



APPLICATION

Explosion protected control units type SKX 12 – SKX 15, alone or in various combinations of merged set (combination) are intended for the control, distribution and signaling in the power circles on places with presence of explosive mixtures of gases, vapor and dust with air, in hazardous areas 1, 2, 21, 22.

CONSTRUCTION

Enclosure: polyester plastic reinforced with glass fiber, color - black

Cover: with integrated Thermoplastic elastomer gasket, closes with four M5 stainless steel screws.

Due to the four available sizes and the modular design, the devices can be used for almost every application. Built-in components, actuators and indicator components can be mounted in or on Ex e enclosures or combination of merged enclosures. Possible combinations and schedules built-in components, actuators and indicator components is determined by the certification documentation. Control units usually aren't wired.

TECHNICAL DATA

Certificate:	CESI 13 ATEX 017X
Marking:	CE 0722
Apparatus category:	II 2G II 2D
Marking of explosion protection:	Ex e d mb ia/ib IIC Gb Ex tb IIIC T80°C Db
Environment temperature:	-20 °C ≤ T _a ≤ +50 °C
Degree of protection:	IP 66
Resistance to shock:	IK 08
Insulation class:	I (protective earthing) in accordance with EN 61140
Rated insulation voltage U_i:	690 V AC (type with mantle terminals type SL U _i =400V AC)
Rated current I_{th}:	Up to 16 A
PE terminals (inside of the enclosure):	max. 2x4 mm ² +2x2,5 mm ² , 3x4 mm ² , 2x6 mm ²
Cover fixing:	4xM5 cheese head screw, stainless steel A2
Color:	black, RAL 9005

MOUNTING

With screw kit through the housing holes $\phi 6$ mm at the peaks the rectangle:

SKX 12: 75 x 50 mm

SKX 13: 75 x 100 mm

SKX 14: 75 x 150 mm

SKX 15/15H: 125 x 150 mm



ATEX

CE 0722

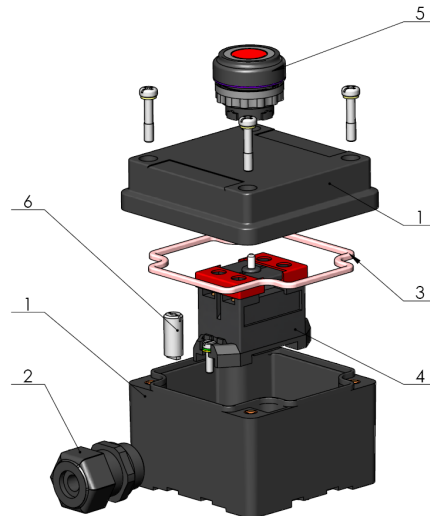
IP 66

-20°C

+50°C

SPARE PARTS AND ACCESSORIES

1. Enclosure and cover SKX ..
2. Cable gland
3. Cover gasket SKX ..
4. Build-in components
5. Actuators and indicators
6. Terminal PE



BUILD-IN COMPONENTS



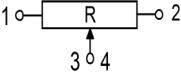



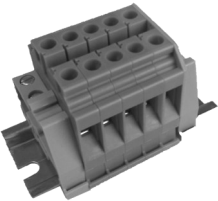

Description, type	Schema		Overview
	Type	Shema	
Control switch SMS 03/ II 2G I M2 Ex de I/IIC Gb Mb • Rated voltage: 630 V AC • Rated current: 16 A • Terminals: 2,5 mm ²	SMS 03/1		
	SMS 03/2		
	SMS 03/3		
	SMS 03/4		
	SMS 03/5		
	SMS 03/6		
	SMS 03/7		
	SMS 03/8		
	SMS 03/9		
	SMS 03/10		
	SMS 03/11		
	SMS 03/12		
	SMS 03/13		

