

Technical Data

Plastic bodied limit switch

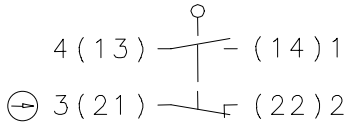
Series IF

Description **IF-SU1Z AH AMP4**

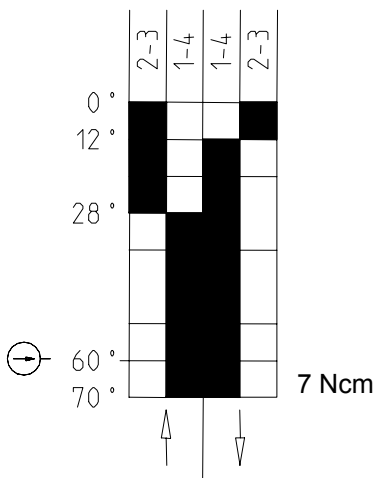
Article number **6089185023**



Operating symbol

1-4 $\hat{=}$ AMP – contact assignment

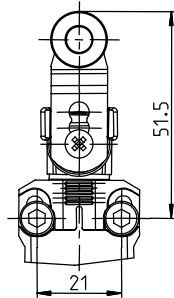


Operating diagram

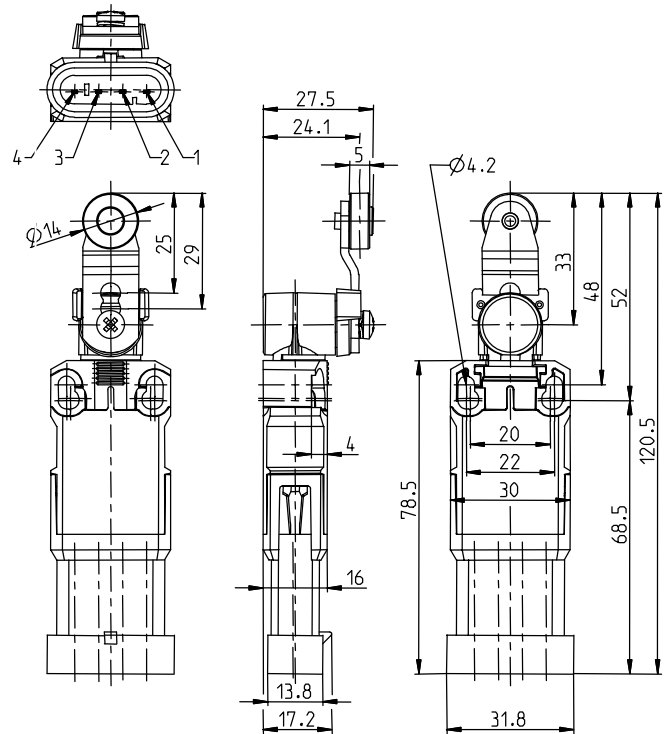


  Tolerance:
 On Off Operating point $\pm 3,5^\circ$

Fixed positioning for safety applications



Mounting screw M5 according to DIN 912 or DIN EN ISO 4762



Electrical data

Rated insulation voltage	U_i	250V AC
Conv. thermal current	I_{the}	10A
Rated operational voltage	U_e	240V
Utilization category		AC-15, U_e/I_e 240V/3A
Positive opening NC contact	\ominus	according to IEC/EN 60947-5-1, Annex K
Short-circuit protective device		Fuse 6A gL/gG
Protection class		II, totally insulated

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Date of issue: 01.09.2005 / Page 1 of 2
 Document : 6089185023_en / Last update : 2 / 2781-05

Technical Data

Plastic bodied limit switch

Mechanical data

Enclosure	PA6 (glass fibre reinforced)
Cover	PA6 (glass fibre reinforced)
Actuator	Lever arm housing (Zn-DG), Lever arm (st), roller (thermoplastic)
Ambient air temperature	-25°C ... +70°C (cable in fixed position)
Contact type	Snap action, 1 NO, 1 NC (Zb)
Mechanical life	3 x 10 ⁶ switching cycles
Switching frequency	≤ 30/min
Assembly	2 x M4 or 2 x M5
Connection	plug socket (AMP SUPERSEAL 1,5 Series)
Weight	≈ 0,08kg
Installation position	Operator definable
Protection type	IP67 acc. to EN 60529; DIN VDE 0470 T1

Actuation

Operating direction: from 2 sides

The actuating head can be turned in steps of 90° by lifting the clamp. This means that it can be approached from 8 different directions.

Standards

VDE 0660 T100, DIN EN 60947-1, IEC 60947-1
VDE 0660 T200, DIN EN 60947-5-1, IEC 60947-5-1

EU Conformity

CE

Approvals

BG (planned)
cCSA_{US} (planned)

Notes

The indicated protection class (IP-code) is only valid when the actuator is correctly mounted and a corresponding plug is used.

Plastic-bodied limit switches

Biggy

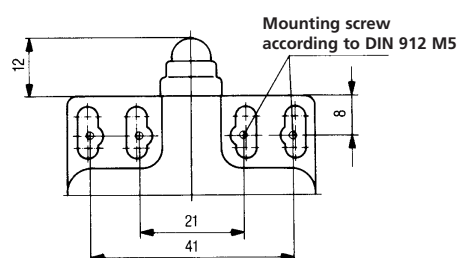
With four different mounting holes,
Protection class IP 65
Hinged snap lid
Two cable entries M 16 x 1.5



- Wide selection of actuators
- Snap action or slow make & break
- Galvanically separated contacts
- Forced disconnection of NC contacts (type dependant)
- Protection class IP 65
- Body and lid PA 6 which is self extinguishing (UL-94 V0) cover PC (UL-94 V0)
- 4 x 90° actuator positions
- Adjustment of the AH lever arm position in 90° increments
- Two cables entries M 16 x 1.5
- Terminals numbered in accordance with DIN EN 50013
- International approvals

Mounting

- Adjustable – two slots for M 4 screws (22 mm centres)
- Adjustable – two slots for M 4 screws (42 mm centres)
- Fixed – two holes for M 5 screws for safety applications (21 mm centres)



- Fixed - two holes for M 5 screws for safety applications (41 mm centres)

Benefits

- Two cable entries allow "through wiring"
- Hinged snap lid for quick and easy access (screwdriver release)
- Lid hinges open to 135° (can also be simply detached)
- Internal cover protects the contacts during mounting
- Screw terminals with self lifting clamps for easy wiring
- Transparent cover for easy adjustment and inspection



Options

- Contact lock (safety pull button reset)
- Contact LED display (LED protected within terminal chamber)
- Additional lid security with fixing screw

Accessory equipment page 53

Contact configuration

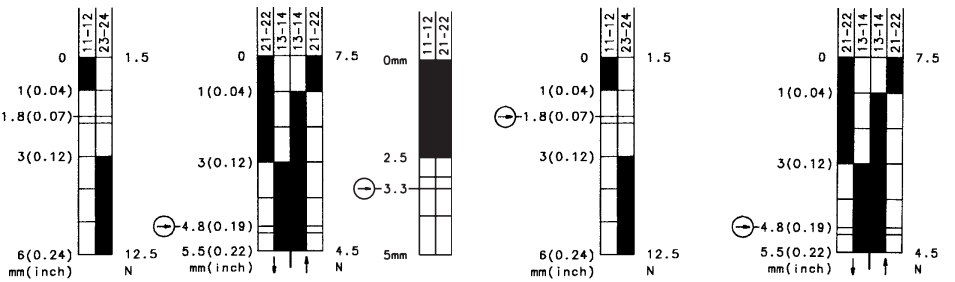
Contact type	Switch function	Switch contacts	Reference	Max. Voltage	Max. constant current
Slow make & break	Changeover	1NF/1NO	U1/U1Z	500 V	10 A
Snap action	Changeover	1NF/1NO	SU1Z	500 V	10 A
Slow make & break	Changeover	2NF	A2Z	400 V	5 A



Designation
Part number
 Circuit diagram
 ⊕ Forced disconnect to IEC 947-5-1 chapter 3
 Za: not galvanically separated contacts
 Zb: galvanically separated contacts
 Slow make & break/snap-action
 Internal seal (iw)/external seal (w)

BI-U1Z w	BI-SU1Z w	BI-A2Z w	BI-U1Z Riw	BI-SU1Z Riw
608.5103.001	608.5153.008	608.5803.036	608.5117.002	608.5167.009
⊕ Zb	⊕ Zb	⊕ Zb	⊕ Zb	⊕ Zb
●/-	-/●	-/●	●/-	-/●
w	w	w	iw	iw

Contact travel mm (inch) Tol. ± 0.25 mm
 Actuator force N Tol. ± 10%
 Actuator angle ° Tol. ± 3.5°
 Actuator torque Ncm Tol. ± 10%
 On Off



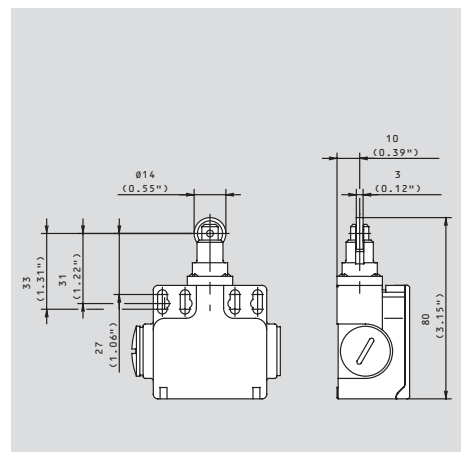
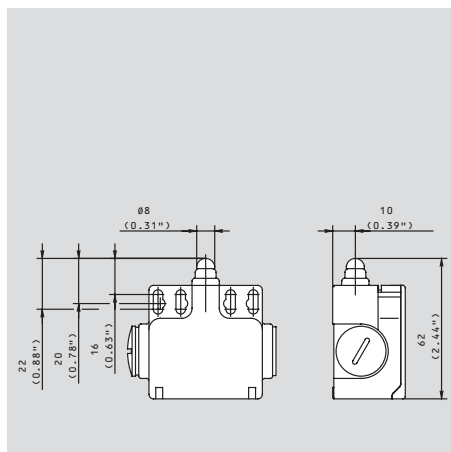
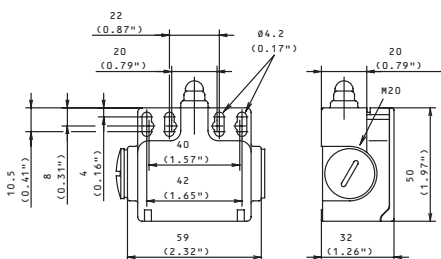
Voltage max.
 Permanent current max.
 In-rush current complies with standards
 IEC 947-5-1 AC 15/DC 13
 Switching frequency max.
 Mechanical life – number of switching actions
 Operating temperature min./max.

