

Lever & Pivoting Safety Switches

Switches Activated By The Door Action



**Ti2 / I88 Switches
with AHDB Actuators**

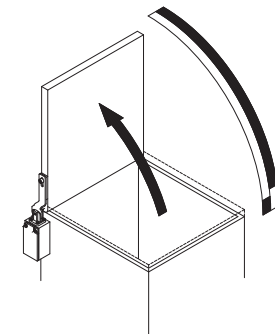
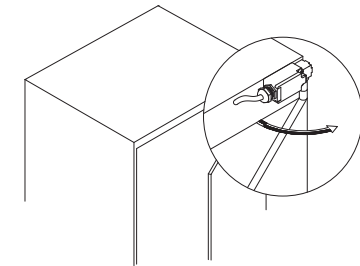


**I88 / GC Switches
with VKS / VKW Actuators**

Lever & Pivoting Safety Switches

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I88 VKS, -VKW, -AHDB; GC VKS, -VKW; Ti2 AHDB



I88-AHDB

Safety switches for hinged protective equipment

These switches are suitable for applications where SHS switches cannot be used. They are used for safety monitoring of safety gates, safety guards and protective equipment. Two different types of actuator are available for this type of safety switch. The actuators also differ in terms of their attachment to the safety guards.

The AHDB actuator is available in the Ti2 and I88 families. The switch is attached in such a way that a spindle on the safety guard or on the hinge can enter the hole in the safety switch. The safety contact is opened by turning the spindle when opening the safety guard. The switch can be actuated in both directions without a limit stop.

The VKS and VKW actuators are part of the I88 and GC families. The switch is mounted next to the safety guard. The lever fixture is mounted on the safety guard and opens the safety contact as it moves. The integrated longitudinal guide compensates for different pivot radii.

I88-VKW

Two different actuator functions are available to facilitate use in varied applications:

- **VKS with vertical setting**

The safety contact is opened when the lever fixture is moved out of its vertical setting in one of the two possible pivot directions.

- **VKW with horizontal setting**

The safety contact is opened as the lever fixture moves out of its horizontal setting. A distinction is made between VKW RE (right) and VKW LI (left) in connection with I88 switches. This designation makes it possible to identify whether the switch can be mounted on the right-hand or left-hand side of the safety guard. The GC family only contains switches for mounting on the left-hand side.

Both variants allow maximum pivot movements of 180°.

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I88 VKS, -VKW, -AHDB; GC VKS, -VKW; Ti2 AHDB



Technical data		Ti2 AHDB	I88 AHDB	I88	GC
Electrical data					
Rated insulation voltage		250 V AC	250 V AC	250 V AC	400 V AC
Conventional thermal current	U1Z A2Z	10 A –	10 A 5 A	10 A 5 A	10 A 5 A
Rated operating voltage	U _e	240 V	240 V	240 V	240 V
Utilization category	U1Z A2Z	AC15, 240 V/3 A, –	AC-15, U _e /I _e 240 V / 3 A AC-15, U _e /I _e 240 V / 1.5 A	AC-15, U _e /I _e 240 V / 3 A AC-15, U _e /I _e 240 V / 1.5 A	AC-15, U _e /I _e 240 V / 3 A –
Positive opening action NC contacts	⊖	As per IEC/EN 60947-5-1, Addendum K	As per IEC/EN 60947-5-1, Addendum K	As per IEC/EN 60947-5-1, Addendum K	As per IEC/EN 60947-5-1, Addendum K
Short-circuit protection		Fuse 6A gL/gG	Fuse 10A gL/gG	Fuse 10A gL/gG	Fuse 10A gL/gG
Protection class		II, Insulated	II, Insulated	II, Insulated	I
Mechanical data					
Enclosure		PBT, glass fibre-reinforced	Thermoplastic, glass fibre-reinforced (UL 94-V0)	Thermoplastic, glass fibre-reinforced (UL 94-V0)	Aluminium pressure die-casting
Cover		PA6.6, black	Thermoplastic, glass fibre-reinforced (UL 94-V0)	Thermoplastic, glass fibre-reinforced (UL 94-V0)	Sheet aluminium
Actuation		Axis lever enclosure, lever (metal)	Axis lever enclosure, lever (metal)	Lever (metal)	Lever (steel)
Ambient temperature		–30°C to + 80°C	–30°C to + 80°C	–30°C to + 80°C	–30°C to + 80°C
Mechanical service life		1 x 10 ⁶ switching cycles	1 x 10 ⁶ switching cycles	1 x 10 ⁶ switching cycles	1 x 10 ⁶ switching cycles
B10d		2 mill.	2 mill.	2 mill.	2 mill.
Switching frequency		≤ 50 / min.	≤ 50 / min.	≤ 50 / min.	≤ 20 / min.
Mounting		2 x M4 or 2 x M5 fixed positioning for safety applications	2 x M4	2 x M4	2 x M4
Type of connection		Screw connections	Screw connections	Screw connections	Screw connections
Conductor cross sections		Single-wire 0.5 – 1.5 mm ² or Stranded wire with ferrule 0.5 – 1.5	Single-wire 0.5 – 1.5 mm ² or Stranded wire with ferrule 0.5 – 1.5	Single-wire 0.5 – 1.5 mm ² or Stranded wire with ferrule 0.5 – 1.5	Single-wire 0.5 – 1.5 mm ² or Stranded wire with ferrule 0.5 – 1.5
Cable entry		1 x M20 x 1,5	1 x M20 x 1,5	1 x M20 x 1,5	1 x M20 x 1,5
Installation position		Any	Any	Any	Any
Protection class		IP65 as per EN 60529	IP65 as per EN 60529	IP65 as per EN 60529	IP65 as per EN 60529
Standards					
VDE 0660 T100, DIN EN 60947-1, IEC 60947-1 VDE 0660 T200, DIN EN 60947-5-1, IEC 60947-5-1					

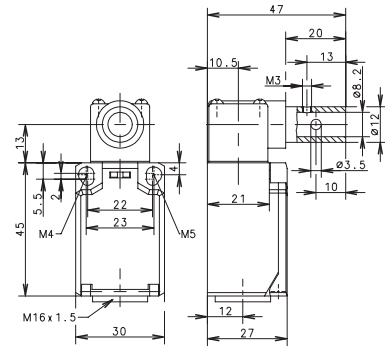
① Depending on switching system. See Table on Pages 72 – 75.

