

Zone 1, 2, 21, 22



#### APPLICATION

Explosion protected control units type SKX 16 – SKX 20, 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: SMC polyester plastic reinforced with glass fiber, color - black  
Cover: SMC with integrated thermoplastic elastomer gasket, closes with four/six M6 stainless steel screws.

Due to the three 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:	Ex ATEX
Marking:	CE 0722
Apparatus category:	II 2GD
Marking of explosion protection:	Ex edm ia/ib IIC Gb Ex tb IIIC T80°C Db
Environment temperature:	-20 °C ≤ T <sub>a</sub> ≤ +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 <sub>i</sub> :	Up to 690 V AC
Rated current I <sub>th</sub> :	Up to 80 A
PE terminals (inside of the enclosure):	max. 2x4 mm <sup>2</sup> +2x2,5 mm <sup>2</sup> , 3x4 mm <sup>2</sup> , 2x6 mm <sup>2</sup>
Cover fixing:	6 x M6 cheese head screw, stainless steel A2
Color::	black, RAL 9005

#### MOUNTING

With screw kit through the housing holes  $\phi 7$  mm at the peaks the rectangle:

SKX 16: 235 x 200 mm  
SKX 18: 380 x 200 mm  
SKX 20: 580 x 200 mm

Ex CONTROL UNITS type SKX 16, SKX 18, SKX 20



ATEX

CE 0722

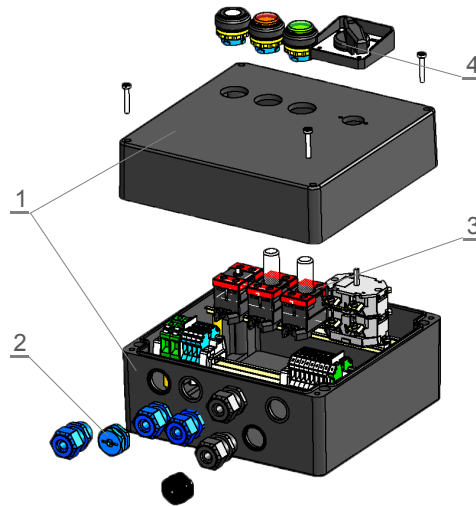
IP 66

-20°C

+50°C

## SPARE PARTS AND ACCESSORIES

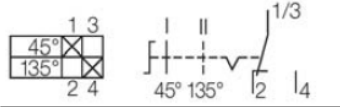
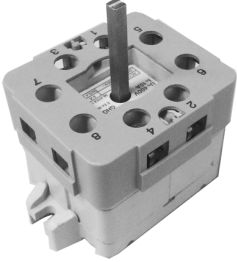
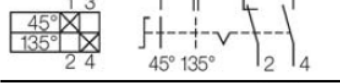
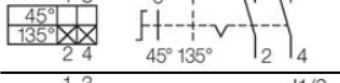
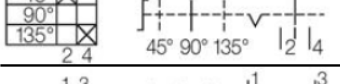
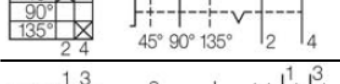

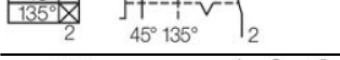
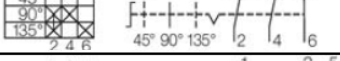
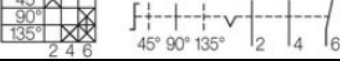
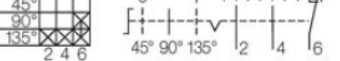
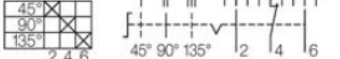


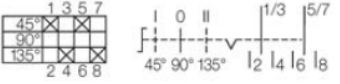
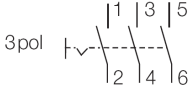
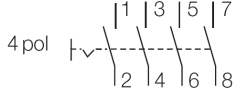
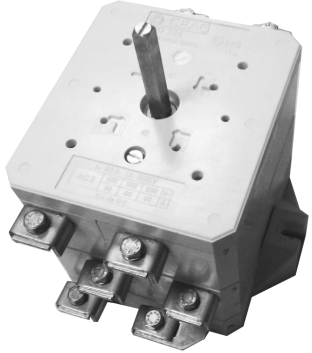
1. Enclosure and cover SKX ..
2. Cable glands and plugs
3. Build-in components
4. Actuators and indicators



