SERIES 2410 - FOOT SWITCHES UP TO 6 (2,5) A 250 V~

PRODUCT ADVANTAGES

- For ratings up to 6 (2,5) A 250 V~
- Ergonomical dimensions allow actuation without tiring
- Long life endurance
- Distinct actuation characteristic
- Retrofittable cable
- Retrofittable protection hood

TECHNICAL DATA

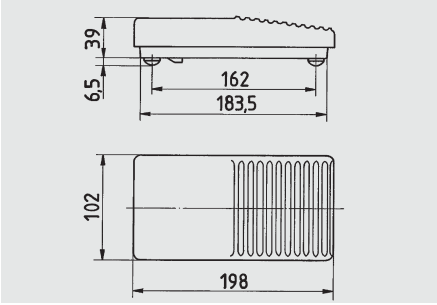
- Mechanical life endurance 3E5
- Resistance to tracking PTI 250
- Foot tread and housing made of PA
- Contacts Ag
-

single pole
contact gap < 3 mm

Normally open
2410.0301*

DT momentary
2410.0401*

with terminal strip and strain relief clip in the housing



double pole
contact gap > 3 mm

Normally open
2410.1001

with three-core cable connection, earthing-plug and -linkage
length: to mains supply 3000 mm
to appliance 250 mm

* Version on stock

ACCESSORIES FOR THE APPLIANCE SWITCHES

PROTECTION CAPS

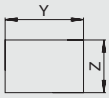
When mounted in the appliance, the actuation side of the switch is dust-tight and protected against splash water.

203 089 011*

suitable for the series

1800.
1801.
1803.
1808.
1855.
1858.

appliance cut-out single pole



X = panel thickness

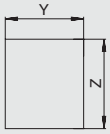
X	Y	Z
0.75...1.25	19.4 –0.1	12.9 +0.1
1.25...2.2	19.8 –0.1	12.9 +0.1

203 090 011*

suitable for the series

1802.
1804.
1805.
1809.

appliance cut-out double pole



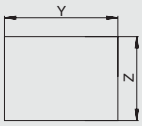
X = panel thickness

X	Y	Z
0.75...1.25	19.4 –0.1	21.9 +0.1
1.25...2.2	19.8 –0.1	21.9 +0.1

203 201 011*

suitable for the series

1832.
1834.
1835.
1839.
1661.
1662.
1663.
1664.
1665.
1667.



X = panel thickness

X	Y	Z
0.75...1.4	30.2 –0.1	22.0 +0.2
1.4 ...2.4	30.6 –0.1	22.0 +0.2

appliance cut-out with protection cap

TUBULAR PUSH-ON COVERS

These push-on covers are appropriate for a better marking of plastic levers especially of the series 1820.

Additional colours on request.

203 105 011*

203 105 031

PROTECTION CAP

This cap protects the installed switch against dust and splash water from the actuation side.

343 001 023*

* Version on stock

SNAP ACTION SWITCHES

1

TECHNICAL INFORMATION Pages **1.**1 - **1.**5

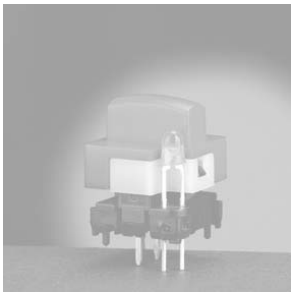
2

APPLIANCE SWITCHES Pages **2.**1- **2.**48

3

SNAP ACTION SWITCHES Pages **3.**1 - **3.**33

4



KEYMODULES Pages **4.**1 - **4.**9

5

INDEX OF PART NUMBERS Pages **5.**1 - **5.**3

CONTENTS SNAP ACTION SWITCHES

For an index of all versions on stock and their packaging units see pages **5.**2 and **5.**3.