BUILD-IN COMPONENTS

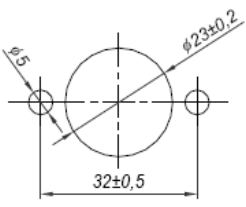
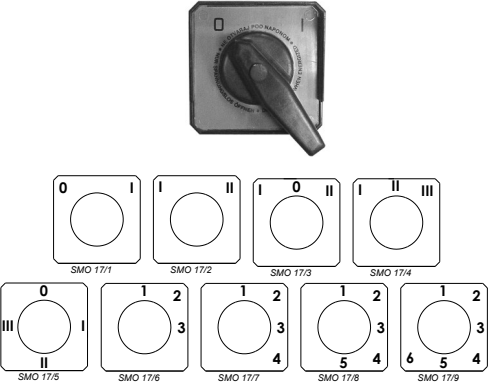
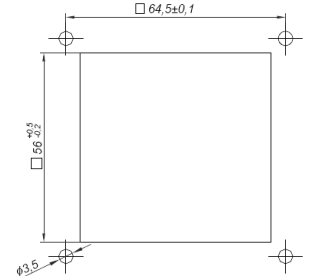
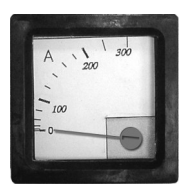
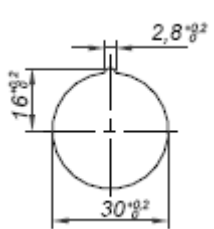
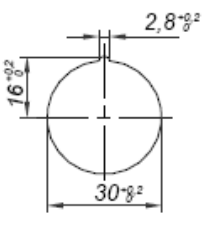
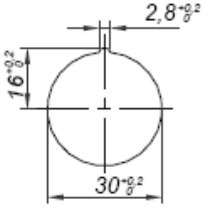

Description, type	Schema	Overview
<p>Control switch GHG 23.</p> <p>II 2GD Ex de IIC</p> <ul style="list-style-type: none"> • Rated voltage: 690 V AC • Rated current : 10 A • Terminals: 2,5 mm² 	<p>060</p>	
	<p>062</p>	
	<p>065</p>	
	<p>061</p>	
	<p>063</p>	
	<p>067</p>	
	<p>011</p>	
	<p>034</p>	
	<p>037</p>	
	<p>049</p>	
	<p>023</p>	
	<p>019</p>	
	<p>033</p>	
	<p>024</p>	
<p>Pushbutton PBT/.</p> <p>II 2G I M2 Ex de I/IIC Gb Mb</p> <ul style="list-style-type: none"> • Rated voltage: 630V AC • Rated current: 16A • Terminals: 2,5 mm² 	<p>PBT/01 PBT/02 PBT/03</p>	



BUILD-IN COMPONENTS

Description, type	Schema	Overview
<p>Signal lamp SLP</p> <p>II 2G I M2 Ex de I/IIC Gb Mb</p> <ul style="list-style-type: none"> • Rated voltage: 12-250 V AC/DC • Max. current: 20-8 mA • Terminals: 2,5 mm² 		
<p>Potionmeter PBT/POT</p> <p>II 2G I M2 Ex de I/IIC Gb Mb</p> <ul style="list-style-type: none"> • Rated voltage: 315 V AC/DC • Rated power: 1W • Scale: 0-100% / 270° • Tolerance: ±20% • Characteristic: linear • Terminals: 2,5 mm² 	 <p>Resistance R: 1,0 kΩ 2,2 kΩ 4,7 kΩ 10 kΩ 470 kΩ</p>	
<p>Measuring instruments AM 72, VM 72</p> <p>II 2GD Ex e ib IIC</p> <ul style="list-style-type: none"> • Measuring range: AM: n/1 A, 0-20 mA, 0-25 A direct 4-20 mA VM: n/1A, 6-415V, 6-660 V • Scale: according to customer demand • Terminals: 1,5 - 4 mm² 	-	
<p>Mantle terminals SL5, SL8</p> <p>II 2G I M2 Ex de I/IIC Gb Mb</p> <ul style="list-style-type: none"> • Rated voltage: 400 V • Rated current: 16 A AC • Terminals: 4 mm² • Max. No. of wire under one clamp: 2x4mm² + 2x2,5mm², 3x4mm² 	-	
<p>Terminals TH 35-7.5</p> <p>II 2GD Ex e II</p> <ul style="list-style-type: none"> • 5 terminals 4mm² • 2 terminals 16mm² • Rated voltage: 690 V AC • Rated current: 16 A 	-	
<p>N/PE busbar (only for SKX 15)</p> <p>II 2G I M2 Ex de I/IIC Gb Mb</p> <ul style="list-style-type: none"> • 11x max. 2x4mm² 	-	

