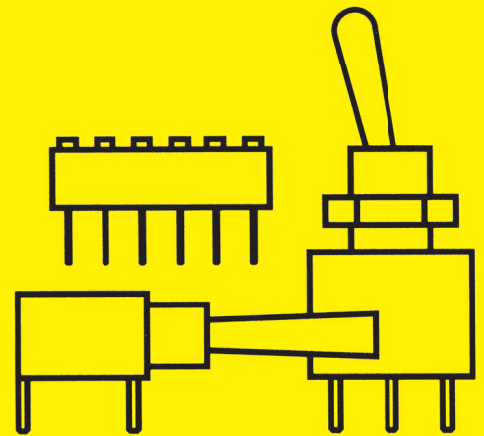
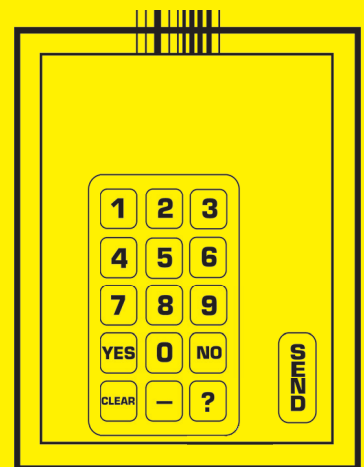


knitter switch

Professional Switches



Input Systems

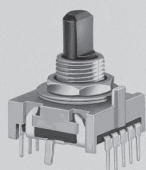


2023/ 2024

9

Rotary Switches / Key Switches

9.1 Rotary Switches



Type	Operating positions	Poles	Special feature	Page
MRS 18	2 – 8	1 – 2		164
MRS 10 H	2 – 6	1 – 6	Operating at the side	165
MRS 12	9	1	11.4 x 13 mm	166
SMR 1-30	2	1	washable, 5 x 5 mm	167

9.2 Key Switches



MRK

top- and side actuated

168–173



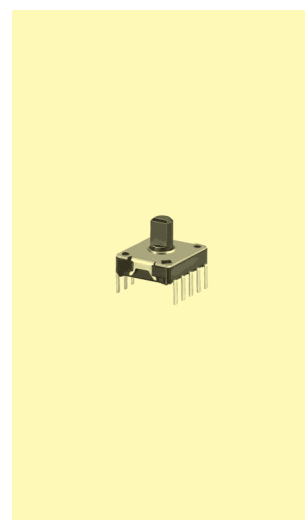
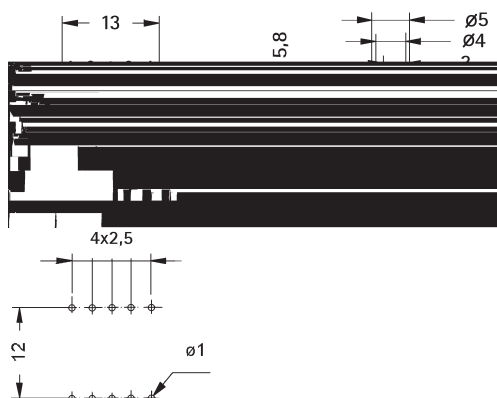


Miniature Rotary Switches

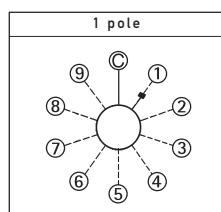
Specifications:

Contact rating:	16 V DC, 100 mA
Contact resistance:	< 50 mΩ
Insulation resistance:	> 100 MΩ at 500 V DC
Dielectric strength:	100 V, 50 Hz for the duration of 1 minute
Operating temperature:	– 20 °C to + 80 °C
Mechanical life:	minimum 10 000 operations
Contacts:	gold
Material:	case: PBT with glass fibre 30%; shaft: PA, flat
Angle between 2 positions:	40°, 9 positions
Mounting:	on pc-board
Contact timing:	non-shorting
Operating force:	250 ± 100 gf. cm
Soldering conditions:	max.: 3 sec, 260 °C

Models:	Poles
MRS 12 V – 19	1



Circuit diagram:





Microminiature Rotary Switches for SMT

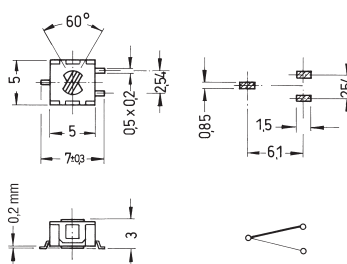
Specifications:

Contact rating:	12 V DC, 50 mA switching 60 V DC, 100 mA non-switching
Contact resistance:	< 100 mΩ
Insulation resistance:	> 500 MΩ
Dielectric strength:	500 V, 50 Hz for the duration of 1 minute
Operating temperature:	-30 °C to +85 °C
Mechanical life:	minimum 800 operations
Contacts:	gold-plated over nickel barrier
Terminals:	gold-plated over nickel barrier
Material:	case: LCP, washable frame: stainless steel
Mounting:	on pc-board – SMD
Soldering conditions:	reflow-soldering – max.: 10 sec ±1 sec, 260 °C ± 10 °C

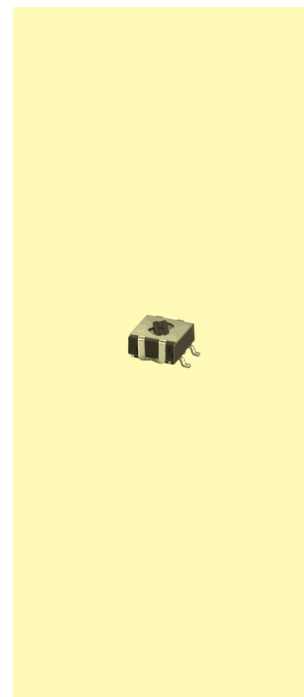
Models: Switching functions

SMR 1-30

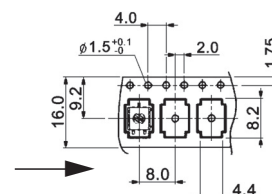
on – on



washable



Packing: on tapes: 2000 pieces; reel Ø 330 mm

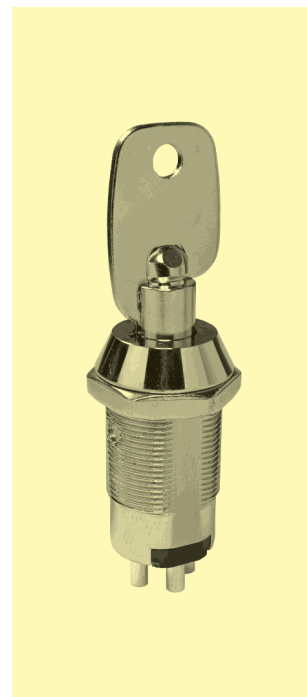
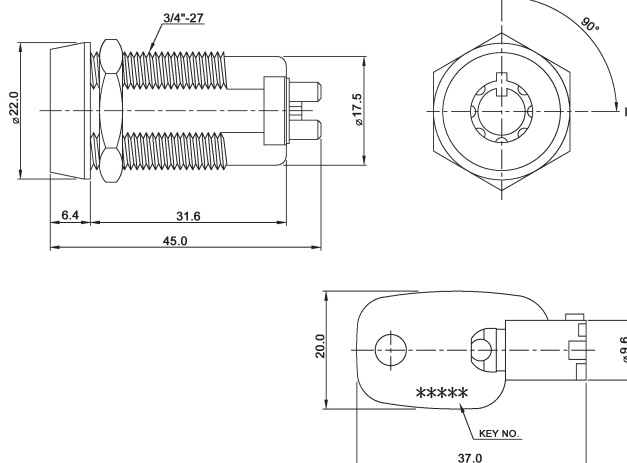