TECHNICAL INFORMATION

SNAP ACTION SWITCHES — Pages **3.**4 - **3.**5

ENCLOSED SNAP ACTION SWITCHES

SERIES 1056

change-over
up to 4 A 12 V resp. 2 A 24 V

protection type IP 40

Pages **3.**6 - **3.**9

SERIES 1055

change-over
up to 4 A 12 V resp. 2 A 24 V,

dust and water proofing
according to IP 67

Pages **3.**6 - **3.**9

SERIES 1058

change-over, normally open and normally closed up to 4 A 12 V resp. 2 A 24 V,

dust and water proofing according to IP 67

Pages **3.**6 - **3.**9

SERIES 1050

change-over, normally open and normally closed up to 10 (1,5) A 250 V~

size DIN 41635 design B

protection type IP 40

Pages **3.**10 - **3.**13

SERIES 1080 AND 1085

change-over, normally open and normally closed up to 21 (8) A 250 V~ 10E3

size DIN 41635 design A

protection type IP 40

Pages **3.**14 - **3.**16

SERIES 1004, 1005 AND 1006

change-over, normally open and normally closed up to 21 (8) A 250 V~ 25E3

size DIN 41635 design A

protection type IP 40

Pages **3.**17 - **3.**21

OPEN AND ENCLOSED SNAP ACTION SWITCHES

SERIES 1019

normally open and normally closed
for 6 (2) A 250 V~

open and enclosed version
with or without lever

Pages
3.22 - **3.**23

OPEN SNAP ACTION SWITCHES

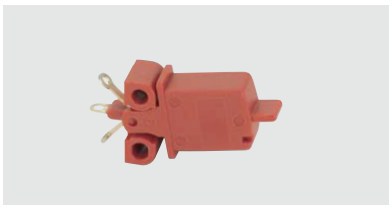
SERIES 1010

change-over, normally open and normally closed up to 10 (3) A 250 V~

size DIN 41635 design C

Pages
3.24 - **3.**26

BI-STABLE SNAP ACTION SWITCHES



SERIES 1011

DT-switch
up to 6 (2) A 250 V~

Page
3.27

ENCLOSED SNAP ACTION SWITCHES

SERIES 1022

change-over, normally open and normally closed up to 4 A 12 V resp.
2 A 24 V

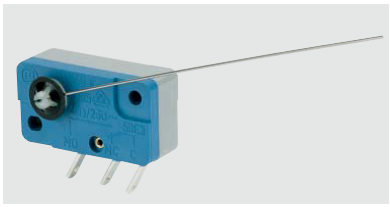
dust and water proofing
according to IP 67

Pages
3.28 - **3.**29

SERIES 1117

normally open and normally closed
for 16 (6) A 400 V~

Pages
3.30 - **3.**31



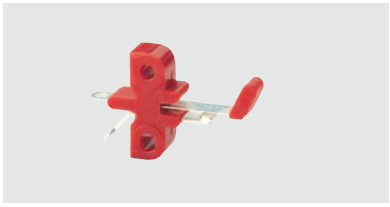
SERIES 1040

change-over and normally open
up to 4 (1) A 250 V~

with rotary shaft actuation

Page
3.32

OPEN LEAF SWITCHES



SERIES 1017

change-over and normally open
up to 100 mA 24 V

Page
3.33

CONTACT RESISTANCE

The contact resistance is the electrical resistance measured at the terminals of the switch when the contacts are closed. The resistance specifications refer to unwired switches in new condition. For silver-based contact materials this value is below 100 mΩ, in gold-based materials below 50 mΩ.

SWITCHING SECURITY

The highest switching security is obtained by utilizing from the entire pre-travel and over-travel. Another element is the contact force which depends in turn on the actuating force. Switches with high contact forces should be chosen if possible.

