protected pushbuttons	Black	Neoprene	ECX 1700
	Red	Silicone	ECX 1701
	Green	Silicone	ECX 1702
	Yellow	Silicone	ECX 1703
	Blue	Silicone	ECX 1704
	Transparent	Silicone	ECX 1705
Protection cup for lighted pushbuttons	Transparent	Silicone	ECX 1706

Cap for two-way pushbuttons



Description	Colour	Material	Code
Protection cup for two-way pushbutton without pilot light	Transparent	Silicone	ECX 1710
with pilot light	Transparent	Silicone	ECX 1711

Accessories and spare parts

Protection for mushroom pushbutton

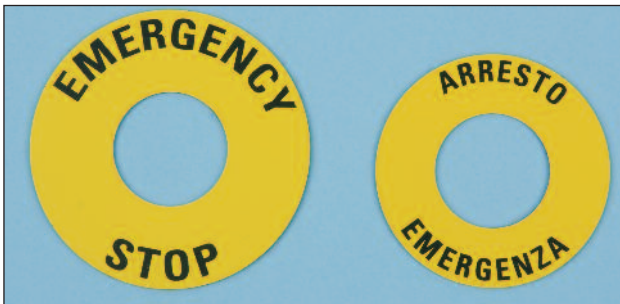


Description

Code

Protection without text	ECX 1600
Protection with text EMERGENCY STOP	ECX 1601
Protection with text ARRESTO EMERGENZA	ECX 1602

Emergency pushbutton \varnothing 50 and \varnothing 60 nameplate



Description

Code \varnothing 50

Code \varnothing 60

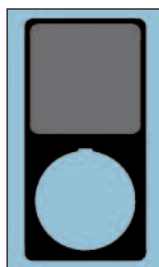
Yellow nameplate with no text	ECX 1660	ECX 1650
EMERGENCY STOP engraved nameplate yellow background	ECX 1661	ECX 1651
ARRESTO EMERGENZA engraved nameplate yellow background	ECX 1662	ECX 1652

Nameplate



Nameplate
30x48mm
without text

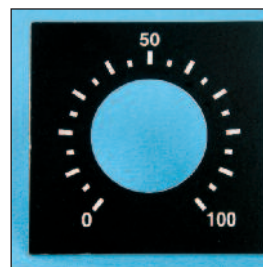
ECX 1850



Nameplate
30x60mm
without text

ECX 1855

Potentiometer legend plate



Legend plate 50x50mm

ECX 2640

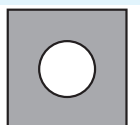
Nameplates for Pushbuttons, Selector switches and Pilot lights

30x40

30x50

30x50

50x50



Description

Code

Code

Code

Code

Nameplate with no text, red or white background	ECX 1610	ECX 1620	ECX 1630	ECX 1640
Nameplate with no text, yellow or black background	ECX 1611	ECX 1621	ECX 1631	ECX 1641
Engraved nameplates (*), black background	ECX 1612	ECX 1622	ECX 1632	ECX 1642
Engraved nameplates (*), red background	ECX 1613	ECX 1623	ECX 1633	ECX 1643
Engraved nameplates (*), yellow background	ECX 1614	ECX 1624	ECX 1634	ECX 1644
Engraved nameplates (*), white background	ECX 1615	ECX 1625	ECX 1635	ECX 1645

Text is to be specified on the order: max 2 lines with 10 characters each.

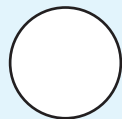
ISO symbols for illuminated pushbuttons and pilot lights

The nameplates with the following text are available on stock and can be ordered according to the following example:

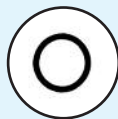
**30x40 Red nameplate with "Arresto" text:
ECX1613 + ECX1702**

Text	Code	Text	Code	Text	Code
Apertura	ECX 1701	Marcia	ECX 1710	Arresto-Marcia	ECX 1719
Arresto	ECX 1702	Salita	ECX 1711	Aut.-Man.	ECX 1720
Avanti	ECX 1703	Sinistra	ECX 1712	Aut.-O-Man.	ECX 1721
Chiusura	ECX 1704	Stop	ECX 1713	Avanti-O-Indietro	ECX 1722
Destra	ECX 1705	Veloce	ECX 1714	Inser.-O-Disins.	ECX 1723
Discesa	ECX 1706	0	ECX 1715	0-I	ECX 1724
Emergenza	ECX 1707	I	ECX 1716	I - II	ECX 1725
Indietro	ECX 1708	II	ECX 1717	I - 0 - II	ECX 1726
Lento	ECX 1709	III	ECX 1718	Start	ECX 1727

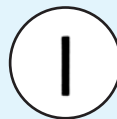
With no text Universal signs



ECX 1801



ECX 1802



ECX 1803

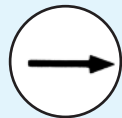


ECX 1804



ECX 1805

Action and speed symbols



ECX 1806

Straight motion
right



ECX 1807

Straight motion
up



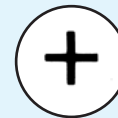
ECX 1808

Rotary motion



ECX 1809

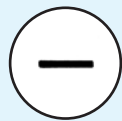
Feed



ECX 1810

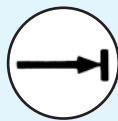
Increase

Action and speed symbols



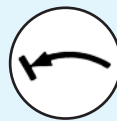
ECX 1811

Decrease



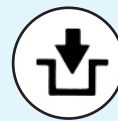
ECX 1812

Limited straight
motion



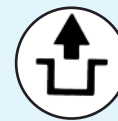
ECX 1813

Limited rotary
motion



ECX 1814

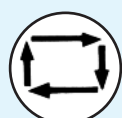
Latch



ECX 1815

Unlatch

Other symbols



ECX 1816

Automatic repeat



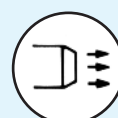
ECX 1817

Manual



ECX 1818

Coolant



ECX 1819

Blow



ECX 1820

Light

Double insulation thermoplastic enclosures with control units (IP65)