Key Switches

Specifications:

Contact rating:	250 V AC, 2 A; 125 V AC, 4 A
Contact resistance:	< 10 mΩ
Insulation resistance:	> 500 MΩ
Dielectric strength:	1500 V, 50 Hz for the duration of 1 minute
Operating temperature:	– 20 °C to + 70 °C
Mechanical life:	minimum 10 000 steps
Material:	Case: zinc alloy, chromium-plated Contacts and Terminals: silver-plated Key: steel, nickel-plated
Angle between 2 positions:	90°
Mounting:	single-hole mounting, 19 mm diameter

Models:	Switching functions	Key removable in pos
MRK 202-1	off – on	I
MRK 202-2	off – on	I, II
MRK 202-A	off – mom	I
MRK 202-DA	on – mom	I

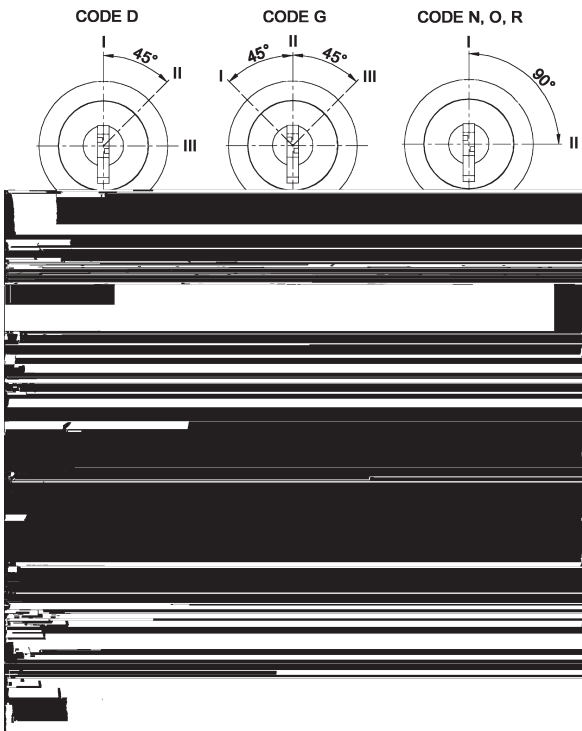


Switches are always supplied with 2 keys.

Specifications:

Contact rating:	250 V AC, 2 A; 125 V AC, 4 A
Contact resistance:	< 50 mΩ
Insulation resistance:	> 500 MΩ
Dielectric strength:	1500 V, 50 Hz for the duration of 1 minute
Operating temperature:	– 20 °C to + 70 °C
Mechanical life:	minimum 10 000 steps
Material:	Case: zinc alloy, chromium-plated Contacts and Terminals: gold-plated Key: steel, nickel-plated
Mounting:	single-hole mounting, 19 mm diameter

Models:	Switching functions	Key removable in pos
MRK 216 D	double pole, on – on – on	III
MRK 216 G	single-pole, on – on – on	II
MRK 216 N	single pole, on – on	I
MRK 216 O	double pole, on – on	I
MRK 216 R	single pole, on – on	I, II
MRK 216	MRK 216 N with wires/connector	I



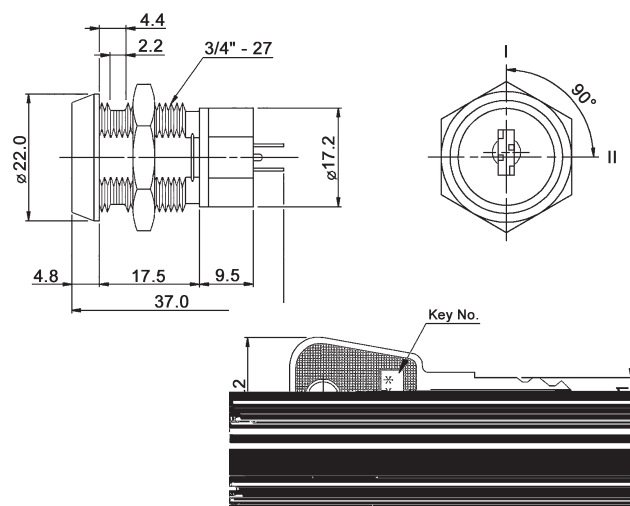
Switches are always supplied with 2 keys.

Key Switches

Specifications:

Contact rating:	250 V AC, 2 A; 125 V AC, 4 A
Contact resistance:	< 50 mΩ
Insulation resistance:	> 500 MΩ
Dielectric strength:	1500 V, 50 Hz for the duration of 1 minute
Operating temperature:	-20 °C to +70 °C
Mechanical life:	minimum 10 000 steps
Material:	Case: zinc alloy, chromium-plated Contacts and Terminals: silver-plated Key: brass, nickel-plated
Angle between 2 positions:	90°
Mounting:	single-hole mounting, 3/4"-27 UNS

Models:	Switching functions	Key removable in pos
MRK 286-A1	off – on	I
MRK 286-A2	off – on	I, II
MRK 286-B1	on – on	I
MRK 286-B2	on – on	I, II



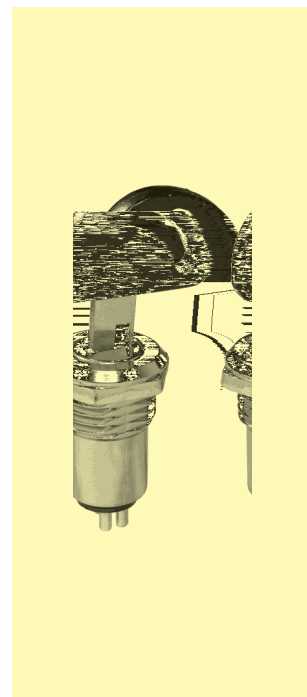
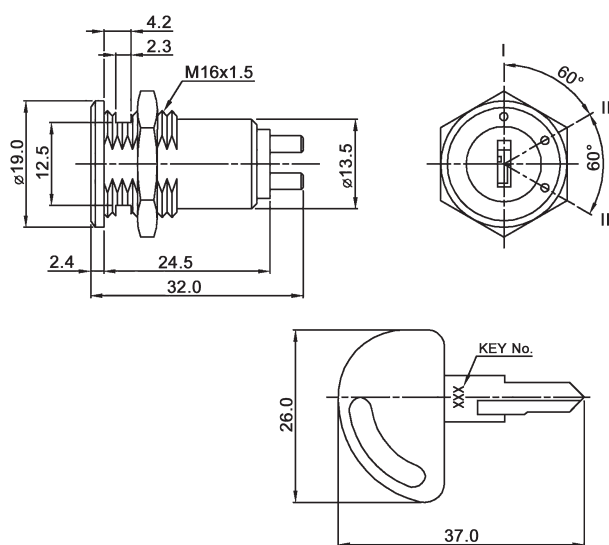
Switches are always supplied with 2 keys.

