# GHG 9810048 Ex-Safety Switches for Zone 22 

Rated current from 25A-700 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 fulfils all these requirement. 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. Switchdisconnectors 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
GHG 9810048 series
safety switches up to 500 A.
meet the strict requirments of class I IEC/EN 62626-1.


Emergency stop versions according to EN 60204-1
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 all 3 material types while those 250 A and above are built into enclosures made of powdercoated sheet steel or electropolished stainless steel. These 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 25 A up to 700 A
- AC3 and AC23 switching capacity
- Environmental protection to IP66
- Compliance with IEC / EN 62626-1 up to 500 A
- Wide temperature range from $-55^{\circ} \mathrm{C}$ to $+55^{\circ} \mathrm{C}$
- Can be locked in "OFF" position by max. 3 padlocks


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 500 A up to 700 A sizes are available in 3-pole or 4-pole versions.

All sizes from 25 A through 500 A feature full AC3 switching capacity for squirrelcage motors during starting or while running per EN 60947-3 Appendix A. This is the most typical industrial application for motors.


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, corrosionresistant, and are suitable for use in harsh industrial environments with extreme ambient temperatures from $-55^{\circ} \mathrm{C}$ to $+55^{\circ} \mathrm{C}$.
Lock-out/tag-out capability 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.

Electrical equipment for use in areas with combustible dust
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.


Technical Data

| GHG 981... |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Marking to 2014/34/EU | (Ex) II 3 D Ex tc IIIC T $80^{\circ} \mathrm{C}$ Dc |  |  |  |  |  |
| Type Examination Certificate | CCH 15 ATEX 1001 |  |  |  |  |  |
| Permissible ambient temperature | $-55^{\circ} \mathrm{C}$ up to $+40^{\circ} \mathrm{C} / 45^{\circ} \mathrm{C} / 50^{\circ} \mathrm{C} / 55^{\circ} \mathrm{C}$ see instruction manual |  |  |  |  |  |
| IK-class according to EN 50102 | 1 K 9 =^ 10 J |  |  |  |  |  |
| Rated voltage | up to 690 V |  |  |  |  |  |
| Rated current | see ordering information |  |  |  |  |  |
| Frequency | $50-60 \mathrm{~Hz}$ |  |  |  |  |  |
| Switch-disconnector for maintenance accd. to IEC 62262-1 | Class 1 (25A-500 A) |  |  |  |  |  |
| Protection class | \| and || |  |  |  |  |  |
| Degree of protection accd. to EN 60529 | IP66 |  |  |  |  |  |
| Auxiliary contact | $1 \times$ NO making - lagging, breaking - leading $1 \times$ NC making - leading, breaking - lagging |  |  |  |  |  |
| 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 | $\begin{aligned} & \text { up to } 690 \text { V AC } \\ & 35 \mathrm{~A} \mathrm{gG} \end{aligned}$ | up to 415 V AC 80 A gG | up to 690 V AC 80 AgG | up to 415 V AC 100 A gG | $\begin{aligned} & \text { up to } 690 \text { V AC } \\ & 100 \mathrm{AgG} \end{aligned}$ |
| Rated making-/breaking capacity AC-3 accd. to EN 60947-3 Appendix A | 25 A / 3 pole <br> 23 A / 4/6 pole | 14 A / 3 pole 14 A / 4/6 pole | 40 A / 3 pole 40 A / 6 pole | 22 A / 3 pole <br> 17 A / 6 pole | 71 A / 3 pole 55 A / 6 pole | 23 A / 3 pole <br> 17 A / 6 pole |
| Connecting terminals | $4 \mathrm{~mm}^{2}-10 \mathrm{~mm}^{2}$ |  | $16 \mathrm{~mm}^{2}-35 \mathrm{~mm}^{2}$ |  | $50 \mathrm{~mm}^{2}-70 \mathrm{~mm}^{2}$ |  |
|  | GHG 981 (100 A) |  | GHG 981 (160 A) |  | GHG 981 ( 250 A ) |  |
| Back-up fuse | up to 415 V AC 125 A gG | $\begin{aligned} & \text { up to } 690 \text { V AC } \\ & 125 \mathrm{AgG} \end{aligned}$ | up to 415 V AC 160 A gG | $\begin{aligned} & \text { up to } 690 \text { V AC } \\ & 160 \mathrm{AgG} \end{aligned}$ | $\begin{aligned} & \text { up to } 415 \mathrm{~V} \text { AC } \\ & 250 \mathrm{AgG} \end{aligned}$ | $\begin{aligned} & \text { up to } 690 \text { V AC } \\ & 250 \mathrm{AgG} \end{aligned}$ |
| Rated making-/breaking capacity AC-3 accd. to EN 60947-3 Appendix A | 100 A | 100 A | 160 A | 160 A | 250 A | 250 A |
| Connecting terminals | $50 \mathrm{~mm}^{2}-70 \mathrm{~mm}^{2}$ |  | $95 \mathrm{~mm}^{2}-\mathrm{M} 8 \times 25$ |  | $185 \mathrm{~mm}^{2}-\mathrm{M} 10 \times 30$ |  |
|  | GHG 981 ( 400 A ) |  | GHG 981 ( $500 \mathrm{~A} / 630 \mathrm{~A}$ ) |  | GHG 981 (700 A) |  |
| Back-up fuse | up to 415 V AC 400 AgG | $\begin{aligned} & \text { up to } 690 \text { V AC } \\ & 400 \mathrm{AgG} \end{aligned}$ | up to 415 V AC 630 A gG | $\begin{aligned} & \text { up to } 690 \text { V AC } \\ & 630 \mathrm{AgG} \end{aligned}$ | up to 415 V AC 800 A gG | $\begin{aligned} & \text { up to } 690 \text { V AC } \\ & 800 \mathrm{AgG} \end{aligned}$ |
| Rated making-/breaking capacity AC-3* accd. to EN 60947-3 Appendix A | 400 A | 400 A | 630 A | 630 A | 700 A | 700 A |
| Connecting terminals | $1 \times 240 \mathrm{~mm}^{2}$ |  | $2 \times 185 \mathrm{~mm}^{2}-\mathrm{M} 12 \times 40$ |  | $2 \times 240$ mm² M12 40 |  |