General Technical Data

Standards	IEC 60947-5-1 / EN 60947-5-1
Air temperature	
– during operation	– 25 ... + 70 °C
– for storage	– 40 ... + 80 °C
Degree of protection (according to IEC 60529 and EN 60529)	IP65
Material	Thermoplastic ABS
Box colour	Gray RAL 7035
Colours of the box lid	Gray RAL 7035 / Yellow RAL 1003

Momentary mushroom pushbutton \varnothing 40 mm.

Dimensions 70x70 mm



Code	N. holes	H mm.
SA 101 SL-001-G	1	51
SA 104 SL-001-G	1	74

Operator description:

Pushbutton **Code ECX4135** with 1 N.C. contact

Mushroom key operated pushbutton \varnothing 40 mm. without latch

Dimensions 70x70 mm



Code	N. holes	H mm.
SA 101 SL-002-G	1	51
SA 104 SL-002-G	1	74

Operator description:

Pushbutton **Code ECX4145** with 1 N.C. contact

Double insulation thermoplastic enclosures with control units (IP65)

Mushroom pushbutton \varnothing 60 mm. without latch

Dimensions 70x70 mm



Code	N. holes	H mm.
SA 101 SL-003-G	1	51
SA 104 SL-003-G	1	74

Operator description:

Pushbutton **Code ECX4137** with 1 N.C. contact

Mushroom pushbutton \varnothing 40 mm. with latch-twist to release

Dimensions 70x70 mm



Code	N. holes	H mm.
SA 101A SL-001-G	1	51
SA 104A SL-001-G	1	74

Operator description:

Pushbutton **Code ECX4131** with 1 N.C. contact

Mushroom pushbutton \varnothing 40 mm. with key, with latch, key rotation release

Dimensions 70x70 mm



Code	N. holes	H mm.
SA 101A SL-003-G	1	51
SA 104A SL-003-G	1	74

Operator description:

Pushbutton **Code ECX4141** with 1 N.C. contact

Mushroom pushbutton \varnothing 60 mm. with latch, twist to release

Dimensions 70x70 mm



Code	N. holes	H mm.
SA 101A SL-004-G	1	51
SA 104A SL-004-G	1	74

Operator description:

Pushbutton **Code ECX4136** with 1 N.C. contact

Double insulation thermoplastic enclosures with control units (IP65)

Mushroom pushbutton \varnothing 40 mm. with latch, pull to release

Dimensions 70x70 mm



Code	N. holes	H mm.
SA 101A SL-005-M	1	51
SA 104A SL-005-M	1	74

Operator description:

Pushbutton **Code ECX1146** with 1 N.C. contact

Plastic ring protected pushbutton \varnothing 30 mm. white colour "START"

Dimensions 70x70 mm



Code	N. holes	H mm.
SA 100 SL-001-G	1	51
SA 103 SL-001-G	1	74

Operator description:

Pushbutton **Code ECX4105-01** with 1 N.O. contact

Extended pushbutton \varnothing 30 mm. black colour "STOP"

Dimensions 70x70 mm



Code	N. holes	H mm.
SA 100 SL-002-G	1	51
SA 103 SL-002-G	1	74

Operator description:

Pushbutton **Code ECX4110-01** with 1 N.C. contact

Plastic ring protected pushbutton \varnothing 30 mm. green colour "I"

Dimensions 70x70 mm



Code	N. holes	H mm.
SA 100 SL-003-G	1	51
SA 103 SL-003-G	1	74

Operator description:

Pushbutton **Code ECX4107** with 1 N.O. contact

Double insulation thermoplastic enclosures with control units (IP65)

Plastic ring protected pushbutton \varnothing 30 mm. red colour "0"

Dimensions 70x70 mm



Code	N. holes	H mm.
SA 100 SL-004-G	1	51
SA 103 SL-004-G	1	74

Operator description:

Pushbutton **Code ECX4106** with 1 N.C. contact

Selector switch "0-1" maintained positions

Dimensions 70x70 mm



Code	N. holes	H mm.
SA 100 SL-005-G	1	51
SA 103 SL-005-G	1	74

Operator description:

Pushbutton **Code ECX4300** with 1 N.O. contact

Key selector switch "0-1" maintained positions

Dimensions 70x70 mm



Code	N. holes	H mm.
SA 100 SL-006-G	1	51
SA 103 SL-006-G	1	74

Operator description:

Pushbutton **Code ECX4410** with 1 N.O. contact

2 plastic ring protected pushbuttons \varnothing 30 mm., black colour with vertical arrow

Dimensions 105x70 mm



Code	N. holes	H mm.
SA 105/40 SL-001-G	2	51
SA 106/40 SL-001-G	2	74

Operator description:

Pushbutton **Code ECX4109** with 1 N.O. contact

Double insulation thermoplastic enclosures with control units (IP65)

2 plastic ring protected pushbutton \varnothing 30 mm. green "I" and red "O" colours