Specifications:

Contact rating:	125 V AC, 0.2 A
Contact resistance:	< 10 mΩ
Insulation resistance:	> 200 MΩ
Dielectric strength:	1000 V, 50 Hz for the duration of 1 minute
Operating temperature:	–20 °C to +70 °C
Mechanical life:	minimum 10 000 steps
Material:	Case: zinc alloy, chromium-plated Contacts and Terminals: silver-plated Key: brass, nickel-plated, POM-cover
Angle between 2 positions:	60°
Mounting:	single-hole mounting, thread M16x1 with flat

Models: Switching functions

MRK 331	on – on
MRK 332	off – on
MRK 333	off – on – on



Key removable in all positions.

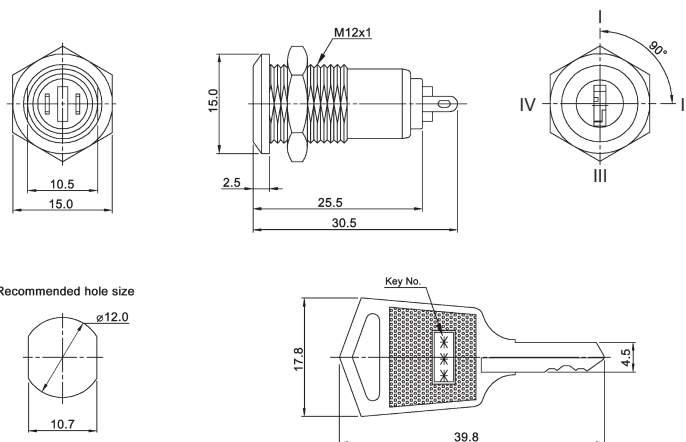
Switches are always supplied with 2 keys.

Key Switches

Specifications:

Contact rating:	125 V AC, 200 mA
Contact resistance:	< 10 mΩ
Insulation resistance:	> 200 MΩ
Dielectric strength:	1000 V, 50 Hz for the duration of 1 minute
Operating temperature:	– 20 °C to + 70 °C
Mechanical life:	minimum 6 000 steps
Material:	Case: zinc alloy, chromium-plated Contacts and Terminals: silver-plated Key: brass, nickel-plated
Angle between 2 positions:	90°
Mounting:	single-hole mounting, 12 mm diameter

Models:	Switching functions	Key removable in pos
MRK 1091 B-1	off – on	I
MRK 1091 B-2	off – on	I, II
MRK 1343 B-1	on – on – on	I, II, III
MRK 1344	on – on – on – on	I, II, III, IV



Switches are always supplied with 2 keys.

Specifications:

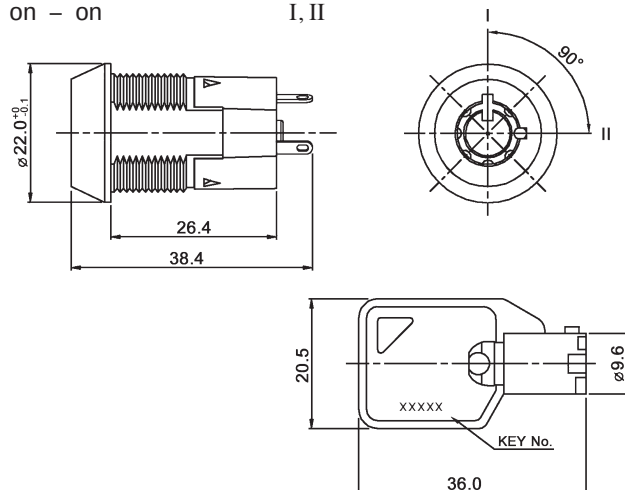
Contact rating:	250 V AC, 2 A; 125 V AC, 4 A
Contact resistance:	< 50 mΩ
Insulation resistance:	> 500 MΩ
Dielectric strength:	1500 V, 50 Hz for the duration of 1 minute
Operating temperature:	–20 °C to +70 °C
Mechanical life:	minimum 10 000 steps
Material:	Case: zinc alloy, chromium-plated Contacts and Terminals: gold-plated Key: steel, nickel-plated
Angle between 2 positions:	90°
Mounting:	single-hole mounting, 19 mm diameter

Models: Switching functions Key removable in pos

MRK 2021 R

on – on

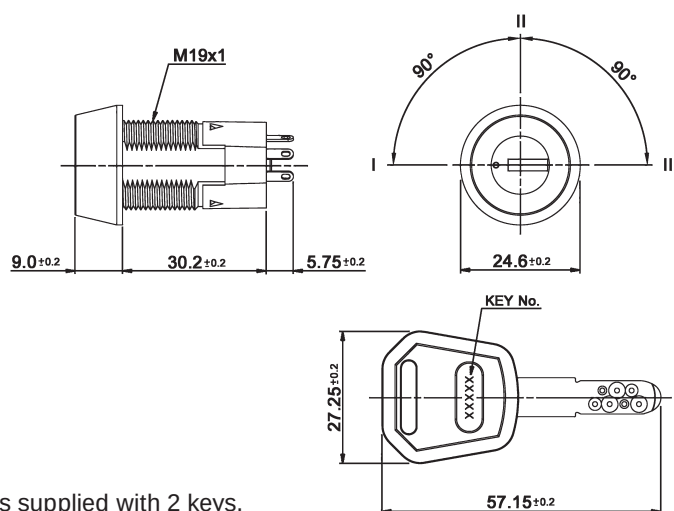
I, II



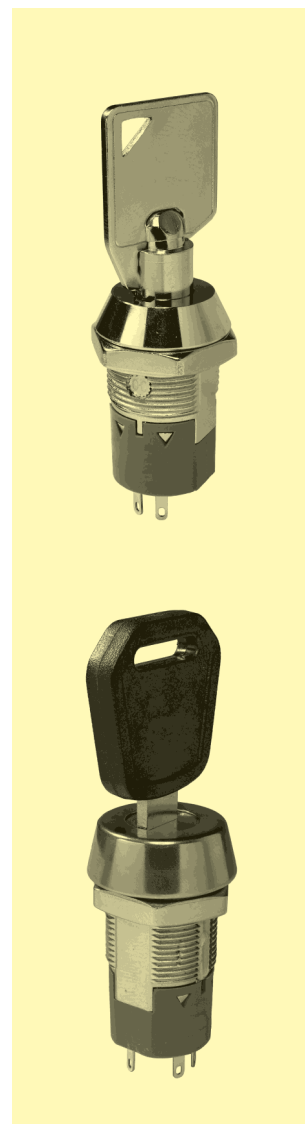
MRK 2930 N

off – on – on

I



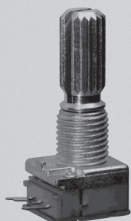
Switches are always supplied with 2 keys.