500 V AC	500 V AC	500 V AC	500 V AC	500 V AC
10 A	10 A	10 A	10 A	10 A
●	●	●	●	●
100/min.	100/min.	100/min.	100/min.	100/min.
10 x 10 ⁶	10 x 10 ⁶	10 x 10 ⁶	10 x 10 ⁶	10 x 10 ⁶
-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C
-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F

Approvals
 Weight
 Delivery: ex-stock/built to order

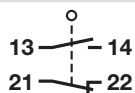
UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA
0.08 kg/0.18 lb	0.08 kg/0.18 lb	0.08 kg/0.18 lb	0.08 kg/0.18 lb	0.08 kg/0.18 lb
●/-	●/-	-/●	●/-	●/-

All dimensions in mm (inch)





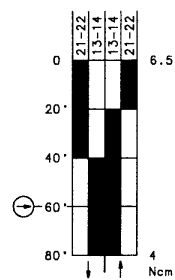
BI-SU1Z AH
608.5185.012



⊖ Zb

-/●

iv



500 V AC
10 A

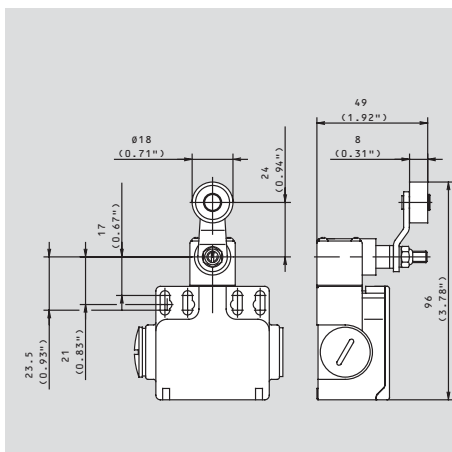
●

100/min.
10 x 10⁶
-30 °C/+80 °C
-22 °F/+176 °F

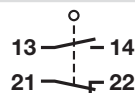
UL, CSA

0.12 kg/0.26 lb

●/-



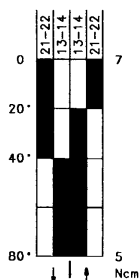
BI-SU1 AV
608.5186.013



Zb

-/●

iv



500 V AC
10 A

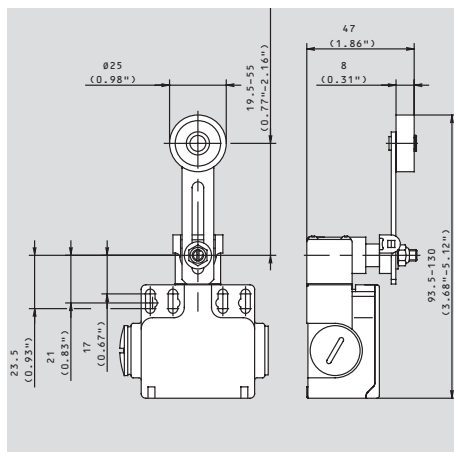
●

100/min.
10 x 10⁶
-30 °C/+80 °C
-22 °F/+176 °F

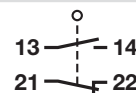
UL, CSA

0.13 kg/0.29 lb

●/-



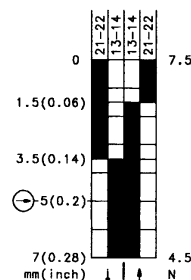
BI-SU1Z Hw
608.5171.017



⊖ Zb

-/●

w



500 V AC
10 A

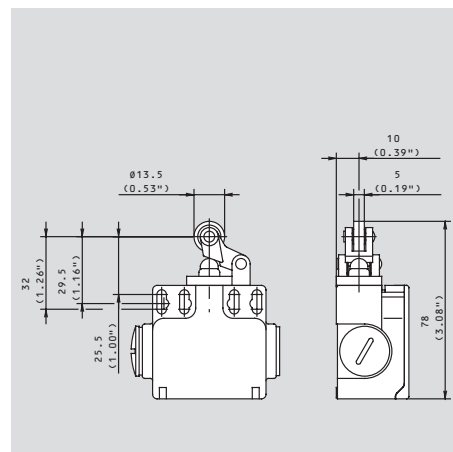
●

100/min.
10 x 10⁶
-30 °C/+80 °C
-22 °F/+176 °F

UL, CSA

0.09 kg/0.20 lb

●/-



Plastic-bodied compact limit switches

Combi C2

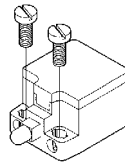
For confined spaces
With two mounting options
Protection class IP 30
Hinged snap lid



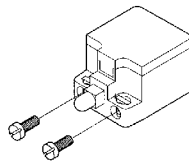
- Compact switches for safety or control applications
- 3 different contact configurations available as slow-action and snap-action
- All normally-closed contacts are positive break
- Two channel safety control possible
- Galvanically isolated terminals, type Zb
- Approvals UL, CSA
- Rectangular cable entries (8.5 x 3.5 mm) for 4 x 1-mm² flexible lead
- 4 screw-type connections (M3,5) with self-lifting clamps
- PBT enclosure, glass-fibre reinforced, self-extinguishing UL 94-V0
- Lid, PC UL 94-V0
- 2 mm contact opening of slow-action system according to EN 81-1 for lift applications



Mounting



a) 2 holes for M4 screws



b) 2 captive M3 nuts for end mounting (depending on type)

Contact configuration

Switching element	Switch function	Switch contact	Designation	Voltage	Continuous current
Slow-action	changeover	1NC/1NO	U1Z	250 V	10 A
Snap-action	changeover	1NC/1NO	SU1Z	250 V	10 A
Slow-action	normally-closed	2NC	A2Z	250 V	10 A
Snap-action	normally-closed	2NC	SA2Z	250 V	10 A
Slow-action	normally-open	2NO	E2	250 V	10 A
Snap-action	normally-open	2NO	SE2	250 V	10 A



Designation

Part number

Switching diagram

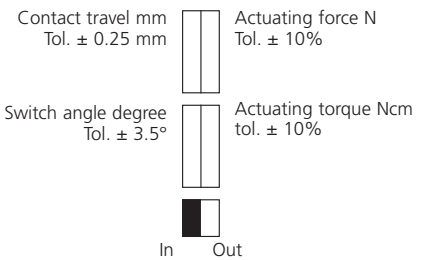
⊕ positive break according to IEC 947-5-1 Chap. 3

Za: changeover contact is not galvanically isolated

Zb: changeover contact is galvanically isolated

Slow-action contact/snap-action contact

Gasket inside (iw)/outside (w)



Voltage max.

Continuous current max.

Making current, acc. to IEC 947-5-1 AC 15/DC 13

Switching frequency max.

Mech. operational life – number of switching cycles

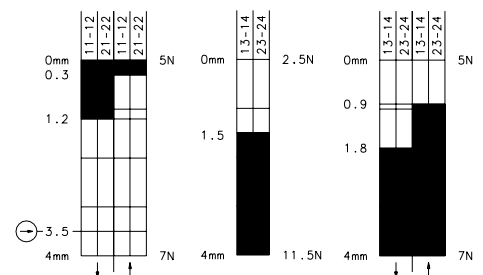
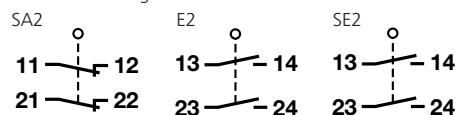
Ambient temperature min./max.

