

Metal-bodied limit switches

ENM 2

Standard switch according to DIN EN 50041
Protection class IP 65



- Increased number of switching functions for safety applications
- Galvanically separated contacts
- Forced disconnection of NC contacts (type dependant)
- Person-protection function ⊕ (depending on model)
- Protection class IP 65
- Aluminum body and lid
- Operating device: 4 x 90° actuator positions
- Cable entry M 20 x 1.5
- International approvals

Mounting

- 2 x M 5 screws, adjustment via elongated holes
- 2 x M 5 screws for safety applications without additional attachment

Mounting advantages

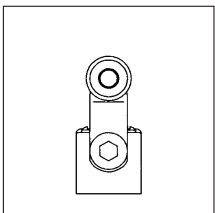
- Increased wiring space
- Earthing surface on same level as switching system
- Turret
Lever: 7.5° / 15° adjustable
- Contact made independent of direction
- Screw terminals with self lifting clamps for easy wiring
- Fine adjustment of switching point via adjusting screw
- Captive lid screws

Options

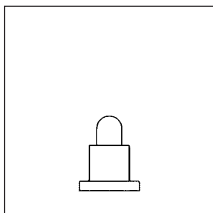
- Latching with contact locking (strain lock-release for safety reasons)
- LED indication of switching status
- EEx certificated versions available acc. ATEX 100 a guideline 94/9/EG
⊕ II 2 G EEx d II C T6
TÜV 03 ATEX 2043 X



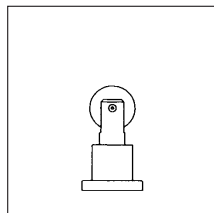
Standard actuating element DIN EN 50041



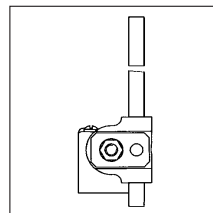
Form A



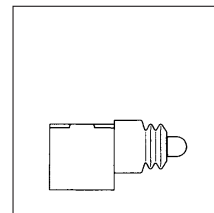
Form B



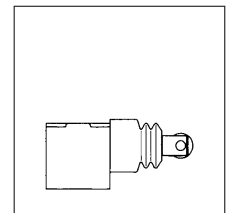
Form C



Form D



Form F
(available upon
request)



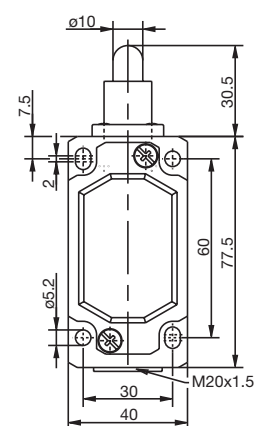
Form G
(available upon
request)

Standard contact configuration

Switching element	Switch function	Switch contact	Designation	Voltage	Continuous current
Slow-action	changeover	1NC/1NO	U1/U1Z	400 V	10 A
Snap-action	changeover	1NC/1NO	SU1/SU1Z	400 V	10 A
Slow-action	normally-closed	2NC	A2/A2Z	400 V	10 A
Snap-action	normally-closed	2NC	SA2/SA2Z	250 V	10 A
Slow-action (overlapping)	changeover	1NC/1NO	UV1/UV1Z	400 V	10 A
Slow-action (overlapping)	changeover	2NC/1NO	UV15/UV15Z	400 V	5 A

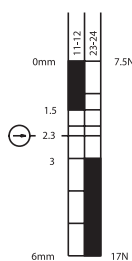
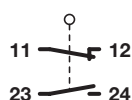
Optional contact configuration

Switching element	Switch function	Switch contact	Designation	Voltage	Continuous current
Slow-action	normally-open	2NO	E2	250 V	10 A
Snap-action	normally-open	2NO	SE2	250 V	10 A
Slow-action	changeover	2NC/1NO	U15/U15Z	400 V	5 A
Slow-action	changeover	1NC/2NO	U16/U16Z	400 V	5 A
Slow-action (overlapping)	changeover	1NC/2NO	UV16/UV16Z	400 V	5 A

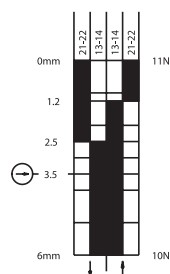
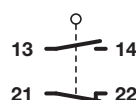


Contact travel diagrams and graphic symbols

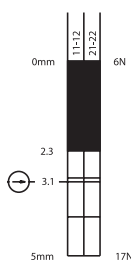
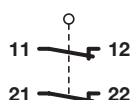
U1Z



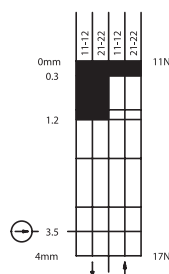
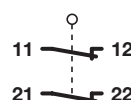
SU1Z



