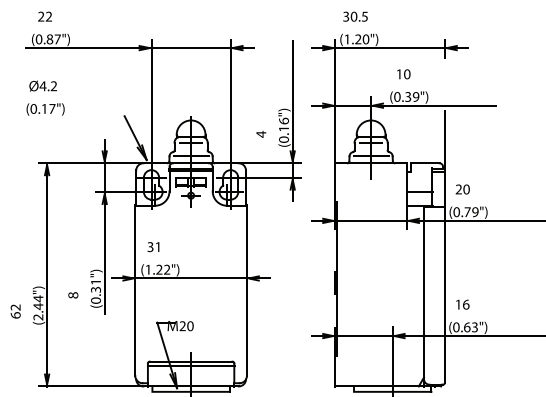


## I88 Series



### Recommended use

Due to its compact size and wide range of actuators and contacts the I88 series is our most popular line of limit switches. Suitable for a huge range of applications, including safety and position monitoring, these switches offer an IP65 protection rating.

### Product advantages

- Standard switch conforming to DIN EN 50047
- Standard actuator conforming to DIN EN 50047, Type A, B, C, E
- Protection class IP65 to VDE 0470 T1
- Enclosure and cover PA 6, self-extinguishing (UL-94-V0)
- Actuator can be repositioned by 4 x 90°
- Cable entry M20 x 1.5
- Connection designation conforming to DIN EN 50013

### Options

- Available with M12 connector
- AS interface variants available
- Cable entry M16 x 1.5

### Design layout

- Slow-action and snap-action contacts
- Versions: 1 NC/1NO, 2 NC, 2 NO, overlapping contacts
- All NC contacts with  $\ominus$  in the circuit diagram are positively opening contacts
- Type: Zb (galvanically isolated changeover contact)
- Latching function on request

### Mounting

- Two M4 screws (distance between centers 22 mm), adjustment with slots
- Two M5 screws for safety applications without additional fixing element (Fig. 1)
- Additionally secured by guide plate for lateral approach forces
- Front mounting (depending on type)

### Installation advantages

- Snap-on cover can be released with screwdriver
- Cover opening range 135° (cover can also be detached from hinge)
- Cover protects switching element during installation
- Screw connections with self-lifting clamping plates
- Easy to install cover lock (close and press)
- Cover can be additionally secured with screw

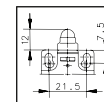


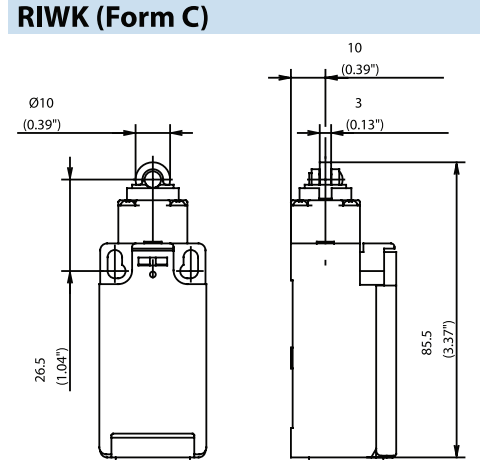
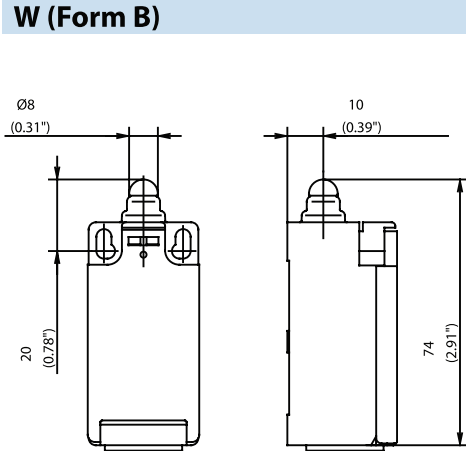
Fig. 1