10

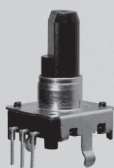
Encoder

10.1 Standard Encoder



MERPS 6	176
MER 9 / MERP 9	177 – 178
MER 11 / MERS 11 / MERP 11 / MERL 11 / MERPS 11	179 – 183
MER 16	184

10.2 Illuminated Encoder



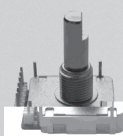
MER 12 / MERP 12	185 – 187
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10.3 Hollow Shaft Encoder



MERS 5 / 7 / 10	188
MER 10-12 R7	188
MER 23	189
MER 1045-24	190

10.4 Optical Encoder



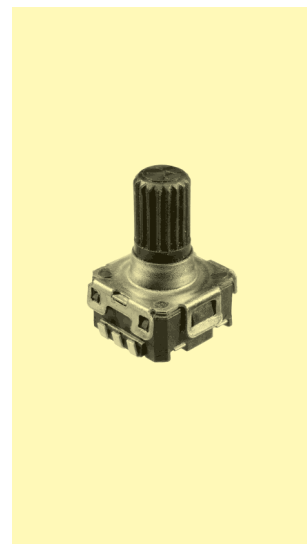
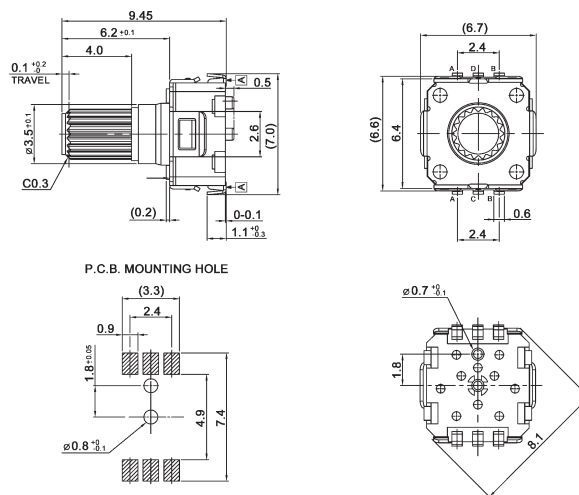
MEOP 14	191
MEOP 19	192

Specifications:

Contact rating:	5 V DC, 10 mA
Coactant resistance:	< 100mΩ
Insulation resistance:	> 50 MΩ
Dielectric strength:	100 V, 50 Hz for the duration of 1 minute
Operating temperature:	–40°C to +85°C
Detent torque:	2.5 Ncm
Pulses/Detents per turn:	6/12
Mechanical life (cycle funtion):	minimum 50 000 turns
Pushbutton function:	Actuation Force 4 N, travel 0.1 mm, mechanical life > 50 000 operations
Contacts and terminals:	silver-plated
Mounting:	on pc-board – SMD
Soldering conditions:	reflow soldering, max. 10 s, max. 260 °C

Model:

MERPS 6-6210T



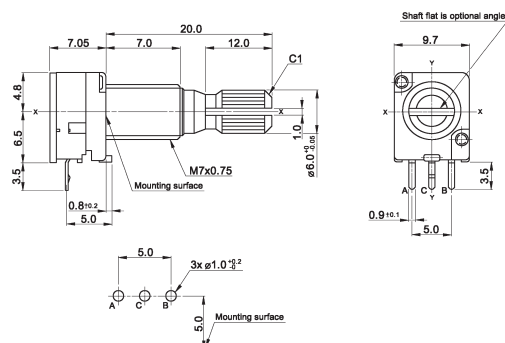
Packing: on tapes (400 pieces, Ø 330 mm)

Specifications:

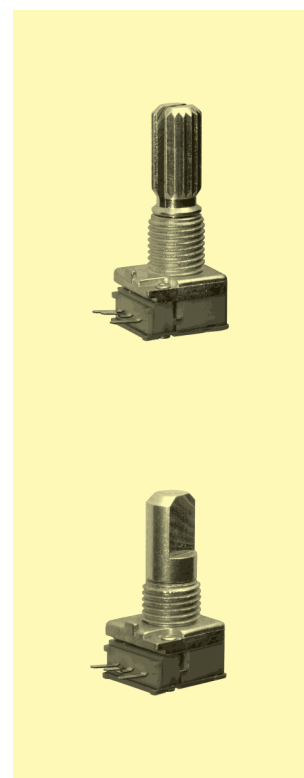
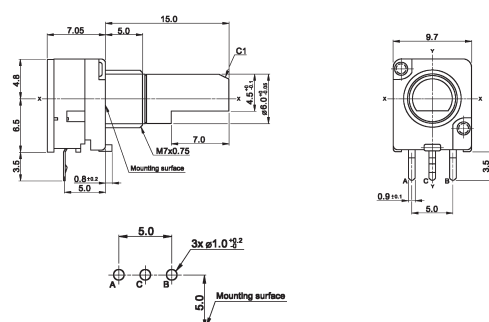
Contact rating:	5 V DC, 1 mA
Insulation resistance:	>100 MΩ
Dielectric strength:	300 V, 50 Hz for the duration of 1 minute
Operating temperature:	−40 °C to +85 °C
Rotational/Detent torque:	0.5/1.0 Ncm
Pulses/Detents per turn:	15/30
Mechanical life:	>15 000 cycles
Pushbutton (optional):	actuation force 5 N, travel 0.5 mm, life >10 000 operations
Contacts:	silver-plated
Terminals:	silver-plated
Mounting:	on pc-board
	single hole mounting M 7 x 0.75
Soldering conditions:	wave-soldering – max.: 5 sec, 260 °C

Models:

MER9-15220BM7R



MER9-15115AM7R



Output signal format:

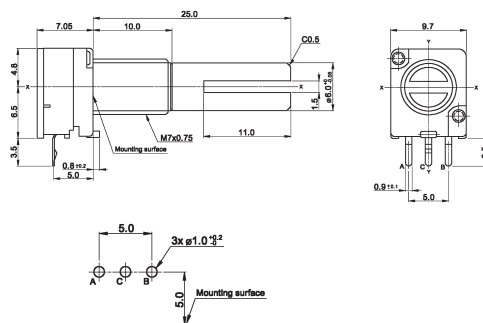
Shaft rotational direction	Signal	Output
C.W.	Terminal A-C	OFF ON
	Terminal B-C	OFF ON
C.C.W.	Terminal A-C	OFF ON
	Terminal B-C	OFF ON

Encoder

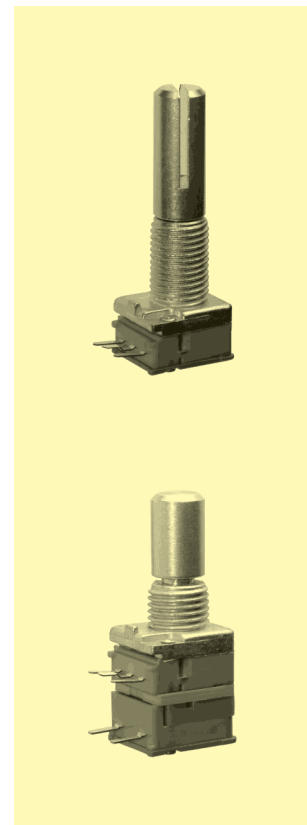
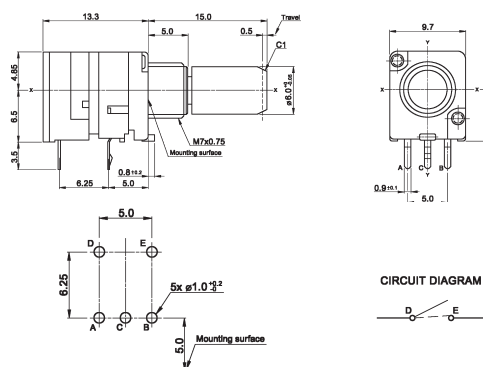