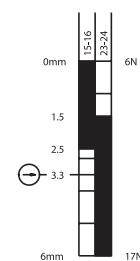
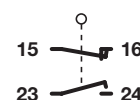
A2Z



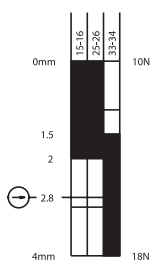
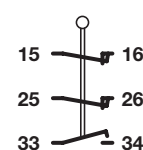
SA2Z



UV1Z

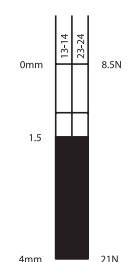
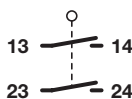


UV15Z

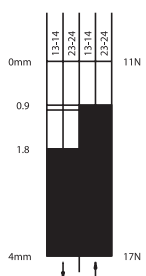
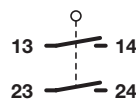


On request

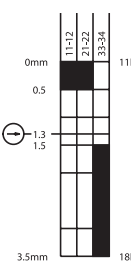
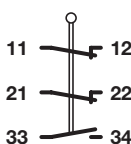
E2



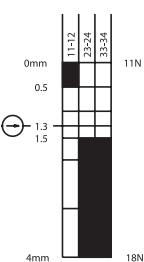
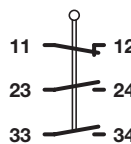
SE2



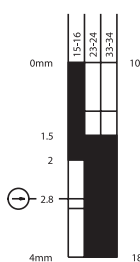
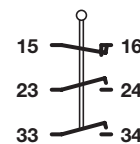
U15Z



U16Z



UV16Z

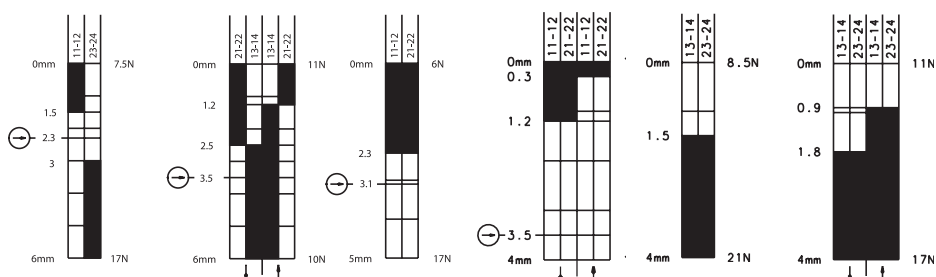




Designation
Part number
Switching diagram
⊕ Positive break according to IEC 947-5-1 Chap. 3
Za: changeover contact is not galvanically isolated
Zb: changeover contact is galvanically isolated
Slow-action contact / snap-action contact
Gasket inside (iw)/outside (w)

ENM2-U1Z iw	ENM2-SU1Z iw	ENM2-A2Z iw	ENM2-SA2Z iw	ENM2-E2 iw	ENM2-SE2 iw
608.7102.001	608.7352.002	608.7802.003	608.7852.020	608.7802.021	608.7852.022
⊕ Zb	⊕ Zb	⊕ Zb	⊕ Zb	⊕ Zb	⊕ Zb
●/-	-/●	●/-	-/●	●/-	-/●
iw	iw	iw	iw	iw	iw

Contact travel mm Tol. ± 0.25 mm	Actuating force N Tol. ± 10%
Switch angle degree Tol. ± 3.5°	Actuating torque Ncm Tol. ± 10%
In	Out



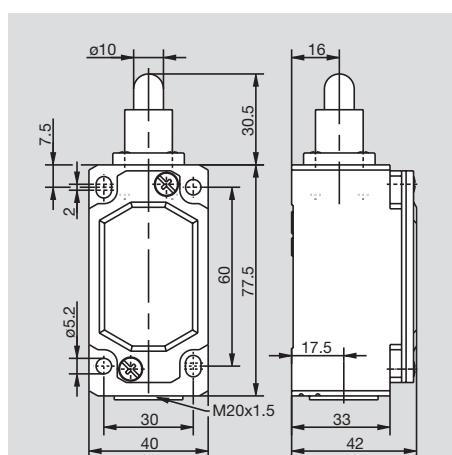
Voltage	max.
Continuous current	max.
Making current, acc. to IEC 947-5-1 AC 15/DC 13	
Switching frequency	max.
Mech. operational life – number of switching cycles	
Ambient temperature	min./max.