### Technical data

Electrical data	
Rated insulation voltage	U <sub>i</sub> max. 250 V AC
Conventional thermal current (up to) <sup>1</sup>	I <sub>th</sub> 10 A
Rated operating voltage	U <sub>e</sub> max. 240 V
Utilization category (up to) <sup>1</sup>	AC-15, U <sub>e</sub> /I <sub>e</sub> 240 V/3 A
Short-circuit protection (up to) <sup>1</sup>	Fuse 10 A gL/gG
Protection class	II, Insulated
Mechanical data	
Enclosure material	Thermoplastic, glass fibre-reinforced (UL 94-V0)
Ambient temperature	-30 °C to +80 °C
Mechanical service life (up to) <sup>1</sup>	10 x 10 <sup>6</sup> switching cycles
B10d (up to) <sup>1</sup>	20 Mio.
Switching frequency	≤ 100/min.
Type of connection	Screw connections
Conductor cross sections	Single-wire 0.5 - 1.5 mm <sup>2</sup> or Stranded wire with ferrule 0.5 - 1.5 mm <sup>2</sup>
Cable entry	1 x M20 x 1,5
Standards	
VDE 0660 T100, DIN EN 60947-1, IEC 60947-1 VDE 0660 T200, DIN EN 60947-5-1, IEC 60947-5-1	

<sup>1</sup> Depending on the switch system.

**I88 Series**



Switching Operation	Slow Action	Snap Action	Slow Action	Snap Action
<b>1 NC / 1 NO Contacts</b>	<b>608.6103.008</b> I88-U1Z W 	<b>608.6153.012</b> I88-SU1Z W 	<b>608.6117.017</b> I88-U1Z RIWK 	<b>608.6167.018</b> I88-SU1Z RIWK 
<b>2 NC Contacts</b>	<b>608.6803.013</b> I88-A2Z W 	-	<b>608.6817.087</b> I88-A2Z RIWK 	-
<b>2 NO Contacts</b>	<b>608.6803.014</b> I88-E2 W 	-	<b>608.6817.071</b> I88-E2 RIWK 	-
<b>1 NC / 1 NO Contacts Overlapping</b>	<b>608.6303.011</b> I88-UV1Z W 	-	-	-

**Technical Information**

	Slow Action	Snap Action	Slow Action	Snap Action
Maximum Switching Voltage	240V	240V	240V	240V
Max. Switching Amps (up to)*	10A	10A	10A	10A
B10d (up to)*	20 Million	20 Million	20 Million	20 Million
Mechanical Service Life (up to)*	10 x 10 <sup>6</sup>	10 x 10 <sup>6</sup>	10 x 10 <sup>6</sup>	10 x 10 <sup>6</sup>
Switching Frequency	≤ 100/min	≤ 100/min	≤ 100/min	≤ 100/min
Operating Temperature	-30 °C to +80 °C	-30 °C to +80 °C	-30 °C to +80 °C	-30 °C to +80 °C
Protection Rating	IP65	IP65	IP65	IP65
Utilization Category (up to)*	AC-15, Ue/Ue 240V 3A	AC-15, Ue/Ue 240V 3A	AC-15, Ue/Ue 240V 3A	AC-15, Ue/Ue 240V 3A
Rate Insulation Voltage	250VAC	250VAC	250VAC	250VAC

Approvals \* Depending on switching system - see technical information for details



**Special features/variants** (on request)

- Available with black enclosure
- With latching function



**Special features/variants** (on request)

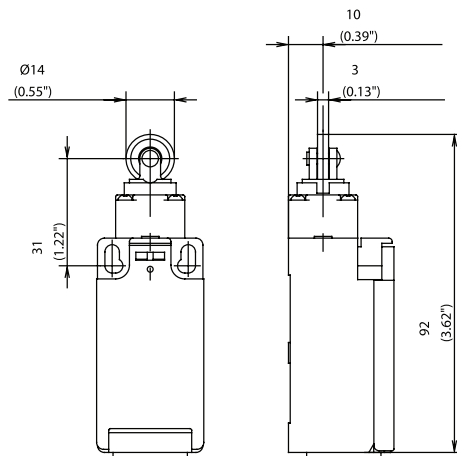
- Available with steel roller or black enclosure
- With black enclosure
- With latching function