ACTUATORS AND INDICATORS

Description, type	Mounting	Overview																				
<p>Switch actuator SMO 17/.</p> <p>II 2G II 2D I M2 Ex e I/IIC Gb Mb Ex t IIIC Db</p>																						
<p>Front element of measuring instruments SAM 72</p> <p>II 2G II 2D I M2 Ex e I/IIC Gb Mb Ex t IIIC Db</p>																						
<p>Puschbitton actuator SPO 01/.</p> <p>II 2G II 2D I M2 Ex e I/IIC Gb Mb Ex t IIIC Db</p>		<p>Type SPO 01/.</p> <table border="1" data-bbox="1153 1090 1453 1435"> <tr><td>SPO 01/01</td><td>0</td></tr> <tr><td>SPO 01/02</td><td>I</td></tr> <tr><td>SPO 01/03</td><td>II</td></tr> <tr><td>SPO 01/04</td><td>RED</td></tr> <tr><td>SPO 01/05</td><td>GREEN</td></tr> <tr><td>SPO 01/06</td><td>WHITE</td></tr> <tr><td>SPO 01/07</td><td>START</td></tr> <tr><td>SPO 01/08</td><td>STOP</td></tr> <tr><td>SPO 01/09</td><td>ON</td></tr> <tr><td>SPO 01/10</td><td>OFF</td></tr> </table>	SPO 01/01	0	SPO 01/02	I	SPO 01/03	II	SPO 01/04	RED	SPO 01/05	GREEN	SPO 01/06	WHITE	SPO 01/07	START	SPO 01/08	STOP	SPO 01/09	ON	SPO 01/10	OFF
SPO 01/01	0																					
SPO 01/02	I																					
SPO 01/03	II																					
SPO 01/04	RED																					
SPO 01/05	GREEN																					
SPO 01/06	WHITE																					
SPO 01/07	START																					
SPO 01/08	STOP																					
SPO 01/09	ON																					
SPO 01/10	OFF																					
<p>Front element of signal lamp SPO 02/.</p> <p>II 2G II 2D I M2 Ex e I/IIC Gb Mb Ex t IIIC Db</p>		<p>Type SPO 02/.</p> <table border="1" data-bbox="1153 1480 1453 1641"> <tr><td>SPO 02/01</td><td>RED</td></tr> <tr><td>SPO 02/02</td><td>GREEN</td></tr> <tr><td>SPO 02/03</td><td>YELLOW</td></tr> <tr><td>SPO 02/04</td><td>TRANSPARENT</td></tr> </table>	SPO 02/01	RED	SPO 02/02	GREEN	SPO 02/03	YELLOW	SPO 02/04	TRANSPARENT												
SPO 02/01	RED																					
SPO 02/02	GREEN																					
SPO 02/03	YELLOW																					
SPO 02/04	TRANSPARENT																					
<p>Key-operated pushbutton actuator GHG 410 1904 R0012</p> <p>II 2GD Ex e II IP66</p>																						



ATEX

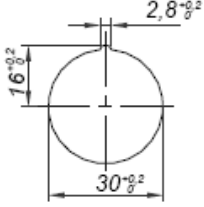

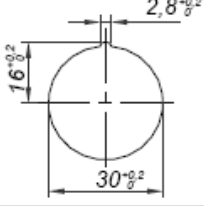

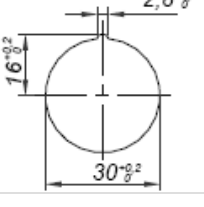

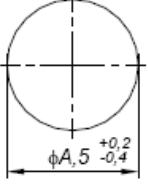

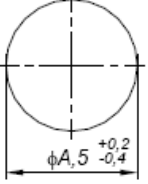

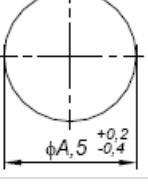

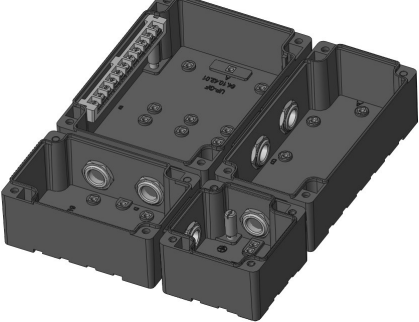
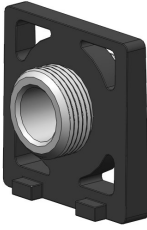
CE 0722