400 V AC	400 V AC	400 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.
10 x 10 ⁶	10 x 10 ⁶	10 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
-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 actuating element	Form
Approvals (applied for)	
Weight	
Delivery: ex-stock/built to order	

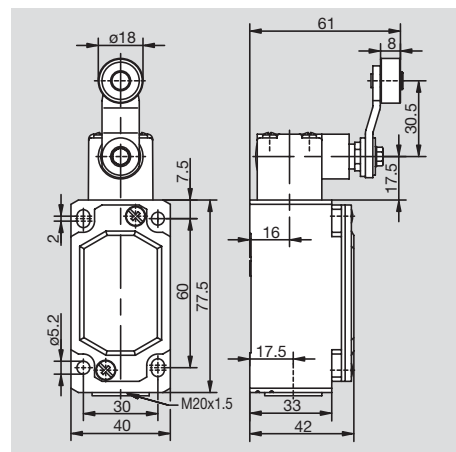
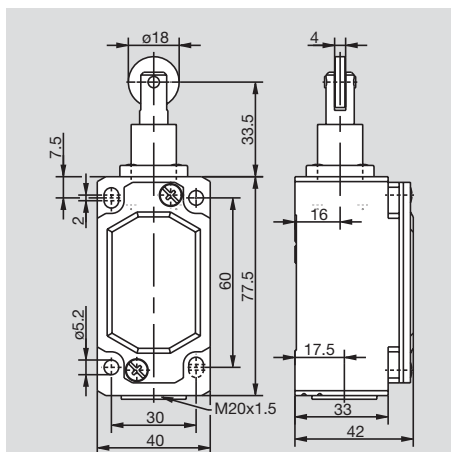
B	B	B	C	C	C
UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA
0.20 kg	0.20 kg	0.20 kg	0.20 kg	0.20 kg	0.20 kg
●/-	●/-	●/-	-/●	●/-	-/●

All dimensions in mm





ENM2-UV1Z iw 608.7302.027	ENM2-UV15Z iw 608.7602.024	ENM2-UV16Z iw 608.7602.026	ENM2-U1Z Riw 608.7117.004	ENM2-SU1Z Riw 608.7367.005	ENM2-A2Z Riw 608.7817.006	ENM2-U1Z AHS-V 608.7135.013	ENM2-SU1Z AHS-V 608.7385.014	ENM2-A2Z AHS-V 608.7835.015
⊕ Zb	⊕ Za	⊕ Za	⊕ Zb	⊕ Zb	⊕ Zb	⊕ Zb	⊕ Zb	⊕ Zb
●/-	●/-	●/-	●/-	-/●	●/-	●/-	-/●	●/-
iw	iw	iw	iw	iw	iw	iw	iw	iw
400 V AC 10 A	400 V AC 5 A	400 V AC 5 A	400 V AC 10 A	400 V AC 10 A	400 V AC 10 A	400 V AC 10 A	400 V AC 10 A	400 V AC 10 A
●	●	●	●	●	●	●	●	●
100/min. 10 x 10 ⁶	100/min. 1 x 10 ⁵	100/min. 1 x 10 ⁵	100/min. 10 x 10 ⁶	100/min. 10 x 10 ⁶	100/min. 10 x 10 ⁶	100/min. 10 x 10 ⁶	100/min. 10 x 10 ⁶	100/min. 10 x 10 ⁶
-30 °C/+80 °C -22 °F/+176 °F	-30 °C/+80 °C -22 °F/+176 °F	-30 °C/+80 °C -22 °F/+176 °F	-30 °C/+80 °C -22 °F/+176 °F	-30 °C/+80 °C -22 °F/+176 °F	-30 °C/+80 °C -22 °F/+176 °F	-30 °C/+80 °C -22 °F/+176 °F	-30 °C/+80 °C -22 °F/+176 °F	-30 °C/+80 °C -22 °F/+176 °F
C UL, CSA	C UL, CSA	C UL, CSA	C UL, CSA	C UL, CSA	C UL, CSA	A UL, CSA	A UL, CSA	A UL, CSA
0.20 kg	0.20 kg	0.20 kg	0.21 kg	0.21 kg	0.21 kg	0.28 kg	0.28 kg	0.28 kg
●/-	●/-	●/-	●/-	●/-	●/-	●/-	●/-	●/-

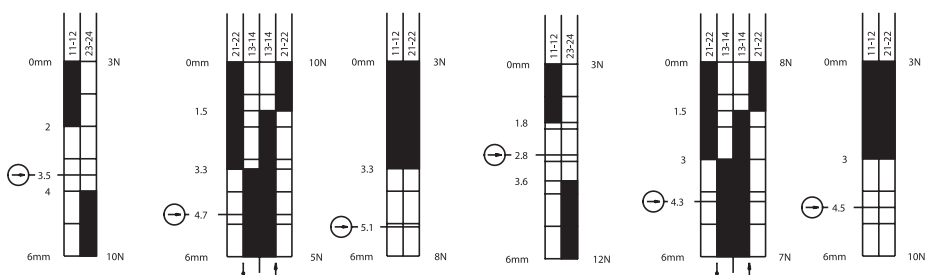




Designation
Part number
Switching diagram
⊕ Positive break according to IEC 947-5-1 Chap. 3
Za: changeover contact is not galvanically isolated
Zb: changeover contact is galvanically isolated
Slow-action contact / snap-action contact
Gasket inside (iw)/outside (w)