Approvals

Weight

Delivery: ex-stock/built to order

Further switching functions

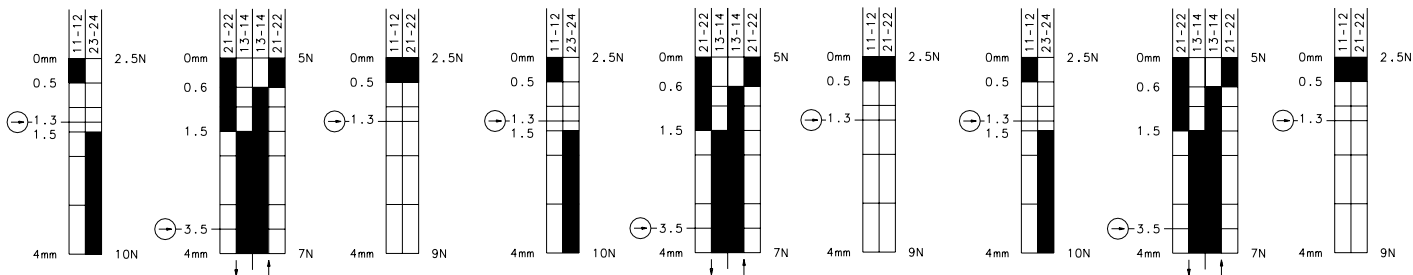


Dimensions

All dimensions in mm

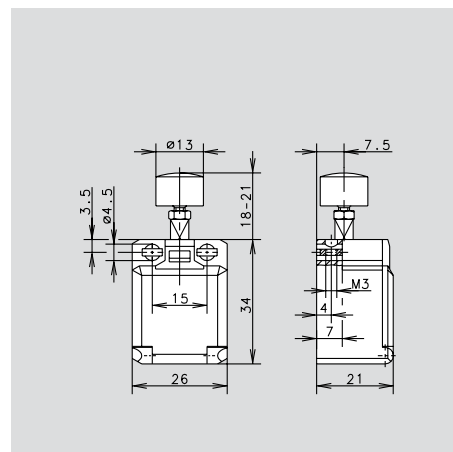
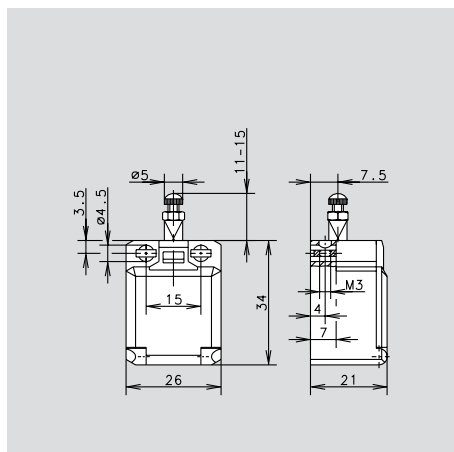
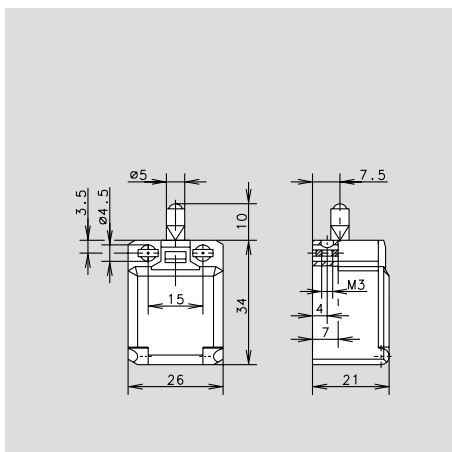


C2-U1Z	C2-SU1Z	C2-A2Z	C2-U1Z St	C2-SU1Z St	C2-A2Z St	C2-U1Z K	C2-SU1Z K	C2-A2Z K
600.8101.001	600.8351.002	600.8801.003	600.8104.025	600.8354.026	600.8804.027	600.8107.019	600.8357.020	600.8807.021
⊕ Zb	⊕ Zb	⊕ Zb	⊕ Zb	⊕ Zb	⊕ Zb	⊕ Zb	⊕ Zb	⊕ Zb
●/-	-/●	●/-	●/-	-/●	●/-	●/-	-/●	●/-
-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-



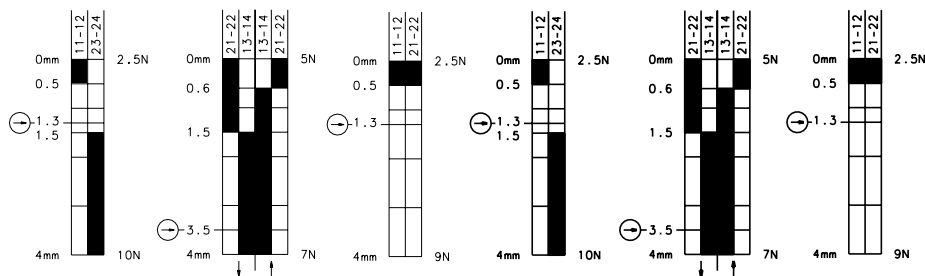
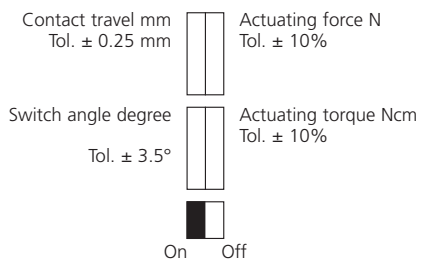
250 V AC	250 V AC	250 V AC	250 V AC	250 V AC	250 V AC	250 V AC	250 V AC	250 V AC
10 A	10 A	10 A	10 A	10 A	10 A	10 A	10 A	10 A
●	●	●	●	●	●	●	●	●
100/min.	100/min.	100/min.	100/min.	100/min.	100/min.	100/min.	100/min.	100/min.
3 x 10 ⁶	3 x 10 ⁶	3 x 10 ⁶	3 x 10 ⁶	3 x 10 ⁶	3 x 10 ⁶	3 x 10 ⁶	3 x 10 ⁶	3 x 10 ⁶
-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C
-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F

UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA
0.02 kg	0.02 kg	0.02 kg	0.02 kg	0.02 kg	0.02 kg	0.02 kg	0.02 kg	0.02 kg
●/-	●/-	●/-	●/-	●/-	●/-	●/-	●/-	●/-





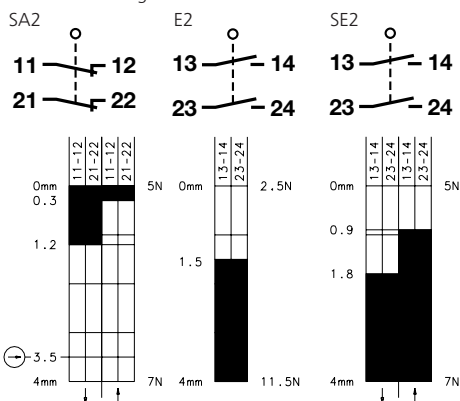
Designation	C2-U1Z R	C2-SU1Z R	C2-A2Z R	C2-U1Z o.M.+H	C2-SU1Z o.M.+H	C2-A2Z o.M.+H
Switch part number	600.8116.013	600.8366.014	600.8816.015	600.8101.007	600.8351.008	600.8801.009
Actuator part number	-	-	-	391.0190.259	391.0190.259	391.0190.259
Switching diagram						
⊕ positive break according to IEC 947-5-1 Chap. 3						
Za: changeover contact is not galvanically isolated						
Zb: changeover contact is galvanically isolated						
Slow-action contact/snap-action contact	●/-	-/●	●/-	●/-	-/●	●/-
Gasket inside (iw)/outside (w)	-/-	-/-	-/-	-/-	-/-	-/-



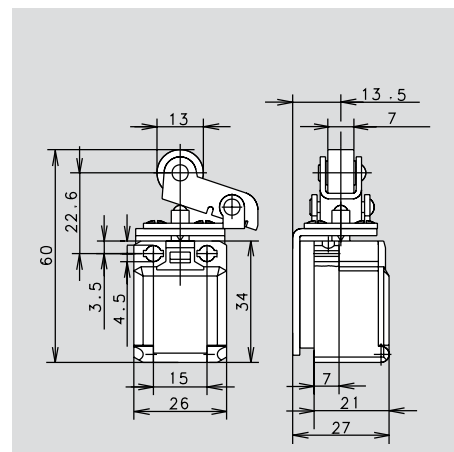
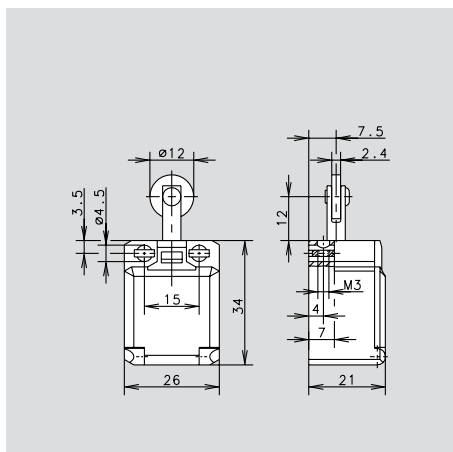
Voltage	max.	250 V AC	250 V AC	250 V AC	250 V AC	250 V AC	250 V AC
Continuous current	max.	10 A	10 A	10 A	10 A	10 A	10 A
Making current, acc. to IEC 947-5-1 AC 15/DC 13		●	●	●	●	●	●
Switching frequency	max.	100/min.	100/min.	100/min.	100/min.	100/min.	100/min.
Mech. operational life – number of switching cycles		3 x 10 ⁵	3 x 10 ⁵	3 x 10 ⁵	3 x 10 ⁵	3 x 10 ⁵	3 x 10 ⁵
Ambient temperature	min./max.	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C
		-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F

Approvals	UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA
Weight	0.02 kg	0.02 kg	0.02 kg	0.03 kg	0.03 kg	0.03 kg
Delivery: ex-stock/built to order	●/-	●/-	●/-	●/-	●/-	●/-

Further switching functions



Dimensions
All dimensions in mm



Plastic-bodied limit switches

ENK

Euronorm standard switch according to
DIN EN 50041
Protection class IP 65
Hinged snap lid



- Standard actuators to DIN EN 50041 form A, B, C, D, F, G
- Large range of actuators
- 4 x 90° actuator positions
- Snap action or slow make & break contacts
- Galvanically separated contacts
- Forced disconnection of NC contacts
- Metal actuators for heavy duty applications
- Cable entry M 20 x 1.5
- Protection class IP 65
- Body and lid PA 6 which is self extinguishing (UL-94-V0)

Benefits

- Hinged snap lid for quick and easy access (screwdriver release)
- Lid hinges open to 150° (can also be simply detached)
- Internal cover protects the contacts during mounting
- Screw terminals with self lifting clamps for easy wiring
- Transparent cover for easy adjustment and inspection



Mounting

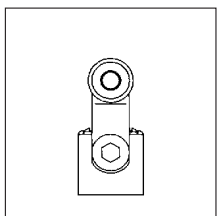
- Adjustable – two slots for M 5 screws
- Fixed - two holes for M 5 screws for safety applications

Options

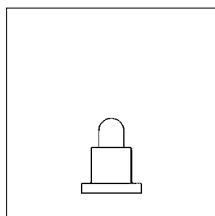
- Contact lock (safety pull button reset)
- Contact LED display (LED protected within terminal chamber)
- WK actuator (form F) can be supplied to order
- WR actuator (form G) can be supplied to order
- EEx certificated versions available acc. ATEX 100 a