IP 66

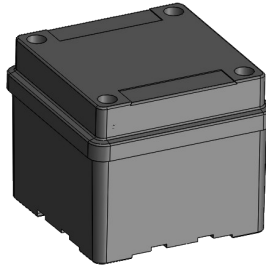
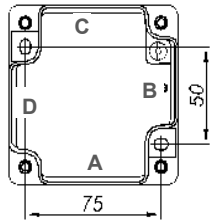
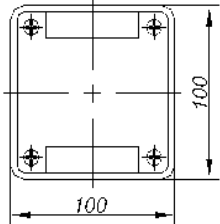
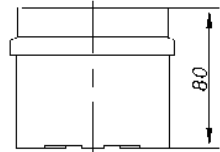
-20°C

+50°C

ACTUATORS AND INDICATORS

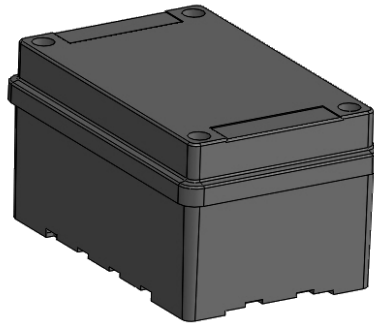
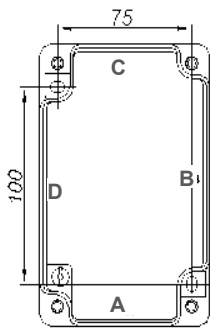
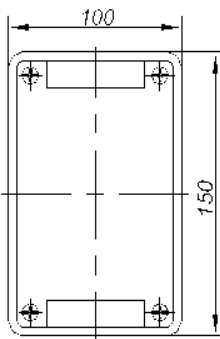
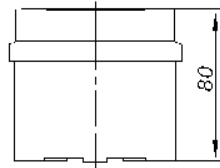
Description, type	Mounting	Overview
Mushroom-head pushbutton actuator GHG 418 815 ..R .. (EMERGENCY-STOP) II 2GD Ex e II IP66		
Key-operated mushroom-head pushbutton actuator GHG 418 815 ..R.. (EMERGENCY-STOP) II 2GD Ex e II IP66		
Potentiometer acuator GHG 410 1944 R0010 II 2GD Ex e II IP66		
Cable gland SPU ISO 16 - ISO 40 II 2G II 2D Ex e I/II C Gb Ex t IIIC Db		
Cable gland for armoured cable SPU A ISO 16 - ISO 40 II 2G II 2D Ex e I/II C Gb Ex t IIIC Db		
Plug SPC .. ISO 16 - ISO M40 II 2G II 2D Ex e I/II C Gb Ex t IIIC Db		
Connection part SKX		

Enclosure type SKX 12



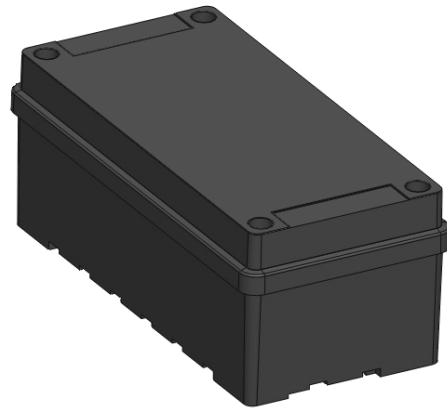
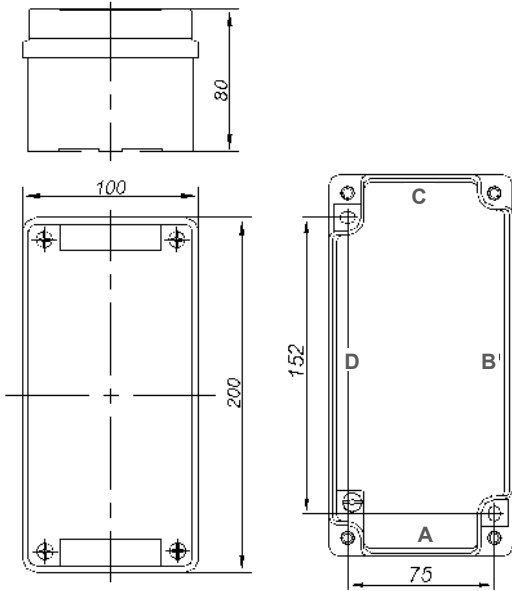
Max. No. of cable glands			
cable gland side	M16	M20	M25
A-C	2	2	1
B-D	1	1	1