[^0]Ordering details GHG 98125 A-100 A

|  |  |  |  |  | Enclo | sure si | es: GR |  | Enclo | sure siz | es: me |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Rated current | Poles | Enclosure material | Cable entry (metal thread) | Cable glands (plastic) | $\begin{aligned} & \text { Size } \\ & 1 \end{aligned}$ | $\begin{aligned} & \text { Size } \\ & 2 \end{aligned}$ | $\begin{aligned} & \text { Size } \\ & 3 \end{aligned}$ | $\begin{aligned} & \text { Size } \\ & 4 \end{aligned}$ | $\begin{gathered} \text { Size } \\ 1 \end{gathered}$ | $\begin{aligned} & \text { Size } \\ & 2 \end{aligned}$ | $\begin{aligned} & \text { Size } \\ & 3 \end{aligned}$ | $\begin{gathered} \text { Size } \\ 4 \end{gathered}$ | Order No. ${ }^{11}$ |

GHG 981 (25 A)


GHG 981 ( 80 A )

| 80 A | 3 pole | GRP | 2xM50, 1xM25 | $X$ |  | GHG 9810048 R1231 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 80 A | 4 pole | GRP | 2xM50, 1xM25 | X |  | GHG 9810048 R1232 |
| 80 A | 6 pole | GRP | 4xM50, 1xM25 | X |  | GHG 9810048 R1233 |
| 80 A | 3 pole | Sheet steel, powder-coated | 2xM50, 1xM25 |  | $X$ | GHG 9810048 R1234 |
| 80 A | 4 pole | Sheet steel, powder-coated | 2xM50, 1xM25 |  | X | GHG 9810048 R1235 |
| 80 A | 6 pole | Sheet steel, powder-coated | 4xM50, 1xM25 |  | X | GHG 9810048 R1236 |
| 80 A | 3 pole | 316L stainless steel, electro-polished | 2xM50, 1xM25 |  | $X$ | GHG 9810048 R1237 |
| 80 A | 4 pole | 316L stainless steel, electro-polished | $2 \mathrm{xM} 50,1 \mathrm{M} 25$ |  | X | GHG 9810048 R1238 |
| 80 A | 6 pole | 316L stainless steel, electro-polished | 4xM50, 1xM25 |  | X | GHG 9810048 R1239 |