Dimensions 105x70 mm



Code	N. holes	H mm.
SA 105/40 SL-002-G	2	51
SA 106/40 SL-002-G	2	74

Operator description:

Green Code ECX4107 with 1 N.O. contact

Red Code ECX4106 with 1 N.C. contact

2 plastic ring protected pushbutton \varnothing 30 mm. green "I" and red "O" colours

Dimensions 105x70 mm



Code	N. holes	H mm.
SA 105/40 SL-003-G	2	51
SA 106/40 SL-003-G	2	74

Operator description:

Green Code ECX4102 with 1 N.O. contact

Red Code ECX4101 with 1 N.C. contact

3 plastic ring protected pushbuttons \varnothing 30 mm. green and red

Dimensions 140x70 mm



Code	N. holes	H mm.
SA 107/40 SL-001-G	3	51
SA 108/40 SL-001-G	3	74

Operator description:

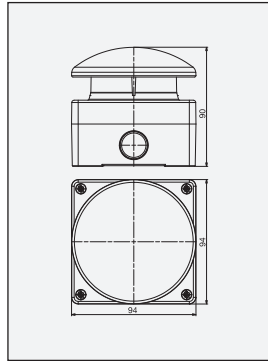
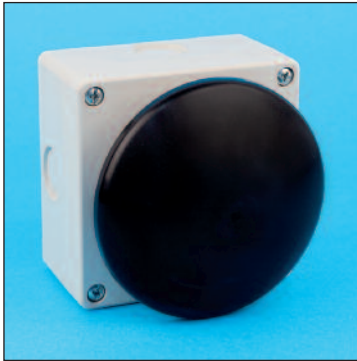
Green Code ECX4102 with 1 N.O. contact

Red Code ECX4101 with 1 N.C. contact

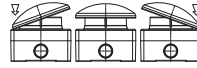
On request, we can provide all our enclosures fitted with any buttons and accessories available in our range.

Double insulation thermoplastic enclosures with control units (IP65)

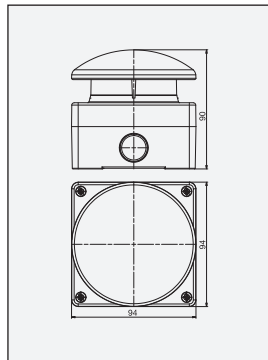
Foot and palm switches



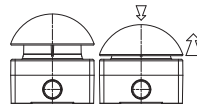
Version	Colour	Contacts	Code
Wobble \varnothing 90 mushroom	Black	1 NO	SA 080-10
	Black	1 NO + 1 NC \rightarrow	SA 080-11
	Red	1 NC \rightarrow	SA 081-01
	Red	1 NO + 1 NC \rightarrow	SA 081-11
	Green	1 NO \rightarrow	SA 082-10
	Green	1 NO + 1 NC \rightarrow	SA 082-11



Foot and palm switches

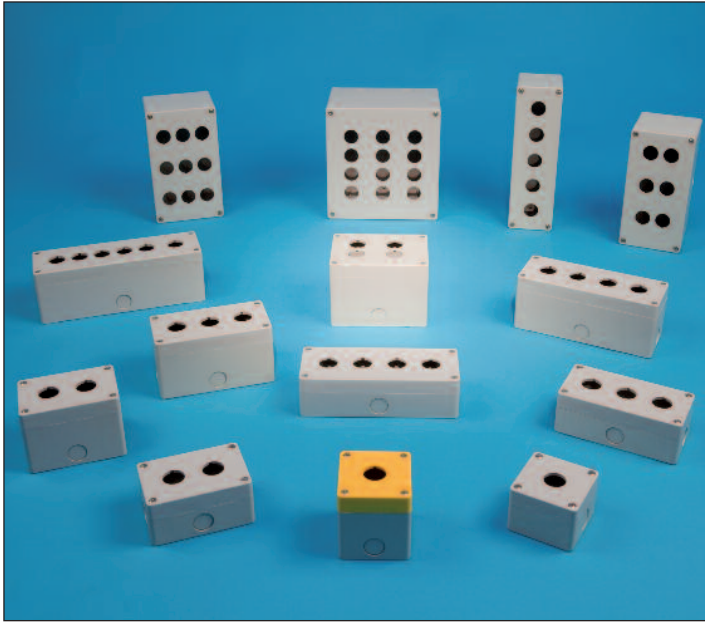


Version	Colour	Contacts	Code
Emergency \varnothing 90 mushroom pull to release	Red	1 NC \rightarrow	SA 091-01
	Red	2 NC \rightarrow	SA 091-02
	Red	1 NO + 1 NC \rightarrow	SA 091-11



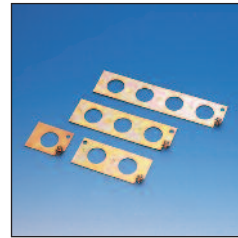
Pull to release

Double insulation thermoplastic enclosures (IP65)

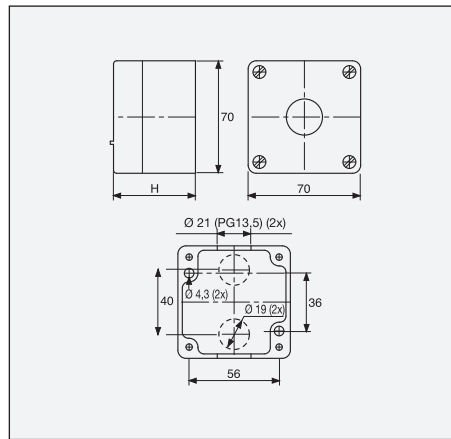


General Technical Data

Standards	IEC 60947-5-1 / EN 60947-5-1
Air temperature	
– during operation	– 25 ... + 70 °C
– for storage	– 40 ... + 80 °C
Degree of protection (according to IEC 60529 and EN 60529)	IP65
Material	Thermoplastic ABS
Box colour	Gray RAL 7035
Colours of the box lid	Gray RAL 7035 / Yellow RAL 1003