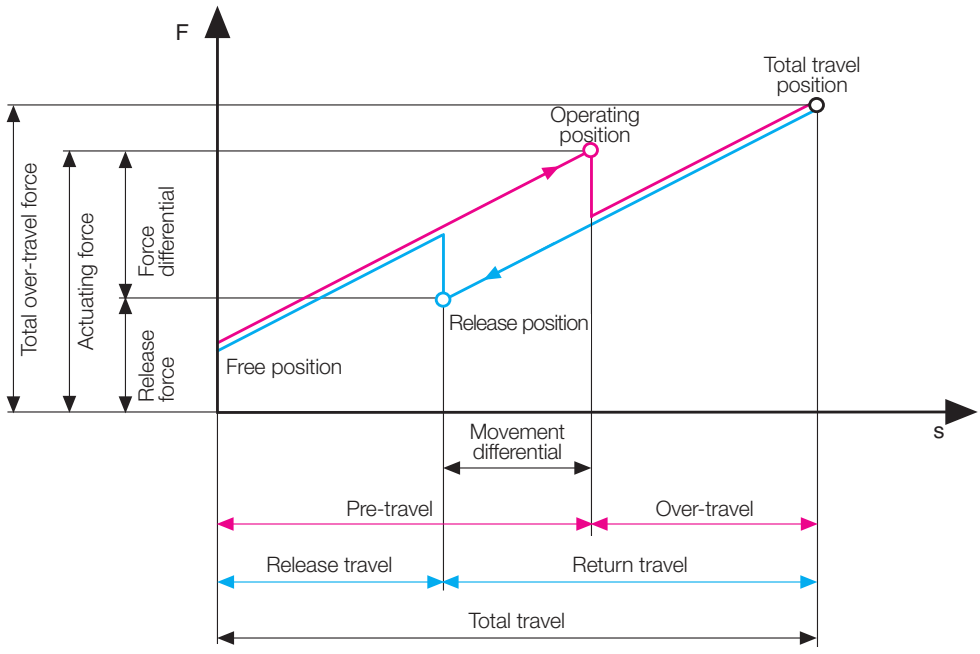
BOUNCE TIME

The bounce time is the time between the first closing of the contacts (turn-on signal) and the last dropping below a given threshold value of the contact resistance. The values are typically below 5 ms.

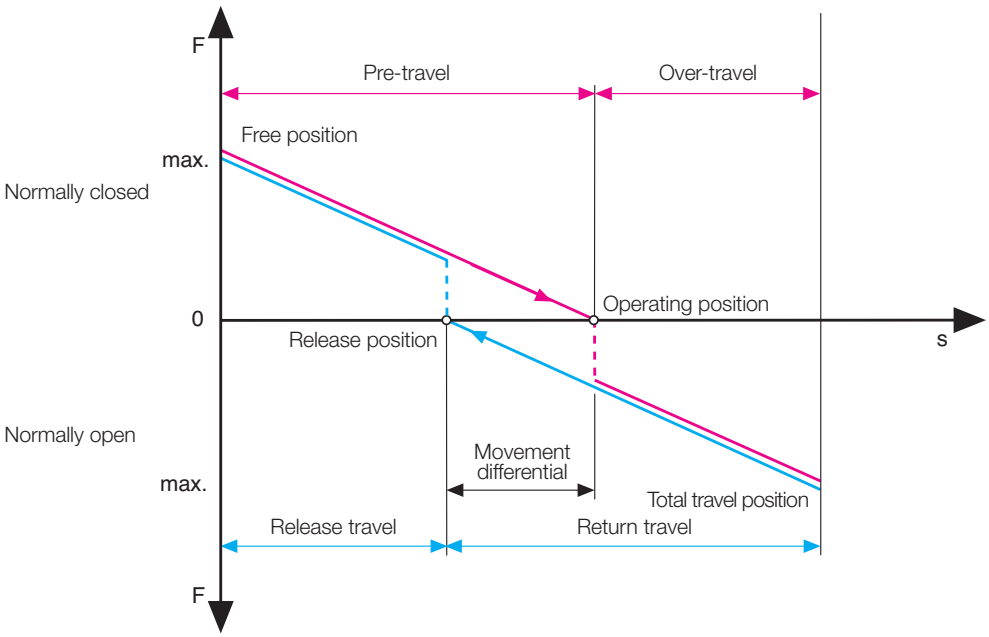
SWITCHING TIME / TRAVEL

The switching time/travel is the time/distance that the switching system needs to get from the first opening of the previously closed contacts to the first current flow of the contacts after the snap action. Please ask for additional information for applications with a very slow actuating speed or applications where the actuation of the switch is controlled by its switching process.

ACTUATING FORCE - MOVEMENT - DIAGRAM



POSITIONS - FORCES - MOVEMENTS

Free position	Position of the actuator, without any influence of outside force.
Operating position	Position on the travel of the actuator, where the snap mechanism is set into function.
Total travel position	Position of the actuator at the end of the allowed travel.
Release position	Position on the travel of the actuator, where the snap mechanism starts to operate backwards.
Actuating force	Necessary force at the actuator, to bring it from the free position over the operating position.
Release force	Force, to which the actuating force has to be decreased so that the snap mechanism returns to the free position.
Force differential	Difference between actuating force and release force.
Total over-travel force	Necessary force, to keep the actuator in the permitted total traveled position.
Pre-travel	Movement between free position and operating position.
Over-travel	Movement between operating position and total traveled position.
Return travel	Movement between total traveled position and release position.
Release travel	Movement between release position and free position.
Movement differential	Movement between operating position and release position.
Total travel	Sum of pre-travel and over-travel resp. return travel and release travel.

CONTACT FORCE-MOVEMENT-DIAGRAM