Enclosure type SKX 13



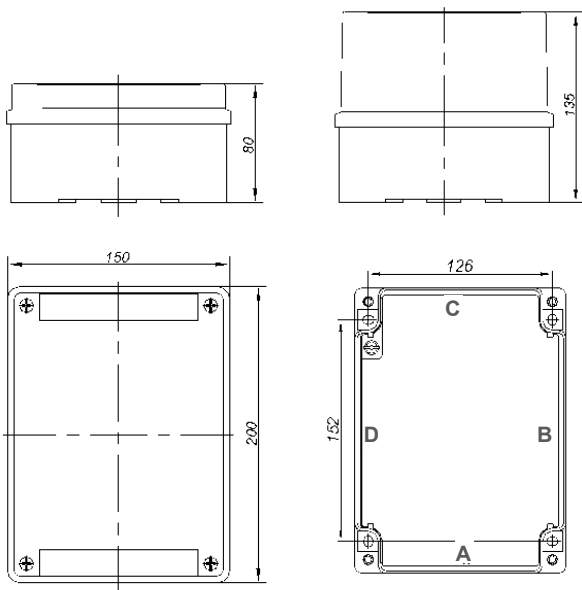
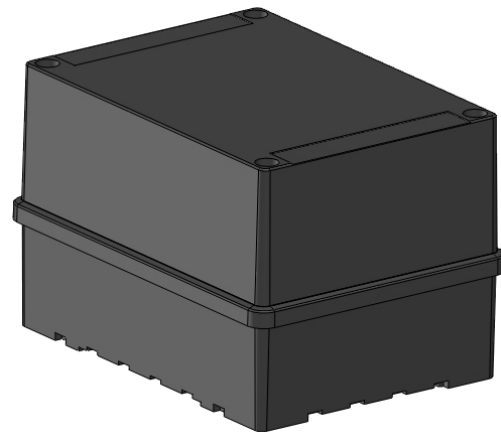
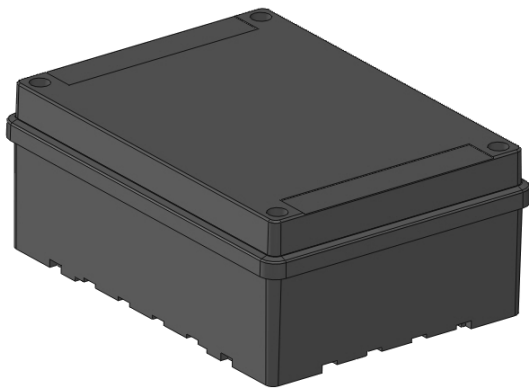
Max. No. of cable glands			
cable gland side	M16	M20	M25
A-C	2	2	1
B-D	4	3	2

Enclosure type SKX 14



Max. No. of cable glands				
cable gland side	M16	M20	M25	M32
A-C	2	2	1	1
B-D	6	4	3	2

Enclosure type SKX 15



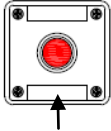
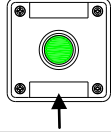
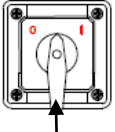
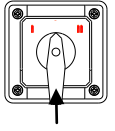
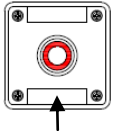
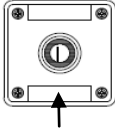
Max. No. of cable glands					
cable gland side	M16	M20	M25	M32	M40
A-C	4	3	2	2	1
B-D	6	4	3	2	2

* with built-in N/PE busbar

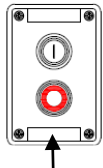
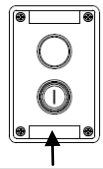
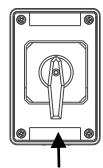
cable gland side	M16	M20	M25	M32	M40
A-C	4	3	2	2	1
B-D	5	3	3	-	-

STANDARD PRODUCTS OF CONTROL UNITS

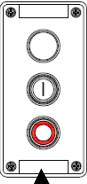

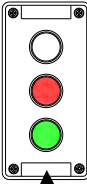
SKX 12/ ..

