

Explosion protected switchgear



GHG 981 Ex-Safety switch for zone 22
GRP, Stainless steel, and painted steel enclosures for harsh environments



EATON

Powering Business Worldwide

GHG 981 Ex-Safety switch for zone 22

Rated current from 25 A - 630 A

Safety first

Occupational safety always has top priority! For this reason, whenever it is necessary to carry out maintenance, cleaning or repair work, it must be possible to isolate machines and installations from the electrical power supply in an absolutely safe and reliable way. Normally this is realised by switch-disconnectors (safety-switches) according to **IEC/EN 62626-1**.

The GHG981 safety switches approved for use in zone 22 areas containing explosive dust fulfil all these requirements. With the built-in padlocking facilities, they can be used as a load break switch with full confidence they will provide the required safety and personnel protection.

In what applications is IEC 62626-1 compliance required?

This standard applies to various applications to provide isolation of electrical equipment, namely motor circuits. Switch-disconnectors used in these applications are commonly known as *"safety switches," "repair and maintenance switches,"* or *"isolators"* and are placed in close proximity to the equipment. Position switches, inspection switches, and other switches are not covered by this standard.

For any application

All GHG 981 0048 series safety switches meet the strict requirements of class 1 IEC/EN 62626-1.

Ready for harsh environments

The enclosures for our GHG 981 safety switches are designed with IP66 environmental protection and are available in powder-coated sheet steel, glass-reinforced polyester (GRP), or electro-polished stainless steel. They are impact resistant and robust, corrosion-resistant, and are suitable for use in harsh industrial environments with extreme ambient temperatures from -55 °C to +55 °C.

Lock-out/tag-out capable

All GHG981 safety switches come with built-in lock-out/tag-out capability and can be locked in the "OFF" position by means of max. 3 padlocks. While switched to the "OFF" position, the enclosure covers of safety switches cannot be opened without destroying the enclosure. This provides an extra level of safety as it prevents access to a switch locked in the "OFF" position, eliminating any risk of tampering with the switch position or electrical connections.

The right size for every application

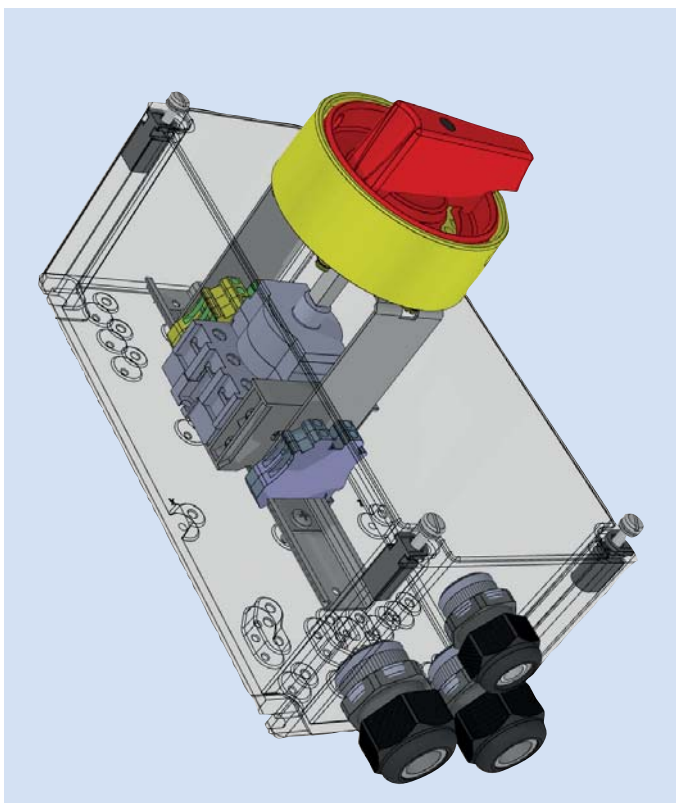
The switches are available in 3-pole, 4-pole, and 6-pole versions in sizes ranging from 25 A to 400 A. The 630 A size is available in 3-pole or 4-pole versions.

All sizes from 25 A through 630 A they feature full AC3 switching capacity for squirrel-cage motors during starting or while running per EN 60947-3 Appendix A. This is the most typical industrial application for motors.

Optional **emergency stop** versions to **EN 60204-1** featuring a red handle with a yellow backplate are also available. The additional leading or lagging auxiliary contact guarantees double safety for extreme switching conditions. All switch versions feature an earth terminal.

Special features of the safety switches include designs for ease of installation and readily accessible connection terminals.