ENM2-U1Z DGHW	ENM2-SU1Z DGHW	ENM2-A2Z DGHW	ENM2-U1Z DGKW	ENM2-SU1Z DGKW	ENM-A2Z DGKW
608.7121.007	608.7371.008	608.7821.009	608.7127.010	608.7377.011	608.7827.012
⊕ Zb	⊕ Zb	⊕ Zb	⊕ Zb	⊕ Zb	⊕ Zb
●/-	-/●	●/-	●/-	-/●	●/-
W	W	W	W	W	W

Contact travel mm Tol. ± 0.25 mm	Actuating force N Tol. ± 10%
Switch angle degree Tol. ± 3.5°	Actuating torque Ncm Tol. ± 10%
In	Out



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.

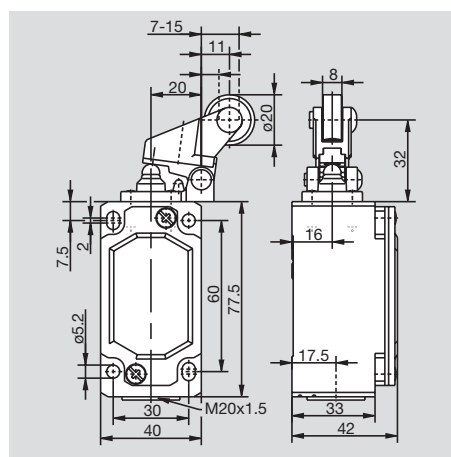
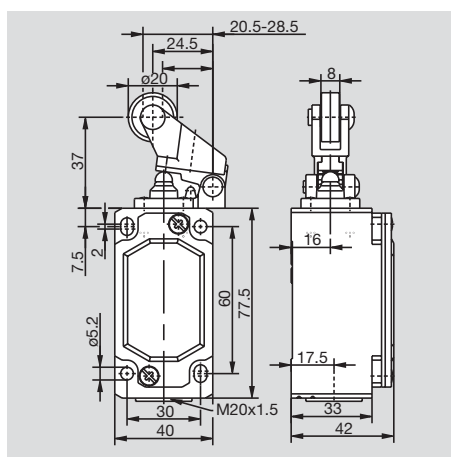
400 V AC	400 V AC	400 V AC	400 V AC	400 V AC	400 V AC
10 A	10 A	10 A	10 A	10 A	10 A
●	●	●	●	●	●
100/min.	100/min.	100/min.	100/min.	100/min.	100/min.
10 x 10 ⁶	10 x 10 ⁶	10 x 10 ⁶	10 x 10 ⁶	10 x 10 ⁶	10 x 10 ⁶
-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C
-22 °F/+176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

Standard actuating element	Form
Approvals (applied for)	
Weight	
Delivery: ex-stock/built to order	

-	-	-	-	-	-
UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA
0.23 kg	0.23 kg	0.23 kg	0.23 kg	0.23 kg	0.23 kg
-/●	-/●	-/●	-/●	-/●	-/●

All dimensions in mm

(*) Adjustable operating devices are not recommended for safety applications.



[illegible]

Metal-bodied limit switches

GC I

Slim design
Protection class IP 65
Very large range of actuators
Multiple pole contacts



- Snap action or slow make & break contacts
- Galvanically separated contacts (type dependant)
- Forced disconnection of NC contacts
- Protection class IP 65
- Aluminum body and lid
- 4 x 90° actuator positions
- Adjustment of the AH lever arm position in 90° increments
- Single direction operation of contacts with AH actuator (user selectable)
- Cable entry M 20 x 1.5
- Terminals numbered in accordance with DIN EN 50013
- International approvals
- Model range GC II for additional switch functions (on request)

Mounting

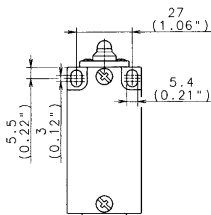
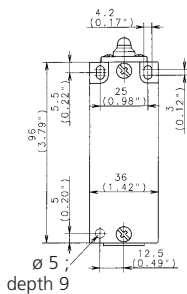
- Adjustable – two slots for M 4 screws