GHG 981 ( 100 A)

| 100 A | 3 pole | GRP | 2xM50, 1xM25 | X |  | GHG 9810048 R1241 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 100 A | 4 pole | GRP | 2xM63, 1xM25 | X |  | GHG 9810048 R1242 |
| 100 A | 6 pole | GRP | 4xM50, 1xM25 | X |  | GHG 9810048 R1243 |
| 100 A | 3 pole | Sheet steel, powder-coated | $2 \mathrm{xM} 50,1 \mathrm{MM} 25$ |  | X | GHG 9810048 R1244 |
| 100 A | 4 pole | Sheet steel, powder-coated | 2xM63, 1xM25 |  | X | GHG 9810048 R1245 |
| 100 A | 6 pole | Sheet steel, powder-coated | 4xM50, 1xM25 |  | X | GHG 9810048 R1246 |
| 100 A | 3 pole | 316L stainless steel, electro-polished | $2 \mathrm{xM} 50,1 \mathrm{MM} 25$ |  | X | GHG 9810048 R1247 |
| 100 A | 4 pole | 316L stainless steel, electro-polished | 2xM63, 1xM25 |  | X | GHG 9810048 R1248 |
| 100 A | 6 pole | 316L stainless steel, electro-polished | $4 \mathrm{xM} 50,1 \mathrm{MM} 25$ |  | X | GHG 9810048 R1249 |

[^1]