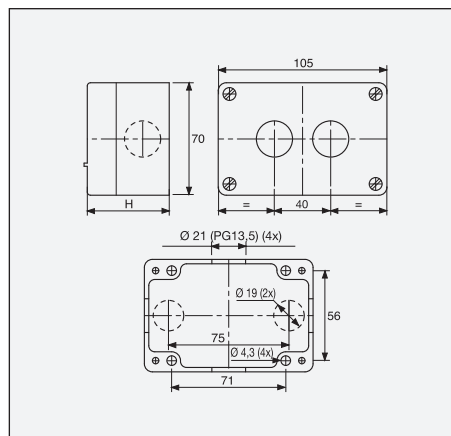


Description	Code
Suitable for boxes with 1 hole	SA 1
Suitable for boxes with 2 holes	SA 2
Suitable for boxes with 3 holes	SA 3
Suitable for boxes with 4 holes	SA 4
Suitable for boxes with 5 holes	SA 5



Code	N. holes	H mm.
SA 100/00 SL*	0	51
SA 103/00 SL*	0	74
SA 100 SL*	1	51
SA 103 SL*	1	74
SA 101 SL**	1	51
SA 104 SL**	1	74
SA 101 A SL***	1	51
SA 104 A SL***	1	74

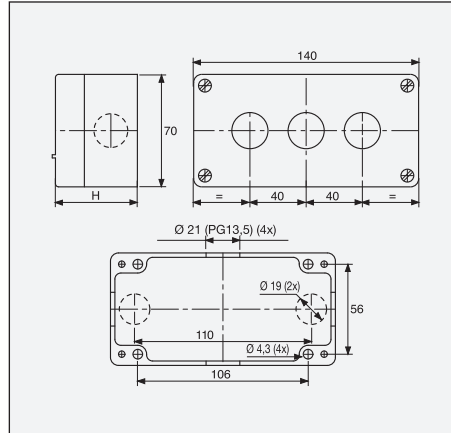
* Gray cover
 ** Yellow cover
 *** Yellow cover with text



Code	N. holes	H mm.
SA 105/00 SL	0	51
SA 106/00 SL	0	74
SA 105/40 SL	2	51
SA 106/40 SL	2	74

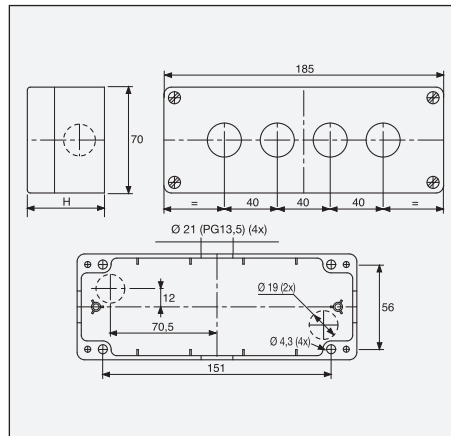
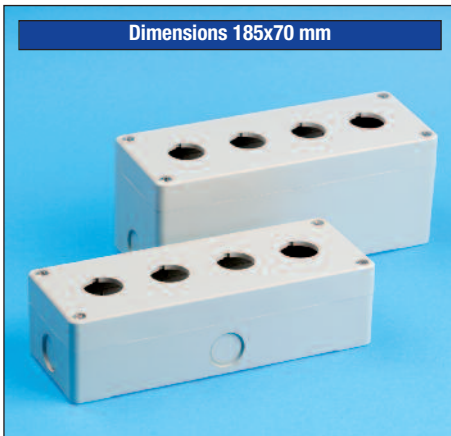
Double insulation thermoplastic enclosures (IP65)

Dimensions 140x70 mm



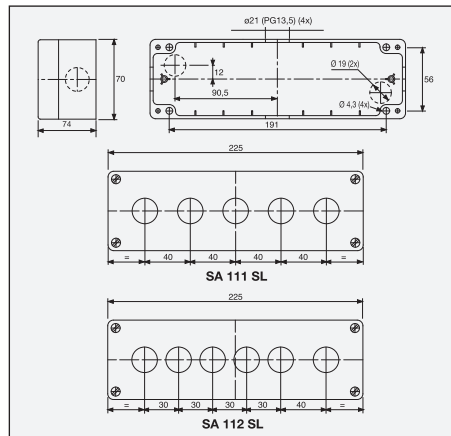
Code	N. holes	H mm.
SA 107/00 SL	0	51
SA 108/00 SL	0	74
SA 107/40 SL	3	51
SA 108/40 SL	3	74

Dimensions 185x70 mm



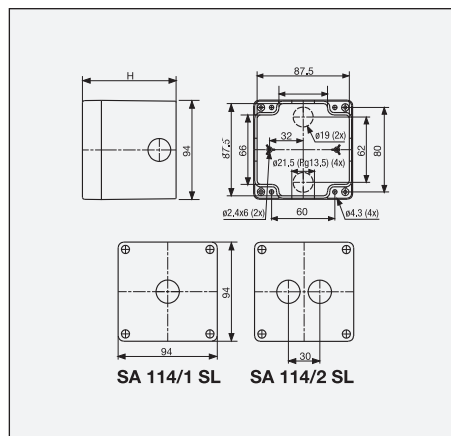
Code	N. holes	H mm.
SA 109/00 SL	0	51
SA 110/00 SL	0	74
SA 109/40 SL	4	51
SA 110/40 SL	4	74