Type	Build-in components and actuator / indicator	Overview
SKX 12/1	Signal lamp SLP - red SPO 02/1 - cable gland SPU 25	
SKX 12/2	Signal lamp SLP - green SPO 02/2 - cable gland SPU 25	
SKX 12/3	Signal lamp SLP - white SPO 02/4 - cable gland SPU 25	-
SKX 12/21	Control switch SMS 03/1 - switch actuator SMO 17/1 - cable gland SPU 25	
SKX 12/22	Serial switch SMS 03/8 - switch actuator SMO 17/5 - cable gland SPU 25	0 - I - II - III
SKX 12/23	Control switch SMS 03/6 - switch actuator SMO 17/2 - cable gland SPU 25	
SKX 12/31	Pushbutton PBT 01 - Key-operated mushroom-head pushbutton actuator GHG 410 1906 R0005 - cable gland SPU 25	-
SKX 12/32	Pushbutton PBT 01 - pushbutton actuator SPO 01/1 - cable gland SPU 25	
SKX 12/33	Pushbutton PBT 01 - pushbutton actuator SPO 01/2 - cable gland SPU 25	
SKX 12/34	Pushbutton PBT 01 - Mushroom-head pushbutton actuator GHG 410 1905 R0005 - cable gland SPU 25	-
SKX 12/35	Pushbutton PBT 01 - Mushroom-head pushbutton actuator GHG 410 1906 R0005 with protector - 2x cable gland SPU 20	-
SKX 12/36	Pushbutton PBT 011 - Key-operated pushbutton GHG 410 1906 R0005 - 2x cable gland SPU 20	-
SKX 12/37	Potentiometer GHG 4101901 R0193 - GHG 410 1944 R0010 - cable gland SPU 25	-

SKX 13/ ..

Type	Build-in components and actuator / indicator	Overview
SKX 13/1	2x pushbutton PBT 01 - SPO 01/1 - SPO 01/2 - cable gland SPU 25	
SKX 13/11	Pushbutton PBT 01 - SPO 01/1 - Signal lamp SLP - Front element of signal lamp SPO 02/2 - cable gland SPU 25	
SKX 13/21	Mantle terminals SL8 - 6x cable gland SPU 25	-
SKX 13/71	Switch GHG 23. ...R.... (Ex 23 4 024) - switch actuator SMO 17/2 - cable gland SPU 25	-
SKX 13/72	Switch GHG 23. ...R.... (Ex 23 8 067) - switch actuator SMO 17/1 - cable gland SPU 25	-
SKX 13/10	Switch SMS 03/1 - switch actuator SMO 17/1 - cable gland SPU 25	
SKX 13/20	SMS 03/4 - SMO 17/2 - SPU 25	
SKX 13/30	SMS 03/5 - SMO 17/2 - SPU 25	
SKX 13/40	SMS 03/6 - SMO 17/2 - SPU 25	
SKX 13/60	SMS 03/3 - SMO 17/3 - SPU 25	
SKX 13/70	SMS 03/2 - SMO 17/1 - SPU 25	
SKX 13/80	SMS 03/7 - SMO 17/1 - SPU 25	
SKX 13/100	SMS 03/8 - SMO 17/5 - SPU 25	
SKX 13/110	SMS 03/9 - SMO 17/1 - SPU 25	
SKX 13/120	SMS 03/11 - SMO 17/2 - SPU 25	

SKX 14/ ..

Type	Build-in components and actuator / indicator	Overview
SKX 14/1	2x pushbutton PBT 01 - SPO 01/1 - SPO 01/2 - Signal lamp SLP - SPO 02/2 - cable gland SPU 25	
SKX 14/11	3x pushbutton PBT 01 - pushbutton actuator SPO 01/1 - SPO 01/2 - SPO 01/3 - cable gland SPU 25	
SKX 14/21	Mantle terminals SL 8 - 8x cable gland SPU 25	-
SKX 14/22	3x signal lamp SLP front element of signal lamp SPO 02/1 - SPO 02/2 - SPO 02/3 - cable gland SPU 25	
SKX 14/31	3x pushbutton PBT 01 - pushbutton actuator SPO 01/1 - SPO 01/2 Mushroom-head pushbutton actuator GHG 410 1906 R0005 - cable gland SPU 25	-

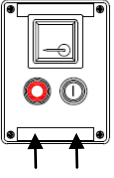


ATEX

CE 0722



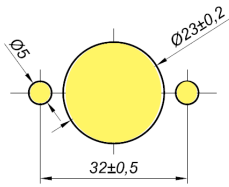
SKX 15/ ..