Drawing dimensions in mm

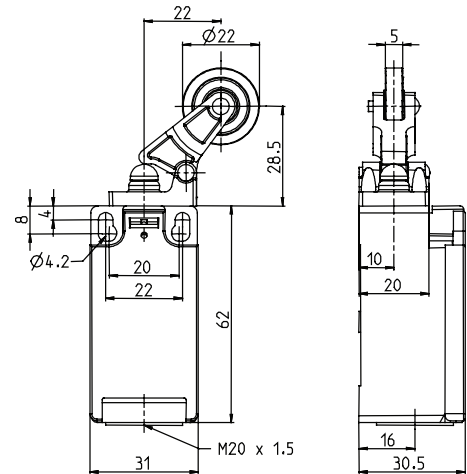
**I88 Series**



**RIWL**



**KNW RO22**

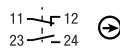


**Switching Operation**

**1 NC / 1 NO Contacts**

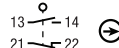
**Slow Action**

**608.6117.050**  
I88-U1Z RIWL



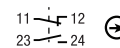
**Snap Action**

**608.6167.051**  
I88-SU1Z RIWL



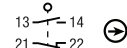
**Slow Action**

**618.6127.112**  
I88-U1Z KNW RO22



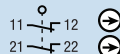
**Snap Action**

**608.6177.053**  
I88-SU1Z KNW RO22



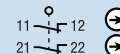
**2 NC Contacts**

**608.6817.072**  
I88-A2Z RIWL



-

**618.6827.246**  
I88-A2Z KNW RO22



**2 NO Contacts**

**608.6817.069**  
I88-E2 RIWL



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**1 NC / 1 NO Contacts Overlapping**

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**Replacement actuator:**

**391.8161.673**

**391.8250.682**

**Technical Information**

	Slow Action	Snap Action	Slow Action	Snap Action
Maximum Switching Voltage	240V	240V	240V	240V
Max. Switching Amps (up to)*	10A	10A	10A	10A
B10d (up to)*	20 Million	20 Million	20 Million	20 Million
Mechanical Service Life (up to)*	3 x 10 <sup>6</sup>	10 x 10 <sup>6</sup>	10 x 10 <sup>6</sup>	10 x 10 <sup>6</sup>
Switching Frequency	≤ 100/min	≤ 100/min	≤ 100/min	≤ 100/min
Operating Temperature	-30 °C to +80 °C	-30 °C to +80 °C	-30 °C to +80 °C	-30 °C to +80 °C
Protection Rating	IP65	IP65	IP65	IP65
Utilization Category (up to)*	AC-15, Ue/Ue 240V 3A	AC-15, Ue/Ue 240V 3A	AC-15, Ue/Ue 240V 3A	AC-15, Ue/Ue 240V 3A
Rate Insulation Voltage	250VAC	250VAC	250VAC	250VAC

Approvals

\* Depending on switching system - see technical information for details



**Special features/variants (on request)**

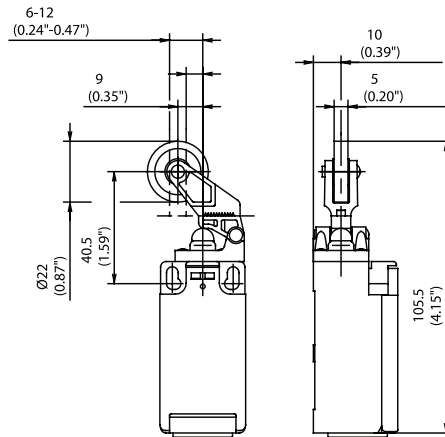
- Available with black enclosure
- With latching function
- With steel roller

Drawing dimensions in mm

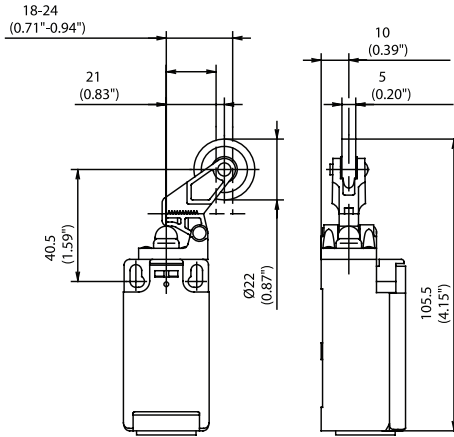
**I88 Series**



**DGHW RO22**



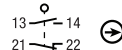
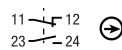
**DGKW RO22**



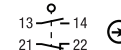
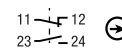
**Switching Operation**

**1 NC / 1 NO Contacts**

Slow Action	Snap Action
<b>608.6121.029</b> I88-U1Z DGHW RO22	<b>608.6171.030</b> I88-SU1Z DGHW RO22