Accessory equipment page 53

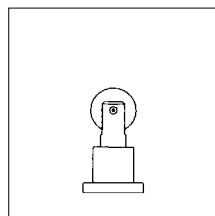
Standard actuators DIN EN 50041



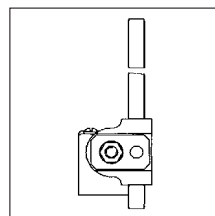
Type A



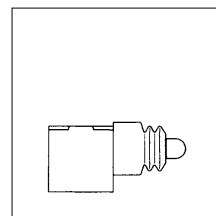
Type B



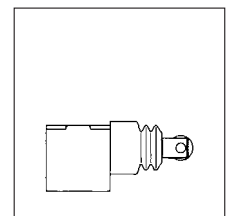
Type C



Type D



Type F
(Built to order)



Type G
(Built to order)

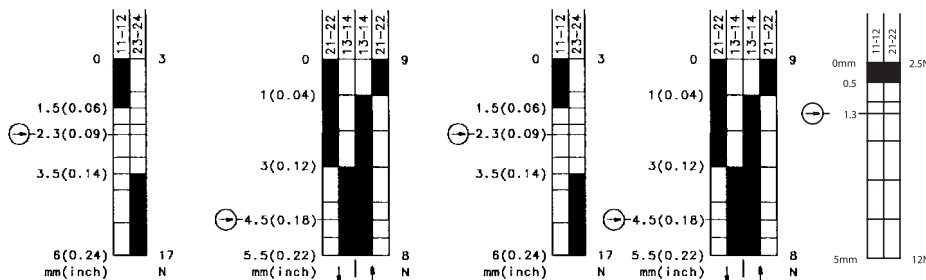
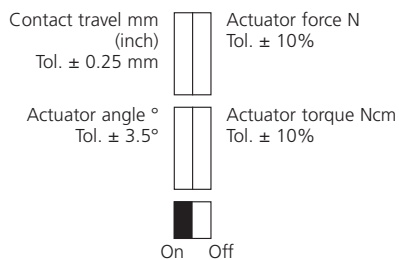
Contact configuration

Contact type	Switch function	Switch contacts	Reference	Max. Voltage	Max. constant current
Slow make & break	Changeover	1NC/1NO	U1/U1Z	500 V	10 A
Snap action	Changeover	1NC/1NO	SU1/SU1Z	500 V	10 A
Slow make & break	NC	2NC	A2Z	400 V	6 A
Slow make & break	NC	3NC	A3Z	400 V	6 A
Slow make & break	Changeover overlapping	1NC/1NO	UV1Z	500 V	10 A



Designation
Part number
 Circuit diagram
 ⊕ Forced disconnect to IEC 947-5-1 chapter 3
 Za: not galvanically separated contacts
 Zb: galvanically separated contacts
 Slow make & break/snap-action
 Internal seal (iw)/external seal (w)

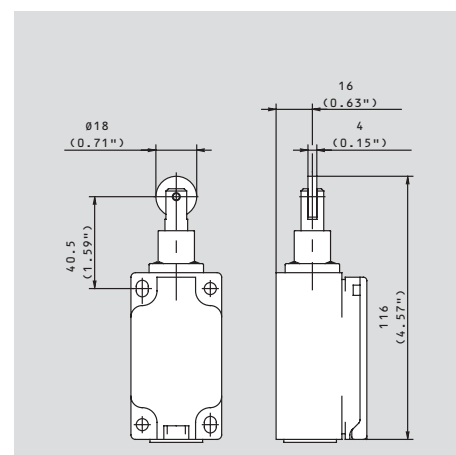
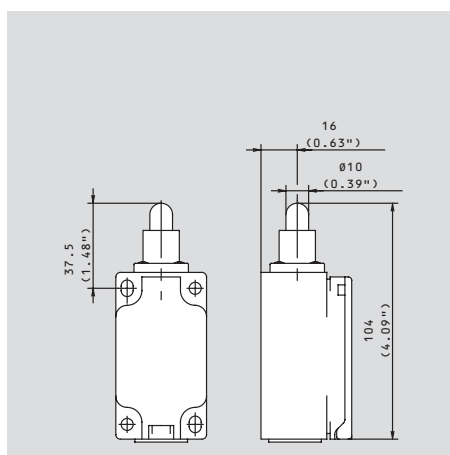
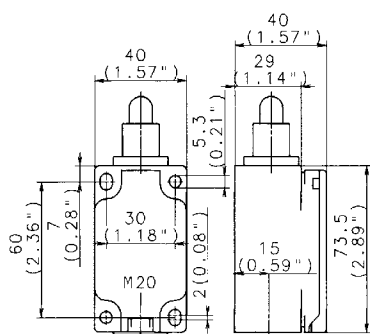
ENK-U1Z iw	ENK-SU1Z iw	ENK-U1Z Riw	ENK-SU1Z Riw	ENK-A2Z Riw
608.1102.001	608.1152.007	608.1117.002	608.1167.008	608.1817.281
⊕ Zb	⊕ Zb	⊕ Zb	⊕ Zb	⊕ Zb
●/-	-/●	●/-	-/●	-/●
iw	iw	iw	iw	iw



Voltage	max.
Permanent current	max.
In-rush current complies with standards	
IEC 947-5-1 AC 15/DC 13	
Switching frequency	max.
Mechanical life – number of switching actions	
Operating temperature	min./max.
Standard actuator	form
Approvals	
Weight	
Delivery: ex-stock/built to order	

500 V AC	500 V AC	500 V AC	500 V AC	400 V AC
10 A	10 A	10 A	10 A	5 A
●	●	●	●	●
100/min.	100/min.	100/min.	100/min.	100/min.
10 x 10 ⁶	10 x 10 ⁶	10 x 10 ⁶	10 x 10 ⁶	1 x 10 ⁶
-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C
-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F
B	B	C	C	C
UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA
0.15 kg/0.33 lb	0.15 kg/0.33 lb	0.16 kg/0.33 lb	0.16 kg/0.33 lb	0.16 kg/0.33 lb
●/-	●/-	●/-	●/-	●/-

All dimensions in mm (inch)





Designation
Part number
 Circuit diagram
 ⊕ Forced disconnect to IEC 947-5-1 chapter 3
 Za: not galvanically separated contacts
 Zb: galvanically separated contacts
 Slow make & break/snap-action
 Internal seal (iw)/external seal (w)

ENK-U1Z AHS-V	ENK-SU1Z AHS-V	ENK-A2Z AHS-V	ENK-U1 AV	ENK-SU1 AV	ENK-A2 AV
608.1135.003	608.1185.009	608.1835.323	608.1136.012	608.1186.018	608.1836.319
⊕ Zb	⊕ Zb	⊕ Zb	Zb	Zb	Zb
●/-	-/●	-/●	●/-	-/●	●/-
iw	iw	iw	iw	iw	iw

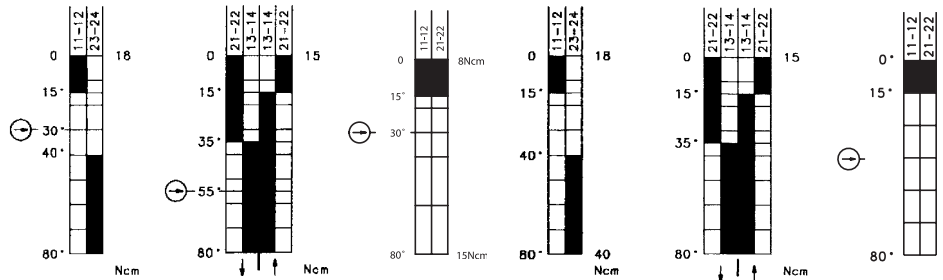
Contact travel mm (inch)
 Tol. ± 0.25 mm

Actuator force N
 Tol. ± 10%

Actuator angle °
 Tol. ± 3.5°

Actuator torque Ncm
 Tol. ± 10%

On Off



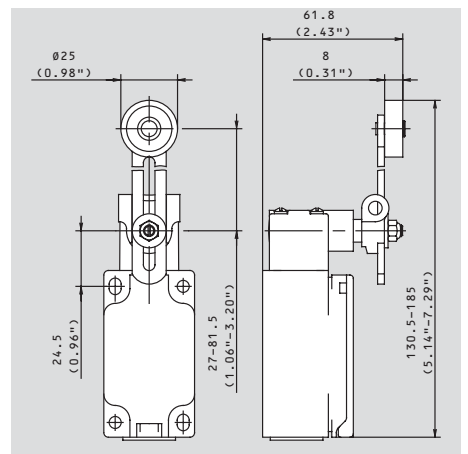
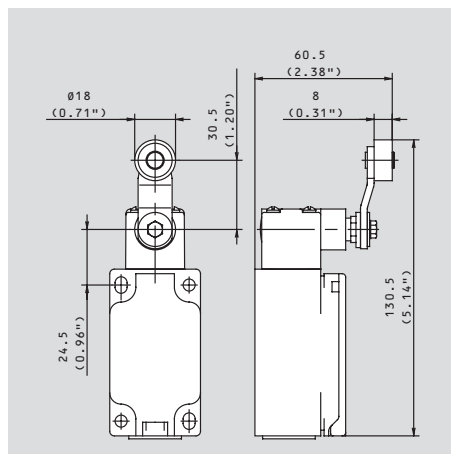
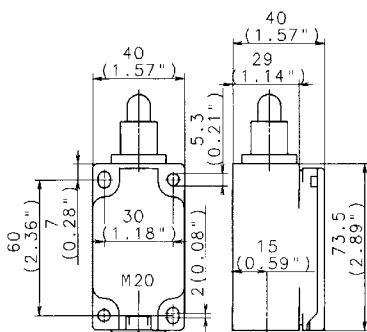
Voltage max.
 Permanent current max.
 In-rush current complies with standards
 IEC 947-5-1 AC 15/DC 13
 Switching frequency max.
 Mechanical life – number of switching actions
 Operating temperature min./max.