Dimensions 225x70 mm



Code	N. holes	H mm.
SA 111/00 SL	0	74
SA 111 SL	5	74
SA 112 SL	6	74

Dimensions 94x94 mm

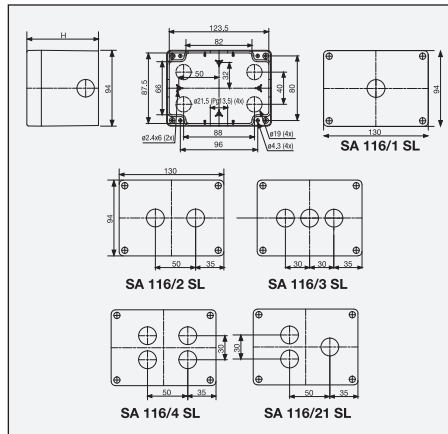


Code	N. holes	H mm.
SA 113/00 SL*	0	50
SA 113/1 SL*	1	50
SA 113/2 SL*	2	50
SA 113 Y/1 SL**	1	50
SA 113 Y-A/1 SL***	1	50
SA 114/00 SL*	0	90
SA 114/1 SL*	1	90
SA 114/2 SL*	2	90
SA 114 Y/1 SL**	1	90
SA 114 Y-A/1 SL***	1	90

* Gray cover / ** Yellow cover / ***Yellow cover with text

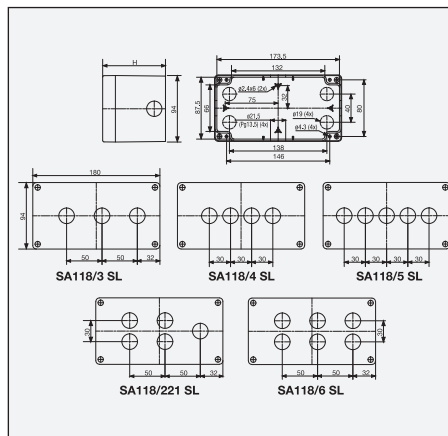
Double insulation thermoplastic enclosures (IP65)

Dimensions 130x94 mm



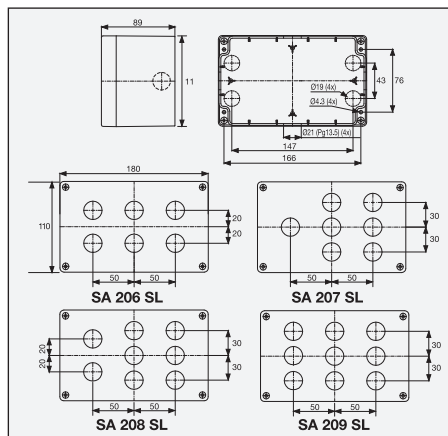
Code	N. holes	H mm.
SA 116/00 SL	0	90
SA 116/1 SL	1	90
SA 116/2 SL	2	90
SA 116/3 SL	3	90
SA 116/21 SL	3	90
SA 116/4 SL	4	90

Dimensions 180x94 mm



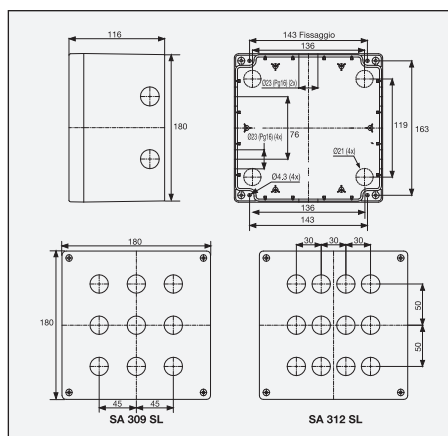
Code	N. holes	H mm.
SA 118/00 SL	0	90
SA 118/3 SL	3	90
SA 118/4 SL	4	90
SA 118/5 SL	5	90
SA 118/221 SL	5	90
SA 118/6 SL	6	90

Dimensions 180x110 mm



Code	N. holes	H mm.
SA 200/00 SL	0	90
SA 206 SL	6	90
SA 207 SL	7	90
SA 208 SL	8	90
SA 209 SL	9	90

Dimensions 180x180 mm



Code	N. holes	H mm.
SA 300/00 SL	0	116
SA 309 SL	9	116
SA 312 SL	12	116

Aluminium enclosures (IP65)