## 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 <sup>2</sup>	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**

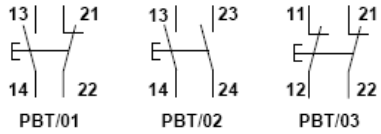



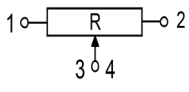



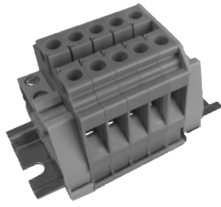
Description, type	Schema	Overview
<p>Control switch GHG 23.</p> <p>II 2GD Ex de IIC</p> <ul style="list-style-type: none"> <li>• Rated voltage: 690 V AC</li> <li>• Rated current : 10 A</li> <li>• Terminals: 2,5 mm<sup>2</sup></li> </ul>	 <p>060</p>	
	 <p>062</p>	
	 <p>065</p>	
	 <p>061</p>	
	 <p>063</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>Main current switch GHG 260</p> <p>II 2GD Ex de IIC</p> <ul style="list-style-type: none"> <li>• Rated voltage: 690 V AC</li> <li>• Rated current : 40 - 80 A</li> <li>• Terminals: 16 - 25 mm<sup>2</sup></li> </ul>	 <p>3pol</p>  <p>4pol</p>	



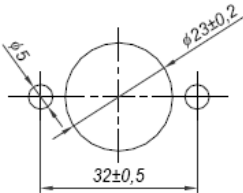
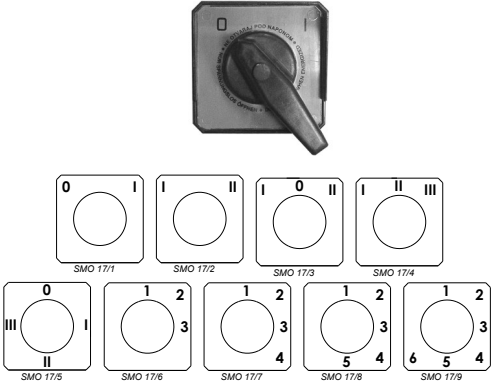
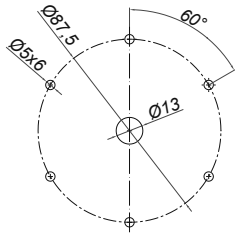

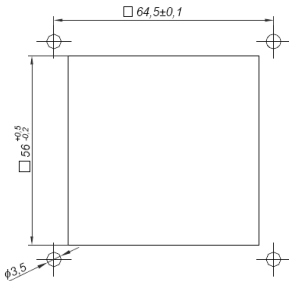
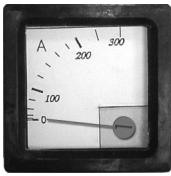
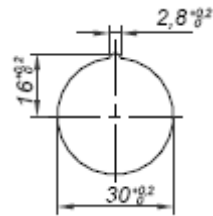