Safety switches rated 160 A and below are available in GRP, powder-coated sheet steel or electro-polished stainless steel while those 250 A and above are built into enclosures made of powder-coated sheet steel or electro-polished stainless steel. The metal enclosures can be fitted with screw-on flanges.



Features

- Approved for use in Zone 22 explosive dust atmospheres and for industrial applications
- For max. currents from 25A up to 630A
- AC3 and AC23 switching capacity
- Environmental protection to IP66
- Compliance with IEC / EN 62626-1
- Wide temperature range from -55°C to +55°C
- Can be locked in "OFF" position by max. 3 padlocks

Ordering details

Rated current	Poles	Enclosure material	Cable entry (metal thread)	cable glands (plastic)	Enclosure sizes: GRP				Enclosure sizes: metal				Order No. ¹⁾
					1	2	3	4	1	2	3	4	
GHG 981 (25 A)													
25 A	3 pole	GRP		2xM32, 1xM25	X								GHG 981 0048 R1211
25 A	4 pole	GRP		2xM32, 1xM25	X								GHG 981 0048 R1212
25 A	6 pole	GRP		4xM32, 1xM25		X							GHG 981 0048 R1213
25 A	3 pole	Sheet steel, powder-coated	2xM32, 1xM25						X				GHG 981 0048 R1214
25 A	4 pole	Sheet steel, powder-coated	2xM32, 1xM25						X				GHG 981 0048 R1215
25 A	6 pole	Sheet steel, powder-coated	4xM32, 1xM25						X				GHG 981 0048 R1216
25 A	3 pole	316L stainless steel, electro-polished	2xM32, 1xM25						X				GHG 981 0048 R1217
25 A	4 pole	316L stainless steel, electro-polished	2xM32, 1xM25						X				GHG 981 0048 R1218
25 A	6 pole	316L stainless steel, electro-polished	4xM32, 1xM25						X				GHG 981 0048 R1219
GHG 981 (40 A)													
40 A	3 pole	GRP		2xM40, 1xM25			X						GHG 981 0048 R1221
40 A	4 pole	GRP		2xM40, 1xM25			X						GHG 981 0048 R1222
40 A	6 pole	GRP		4xM40, 1xM25			X						GHG 981 0048 R1223
40 A	3 pole	Sheet steel, powder-coated	2xM40, 1xM25						X				GHG 981 0048 R1224
40 A	4 pole	Sheet steel, powder-coated	2xM40, 1xM25						X				GHG 981 0048 R1225
40 A	6 pole	Sheet steel, powder-coated	4xM40, 1xM25						X				GHG 981 0048 R1226
40 A	3 pole	316L stainless steel, electro-polished	2xM40, 1xM25						X				GHG 981 0048 R1227
40 A	4 pole	316L stainless steel, electro-polished	2xM40, 1xM25						X				GHG 981 0048 R1228
40 A	6 pole	316L stainless steel, electro-polished	4xM40, 1xM25						X				GHG 981 0048 R1229
GHG 981 (80 A)													
80 A	3 pole	GRP		2xM50, 1xM25			X						GHG 981 0048 R1231
80 A	4 pole	GRP		2xM50, 1xM25			X						GHG 981 0048 R1232
80 A	6 pole	GRP		4xM50, 1xM25				X					GHG 981 0048 R1233
80 A	3 pole	Sheet steel, powder-coated	2xM50, 1xM25							X			GHG 981 0048 R1234
80 A	4 pole	Sheet steel, powder-coated	2xM50, 1xM25							X			GHG 981 0048 R1235
80 A	6 pole	Sheet steel, powder-coated	4xM50, 1xM25							X			GHG 981 0048 R1236
80 A	3 pole	316L stainless steel, electro-polished	2xM50, 1xM25							X			GHG 981 0048 R1237
80 A	4 pole	316L stainless steel, electro-polished	2xM50, 1xM25							X			GHG 981 0048 R1238
80 A	6 pole	316L stainless steel, electro-polished	4xM50, 1xM25							X			GHG 981 0048 R1239
GHG 981 (100 A)													
100 A	3 pole	GRP		2xM50, 1xM25			X						GHG 981 0048 R1241
100 A	4 pole	GRP		2xM63, 1xM25				X					GHG 981 0048 R1242
100 A	6 pole	GRP		4xM50, 1xM25				X					GHG 981 0048 R1243
100 A	3 pole	Sheet steel, powder-coated	2xM50, 1xM25							X			GHG 981 0048 R1244
100 A	4 pole	Sheet steel, powder-coated	2xM63, 1xM25							X			GHG 981 0048 R1245
100 A	6 pole	Sheet steel, powder-coated	4xM50, 1xM25							X			GHG 981 0048 R1246
100 A	3 pole	316L stainless steel, electro-polished	2xM50, 1xM25							X			GHG 981 0048 R1247
100 A	4 pole	316L stainless steel, electro-polished	2xM63, 1xM25							X			GHG 981 0048 R1248
100 A	6 pole	316L stainless steel, electro-polished	4xM50, 1xM25							X			GHG 981 0048 R1249