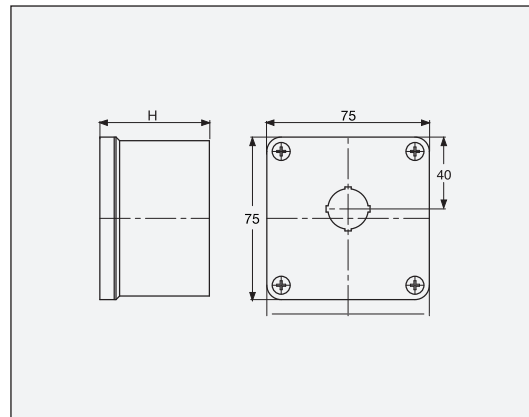


General Technical Data

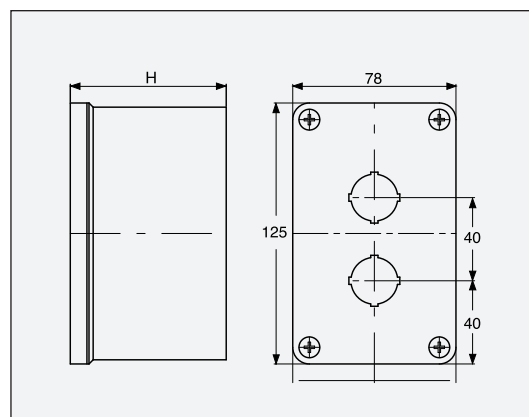
Standards	IEC 60947-5-1 / EN 60947-5-1	
Air temperature		
– during operation		– 25 ... + 70 °C
– for storage		–40 ... + 80 °C
Degree of protection (according to IEC 60529 and EN 60529)	IP65	
Material	Aluminium alloy AISi9Cu EN-AB47100 with Cu < 1% (ex UNI 5079)	
Specific weight	Kg/dm ³	2,65
Ultimate tensile strength	Kg/mm ²	23 ÷ 27
Brinell hardness		75 ÷ 95
Heat conductivity at 20 °C	cal/cm sec °C	0,37
Heat resistance	°C	+300
Cold resistance	°C	–100

Kind of finishing

- A** = Sandblasted box and cover
- B** = Painted box and cover RAL 7035 (Grey)
- C** = Sandblasted box and painted cover RAL 1023 (Yellow)
- D** = Painted box RAL 7035 (Grey) and painted cover RAL 1023 (Yellow)

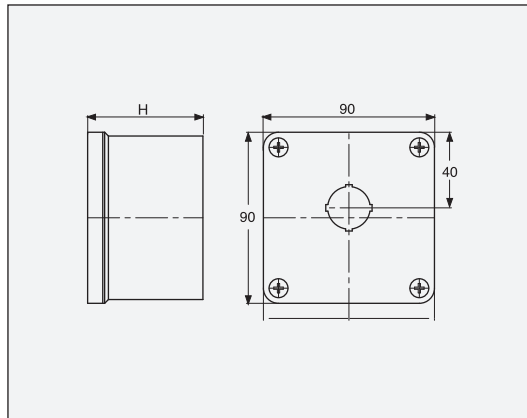


Code	Finishing	N. holes	H mm.
SAM 070-A	A	1	54
SAM 070-B	B	1	54
SAM 070-C	C	1	54
SAM 070-D	D	1	54
SAM 170-A	A	0	54
SAM 170-B	B	0	54

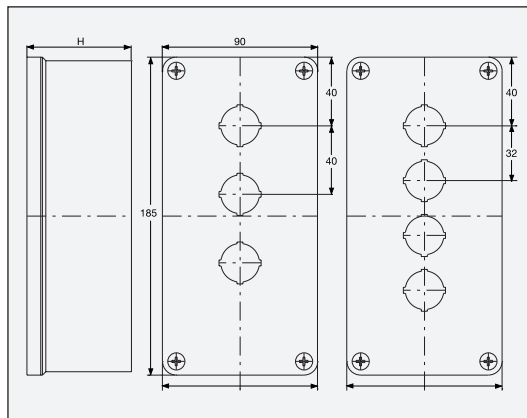


Code	Finishing	N. holes	H mm.
SAM 104-A	A	2	61
SAM 104-B	B	2	61
SAM 204-A	A	0	61
SAM 204-B	B	0	61
SAM 106-A	A	2	75
SAM 106-B	B	2	75
SAM 206-A	A	0	75
SAM 206-B	B	0	75

Aluminium enclosures (IP65)

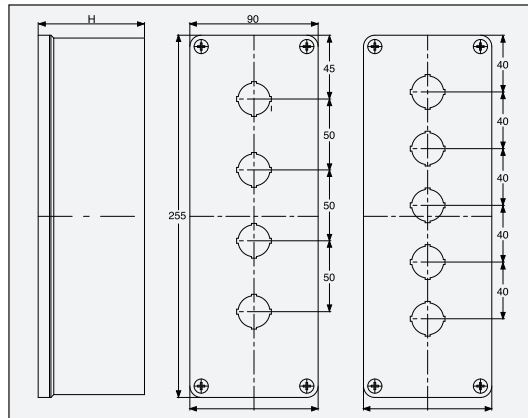


Code	Finishing	N. holes	H mm.
SAM 100-A	A	1	61
SAM 100-B	B	1	61
SAM 100-C	C	1	61
SAM 100-D	D	1	61
SAM 200-A	A	0	61
SAM 200-B	B	0	61
SAM 101-A	A	1	69
SAM 101-B	B	1	69
SAM 101-C	C	1	69
SAM 101-D	D	1	69
SAM 301-A	A	0	69
SAM 301-B	B	0	69