Type	Build-in components and actuator / indicator	Overview
SKX 15/1	2x pushbutton PBT 01 - SPO 01/1 - SPO 01/2 - 2x signal lamp SLP - 02/1 - SPO 02/2 - 2x cable gland SPU 25	
SKX 15/11-11	2x pushbutton PBT 01 - pushbutton actuator SPO 01/1 - SPO 01/2 - ammeter AM 72 100/1A - 2x cable gland SPU 25	
SKX 15/11-12	2xPBT 01 - SPO 01/1 - SPO 01/2 - AM 72 50/1 A - 2xSPU 25	
SKX 15/11-21	2xPBT 01 - SPO 01/1 - SPO 01/2 - AM 72 100/5 A - 2xSPU 25	
SKX 15/11-22	2xPBT 01 - SPO 01/1 - SPO 01/2 - AM 72 50/1 A - 2xSPU 25	
SKX 15/21-11	Switch GHG 23. .R.. - switch actuator SMO 17/1 - ammeter AM 72 100/1 A - 2x uvodnica SPU 25	
SKX 15/21-12	Switch GHG 23. ...R... - switch actuator SMO 17/1 - ammeter AM 72 100/1 A - 2x uvodnica SPU 25	
SKX 15/21-21	Switch GHG 23. ...R.... - Switch actuator SMO 17/1 - ammeter AM 72 100/5 A - 2x uvodnica SPU 25	
SKX 15/21-22	Switch GHG 23. ...R.... - switch actuator SMO 17/1 - ammeter AM 72 50/5 A - 2x cable gland SPU 25	
SKX 15/34	4x pushbutton PBT/1 - 2xSPO 01/1 - 2xSPO 01/2 - 2x cable gland SPU 25	-
SKX 15/41	Switch SMS 03/1 - 2x terminal EURO E16-25 - 2x cable gland SPU 25	-
SKX 15/50	Switch SMS 03/12 - SMO 17/2 - cable gland SPU 25	-
SKX 15/90	Switch SMS 03/10 - SMO 17/3 - cable gland SPU 25	-
SKX 15/51	Switch SMS 03/9 - SMO 17/1 - 2x pushbutton PBT/1 - SPO 01/1 - SPO01/2 - 2x cable gland SPU 25	-
SKX 15/61	Switch GHG 23. ...R.... (Ex 23 4 024) - SMO 17/2 - 5x terminal EURO E4 - cable gland SPU 25	-
SKX 15/62	Switch GHG 23. ...R.... (Ex 23 8 067) - SMO 17/1 - 5x terminal EURO E4 - cable gland SPU 25	-
SKX 15/65	4x mantle terminals SL5 - 8x cable gland SPU 25	-

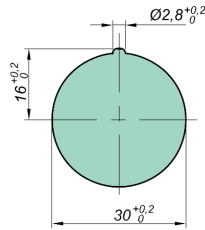
INSTRUCTIONS FOR DESIGN OF CONTROL UNITS type SKX 12/.. - 15/..

Products according to special request of the customer have the type designation which consists of a basic type designation: **SKX 12, SKX13, SKX 14, SKX 15 and MSRU** number that represents the production number assigned by the manufacturer. The customer in the order defined the configuration, eg:
 In to enclosure MMK 15 is installed switch SMS 03/3 with the switch actuator SMO 17/3, signal lamps SLP with a red front element SPO 02/01 and green SPO 02/02. On side A two cable glands ISO 25, and on side C two ISO plugs M25
Designation for ordering: MMK15 + SMS03/3 + SMO17/3 + 2xPBT/01+ SPO02/1 + SPO02/2 + A 2xSPU25 + C 2xSPC25