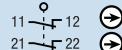


Slow Action	Snap Action
<b>608.6127.025</b> I88-U1Z DGKW RO22	<b>608.6177.026</b> I88-SU1Z DGKW RO22



**2 NC Contacts**

<b>608.6821.120</b> I88-A2Z DGHW RO22	-
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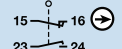
**2 NO Contacts**

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**1 NC / 1 NO Contacts Overlapping**

<b>618.6321.244</b> I88-UV1Z DGHW RO22	-
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**Replacement actuator:**

<b>391.8211.529</b>	-
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<b>391.8271.528</b>	-
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**Technical Information**

	Slow Action	Snap Action
Maximum Switching Voltage	240V	240V
Max. Switching Amps (up to)*	10A	10A
B10d (up to)*	20 Million	20 Million
Mechanical Service Life (up to)*	10 x 10 <sup>6</sup>	10 x 10 <sup>6</sup>
Switching Frequency	≤ 100/min	≤ 100/min
Operating Temperature	-30 °C to +80 °C	-30 °C to +80 °C
Protection Rating	IP65	IP65
Utilization Category (up to)*	AC-15, Ue/Ue 240V 3A	AC-15, Ue/Ue 240V 3A
Rate Insulation Voltage	250VAC	250VAC

	Slow Action	Snap Action
Maximum Switching Voltage	240V	240V
Max. Switching Amps (up to)*	10A	10A
B10d (up to)*	20 Million	20 Million
Mechanical Service Life (up to)*	10 x 10 <sup>6</sup>	10 x 10 <sup>6</sup>
Switching Frequency	≤ 100/min	≤ 100/min
Operating Temperature	-30 °C to +80 °C	-30 °C to +80 °C
Protection Rating	IP65	IP65
Utilization Category (up to)*	AC-15, Ue/Ue 240V 3A	AC-15, Ue/Ue 240V 3A
Rate Insulation Voltage	250VAC	250VAC

Approvals

\* Depending on switching system - see technical information for details



**Special features/variants (on request)**

- Available with black enclosure
- Available with different mounting directions
- With different roller diameters

**Special features/variants (on request)**

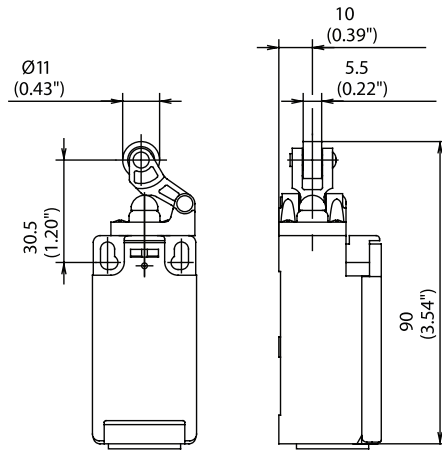
- With latching function
- With different roller diameters
- With 2NC/1NO or 2NO/1NC contacts

Drawing dimensions in mm

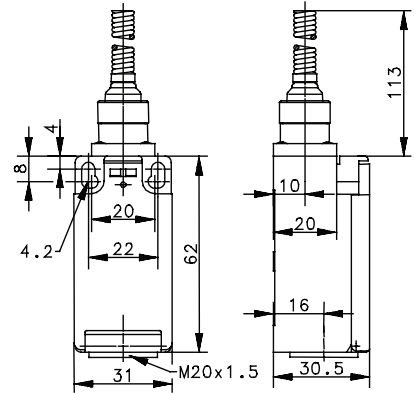
**I88 Series**



**HW RO11 (Form E)**



**FF**

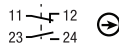


**Switching Operation**

**1 NC / 1 NO Contacts**

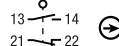
**Slow Action**

**608.6121.021**  
I88-U1Z HW RO11



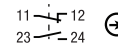
**Snap Action**

**608.6171.022**  
I88-SU1Z HW RO11



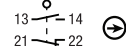
**Slow Action**

**618.6140.217**  
I88-U1 FF



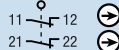
**Snap Action**

**608.6190.078**  
I88-SU1 FF



**2 NC Contacts**

**608.6821.099**  
I88-A2Z HW RO11



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**2 NO Contacts**

**608.6821.068**  
I88-E2 HW RO11



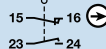
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**1 NC / 1 NO Contacts Overlapping**