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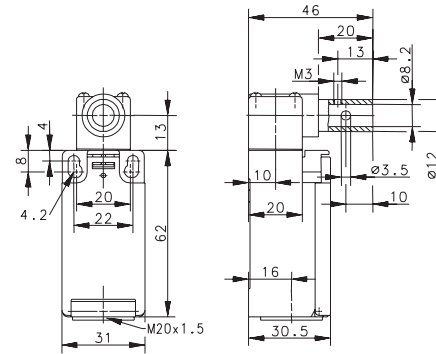
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Ti2-AHDB; I88-AHDB

Ti2 AHDB



I88 AHDB



Switching operation

1 NC / 1 NO contact

2 NC contact

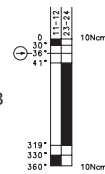
2 NO contacts

1 NC / 1 NO contact
Overlapping

Approvals

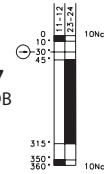
Slow-action Snap-action

6188100030
Ti2-U1Z AHDB

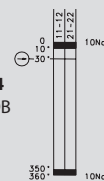


Slow-action Snap-action

6186100267
I88-U1Z AHDB



6186800324
I88-A2Z AHDB

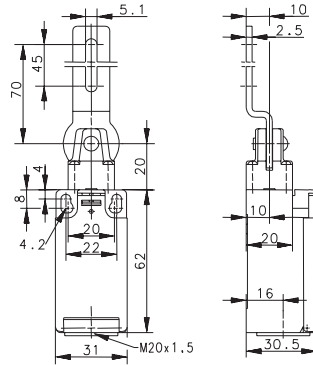


Lever & Pivoting Safety Switches

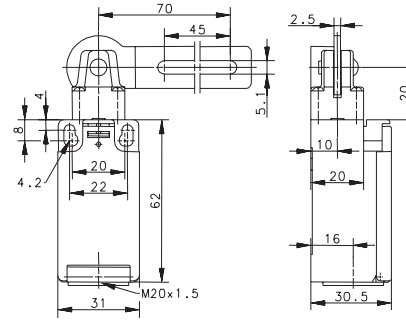
Switches Activated By The Door Action

I88-VKS; I88-VKW

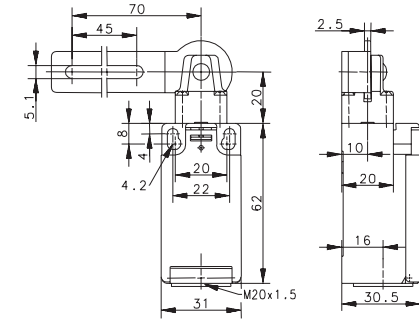
I88 VKS



I88 VKW RE



I88 VKW LI



Switching operation

Slow-action

Snap-action

Slow-action

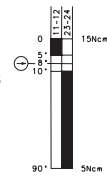
Snap-action

Slow-action

Snap-action

1 NC / 1 NO contact

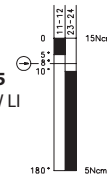
6086100093
I88-U1Z VKS



6086100094
I88-U1Z VKW RE



6086100095
I88-U1Z VKW LI



2 NC contact

6186800447
I88-A2Z VKS



2 NO contacts

**1 NC / 1 NO contact
Overlapping**

Approvals

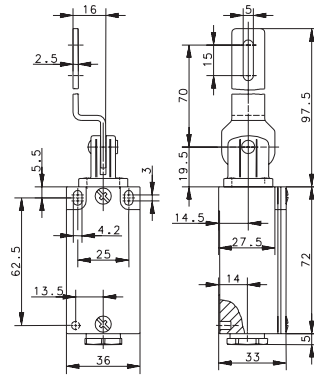


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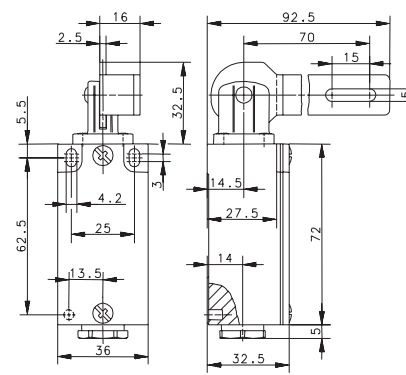
Switches Activated By The Door Action

GC-VKS; GC-VKW

GC VKS



GC VKW



Switching operation

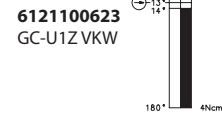
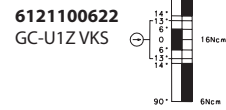
Slow-action

Snap-action

Slow-action

Snap-action

1 NC / 1 NO contact



2 NC contact

6121800835
GC-A2Z VKW

Graph showing switching force vs. angle for GC-A2Z VKW. The y-axis represents force in Ncm (0, 10, 18, 21) and the x-axis represents angle in degrees (180°, 0°, 180°). The curve shows a slow-action region from 180° to 0° with a force of 21 Ncm, and a snap-action region from 0° to 180° with a force of 18 Ncm.

2 NO contacts

1 NC / 1 NO contact
Overlapping

Approvals