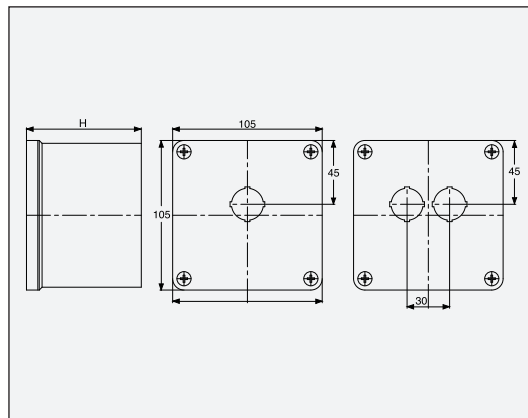


Code	Finishing	N. holes	H mm.
SAM 180-A	A	3	61
SAM 180-B	B	3	61
SAM 181-A	A	4	61
SAM 181-B	B	4	61
SAM 280-A	A	0	61
SAM 280-B	B	0	61
SAM 185-A	A	3	75
SAM 185-B	B	3	75
SAM 186-A	A	4	75
SAM 186-B	B	4	75
SAM 285-A	A	0	75
SAM 285-B	B	0	75

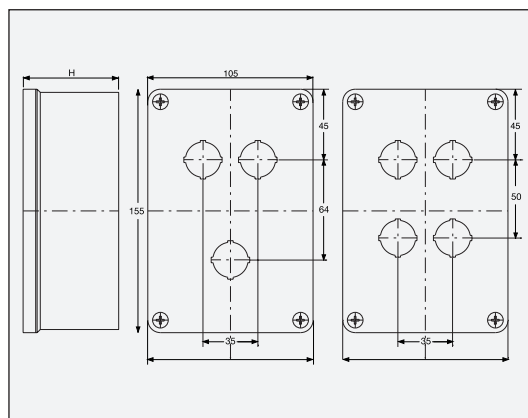
Aluminium enclosures (IP65)



Code	Finishing	N. holes	H mm.
SAM 119-A	A	4	61
SAM 119-B	B	4	61
SAM 130-A	A	5	61
SAM 130-B	B	5	61
SAM 131-A	A	6	61
SAM 131-B	B	6	61
SAM 219-A	A	0	61
SAM 219-B	B	0	61
SAM 109-A	A	4	75
SAM 109-B	B	4	75
SAM 111-A	A	5	75
SAM 111-B	B	5	75
SAM 112-A	A	6	75
SAM 112-B	B	6	75
SAM 209-A	A	0	75
SAM 209-B	B	0	75



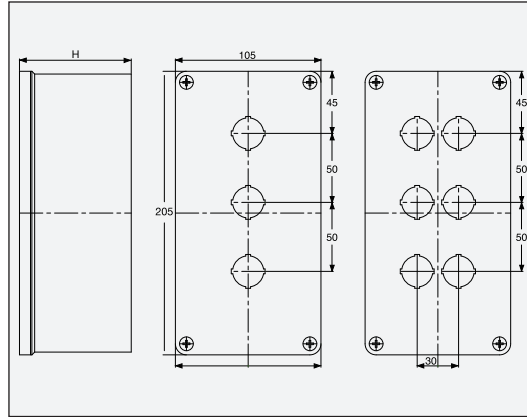
Code	Finishing	N. holes	H mm.
SAM 102-A	A	1	61
SAM 102-B	B	1	61
SAM 102-C	C	1	61
SAM 102-D	D	1	61
SAM 122-A	A	0	61
SAM 122-B	B	0	61
SAM 132-A	A	2	61
SAM 132-B	B	2	61
SAM 103-A	A	1	81
SAM 103-B	B	1	81
SAM 103-C	C	1	81
SAM 103-D	D	1	81
SAM 203-A	A	0	81
SAM 203-B	B	0	81
SAM 105-A	A	2	81
SAM 105-B	B	2	81



Code	Finishing	N. holes	H mm.
SAM 117-A	A	3 (2+1)	61
SAM 117-B	B	3 (2+1)	61
SAM 108-A	A	4 (2+2)	61
SAM 108-B	B	4 (2+2)	61
SAM 127-A	A	0	61
SAM 127-B	B	0	61
SAM 137-A	A	3 (2+1)	81
SAM 137-B	B	3 (2+1)	81
SAM 138-A	A	4 (2+2)	81
SAM 138-B	B	4 (2+2)	81
SAM 208-A	A	0	81
SAM 208-B	B	0	81

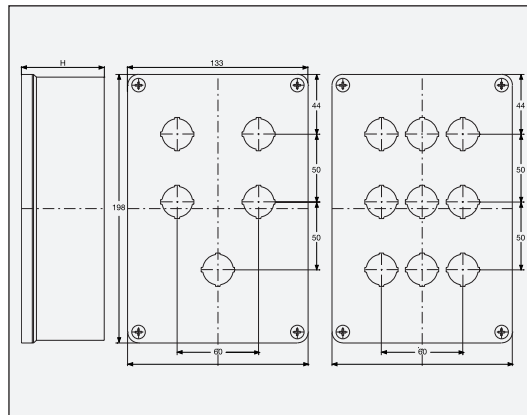
Aluminium enclosures (IP65)

Dimensions 205x105 mm



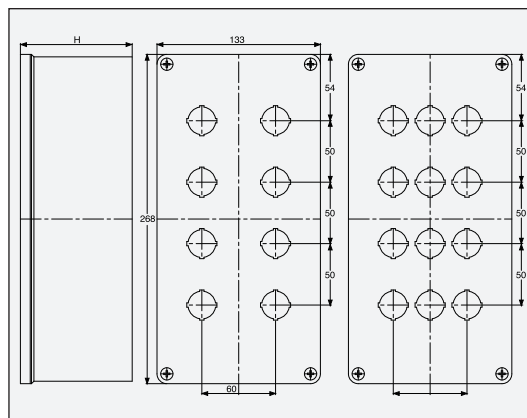
Code	Finishing	N. holes	H mm.
SAM 114-A	A	3	61
SAM 114-B	B	3	61
SAM 210-A	A	5 (2+2+1)	61
SAM 210-B	B	5 (2+2+1)	61
SAM 201-A	A	6 (2+2+2)	61
SAM 201-B	B	6 (2+2+2)	61
SAM 300-A	A	0	61
SAM 300-B	B	0	61
SAM 107-A	A	3	81
SAM 107-B	B	3	81
SAM 093-A	A	5 (2+2+1)	81
SAM 093-B	B	5 (2+2+1)	81
SAM 113-A	A	6 (2+2+2)	81
SAM 113-B	B	6 (2+2+2)	81
SAM 207-A	A	0	81
SAM 207-B	B	0	81