**608.6321.100**  
I88-UV1Z HW RO11



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**Replacement actuator:**

**391.8191.547**

**391.8401.031**

**Technical Information**

	Slow Action	Snap Action
Maximum Switching Voltage	240V	240V
Max. Switching Amps (up to)*	10A	10A
B10d (up to)*	20 Million	20 Million
Mechanical Service Life (up to)*	3 x 10 <sup>6</sup>	10 x 10 <sup>6</sup>
Switching Frequency	≤ 100/min	≤ 100/min
Operating Temperature	-30 °C to +80 °C	-30 °C to +80 °C
Protection Rating	IP65	IP65
Utilization Category (up to)*	AC-15, Ue/Ue 240V 3A	AC-15, Ue/Ue 240V 3A
Rate Insulation Voltage	250VAC	250VAC

	Slow Action	Snap Action
Maximum Switching Voltage	240V	240V
Max. Switching Amps (up to)*	10A	10A
B10d (up to)*	20 Million	20 Million
Mechanical Service Life (up to)*	10 x 10 <sup>6</sup>	10 x 10 <sup>6</sup>
Switching Frequency	≤ 100/min	≤ 100/min
Operating Temperature	-30 °C to +80 °C	-30 °C to +80 °C
Protection Rating	IP65	IP65
Utilization Category (up to)*	AC-15, Ue/Ue 240V 3A	AC-15, Ue/Ue 240V 3A
Rate Insulation Voltage	250VAC	250VAC

Approvals

\* Depending on switching system - see technical information for details



**Special features/variants (on request)**

- Available with black enclosure
- With steel roller
- Different roller diameters

**Special features/variants (on request)**

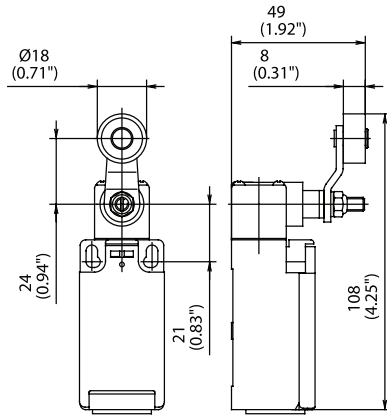
- Available with black enclosure
- Various spring lengths
- Different spring type or spring rod

*Drawing dimensions in mm*

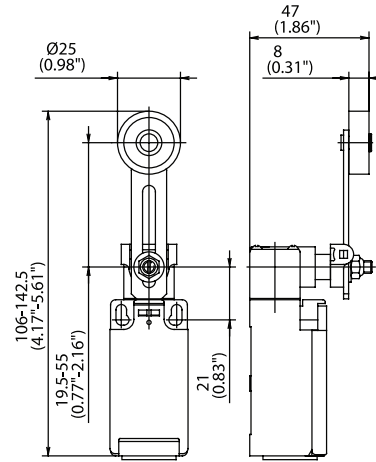
**I88 Series**



**AH (Form A)**



**AV**



Switching Operation	Slow Action	Snap Action	Slow Action	Snap Action
<b>1 NC / 1 NO Contacts</b>	<b>608.6135.033</b> I88-U1Z AH 	<b>608.6185.034</b> I88-SU1Z AH 	<b>608.6136.037</b> I88-U1 AV 	<b>608.6186.038</b> I88-SU1 AV 
<b>2 NC Contacts</b>	<b>608.6835.059</b> I88-A2Z AH 	-	<b>608.6836.131</b> I88-A2 AV 	-
<b>2 NO Contacts</b>	<b>608.6835.116</b> I88-E2 AH 	-	-	-
<b>1 NC / 1 NO Contacts Overlapping</b>	<b>618.6335.628</b> I88-UV1Z AH 	-	-	-

Replacement actuator:

**391.8351.166**

**391.8360.984**

**Technical Information**

	Slow Action	Snap Action
Maximum Switching Voltage	240V	240V
Max. Switching Amps (up to)*	10A	10A
B10d (up to)*	20 Million	20 Million
Mechanical Service Life (up to)*	10 x 10 <sup>6</sup>	10 x 10 <sup>6</sup>
Switching Frequency	≤ 100/min	≤ 100/min
Operating Temperature	-30 °C to +80 °C	-30 °C to +80 °C
Protection Rating	IP65	IP65
Utilization Category (up to)*	AC-15, Ue/Ue 240V 3A	AC-15, Ue/Ue 240V 3A
Rate Insulation Voltage	250VAC	250VAC