Models:

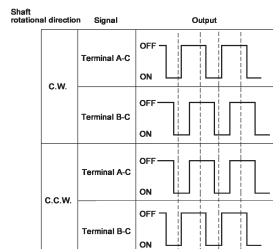
MER9-15325CM7R



MERP9-15415AM7R



Output signal format:



Ordering code 9 mm Encoder:

MER 9 -

Switch function:
☐ no switch
☐ switch

Shaft type:
☐ 1 flat shaft
☐ 2 knurled shaft
☐ 3 cut shaft
☐ 4 round shaft

Bushing:
☐ A 5 mm
☐ B 7 mm
☐ C 10 mm

Orientation:
☒ horizontal

Number of pulses:
☐ 12 12 pulses
☐ 15 15 pulses

Shaft length:
☐ 15 15 mm
☐ 20 20 mm
☐ 25 25 mm

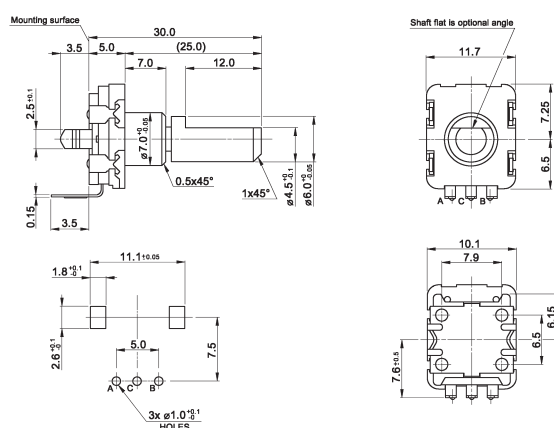
Bushing thread:
☐ M7 M7
☐ no thread

Specifications:

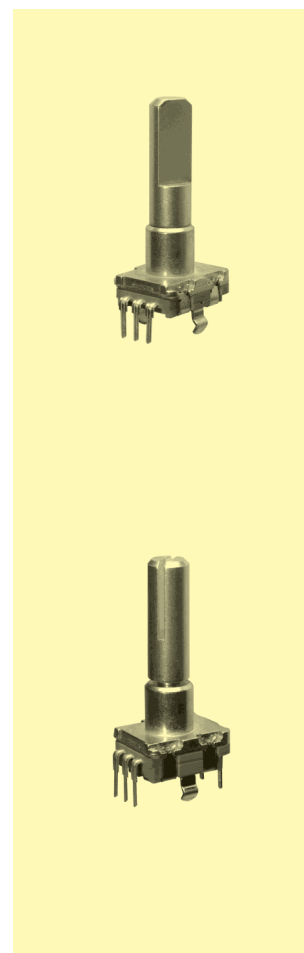
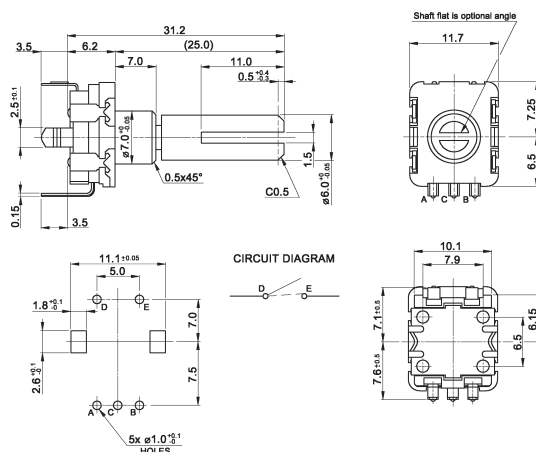
Contact rating:	5 V DC, 10 mA
Insulation resistance:	>100 MΩ
Dielectric strength:	300 V, 50 Hz for the duration of 1 minute
Operating temperature:	-10 °C to +85°C
Rotational/Detent torque:	0.5/1.2 Ncm
Mechanical life:	>15 000 cycles
Pushbutton (optional):	actuation force 6 N, travel 0.5 mm, life > 25 000 operations
Contacts:	silver-plated
Terminals:	silver-plated
Mounting:	on pc-board
	single hole mounting, bushing M 7 x 0.75
Soldering conditions:	wave-soldering – max.: 5 sec, 260 °C

Models:

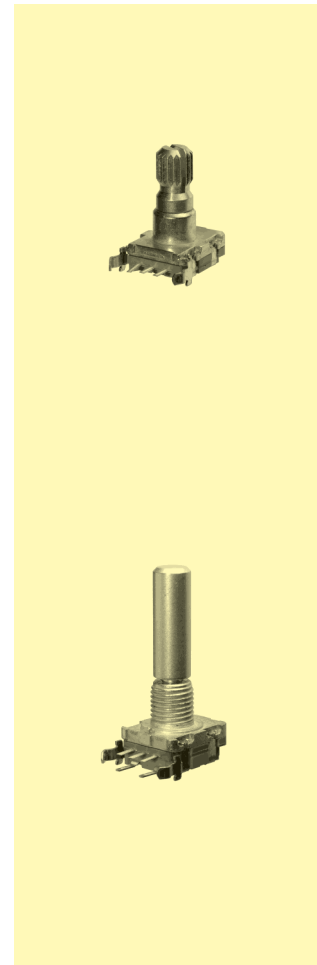
MER11-15125B



MERP11-15325B



MER11-15215A-R



Shift rotational direction	Signal	Output
C.W.	Terminal A-C	
	Terminal B-C	
C.C.W.	Terminal A-C	
	Terminal B-C	

Pushbutton:

☐ without
☒ with

Number of pulses:

☐ 08 8 pulses, 16 detents
☐ 08N 8 pulses, no detents
☐ 15 15 pulses, 30 detents
☐ 15N 15 pulses, no detents
☐ 16 16 pulses, 16 detents
☐ 16N 16 pulses, no detents
☐ 20 20 pulses, 20 detents
☐ 20N 20 pulses, no detents

Shaft type:

☐ 1 flat
☐ 2 knurled
☐ 3 cut
☐ 4 round

Shaft length:

☐ 15 15 mm
☐ 17.5 17.5 mm
☐ 20 20 mm
☐ 25 25 mm

Bushing height:

☐ A 5 mm
☐ B 7 mm

Shaft orientation:

☒ R horizontal
☐ vertical

Thread:

☒ M7 M7
☐ no thread

Travel (only for "P"):