500 V AC	500 V AC	400 V AC	500 V AC	500 V AC	400 V AC
10 A	10 A	5 A	10 A	10 A	5 A
●	●	●	●	●	●
100/min.	100/min.	100/min.	100/min.	100/min.	100/min.
10 x 10 ⁶	10 x 10 ⁶	1 x 10 ⁶	10 x 10 ⁶	10 x 10 ⁶	10 x 10 ⁶
-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C
-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F

Standard actuator form
 Approvals
 Weight
 Delivery: ex-stock/built to order

A	A	A	-	-	-
UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA
0.23 kg/0.51 lb	0.23 kg/0.51 lb	0.23 kg/0.51 lb	0.24 kg/0.53 lb	0.24 kg/0.53 lb	0.24 kg/0.53 lb
●/-	●/-	●/-	●/-	●/-	●/-

All dimensions in mm (inch)





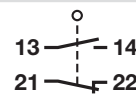
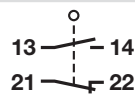
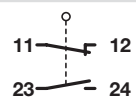
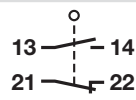
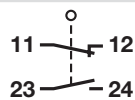
ENK-U1Z AD
608.1137.011

ENK-SU1Z AD
608.1187.017

ENK-U1Z Hw
608.1121.095

ENK-SU1Z Hw
608.1171.096

ENK-SU1 FF
608.1190.045



⊖ Zb

⊖ Zb

⊖ Zb

⊖ Zb

Zb

●/-

-/●

-/●

-/●

-/●

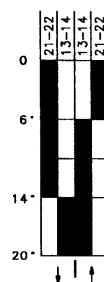
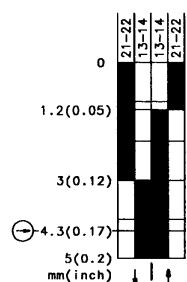
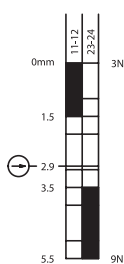
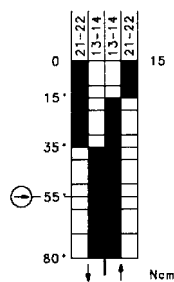
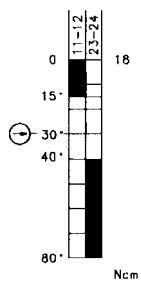
iw

iw

iw

w

w



500 V AC
10 A

500 V AC
10 A

500 V AC
10 A

500 V AC
10 A

500 V AC
10 A

●

●

●

●

●

100/min.

100/min.

100/min.

100/min.

100/min.

10 x 10⁶

10 x 10⁶

10 x 10⁶

10 x 10⁶

10 x 10⁶

-30 °C/+80 °C

-30 °C/+80 °C

-30 °C/+80 °C

-30 °C/+80 °C

-30 °C/+80 °C

-22 °F/+176 °F

-22 °F/+176 °F

-22 °F/+176 °F

-22 °F/+176 °F

-22 °F/+176 °F

D
UL, CSA

D
UL, CSA

D
UL, CSA

-
UL, CSA

-
UL, CSA

0.23 kg/0.51 lb

0.23 kg/0.51 lb

0.16 kg/0.35 lb

0.16 kg/0.35 lb

0.15 kg/0.35 lb

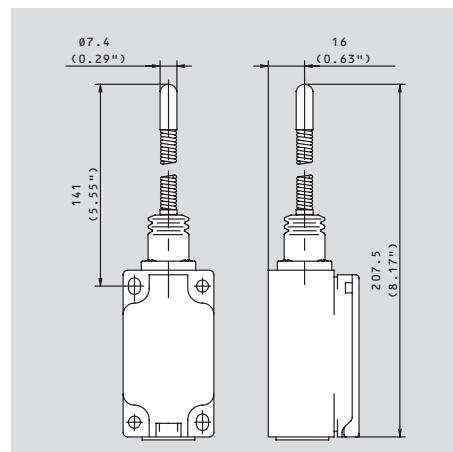
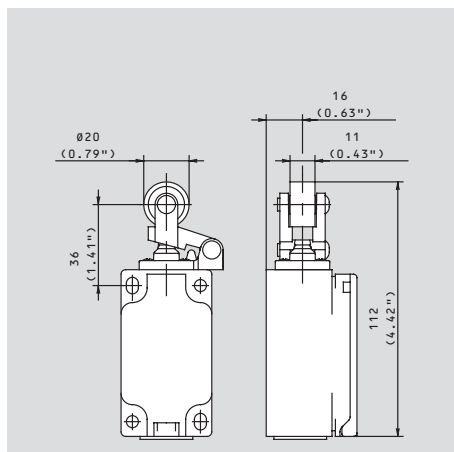
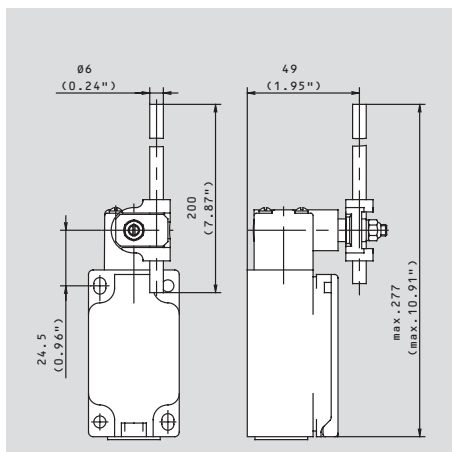
●/-

●/-

●/-

●/-

●/-



Plastic-bodied limit switches

I88

Euronorm standard switch to
DIN EN 50047
Protection class IP 65
Hinged snap lid



- Standard actuators to DIN EN 50047 type A, B, C, E
- Large range of actuators
- Snap action or slow make & break contacts
- Galvanically separated contacts
- Forced disconnection of NC contacts
- Protection class IP 65
- Body and lid PA 6 which is self extinguishing
- 4 x 90° actuator positions
- Cable entry M 20 x 1.5
- Terminals numbered in accordance with DIN EN 50013
- International approvals

Mounting

- Adjustable – Two slots for M 4 screws (22 mm centres)
- Fixed – Two holes for M 5 screws for safety applications without additional fixings (fig. 1)
- Additional positive location with guide discs (fig. 2)
- Front mounting (type dependant) (fig. 3)

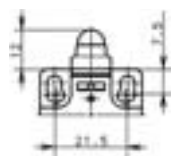


Fig. 1

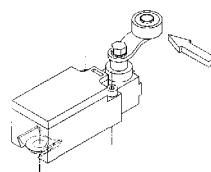


Fig. 2

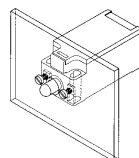


Fig. 3



Benefits

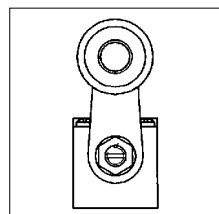
- Hinged snap lid for quick and easy access (screwdriver release)
- Lid hinges open to 135° (can also be easily detached)
- Internal cover protects the contacts during mounting
- Screw terminals with self-lifting clamps for easy wiring
- Transparent cover for easy adjustment and inspection

Options

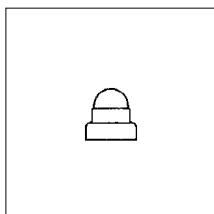
- Contact lock (safety pull button reset)
- Contact LED display (LED protected within terminal chamber)
- Cable entry M 16 x 1.5
- Additional lid security with fixing screw

Accessory equipment page 53

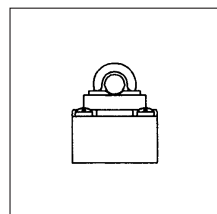
Standard actuators DIN EN 50047



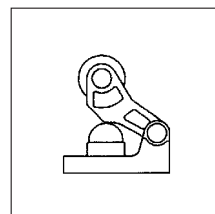
Type A



Type B



Type C



Type E

Contact configuration

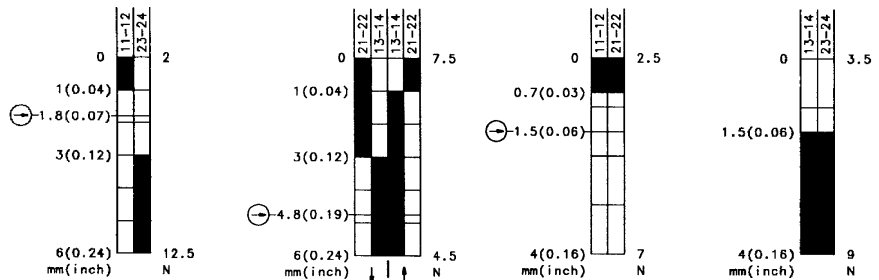
Contact type	Switch function	Switch contacts	Reference	Max. Voltage	Max constant current
Slow make & break	Changeover	1NC/1NO	U1/U1Z	500 V	10 A
Snap action	Changeover	1NC/1NO	SU1/SU1Z	500 V	10 A
Slow make & break	NC	2NC	A2Z	400 V	6 A
Slow make & break	NO	2NO	E2	400 V	6 A
Slow make & break	Changeover	1NC/1NO	UV1Z	500 V	10 A
Slow make & break	Changeover	2NC/1NO	UV15Z	400 V	6 A
Slow make & break	Changeover	1NC/2NO	UV16Z	400 V	6 A



Designation
Part number
 Circuit diagram
 ⊕ Forced disconnect to IEC 947-5-1 chapter 3
 Za: not galvanically separated contacts
 Zb: galvanically separated contacts
 Slow make & break/snap-action
 Internal seal (iw)/external seal (w)

l88-U1Z w	l88-SU1Z w	l88-A2Z w	l88-E2 w
608.6103.008	608.6153.012	608.6803.013	608.6803.014
⊕ Zb	⊕ Zb	⊕ Zb	-
●/-	-/●	●/-	●/-
w	w	w	w