Benefits

- Screw terminals with self-lifting clamps for easy wiring
- Easily exchanged contact block with latch holding device
- Contact switch point adjustable with adjusting screw

Options

- Contact lock (button reset)
- Housing size I
Slots for M 5 fixing screws (27 mm pitch)
- EEx certificated versions available acc. ATEX 100 a guideline 94/9/EG
II 2 G EEx d II C T6
TÜV 03 ATEX 2043 X



(For safety applications use 4 mm ø dowel in pre-formed blind hole on underside of switch body or select body with M 5 round holes)

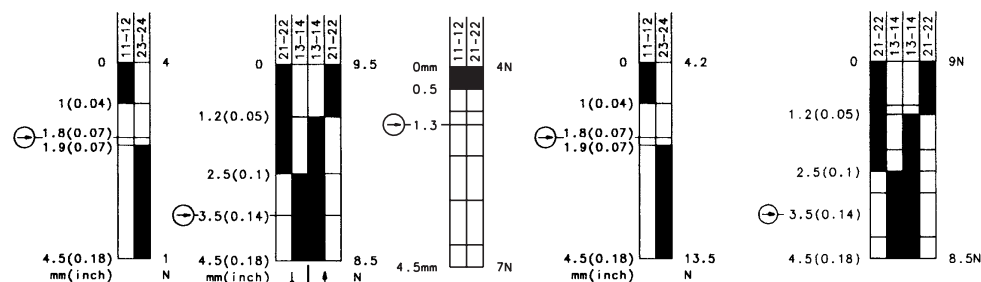
Contact configuration

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 overlapping	1NC/1NO	UV1Z	500 V	10 A
Slow make & break	Changeover	2NC/1NO	U15Z	400 V	6 A
Slow make & break	Changeover	1NC/2NO	U16Z	400 V	6 A
Slow make & break	Changeover overlapping	2NC/1NO	UV15Z	400 V	6 A
Slow make & break	Changeover overlapping	1NC/2NO	UV16Z	400 V	6 A
Slow make & break	Changeover	2NC/2NO	U2Z	400 V	6 A
Snap action	Changeover	2NC/2NO	SU2	250 V	6 A



Designation	GC-U1Z iw	GC-SU1Z iw	GC-A2Z iw	GC-U1Z STiw	GC-SU1Z STiw
Part number	602.1102.001	602.1352.620	602.1802.189	602.1105.015	602.1155.017
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)	iw	iw	iw	iw	iw

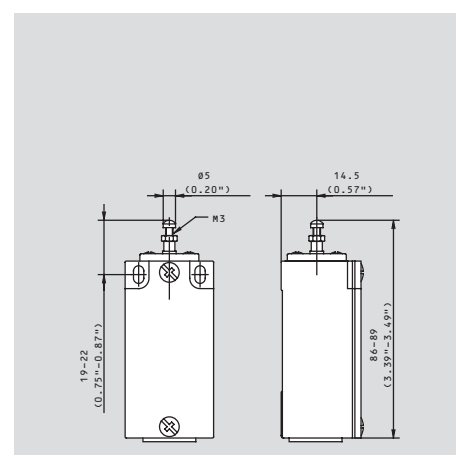
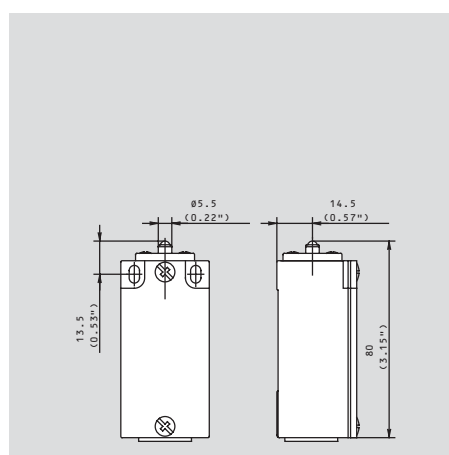
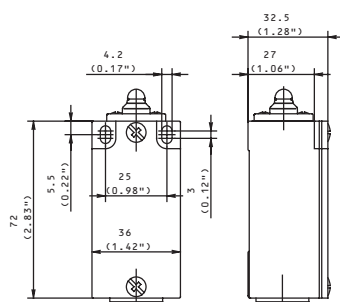
Contact travel mm (inch)	1 (0.04)
Tol. ± 0.25 mm	
Actuator force N	4 (0.9)
Tol. ± 10%	
Actuator angle °	1.2 (0.05)
Tol. ± 3.5°	
Actuator torque Ncm	2.5 (0.1)
Tol. ± 10%	
On	
Off	



Voltage	max.	500 V AC	500 V AC	400 V AC	500 V AC	500 V AC
Permanent current	max.	10 A	10 A	6 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	3 x 10 ⁵	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