☐ 0.5 mm
☒ 1.5 mm

Terminal B-C

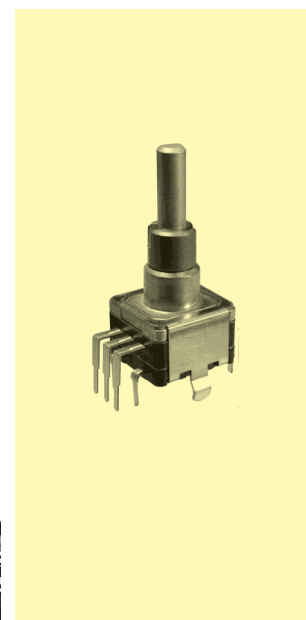
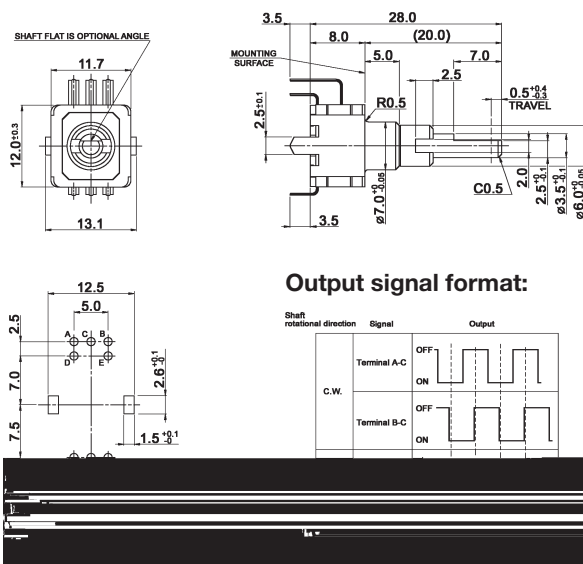
ON

Specifications:

Contact rating:	5 V DC, 10 mA
Cocontact resistance:	< 100mΩ
Insulation resistance:	> 100 MΩ
Dielectric strength:	300 V, 50 Hz for the duration of 1 minute
Operating temperature:	–40°C to +85°C
Detent torque:	1 Ncm
Pulses/Detents per turn:	15/30, version "N": no detent
Mechanical life (cycle funtion):	minimum 15 000 turns
Pushbutton function:	Actuation Force 3.5 N, travel 0.5 mm, mechanical life > 20 000 operations
Contacts and terminals:	silver-plated
Mounting:	on pc-board with pin-contact
Soldering conditions:	wave soldering, max. 5 s, max. 260 °C

Model:

MERP11-15520A



Ordering code:

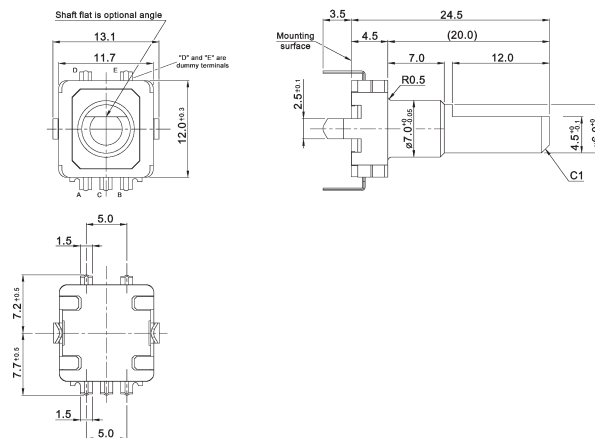
MER		11	-			
Pushbutton:	Pulses/Detents:	Shaft style:	Shaft length:	Bushing height:	Travel (for "P" only):	
☐ without	☐ 15 15 / 30	☐ 5 flat	☐ 20 20 mm	☐ A 5 mm	☐ 0.5 mm	
☐ P with	☐ 15N 15 / none				☐ 1.5 1.5 mm	

Specifications:

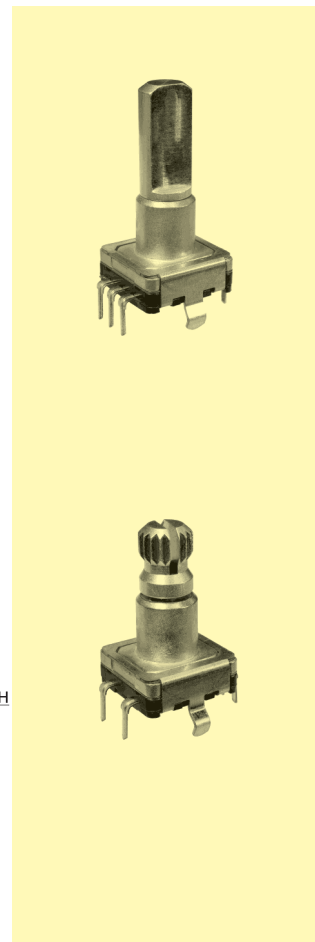
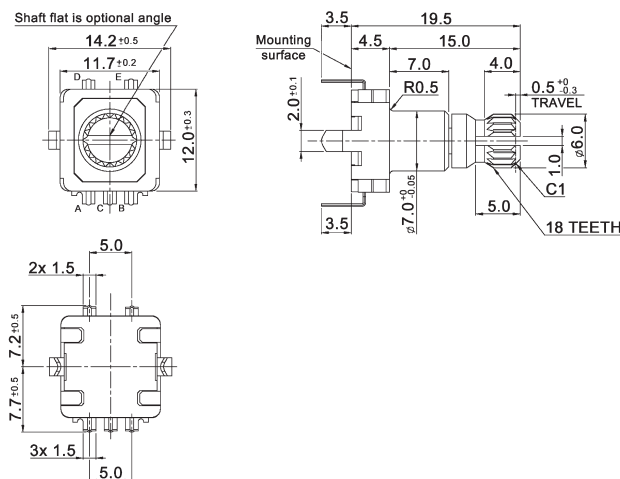
Contact rating:	5 V DC, 10 mA
Coactance resistance:	< 100mΩ
Insulation resistance:	> 100 MΩ
Dielectric strength:	300 V, 50 Hz for the duration of 1 minute
Operating temperature:	-40°C to +85°C
Detent torque:	1 Ncm
Pulses/Detents per turn:	15/30, version "N": no detent
Mechanical life (cycle funtion):	minimum 15 000 turns
Pushbutton function:	Actuation Force 3.5 N, travel 0.5 mm, mechanical life > 20 000 operations
Contacts and terminals:	silver-plated
Mounting:	on pc-board with pin-contact
Soldering conditions:	wave soldering, max. 5 s, max. 260 °C

Models:

MERL11-15120B



MERLP11-15215



Ordering code:

MERL 11 - [] [] [] [] - []

Pushbutton:

- ☐ without
☒ with

Pulses/Detents:

- ☒ 15 15 / 30
☒ 15N 15 / none

Shaft style:

- ☒ 1 flat
☐ 2 knurled

Shaft length:

- ☒ 95 9.5 mm
☐ 15 15 mm
☐ 20 20 mm
☐ 25 25 mm

Bushing height:

- ☒ A 5 mm
☐ B 7 mm
☐ 7 mm (for some types)

Travel (for "P" only):