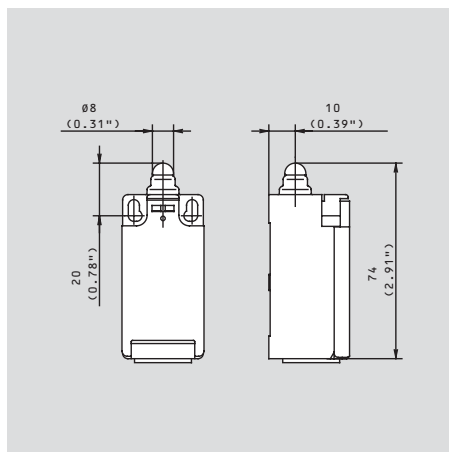
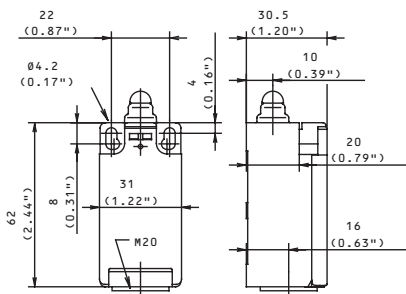
Contact travel mm (inch) Tol. ± 0.25 mm
 Actuator force N Tol. ± 10%
 Actuator angle ° Tol. ± 3.5°
 Actuator torque Ncm Tol. ± 10%
 On Off ¹⁾ Latch Point



Voltage	max.
Permanent current	max.
In-rush current complies with standards	
IEC 947-5-1 AC 15/DC 13	
Switching frequency	max.
Mechanical life – number of switching actions	
Operating temperature	min./max.
Standard actuator	form
Approvals	
Weight	
Delivery: ex-stock/built to order	

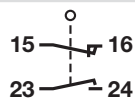
500 V AC	500 V AC	400 V AC	400 V AC
10 A	10 A	5 A	5 A
●	●	●	●
100/min.	100/min.	100/min.	100/min.
10 x 10 ⁶	10 x 10 ⁶	1 x 10 ⁶	1 x 10 ⁶
-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C
-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F
B	B	B	B
UL, CSA	UL, CSA	UL, CSA	UL, CSA
0.06 kg/0.13 lb	0.06 kg/0.13 lb	0.06 kg/0.13 lb	0.06 kg/0.13 lb
●/-	●/-	●/-	●/-

All dimensions in mm (inch)





I88-UV1Z w
608.6303.011

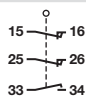


⊖ Zb

●/-

W

I88-UV15Z w
608.6603.046

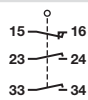


⊖ Zb

●/-

W

I88-UV16Z w
608.6603.047

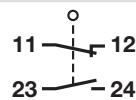


⊖ Zb

●/-

W

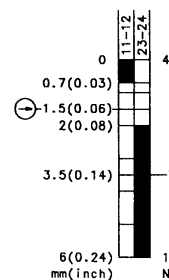
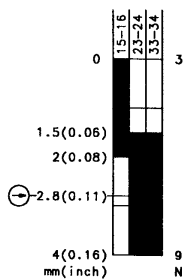
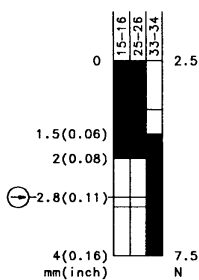
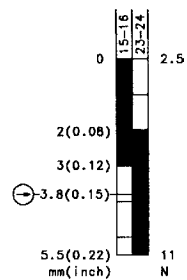
I88-U1Z w Rast
618.6103.005



⊖ Zb

●/-

W



500 V AC

10 A

●

400 V AC

6 A

●

400 V AC

6 A

●

500 V AC

10 A

●

100/min.

10 x 10⁶

-30 °C/+80 °C

-22 °F/+176 °F

100/min.

1 x 10⁶

-30 °C/+80 °C

-22 °F/+176 °F

100/min.

1 x 10⁶

-30 °C/+80 °C

-22 °F/+176 °F

60/min.

1 x 10⁶

-30 °C/+80 °C

-22 °F/+176 °F

B

UL, CSA

B

UL, CSA

B

UL, CSA

B

UL, CSA

0.06 kg/0.13 lb

●/-

0.06 kg/0.13 lb

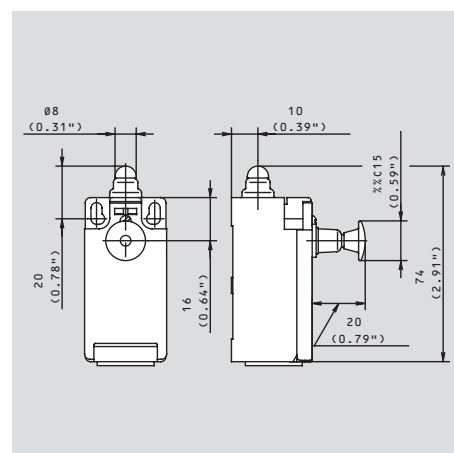
●/-

0.06 kg/0.13 lb

●/-

0.06 kg/0.13 lb

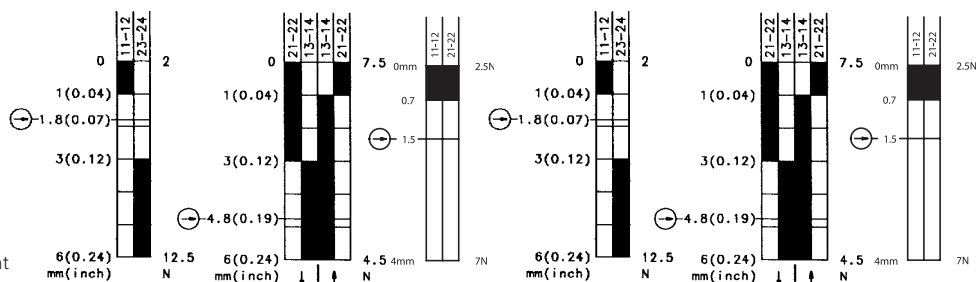
●/-





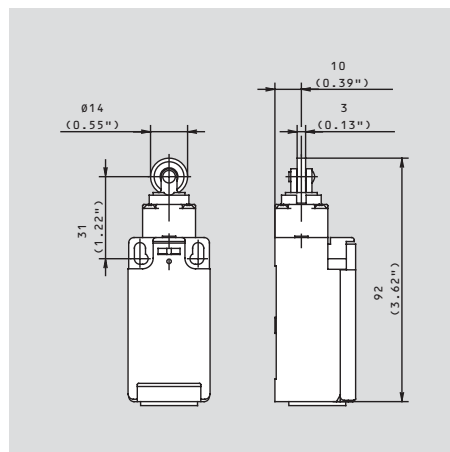
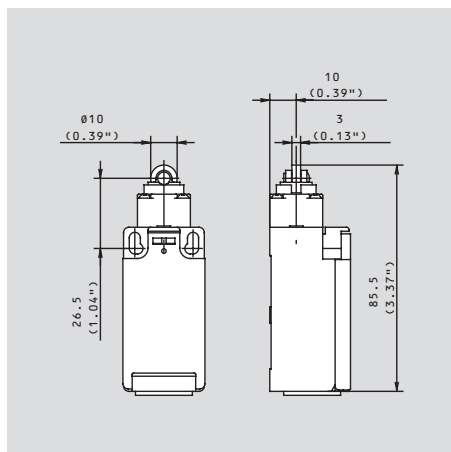
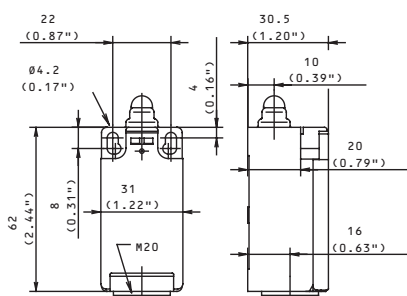
Designation	I88-U1Z Riw K	I88-SU1Z Riw K	I88-A2Z Riw K	I88-U1Z Riw L	I88-SU1Z Riw L	I88-A2Z Riw L
Part number	608.6117.017	608.6167.018	608.6817.087	608.6117.050	608.6167.051	608.6817.072
Circuit diagram						
⊕ Forced disconnect to IEC 947-5-1 chapter 3						
Za: not galvanically separated contacts						
Zb: galvanically separated contacts						
Slow make & break/snap-action						
Internal seal (iw)/external seal (w)						

Contact travel mm (inch)		Actuator force N	
Tol. ± 0.25 mm		Tol. ± 10%	
Actuator angle °		Actuator torque Ncm	
Tol. ± 3.5°		Tol. ± 10%	
On		Off	
		1) Latch Point	



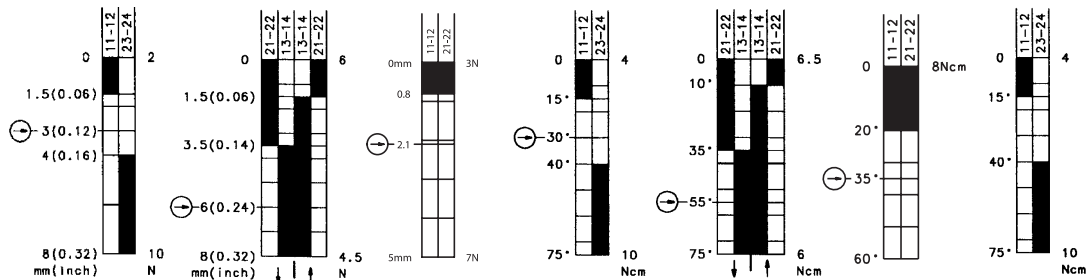
Voltage	max.	500 V AC	500 V AC	400 V AC	500 V AC	500 V AC	400 V AC
Permanent current	max.	10 A	10 A	5 A	10 A	10 A	5 A
In-rush current complies with standards		●	●	●	●	●	●
IEC 947-5-1 AC 15/DC 13							
Switching frequency	max.	100/min.	100/min.	100/min.	100/min.	100/min.	100/min.
Mechanical life – number of switching actions		10 x 10 ⁶	10 x 10 ⁶	1 x 10 ⁶	10 x 10 ⁶	10 x 10 ⁶	1 x 10 ⁶
Operating temperature	min./max.	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C
		-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F
Standard actuator	form	C	C	C	-	-	-
Approvals		UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA
Weight		0.07 kg/0.15 lb	0.07 kg/0.15 lb	0.07 kg/0.15 lb	0.07 kg/0.15 lb	0.07 kg/0.15 lb	0.07 kg/0.15 lb
Delivery: ex-stock/built to order		●/-	●/-	●/-	●/-	●/-	●/-