Dimensions 198x133 mm



Code	Finishing	N. holes	H mm.
SAM 190-A	A	5 (2+2+1)	75
SAM 190-B	B	5 (2+2+1)	75
SAM 191-A	A	9 (3+3+3)	75
SAM 191-B	B	9 (3+3+3)	75
SAM 290-A	A	0	75
SAM 290-B	B	0	75
SAM 195-A	A	5 (2+2+1)	91
SAM 195-B	B	5 (2+2+1)	91
SAM 196-A	A	9 (3+3+3)	91
SAM 196-B	B	9 (3+3+3)	91
SAM 295-A	A	0	91
SAM 295-B	B	0	91

Dimensions 268x133 mm

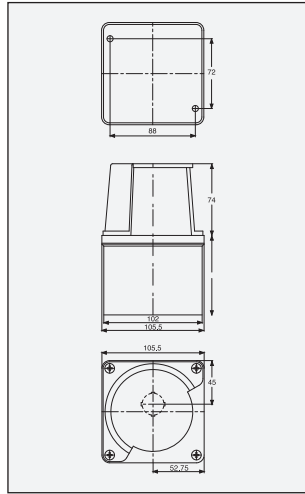


Code	Finishing	N. holes	H mm.
SAM 125-A	A	8 (2+2+2+2)	75
SAM 125-B	B	8 (2+2+2+2)	75
SAM 126-A	A	12 (3+3+3+3)	75
SAM 126-B	B	12 (3+3+3+3)	75
SAM 225-A	A	0	75
SAM 225-B	B	0	75
SAM 115-A	A	8 (2+2+2+2)	91
SAM 115-B	B	8 (2+2+2+2)	91
SAM 116-A	A	12 (3+3+3+3)	91
SAM 116-B	B	12 (3+3+3+3)	91
SAM 215-A	A	0	91
SAM 215-B	B	0	91

Aluminium enclosures (IP65)

Enclosure with pushbutton protection

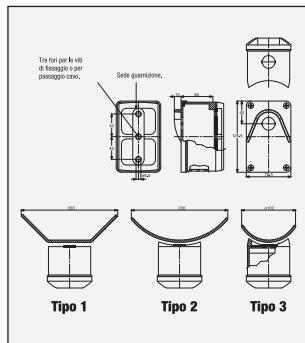
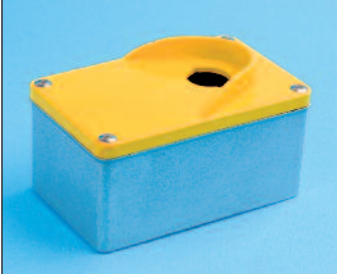
Dimensions 105x105x61 mm



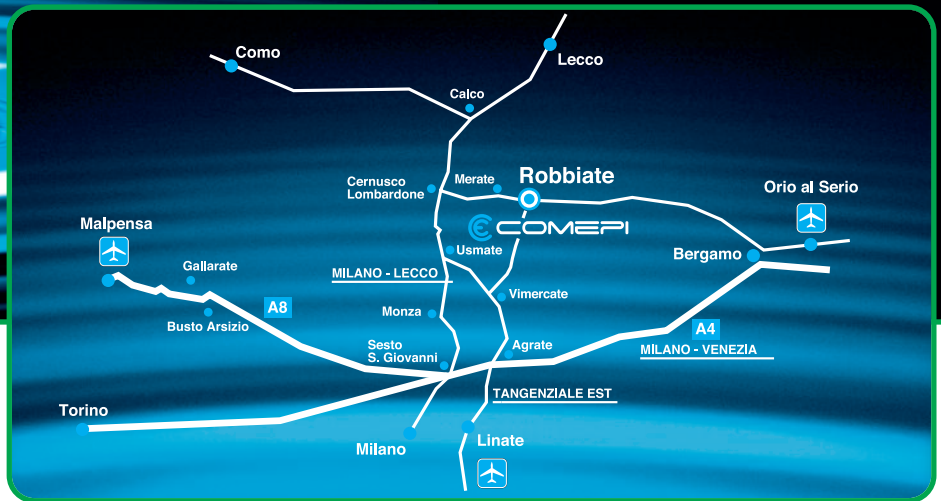
Dimensions	N. holes	Finishing	Code
105x105x61 (74 protez.)	1	A	SAM 139-A
105x105x61 (74 protez.)	1	B	SAM 139-B
105x105x81 (74 protez.)	1	A	SAM 120-A
105x105x81 (74 protez.)	1	B	SAM 120-B

Pole enclosure

Dimensions 125x78x61 mm



Type 1	Type 2	Type 3	N. holes	Finishing
SAM 135-A	SAM 140-A	SAM 150-A	1	A
SAM 135-C	SAM 140-C	SAM 150-C	1	C



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