- ☐ 0.5 mm
☒ 1.5 1.5 mm

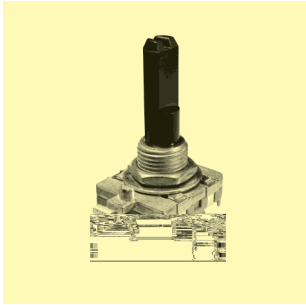
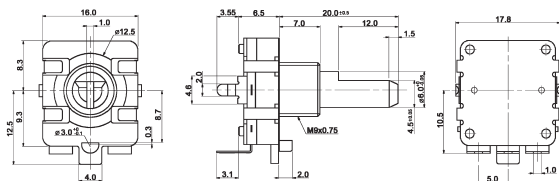


Specifications:

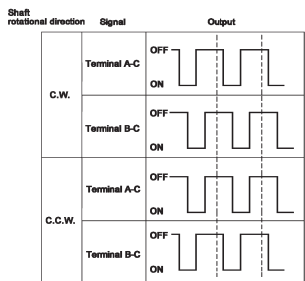
Contact rating:	5 V DC, 10 mA
Contact resistance:	< 100 mΩ
Insulation resistance:	> 100 MΩ
Dielectric strength:	50 V, 50 Hz for the duration of 1 minute
Operating temperature:	–10°C to + 70°C
Detent torque:	0.5 to 2.0 Ncm
Pulses/Detents per turn:	24/24
Mechanical life (cycle funtion):	minimum 50 000 turns
Material:	Contacts and terminals: copper alloy, silver-plated
Mounting:	on pc-board with pin-contact single hole mounting M9x0.75
Soldering conditions:	wave soldering, max. 5 s max. 260 °C

Model:

MER16-24120 M9-TW



Output signal format:

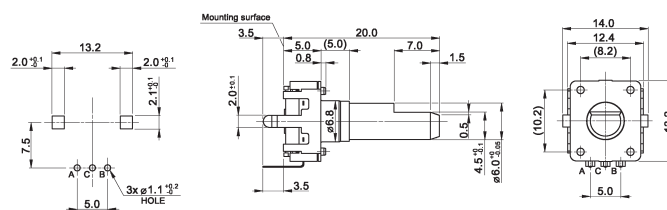


Specifications:

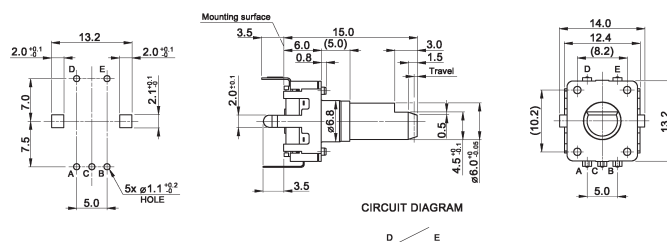
Contact rating:	5 V DC, 0.5 mA
Insulation resistance:	>100 MΩ
Dielectric strength:	300 V, 50 Hz for the duration of 1 minute
Operating temperature:	-10 °C to +70 °C
Rotational/Detent torque:	0.5 N/2.0 Ncm
Pulses/Detents per turn:	12/24 or 24/24 (12/12, 12/0, 24/0 on demand)
Mechanical life:	>30 000 cycles
Pushbutton (optional):	actuation force 3 N, travel 0.5 mm, life > 20 000 operations
Contacts:	silver-plated
Terminals:	silver-plated
Mounting:	on pc-board
	single hole mounting, bushing M 9 x 0.75
Soldering conditions:	wave-soldering – max.: 5 sec, 260 °C

Models:

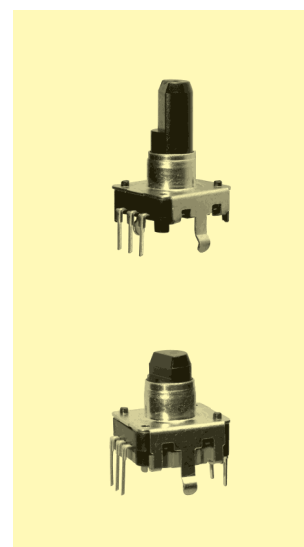
MER12-24120



MERP12-24115



CIRCUIT DIAGRAM



10

Ordering code 12 mm Encoder:

MER

Pushbutton:
☐ without
☒ with

Shaft type:
☒ flat

Thread:
☐ without
☒ M9

Pulses/Detents:
☐ 12 / 24
☒ 12N / none
☒ 12P / 12
☐ 24 / 24
☒ 24N / none

Shaft length:
☐ 8.5 / 8.5 mm
☐ 15 / 15.0 mm
☒ 17.5 / 17.5 mm
☐ 20 / 20.0 mm
☐ 25 / 25.0 mm

Shaft orientation:
☐ vertical
☒ horizontal

Output signal format:

Shaft rotational direction	Signal	Output
C.W.	Terminal A-C	OFF ON
	Terminal B-C	OFF ON
C.C.W.	Terminal A-C	OFF ON
	Terminal B-C	OFF ON

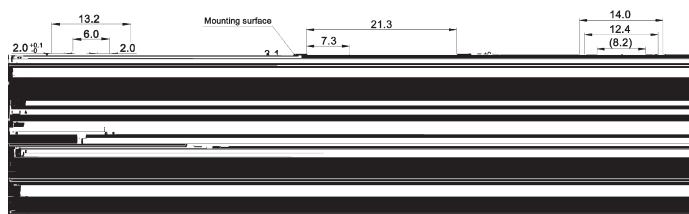
Illuminated Encoder

Specifications:

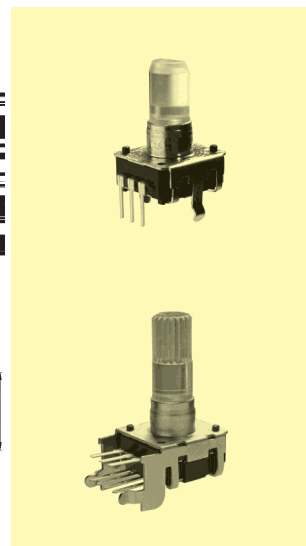
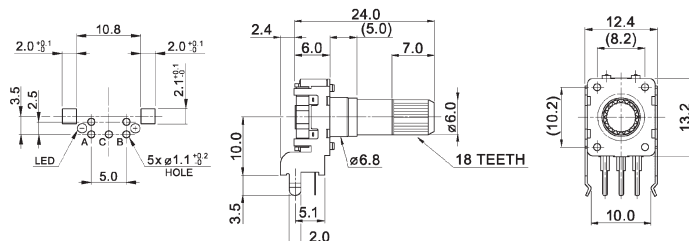
Contact rating:	5 V DC, 0.5 mA
Insulation resistance:	>100 MΩ at 250 V DC / 1 mA
Dielectric strength:	300 V AC for 1 minute
Operating temperature:	-10 °C to +70 °C
Rotational/Detent torque:	0.5 Ncm/2.0 Ncm
Pulse/Detents per turn:	12/12 or 24/24, version "N": no detent
Mechanical life (cycle function):	minimum 30 000 cycles
Pushbutton (optional):	Operating force: 4 N, travel 0.5 mm, mechanical life >20 000 operations
Contacts:	silver-plated
Terminals:	silver-plated
Mounting:	on pc-board with pin-contact optional single hole mounting, bushing M 9 x 0.75
Illuminating:	Types with push button: 2 LED; types without push button: 1 LED
Soldering conditions:	wave-soldering – max.: 5 sec, 260 °C