Approvals	UL, CSA	UL, CSA	UL, CSA	UL, CSA	UL, CSA
Weight	0.14 kg/0.31 lb	0.14 kg/0.31 lb	0.14 kg/0.31 lb	0.14 kg/0.31 lb	0.14 kg/0.31 lb
Delivery: ex-stock/built to order	●/-	●/-	-/●	●/-	●/-

All dimensions in mm (inch)





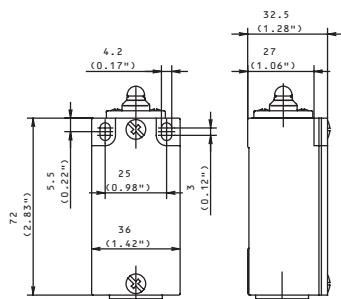
Designation
Part number
Circuit diagram
⊕ Forced disconnect to
IEC 947-5-1 chapter 3
Za: not galvanically separated contacts
Zb: galvanically separated contacts
Slow make & break/snap-action
Internal seal (iw)/external seal (w)

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

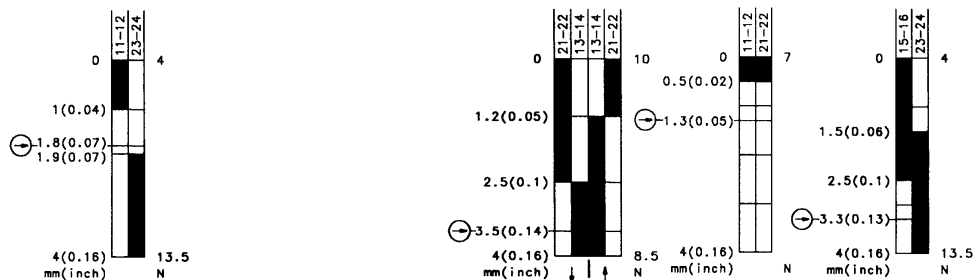
Voltage	max.
Permanent current	max.
In-rush current complies with standards	
IEC 947-5-1 AC 15/DC 13	
Switching frequency	max.
Mechanical life – number of switching actions	
Operating temperature	min./max.

Approvals
Weight
Delivery: ex-stock/built to order

All dimensions in mm (inch)

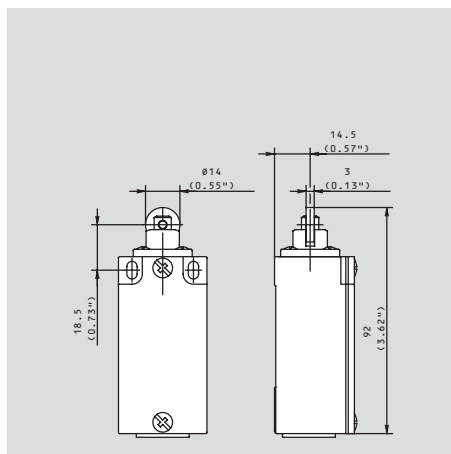


GC-U1Z Riw	GC-SU1Z Riw	GC-A2Z Riw	GC-UV1Z Riw
602.1117.029	602.1367.626	602.1817.172	602.1317.030
⊕ Zb	⊕ Zb	⊕ Za	⊕ Zb
●/-	-/●	●/-	●/-
iw	iw	iw	iw



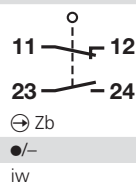
500 V AC	500 V AC	400 V AC	500 V AC
10 A	10 A	6 A	10 A
●	●	●	●
100/min.	100/min.	100/min.	100/min.
10 x 10 ⁶	10 x 10 ⁶	3 x 10 ⁶	10 x 10 ⁶
-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C	-30 °C/+80 °C
-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F	-22 °F/+176 °F

UL, CSA	UL, CSA	–	UL, CSA
0.15 kg/0.33 lb	0.15 kg/0.33 lb	0.15 kg/0.33 lb	0.15 kg/0.33 lb
●/-	●/-	●/-	●/-