All dimensions in mm (inch)

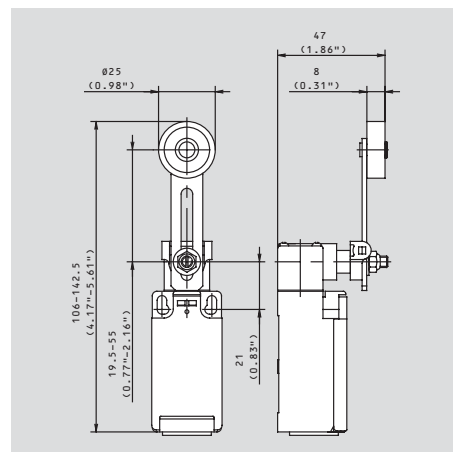
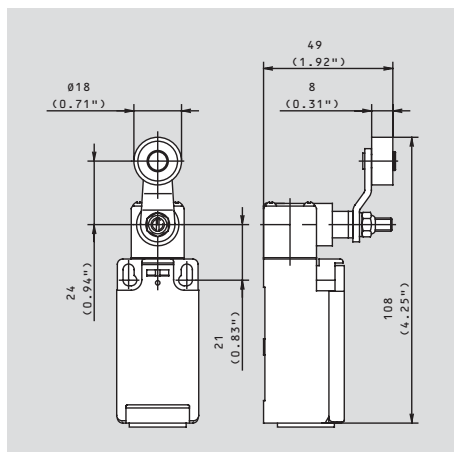
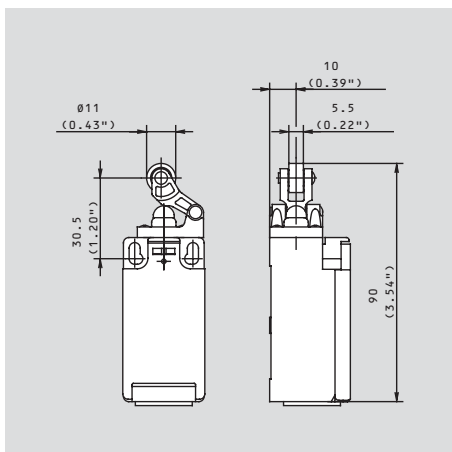




I88-U1Z Hw 608.6121.021	I88-SU1Z Hw 608.6171.022	I88-A2Z Hw 608.6821.099	I88-U1Z AH 608.6135.033	I88-SU1Z AH 608.6185.034	I88-A2Z AH 608.6835.059	I88-U1 AV 608.6136.037
⊖ Zb	⊖ Zb	⊖ Zb	⊖ Zb	⊖ Zb	⊖ Zb	Zb
●/-	-/●	-/●	●/-	-/●	●/-	●/-
w	w	w	iw	iw	iw	iw

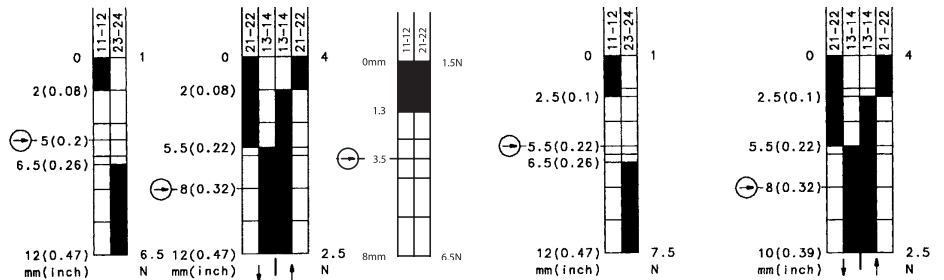
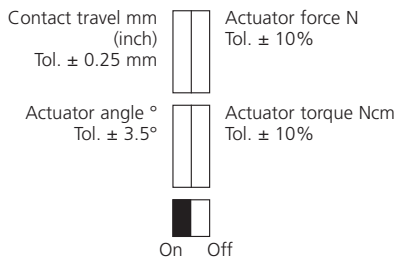


500 V AC	500 V AC	400 V AC	500 V AC	500 V AC	400 V AC	500 V AC
10 A	10 A	5 A	10 A	10 A	5 A	10 A
●	●	●	●	●	●	●
100/min.	100/min.	100/min.	100/min.	100/min.	100/min.	100/min.
10 x 10 ⁶	10 x 10 ⁶	1 x 10 ⁶	10 x 10 ⁶	10 x 10 ⁶	10 x 10 ⁶	10 x 10 ⁶
-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C
-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F
E	E	E	A	A	A	-
UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA
0.07 kg/0.15 lb	0.07 kg/0.15 lb	0.07 kg/0.15 lb	0.10 kg/0.22 lb	0.10 kg/0.22 lb	0.10 kg/0.22 lb	0.11 kg/0.24 lb
●/-	●/-	●/-	●/-	●/-	-/●	●/-



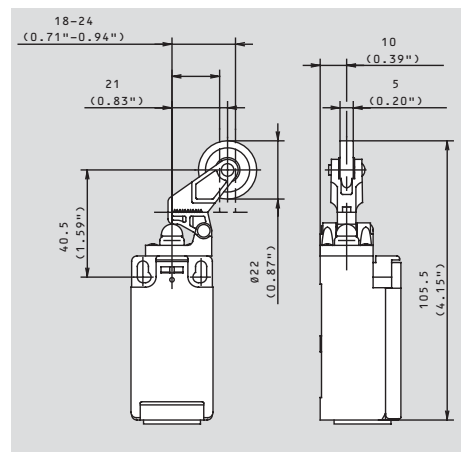
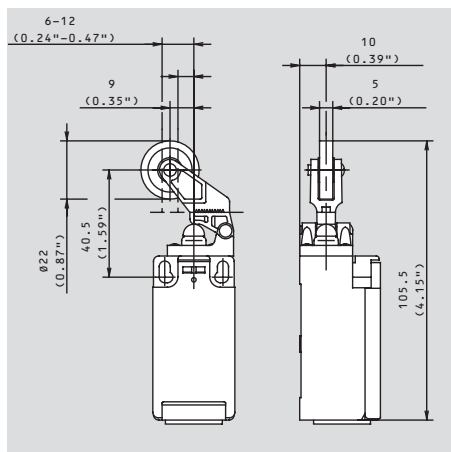
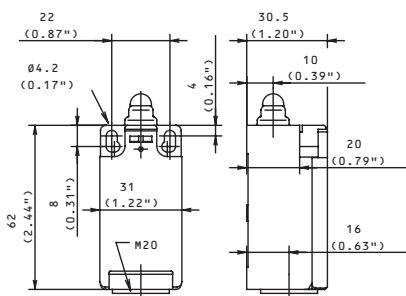


Designation	I88-U1Z DGH w	I88-SU1Z DGH w	I88-A2Z DGH w	I88-U1Z DGK w	I88-SU1Z DGK w
Part number	608.6121.029	608.6171.030	608.6821.120	608.6127.025	608.6177.026
Circuit diagram					
⊕ Forced disconnect to IEC 947-5-1 chapter 3					
Za: not galvanically separated contacts					
Zb: galvanically separated contacts					
Slow make & break/snap-action					
Internal seal (iw)/external seal (w)	●/-	-/●	●/-	●/-	-/●



Voltage	max.	500 V AC	500 V AC	400 V AC	500 V AC	500 V AC
Permanent current	max.	10 A	10 A	5 A	10 A	10 A
In-rush current complies with standards						
IEC 947-5-1 AC 15/DC 13						
Switching frequency	max.	100/min.	100/min.	100/min.	100/min.	100/min.
Mechanical life – number of switching actions		10 x 10 ⁶	10 x 10 ⁶	1 x 10 ⁶	10 x 10 ⁶	10 x 10 ⁶
Operating temperature	min./max.	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C
		-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F
Standard actuator	form	-	-	-	-	-
Approvals		UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA
Weight		0.07 kg/0.15 lb	0.07 kg/0.15 lb	0.07 kg/0.15 lb	0.07 kg/0.15 lb	0.07 kg/0.15 lb
Delivery: ex-stock/built to order		●/-	●/-	●/-	●/-	-/●

All dimensions in mm (inch)



Plastic-bodied compact limit switches

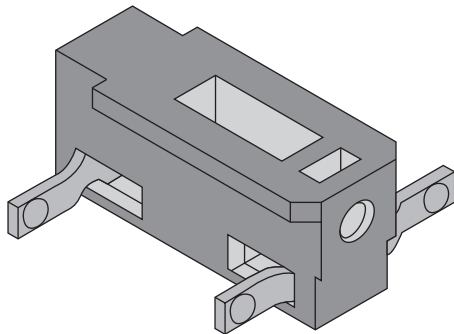
Tiny Ti2

Compact design
Protection class IP 65
Mounting measurements according to
DIN EN 50047
Hinged snap lid

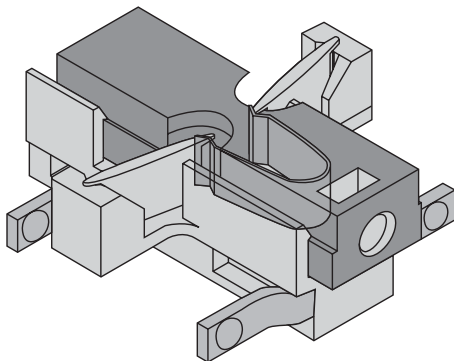


The switching system for C2 and Ti2

- Small hysteresis on the snap-action system
- Large variety of contact functions
- Optimized size utilising proven terminal technology
- Snap-action type prevents undefined status even with very slow actuation
- Compact switches for safety or control applications in protection class IP 65
- 3 different contact configurations available as slow-action or snap-action devices
- Positive break \ominus
- Two channel safety monitoring possible
- Galvanically isolated terminals, type Zb
- Approvals UL, CSA, BG
- Cable entries M 16 x 1.5
- 4 screw terminals M3.5 with self-lifting clamps
- PBT enclosure, fiberglass reinforced, self-extinguishing UL 94-V0
- Lid, PA 6.6 UL 94-V0
- 2 mm contact opening of slow-action system according to EN 81-1 for lift construction
- Actuator mounting in 4 x 90°