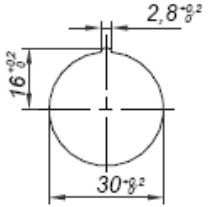

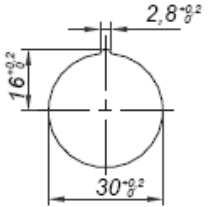

ATEX

CE 0722

**BUILD-IN COMPONENTS**

Description, type	Schema	Overview
<p>Pushbutton PBT/.</p> <p>II 2G I M2 Ex de I/IIC Gb Mb</p> <ul style="list-style-type: none"> <li>Rated voltage: 630V AC</li> <li>Rated current: 16A</li> <li>Terminals: 2,5 mm<sup>2</sup></li> </ul>		
<p>Signal lamp SLP</p> <p>II 2G I M2 Ex de I/IIC Gb Mb</p> <ul style="list-style-type: none"> <li>Rated voltage: 12-250 V AC/DC</li> <li>Max. current: 20-8 mA</li> <li>Terminals: 2,5 mm<sup>2</sup></li> </ul>		
<p>Potentionmeter PBT/POT</p> <p>II 2G I M2 Ex de I/IIC Gb Mb</p> <ul style="list-style-type: none"> <li>Rated voltage: 315 V AC/DC</li> <li>Rated power: 1W</li> <li>Scale: 0-100% / 270°</li> <li>Tolerance: ±20%</li> <li>Characteristic: linear</li> <li>Terminals: 2,5 mm<sup>2</sup></li> </ul>	 <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"> <li>Measuring range: AM: n/1 A, 0-20 mA, 0-25 A direct 4-20 mA VM: n/1A, 6-415V, 6-660 V</li> <li>Scale: according to customer demand</li> <li>Terminals: 1,5 - 4 mm<sup>2</sup></li> </ul>	-	
<p>Mantle terminals SL5, SL8</p> <p>II 2G I M2 Ex de I/IIC Gb Mb</p> <ul style="list-style-type: none"> <li>Rated voltage: 400 V</li> <li>Rated current: 16 A AC</li> <li>Terminals: 4 mm<sup>2</sup></li> <li>Max. No. of wire under one clamp: 2x4mm<sup>2</sup> + 2x2,5mm<sup>2</sup>, 3x4mm<sup>2</sup></li> </ul>	-	
<p>Terminals TH 35-7.5</p> <p>II 2GD Ex e II</p> <ul style="list-style-type: none"> <li>Up to 70 mm<sup>2</sup></li> <li>Rated voltage: 690 V AC</li> <li>Rated current: up to 80 A</li> </ul>	-	

**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>Switch actuator GHG 260 1006</p> <p>II 2GD Ex e II</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="1149 1345 1438 1680"> <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="1149 1735 1438 1864"> <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>																						



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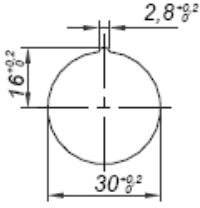