¹⁾ For an emergency stop switch (red handle/yellow back plate), change the 3rd to last digit from R*2** (standard version) to R*3** (emergency stop)

Ordering details

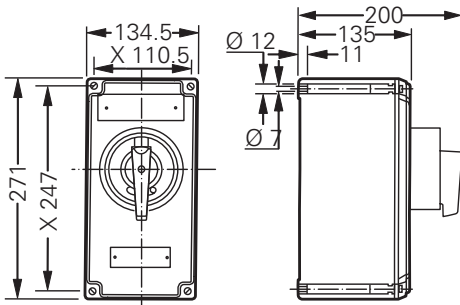
GHG 981 - 160 A - 630 A

Ordering details GHG 981 160 A - 630 A

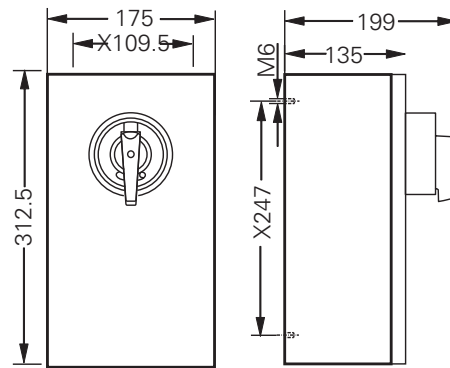
Rated current	Poles	Enclosure material	Cable entry (metal thread)	Cable gland (plastic)	Enclosure sizes: GRP				Enclosure sizes: metal				Order No. ¹⁾
					1	2	3	4	1	2	3	4	
GHG 981 (160 A)													
160 A	3 pole	GRP		2xM63, 1xM25		X							GHG 981 0048 R1251
160 A	4 pole	GRP		2xM63, 1xM25			X						GHG 981 0048 R1252
160 A	6 pole	GRP		4xM50, 1xM25			X						GHG 981 0048 R1253
160 A	3 pole	Sheet steel, powder-coated	2xM63, 1xM25						X				GHG 981 0048 R1254
160 A	4 pole	Sheet steel, powder-coated	2xM63, 1xM25						X				GHG 981 0048 R1255
160 A	6 pole	Sheet steel, powder-coated	4xM50, 1xM25						X				GHG 981 0048 R1256
160 A	3 pole	316L stainless steel, electro-polished	2xM63, 1xM25						X				GHG 981 0048 R1257
160 A	4 pole	316L stainless steel, electro-polished	2xM63, 1xM25						X				GHG 981 0048 R1258
160 A	6 pole	316L stainless steel, electro-polished	4xM50, 1xM25						X				GHG 981 0048 R1259
GHG 981 (250 A)													
250 A	3 pole	Sheet steel, powder-coated	2xM63, 1xM25							X			GHG 981 0048 R1264
250 A	4 pole	Sheet steel, powder-coated	2xM63, 1xM25							X			GHG 981 0048 R1265
250 A	6 pole	Sheet steel, powder-coated	4xM63, 1xM25							X			GHG 981 0048 R1266
250 A	3 pole	316L stainless steel, electro-polished	2xM63, 1xM25							X			GHG 981 0048 R1267
250 A	4 pole	316L stainless steel, electro-polished	2xM63, 1xM25							X			GHG 981 0048 R1268
250 A	6 pole	316L stainless steel, electro-polished	4xM63, 1xM25							X			GHG 981 0048 R1269
GHG 981 (400 A)													
400 A	3 pole	Sheet steel, powder-coated	2xM63, 1xM25							X			GHG 981 0048 R1274
400 A	4 pole	Sheet steel, powder-coated	2xM63, 1xM25							X			GHG 981 0048 R1275
400 A	6 pole	Sheet steel, powder-coated	4xM63, 1xM25							X			GHG 981 0048 R1276
400 A	3 pole	316L stainless steel, electro-polished	2xM63, 1xM25							X			GHG 981 0048 R1277
400 A	4 pole	316L stainless steel, electro-polished	2xM63, 1xM25							X			GHG 981 0048 R1278
400 A	6 pole	316L stainless steel, electro-polished	4xM63, 1xM25							X			GHG 981 0048 R1279
GHG 981 (630 A)													
630 A	3 pole	Sheet steel, powder-coated	4xM80, 1xM25							X			GHG 981 0048 R1284
630 A	4 pole	Sheet steel, powder-coated	4xM80, 1xM25							X			GHG 981 0048 R1285
630 A	3 pole	316L stainless steel, electro-polished	4xM80, 1xM25							X			GHG 981 0048 R1287
630 A	4 pole	316L stainless steel, electro-polished	4xM80, 1xM25							X			GHG 981 0048 R1288