Slow-action device

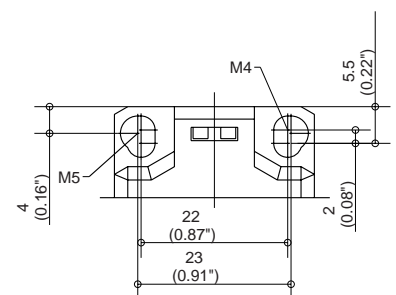


Snap-action device



Mounting

- adjustable mounting with two M4 screws (22 mm centres)
- fixed positioning with two M5 screws (23 mm centres) for safety applications



Contact configuration

Switching element	Switch function	Switch contact	Designation	Voltage	Continuous current
Slow-action	changeover	1NC/1NO	U1Z	250 V	10 A
Snap-action	changeover	1NC/1NO	SU1Z	250 V	10 A
Slow-action	normally-closed	2NC	A2Z	250 V	10 A
Snap-action	normally-closed	2NC	SA2Z	250 V	10 A
Slow-action	normally-open	2NO	E2	250 V	10 A
Snap-action	normally-open	2NO	SE2	250 V	10 A

Plastic-bodied compact limit switches

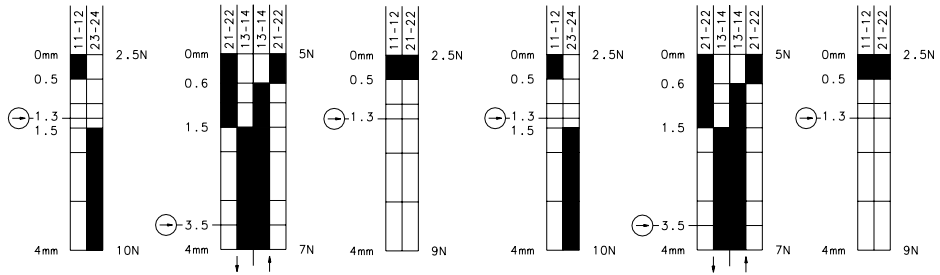
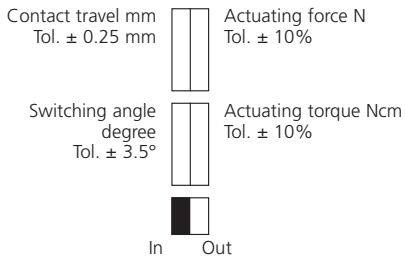
Tiny Ti2

Compact design
 Protection class IP 65
 Mounting measurements according to DIN EN 50047
 Hinged snap lid



Designation
Part number
Switching diagram
⊕ positive break according to IEC 947-5-1 Chap. 3
Za: changeover contact is not galvanically isolated
Zb: changeover contact is galvanically isolated
Slow-action contact/snap-action contact
Gasket inside (iw)/outside (w)

Ti2-U1Z w	Ti2-SU1Z w	Ti2-A2Z w	Ti2-U1Z Ri w	Ti2-SU1Z Ri w	Ti2-A2Z Ri w
608.8103.001	608.8153.002	608.8803.003	608.8117.007	608.8167.008	608.8817.009
⊕ Zb	⊕ Zb	⊕ Zb	⊕ Zb	⊕ Zb	⊕ Zb
●/-	-/●	●/-	●/-	-/●	●/-
w	w	w	iw	iw	iw



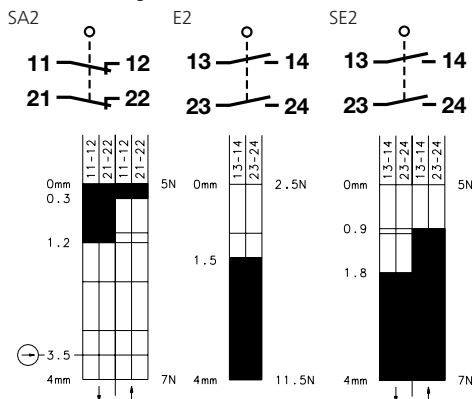
Voltage	max.
Continuous current	max.
Making current, acc. to IEC 947-5-1 AC 15/DC 13	
Switching frequency	max.
Mech. operational life – number of switching cycles	
Ambient temperature	min./max.

250 V AC	250 V AC	250 V AC	250 V AC	250 V AC	250 V AC
10 A	10 A	10 A	10 A	10 A	10 A
●	●	●	●	●	●
100/min.	100/min.	100/min.	100/min.	100/min.	100/min.
3 x 10 ⁵	3 x 10 ⁵	3 x 10 ⁵	3 x 10 ⁵	3 x 10 ⁵	3 x 10 ⁵
-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C
-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F

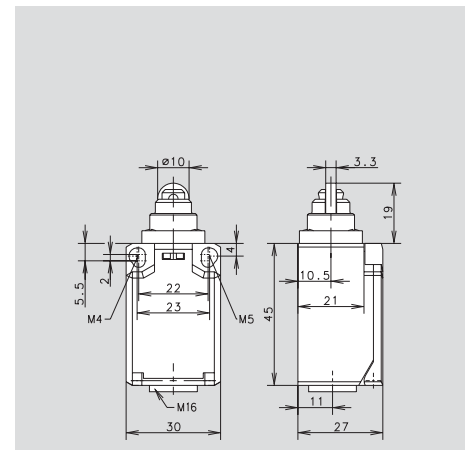
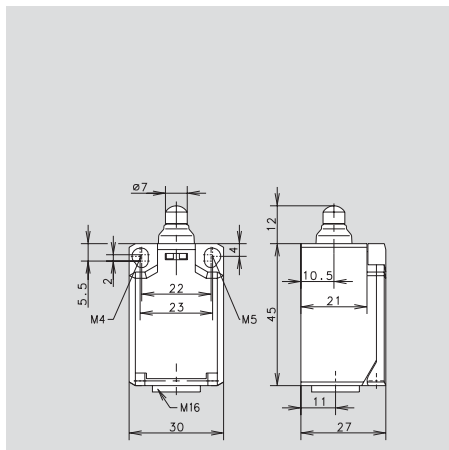
Approvals	
Weight	
Delivery: ex-stock/built to order	

UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA
BG	BG	BG	BG	BG	BG
0.04 kg	0.04 kg	0.04 kg	0.05 kg	0.05 kg	0.05 kg
●/-	●/-	●/-	●/-	●/-	●/-

Further switching functions

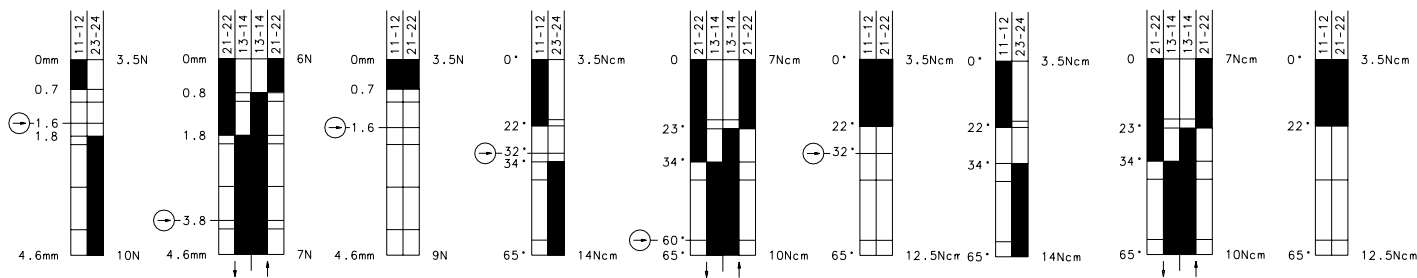


Dimensions
 All dimensions in mm





Ti2-U1Z Hw	Ti2-SU1Z Hw	Ti2-A2Z Hw	Ti2-U1Z AH	Ti2-SU1Z AH	Ti2-A2Z AH	Ti2-U1 AD	Ti2-SU1 AD	Ti2-A2 AD
608.8121.015	608.8171.016	608.8821.017	608.8135.021	608.8185.022	608.8835.023	608.8137.027	608.8187.028	608.8837.029
⊕ Zb	⊕ Zb	⊕ Zb	⊕ Zb	⊕ Zb	⊕ Zb	Zb	Zb	Zb
●/-	-/●	●/-	●/-	-/●	●/-	●/-	-/●	●/-
w	w	w	iw	iw	iw	iw	iw	iw



250 V AC	250 V AC	250 V AC	250 V AC	250 V AC	250 V AC	250 V AC	250 V AC	250 V AC
10 A	10 A	10 A	10 A	10 A	10 A	10 A	10 A	10 A
●	●	●	●	●	●	●	●	●
100/min.	100/min.	100/min.	100/min.	100/min.	100/min.	100/min.	100/min.	100/min.
3 x 10 ⁶	3 x 10 ⁶	3 x 10 ⁶	3 x 10 ⁶	3 x 10 ⁶	3 x 10 ⁶	3 x 10 ⁶	3 x 10 ⁶	3 x 10 ⁶
-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C
-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F

UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA
BG	BG	BG	BG	BG	BG	BG	BG	BG
0.05 kg	0.05 kg	0.05 kg	0.07 kg	0.07 kg	0.07 kg	0.07 kg	0.07 kg	0.07 kg
●/-	●/-	●/-	●/-	●/-	●/-	●/-	●/-	●/-