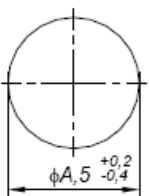

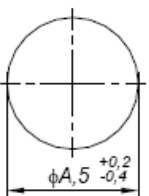

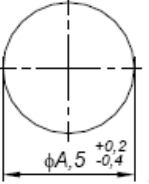


CE 0722

IP 66

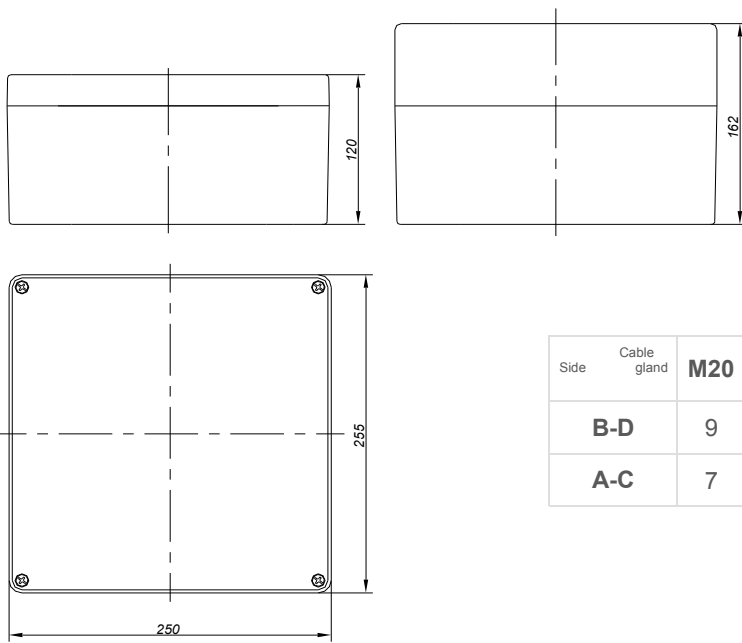
-20°C

+50°C

## ACTUATORS AND INDICATORS

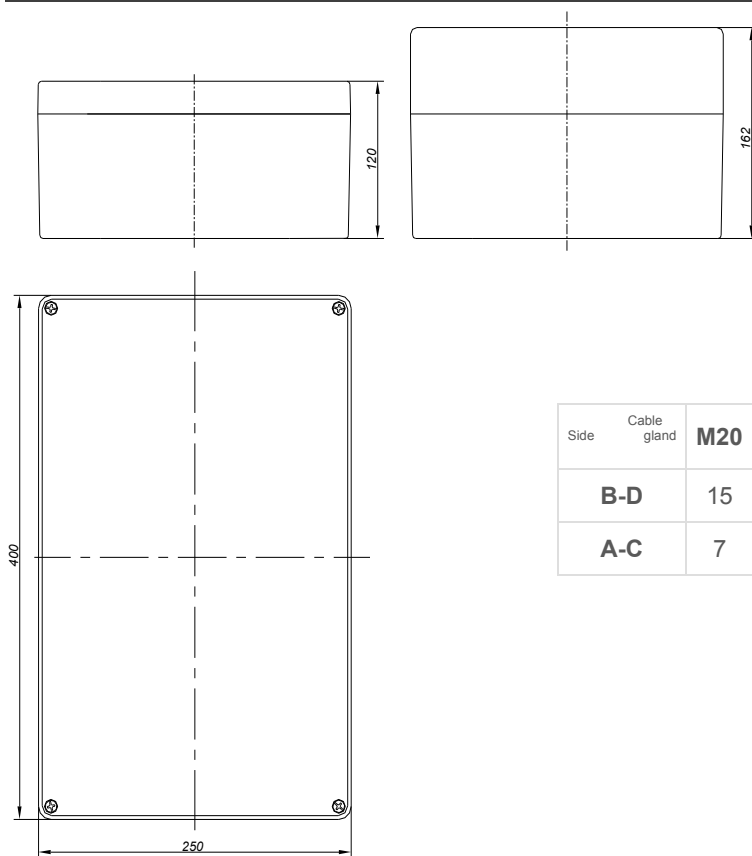
Description, type	Mounting	Overview
Mushroom-head pushbutton actuator GHG 418 815 ..R .. (EMERGENCY-STOP)  II 2GD Ex e II IP66		
Key-operated mushroom-head pushbutton actuator GHG 418 815 ..R.. (EMERGENCY-STOP)  II 2GD Ex e II IP66		
Potentiometer actuator GHG 410 1944 R0010  II 2GD Ex e II IP66		
Cable gland SPU ISO 16 - ISO 40  II 2G II 2D Ex e I/IIC Gb Ex t IIIC Db		
Cable gland for armoured cable SPU A ISO 16 - ISO 40  II 2G II 2D Ex e I/IIC Gb Ex t IIIC Db		
Plug SPC .. ISO 16 - ISO M40  II 2G II 2D Ex e I/IIC Gb Ex t IIIC Db		
Main fuse NH0 300XX, NH0, 301XX  II 2GD Ex de IIC		

**Enclosure type SKX 16**



Side	Cable gland	M20	M25	M32	M40	M50	M63
<b>B-D</b>		9	9	5	3	3	2
<b>A-C</b>		7	5	3	3	-	-

**Enclosure type SKX 18**



Side	Cable gland	M20	M25	M32	M40	M50	M63
<b>B-D</b>		15	15	9	6	5	4
<b>A-C</b>		7	5	3	3	-	-