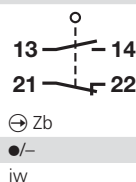




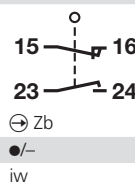
GC-U1Z AH
602.1135.102



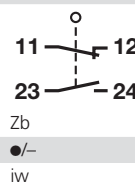
GC-SU1Z AH
602.1385.634



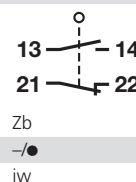
GC-UV1Z AH
602.1335.133



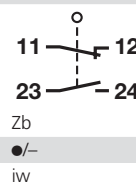
GC-U1 AV
602.1136.104



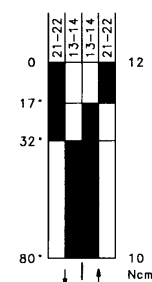
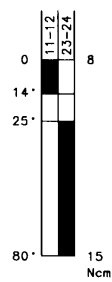
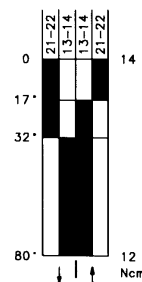
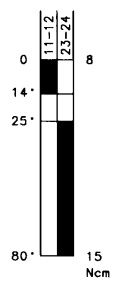
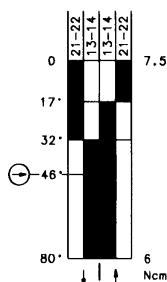
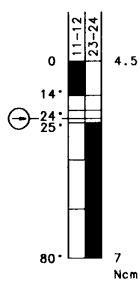
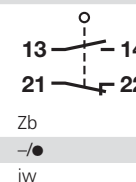
GC-SU1 AV
602.1186.118



GC-U1 AD
602.1137.103



GC-SU1 AD
602.1187.125



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
●

500 V AC
10 A
●

500 V AC
10 A
●

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

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

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

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

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

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

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

UL, CSA

UL, CSA

UL, CSA

UL, CSA

UL, CSA

UL, CSA

UL, CSA

0.20 kg/0.44 lb
●/-

0.20 kg/0.44 lb
●/-

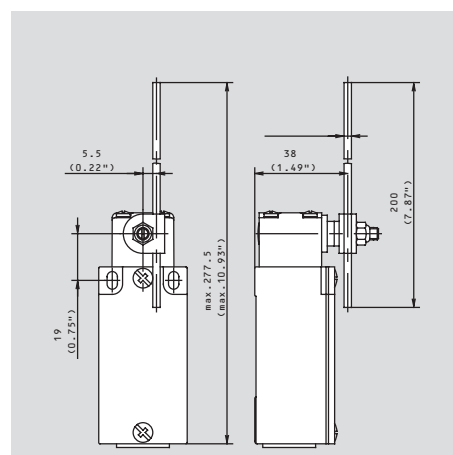
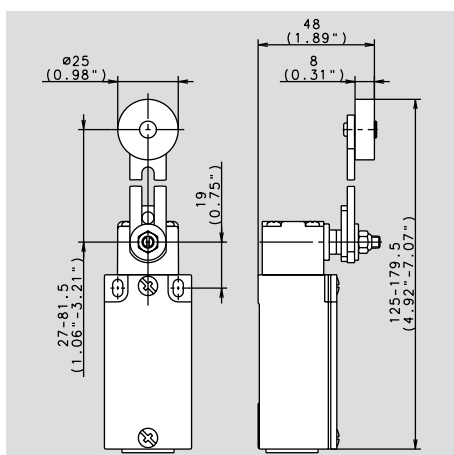
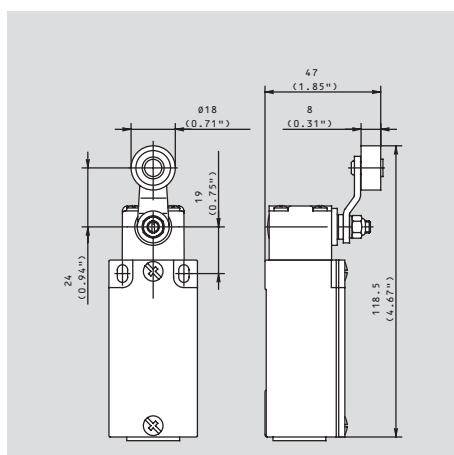
0.20 kg/0.44 lb
●/-

0.23 kg/0.51 lb
●/-

0.23 kg/0.51 lb
●/-

0.22 kg/0.49 lb
●/-

0.22 kg/0.49 lb
●/-

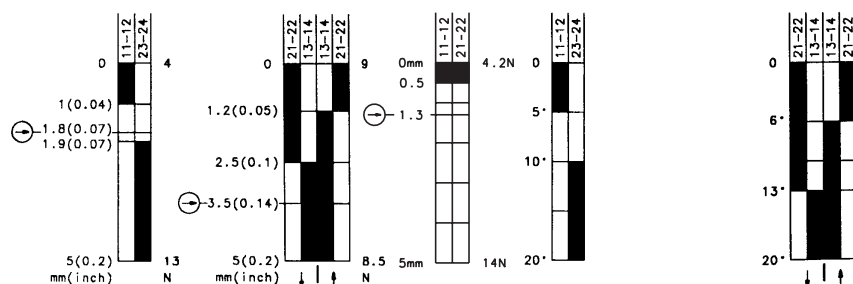




Designation
Part number
Circuit diagram
⊕ Forced disconnect to IEC 947-5-1 chapter 3
Za: not galvanically separated contacts
Zb: galvanically separated contacts
Slow make & break/snap-action
Internal seal (iw)/external seal (w)