	Slow Action	Snap Action
Maximum Switching Voltage	240V	240V
Max. Switching Amps (up to)*	10A	10A
B10d (up to)*	20 Million	20 Million
Mechanical Service Life (up to)*	10 x 10 <sup>6</sup>	10 x 10 <sup>6</sup>
Switching Frequency	≤ 100/min	≤ 100/min
Operating Temperature	-30 °C to +80 °C	-30 °C to +80 °C
Protection Rating	IP65	IP65
Utilization Category (up to)*	AC-15, Ue/Ue 240V 3A	AC-15, Ue/Ue 240V 3A
Rate Insulation Voltage	250VAC	250VAC

\* Depending on switching system - see technical information for details



**Special features/variants** (on request)

- Available with black enclosure
- Available with different actuating directions
- With steel or different diameter roller
- Bent or straight lever in different lengths

**Special features/variants** (on request)

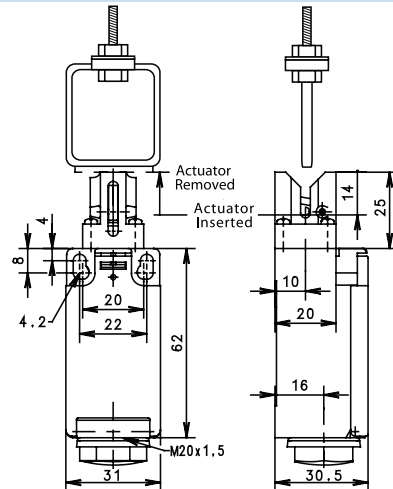
- Available with black enclosure
- Available with different actuating directions
- With steel or different diameter roller
- Bent or straight lever in different lengths

Drawing dimensions in mm

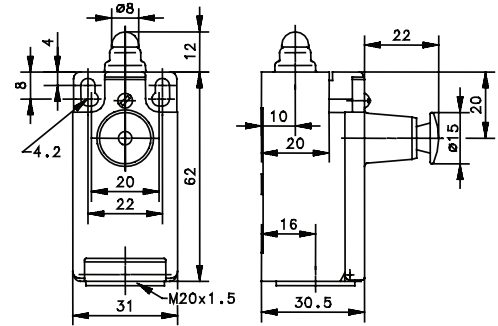
**I88 Series**



**KS**



**W RAST**



Switching Operation	Slow Action	Snap Action	Slow Action	Snap Action
<b>1 NC / 1 NO Contacts</b>	<b>611.6819.140</b> I88-U1Z KS 	- -	<b>618.6103.005</b> I88-U1Z W RAST 	- -
<b>2 NC Contacts</b>	- -	- -	<b>618.6803.155</b> I88-A2Z W RAST 	- -
<b>2 NO Contacts</b>	- -	- -	- -	- -
<b>1 NC / 1 NO Contacts Overlapping</b>	- -	- -	- -	- -

Replacement actuator:

**391.8401.031**

Technical Information	Slow Action	Snap Action	Slow Action	Snap Action
Maximum Switching Voltage	240V	240V	240V	240V
Max. Switching Amps (up to)*	10A	10A	10A	10A
B10d (up to)*	20 Million	20 Million	20 Million	20 Million
Mechanical Service Life (up to)*	3 x 10 <sup>6</sup>	10 x 10 <sup>6</sup>	10 x 10 <sup>6</sup>	10 x 10 <sup>6</sup>
Switching Frequency	≤ 100/min	≤ 100/min	≤ 100/min	≤ 100/min
Operating Temperature	-30 °C to +80 °C	-30 °C to +80 °C	-30 °C to +80 °C	-30 °C to +80 °C
Protection Rating	IP65	IP65	IP65	IP65
Utilization Category (up to)*	AC-15, Ue/Ue 240V 3A	AC-15, Ue/Ue 240V 3A	AC-15, Ue/Ue 240V 3A	AC-15, Ue/Ue 240V 3A
Rate Insulation Voltage	250VAC	250VAC	250VAC	250VAC

\* Depending on switching system - see technical information for details



Drawing dimensions in mm