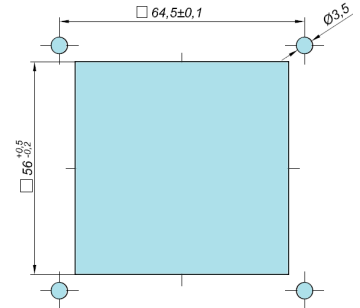
** mounting proposals and dimensions*



Switch actuator SMO 17/3.
Switch mounting

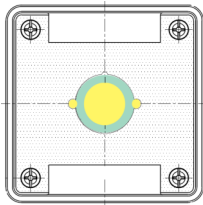


Pushbutton actuator SPO 01/3.
Front element of signal lamp SPO 02/1.
Pushbutton, signal lamp and potentiometer mounting

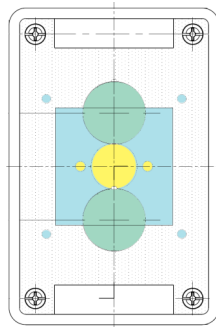


Front element of measuring instrument (AM, VM) SAM 72
Measuring instrument mounting AM, VM

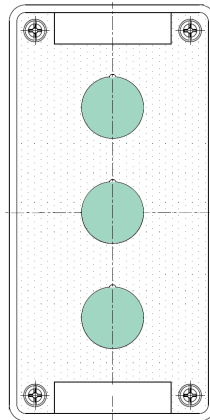
Possible combinations and layout of indicators and actuators components



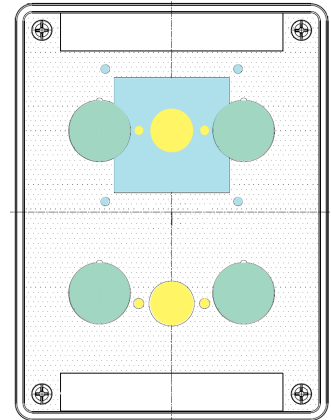
SKX 12



SKX 13

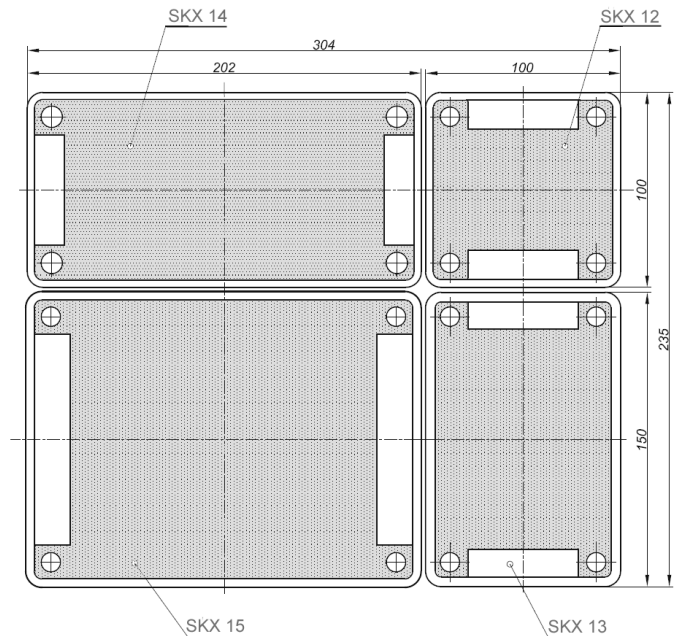
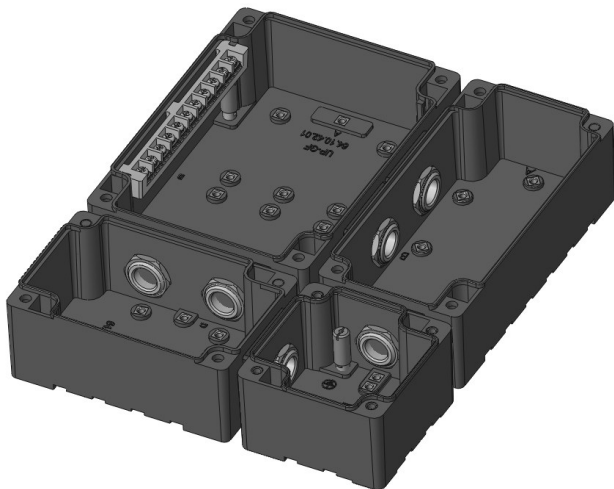


SKX 14



SKX 15

Various combinations of merged set (combination) of SKX enclosures





ATEX

CE 0722

IP 66

-20°C

+50°C