GC-U1Z Hiw	GC-SU1Z Hiw	GC-A2Z Hiw	GC-U1 FF	GC-SU1 FF
602.1120.057	602.1370.629	602.1820.175	602.1140.476	602.1190.100
⊕ Zb	⊕ Zb	⊕ Zb	Zb	Zb
●/-	-/●	●/-	●/-	-/●
iw	iw	iw	w	w

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



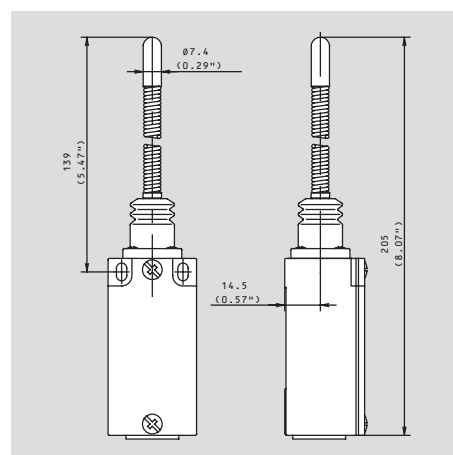
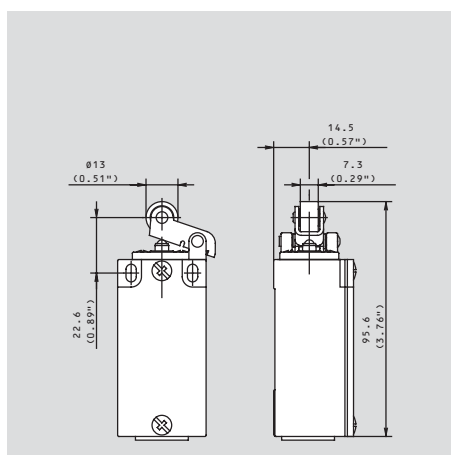
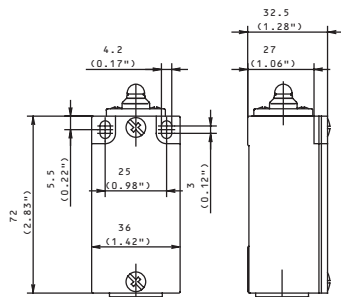
Voltage	max.
Permanent current	max.
In-rush current complies with standards	
IEC 947-5-1 AC 15/DC 13	
Switching frequency	max.
Mechanical life – number of switching actions	
Operating temperature	min./max.

500 V AC	500 V AC	400 V AC	500 V AC	500 V AC
10 A	10 A	6 A	10 A	10 A
●	●	●	●	●
100/min.	100/min.	100/min.	100/min.	100/min.
10 x 10 ⁶	10 x 10 ⁶	3 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
0.16 kg/0.35 lb	0.16 kg/0.35 lb	0.16 kg/0.35 lb	0.17 kg/0.37 lb	0.17 kg/0.37 lb
●/-	●/-	-/●	●/-	●/-

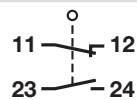
All dimensions in mm (inch)





GC-U1 AF

602.1139.106



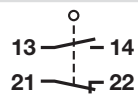
Zb

●/-

ivv

GC-SU1 AF

602.1189.128



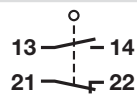
Zb

-/●

ivv

GC-SU1 DR

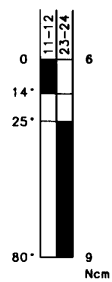
602.1191.099



Zb

-/●

ivv



500 V AC

10 A

●

100/min.

10 x 10⁶

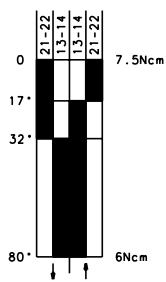
-30 °C/+80 °C

-22 °F/+176 °F

UL, CSA

0.21 kg/0.46 lb

●/-



500 V AC

10 A

●

100/min.

10 x 10⁶

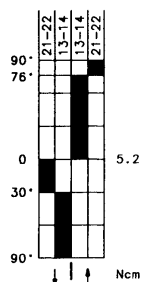
-30 °C/+80 °C

-22 °F/+176 °F

UL, CSA

0.21 kg/0.46 lb

●/-



500 V AC

10 A

●

100/min.

10 x 10⁶

-30 °C/+80 °C

-22 °F/+176 °F

UL, CSA

0.18 kg/0.40 lb

●/-