Ordering details GHG 981160 A-700 A

| Rated current | Poles | Enclosure material | Cable entry (metal thread) | Cable glands (plastic) | Enclosure sizes: GRP |  |  |  | Enclosure sizes: metall |  |  |  | Order No. ${ }^{11}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | $\begin{aligned} & \text { Size } \\ & 1 \end{aligned}$ | $\begin{aligned} & \text { Size } \\ & 2 \end{aligned}$ | $\begin{aligned} & \text { Size } \\ & 3 \end{aligned}$ | $\begin{aligned} & \text { Size } \\ & 4 \end{aligned}$ | $\begin{gathered} \text { Size } \\ 1 \end{gathered}$ | $\begin{aligned} & \text { Size } \\ & 2 \end{aligned}$ | $\begin{aligned} & \text { Size } \\ & 3 \end{aligned}$ | $\begin{gathered} \text { Size } \\ 4 \end{gathered}$ |  |
| GHG 981 (160 A) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 160 A | 3 pole |  |  | 2xM63, 1xM25 |  |  | X |  |  |  |  |  | GHG 9810048 R1251 |
| 160 A | 4 pole | GRP |  | 2xM63, 1xM25 |  |  |  | X |  |  |  |  | GHG 9810048 R1252 |
| 160 A | 6 pole |  |  | 4xM50, 1xM25 |  |  |  | X |  |  |  |  | GHG 9810048 R1253 |
| 160 A | 3 pole | Sheet steel, powder-coated | 2xM63, 1xM25 |  |  |  |  |  |  |  | $X$ |  | GHG 9810048 R1254 |
| 160 A | 4 pole | Sheet steel, powder-coated | 2xM63, 1xM25 |  |  |  |  |  |  |  | $X$ |  | GHG 9810048 R1255 |
| 160 A | 6 pole | Sheet steel, powder-coated | 4xM50, 1xM25 |  |  |  |  |  |  |  | $X$ |  | GHG 9810048 R1256 |
| 160 A | 3 pole | 316L stainless steel, electro-polished | 2xM63, 1xM25 |  |  |  |  |  |  |  | $X$ |  | GHG 9810048 R1257 |
| 160 A | 4 pole | 316L stainless steel, electro-polished | 2xM63, 1xM25 |  |  |  |  |  |  |  | $X$ |  | GHG 9810048 R1258 |
| 160 A | 6 pole | 316L stainless steel, electro-polished | 4xM50, 1xM25 |  |  |  |  |  |  |  | X |  | GHG 9810048 R1259 |
| GHG 981 (250 A) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 250 A | 3 pole | Sheet steel, powder-coated | 2xM63, 1xM25 |  |  |  |  |  |  |  |  | $X$ | GHG 9810048 R1264 |
| 250 A | 4 pole | Sheet steel, powder-coated | 2xM63, 1xM25 |  |  |  |  |  |  |  |  | $X$ | GHG 9810048 R1265 |
| 250 A | 6 pole | Sheet steel, powder-coated | 4xM63, 1xM25 |  |  |  |  |  |  |  |  | X | GHG 9810048 R1266 |
| 250 A | 3 pole | 316L stainless steel, electro-polished | 2xM63, 1xM25 |  |  |  |  |  |  |  |  | $X$ | GHG 9810048 R1267 |
| 250 A | 4 pole | 316L stainless steel, electro-polished | 2xM63, 1xM25 |  |  |  |  |  |  |  |  | $X$ | GHG 9810048 R1268 |
| 250 A | 6 pole | 316L stainless steel, electro-polished | 4xM63, 1xM25 |  |  |  |  |  |  |  |  | X | GHG 9810048 R1269 |
| GHG 981 (400 A) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 400 A | 3 pole | Sheet steel, powder-coated | 2xM63, 1xM25 |  |  |  |  |  |  |  |  | $X$ | GHG 9810048 R1274 |
| 400 A | 4 pole | Sheet steel, powder-coated | 2xM63, 1xM25 |  |  |  |  |  |  |  |  | $X$ | GHG 9810048 R1275 |
| 400 A | 6 pole | Sheet steel, powder-coated | 4xM63, 1xM25 |  |  |  |  |  |  |  |  | $X$ | GHG 9810048 R1276 |
| 400 A | 3 pole | 316L stainless steel, electro-polished | 2xM63, 1xM25 |  |  |  |  |  |  |  |  | $X$ | GHG 9810048 R1277 |
| 400 A | 4 pole | 316L stainless steel, electro-polished | 2xM63, 1xM25 |  |  |  |  |  |  |  |  | X | GHG 9810048 R1278 |
| 400 A | 6 pole | 316L stainless steel, electro-polished | 4xM63, 1xM25 |  |  |  |  |  |  |  |  | X | GHG 9810048 R1279 |
| GHG 981 (500 A) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 500 A | 3 pole | Sheet steel, powder-coated | 4xM80, 1xM25 |  |  |  |  |  |  |  |  | X | GHG 9810048 R1284 |
| 500 A | 4 pole | Sheet steel, powder-coated | 4xM80, 1xM25 |  |  |  |  |  |  |  |  | X | GHG 9810048 R1285 |
| 500 A | 3 pole | 316L stainless steel, electro-polished | 4xM80, 1xM25 |  |  |  |  |  |  |  |  | $X$ | GHG 9810048 R1287 |
| 500 A | 4 pole | 316L stainless steel, electro-polished | 4xM80, 1xM25 |  |  |  |  |  |  |  |  | X | GHG 9810048 R1288 |
| GHG 981 (630 A) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 630 A | 3 pole | Sheet steel, powder-coated | 4xM80, 1xM25 |  |  |  |  |  |  |  |  | X | GHG 9810048 R0284 |
| 630 A | 4 pole | Sheet steel, powder-coated | 4xM80, 1xM25 |  |  |  |  |  |  |  |  | $X$ | GHG 9810048 R0285 |
| 630 A | 3 pole | 316L stainless steel, electro-polished | 4xM80, 1xM25 |  |  |  |  |  |  |  |  | X | GHG 9810048 R0287 |
| 630 A | 4 pole | 316L stainless steel, electro-polished | 4xM80, 1xM25 |  |  |  |  |  |  |  |  | X | GHG 9810048 R0288 |
| GHG 981 (700 A) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 700 A | 3 pole | Sheet steel, powder-coated | 4xM80, 1xM25 |  |  |  |  |  |  |  |  | X | GHG 9810048 R0294 |
| 700 A | 4 pole | Sheet steel, powder-coated | 4xM80, 1xM25 |  |  |  |  |  |  |  |  | X | GHG 9810048 R0295 |
| 700 A | 3 pole | 316L stainless steel, electro-polished | 4xM80, 1xM25 |  |  |  |  |  |  |  |  | X | GHG 9810048 R0297 |
| 700 A | 4 pole | 316L stainless steel, electro-polished | 4xM80, 1xM25 |  |  |  |  |  |  |  |  | X | GHG 9810048 R0298 |

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

## Accessories

| Type | Version |  |
| :--- | :--- | :--- |
| Cable glands |  | see: Main catalogue part 2 - page 2.3.4-2.3.11 |
| Plastic cable glands | M20 up to M63 | see: Main catalogue part 2 - page 2.3.12 - 2.3.19 |
| Metal cable glands | ADE 1 F2 |  |

Size 1 GRP enclosure


Size 2 GRP enclosure


Size 3 GRP enclosure


Size 4 GRP enclosure


Size 1 metal enclosure


Size 2 metal enclosure

Size 3 metal enclosure


Size 4 metal enclosure



[^0]:    * 630 A and 700 A are rated $\mathrm{AC}-23$

[^1]:    ${ }^{11}$ 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)