¹⁾For an emergency stop switch (red handle/yellow back plate), change the 3rd to last digit from R*2** (standard version) to R*3** (emergency stop)

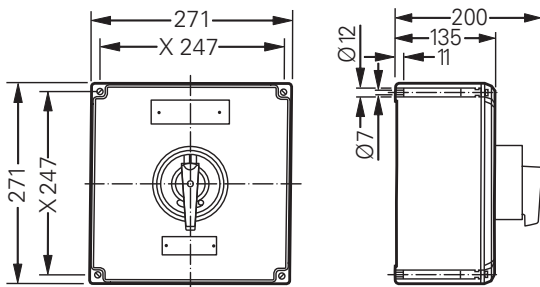
Size 1 GRP enclosure



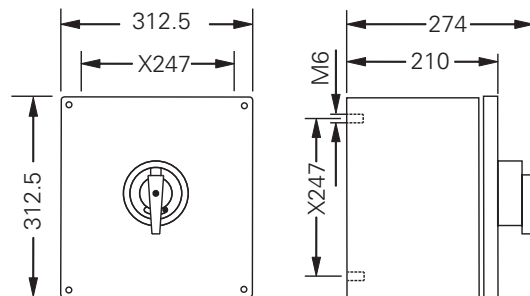
Size 1 metal enclosure



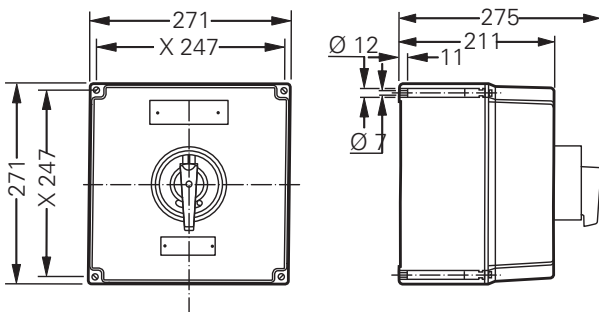
Size 2 GRP enclosure



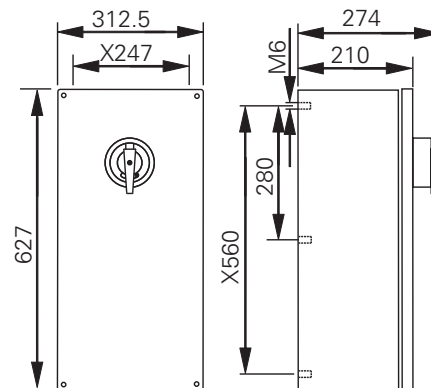
Size 2 metal enclosure



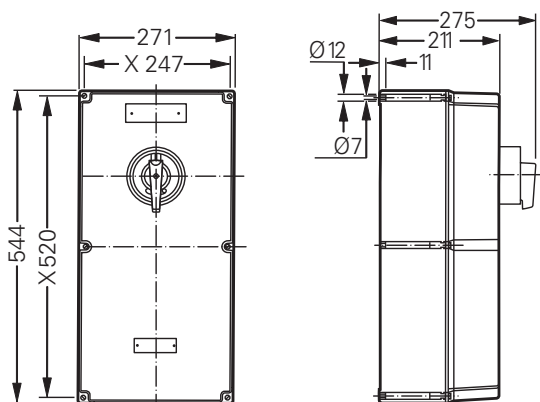
Size 3 GRP enclosure



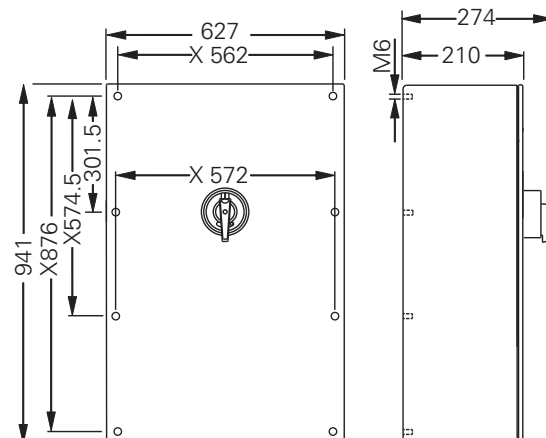
Size 3 metal enclosure



Size 4 GRP enclosure



Size 4 metal enclosure



Dim in mm

Technical data

GHG 981



Technical data

GHG 981...	
Marking to 94/9/EC	⊕ II 3 D Ex tc IIIC T80°C Dc
Type Examination Certificate	CCH 15 ATEX 1001
Permissible ambient temperature	-55 °C up to +40 °C/45 °C/50 °C/55 °C see instruction manual
IK-class according to EN 50102	IK 9 ± 10 J
Rated voltage	up to 690 V
Rated current	see ordering information
Frequency	50 - 60 Hz
Protection class	I and II
Degree of protection accd. to EN 60529	IP66
Auxiliary contact	1 x NO making - lagging; breaking - leading
Padlocking	can be logged in OFF position with 3 commercially padlocks
Enclosure colour	Plastic = black / sheet steel = RAL 7032 / stainless steel 316L = electro-polished

	GHG 981 (25 A)		GHG 981 (40 A)		GHG 981 (80 A)	
Back-up fuse	up to 415 V AC 50 A gG	up to 690 V AC 35 A gG	up to 415 V AC 80 A gG	up to 690 V AC 80 A gG	up to 415 V AC 100 A gG	up to 690 V AC 100 A gG
Rated making-/breaking capacity AC-3 accd. to EN 60947-3 Appendix A	25 A / 3 pole 23 A / 4/6 pole	14 A / 3-pol: 14 A / 4/6-pole	40 A / 3 pole 40 A / 6 pole	22 A / 3-pol: 17 A / 6-pole	71 A / 3 pole 55 A / 6 pole	23 A / 3-pol: 17 A / 6-pole
Connecting terminals	2,5 mm ² - 6 mm ²		10 mm ² - 35 mm ²		25 mm ² - 70 mm ²	

	GHG 981 (100 A)		GHG 981 (160 A)		GHG 981 (250 A)	
Back-up fuse	up to 415 V AC 125 A gG	up to 690 V AC 125 A gG	up to 415 V AC 160 A gG	up to 690 V AC 160 A gG	up to 415 V AC 250 A gG	up to 690 V AC 250 A gG