ATEX

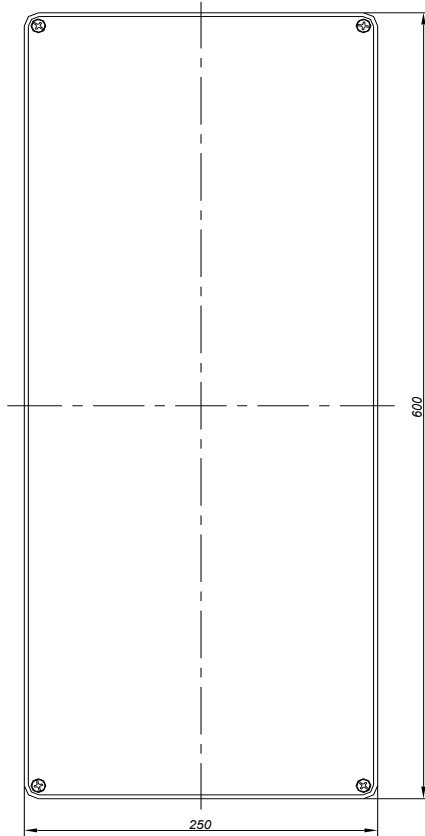
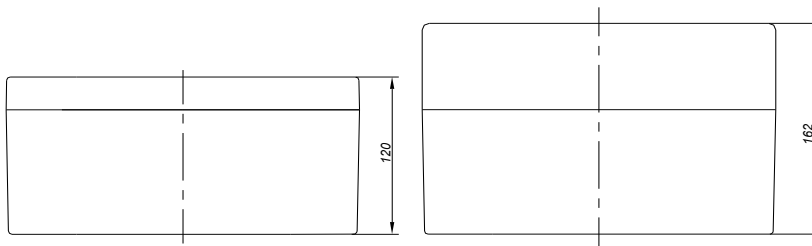
CE 0722

IP 66

-20°C

+50°C

## Enclosure type SKX 20



Side	Cable gland	M20	M25	M32	M40	M50	M63
<b>B-D</b>		22	22	12	8	6	6
<b>A-C</b>		7	5	3	3	-	-



**INSTRUCTIONS FOR DESIGN OF LOW VOLTAGE SWITCHGEAR AND CONTROL GEAR ASSEMBLYES  
type SKX 16/..., SKX 18/..., SKX 20/..**

In and on Ex e enclosure or combination of multiple enclosures, interconnected by bushing, are mounted " Ex e d m ia/ib" and Ex e built-in components, actuator and indicators.

There are no limitation in orientation of enclosure/combination of multiple enclosures, (longer side of enclosure is mounted horizontally or vertically) and the manner of which the mounting is set to the surface.

In horizontal orientation of enclosure, built-in components and actuator and indicators are mounted in maximum two rows.

In vertical orientation of enclosure , built-in components and actuator and indicators are mounted in maximum:

SKX 16 - 2 rows

SKX 18 - 3 rows

SKX 20 - 5 rows

The actual number of mounted rows depends on the device configuration.

Circuit breaker 3p/4p  $I_{th} = 40 A, 80 A$  with its matching actuator or block NH 00 main fuse always occupies two rows,

Actuator and indicators – circuit breaker which are not connected with the actuator, always occupy one and a half row. In one row there can be maximally be:

SKX 16 - 6 poles, horizontal and vertical orientation of the enclosure,

SKX 18 - 12 poles vertical, 8 poles horizontal orientation of the enclosure,

SKX 20 - 18 poles vertical, 12 poles horizontal orientation of the enclosure.

We design systems to suit your requirements on the basis of the data you supply us with:

- the required minimum type of protection
- as appropriate, details of the hazardous atmosphere for which the equipment must be suitable
- single line or wiring diagram
- schematic for control systems
- operating, auxiliary and control voltages
- frequency
- power and current ratings of connected loads
- quantities and types of components required, e.g. contactors, switches, circuit-breakers, fuses, thermal relays, instruments, terminals etc
- quantity and types of cables
- number and size of conductors
- quantity and location of entries (from top, bottom, side, centre)
- environmental conditions
- method of installation

Various combinations of merged set (combination) of SKX enclosures