Rated making-/breaking capacity AC-3 accd. to EN 60947-3	100 A	100 A	160 A	160 A	250 A	250 A
Connecting terminals	35 mm ² - 70 mm ²		70 mm ² - M8 x 25		120 mm ² - M8 x 25	

	GHG 981 (400 A)		GHG 981 (630 A)	
Back-up fuse	up to 415 V AC 400 A gG	up to 690 V AC 400 A gG	up to 415 V AC 630 A gG	up to 690 V AC 630 A gG
Rated making-/breaking capacity AC-3 accd. to EN 60947-3	400 A	400 A	630 A	630 A
Connecting terminals	1 x 240 mm ²		2x185 mm ² - M12 x 40	

Electrical equipment for use in areas with combustible dust

Ignition sources



Combustible dust can be ignited by electrical apparatus in various ways:

- by apparatus surface temperatures that are higher than the ignition or glow temperature of the respective dust. The temperature at which the dust ignites is dependent on the properties of the dust, on whether it is present in the form of a cloud or deposits, on the thickness of the layer and on the type of heat source
- by sparks at electrical parts such as switches, contacts, commutators, brushes or similar
- by the discharge of stored electrostatic energy
- by radiated energy (e.g. electromagnetic radiation)
- by magnetic impact or friction sparks or a rise in temperature originating from the apparatus.

To avoid ignition hazards, it is necessary that:

- the temperature of any surfaces on which dust deposits can form or that can come into contact with a cloud of dust are kept at a temperature that is lower than the limiting temperatures laid down in EN 50028-1-2
- all parts with electric sparks or with temperatures above the ignition or glow temperature of the dust are built into an enclosure that prevents the ingress of dust in a suitable manner, or
- the energy of the electric circuits is limited to such a degree, that sparks or temperature that could ignite combustible dust are avoided
- all other ignition sources are avoided.





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