Models:

MERP12-24121BG



MER12-12224RE-R



Output signal format:

Shaft rotational direction	Signal	Output
C.W.	Terminal A-C	OFF ON
	Terminal B-C	OFF ON
C.C.W.	Terminal A-C	OFF ON
	Terminal B-C	OFF ON

Ordering code 12 mm Encoder:

Switch function:
☐ no switch
☐ switch

Detent:
☐ with
☐ without

Shaft type:
☐ 1 flat shaft
☐ 2 knurled shaft

Bushing thread:
☐ M9 M9
☐ no thread

LED colour:
☐ BL blue (for MER)
☐ RE red (for MER)
☐ GN green (for MER)
☐ OA orange (for MER)
☐ WH white (for MER)
☐ OB orange, blue (for MERP)
☐ BG blue, green (for MERP)
☐ GR red, green (for MERP)

Number of pulses:
☐ 12 12 pulses
☐ 24 24 pulses

Shaft length:
on demand

Orientation:
☐ R horizontal
☐ vertical

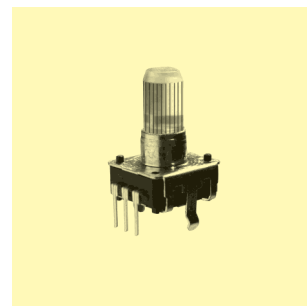
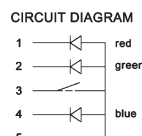
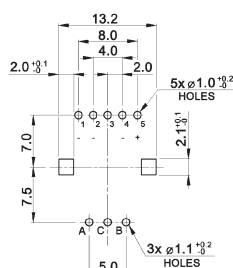
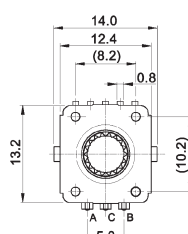
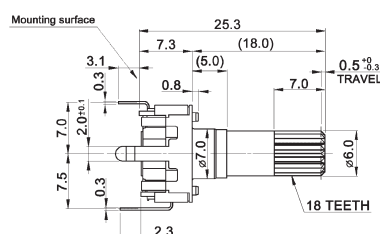
Ordering code: MER ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ - ☐

Specifications:

Contact rating:	5 V DC, 0.5 mA
Insulation resistance:	>100 MΩ
Dielectric strength:	300 V, 50 Hz for the duration of 1 minute
Operating temperature:	-10 °C to +70 °C
Rotational/Detent torque:	0.5 Ncm / 2.0 Ncm
Pulses/Detents per turn:	12/12 or 24/24, version "N": no detent
Mechanical life (cycle function):	minimum 30 000 turns
Pushbutton function:	Actuation force 4.5 ± 2 N, travel 0.5 mm, mechanical life >20 000 operations
Material:	Contacts: stainless steel, silver-plated
Contacts and terminals:	silver-plated
Mounting:	on pc-board with pin-contact
Illuminating:	RGB-LED
Soldering conditions:	wave-soldering – max.: 5 sec, 260 °C

Model:

MERP12-24225M



Output signal format:

Shaft rotational direction	Signal	Output
C.W.	Terminal A-C	OFF ON
	Terminal B-C	OFF ON
C.C.W.	Terminal A-C	OFF ON
	Terminal B-C	OFF ON

Ordering code 12 mm Encoder:

MER **P** **12** **1** **1** **1** **M** **-** **1**

Switch function:
☒ switch

Detent:
☐ with
☒ without

Orientation:
☒ horizontal
☐ vertical

Number of pulses:
☒ 12 pulses
☐ 24 pulses

Shaft type:
☒ 116 flat 16 mm
☐ 118.5 flat 18.5 mm
☐ 121 flat 21 mm
☐ 126 flat 26 mm
☐ 131 flat 31 mm
☐ 225 knurled 25 mm

Bushing thread:
☒ M9 M9
☐ no thread

LED colour:
☒ M RGB-LED

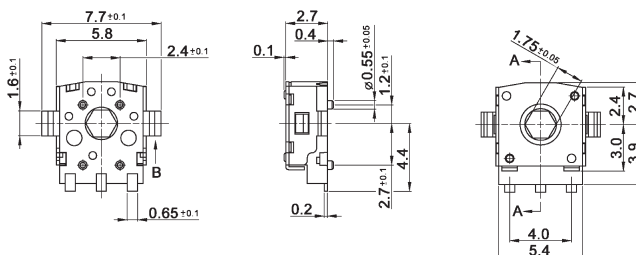
Hollow Shaft Encoder

Specifications:

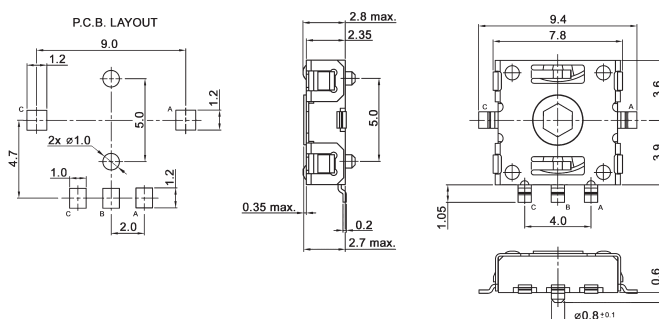
Contact rating:	5 V DC, 1 mA
Contact resistance:	$< 1 \Omega$
Insulation resistance:	$> 10 \text{ M}\Omega$
Dielectric strength:	50 V, 50 Hz for the duration of 1 minute
Operating temperature:	$-40 \text{ }^{\circ}\text{C}$ to $+85 \text{ }^{\circ}\text{C}$
Rotational torque:	$0.5 \pm 0.3 \text{ Ncm}$
Pulses/Detents per turn:	12/24
Mechanical life:	minimum 100 000 turns
Contacts and terminals:	silver-plated
Mounting:	on pc-board with pin-contact
Soldering conditions:	wave-soldering: max. 3 s, max. $260 \text{ }^{\circ}\text{C}$; pre-heat: max. 60 s, max. $100 \text{ }^{\circ}\text{C}$

Models:

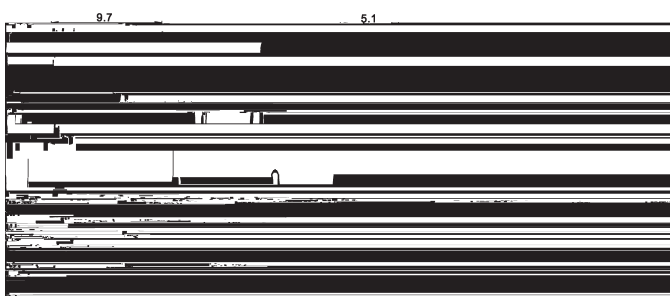
MERS5-12A-V



MERS7-12
MERS7-24



MER10-12 R7



Packing:

MERS5-12 A-V, tape & reel 1400 pcs.

MERS7-12, MERS7-24, bulk 500 pcs., MERS7-12 T, MERS7-24 T, tape & reel 1200 pcs.

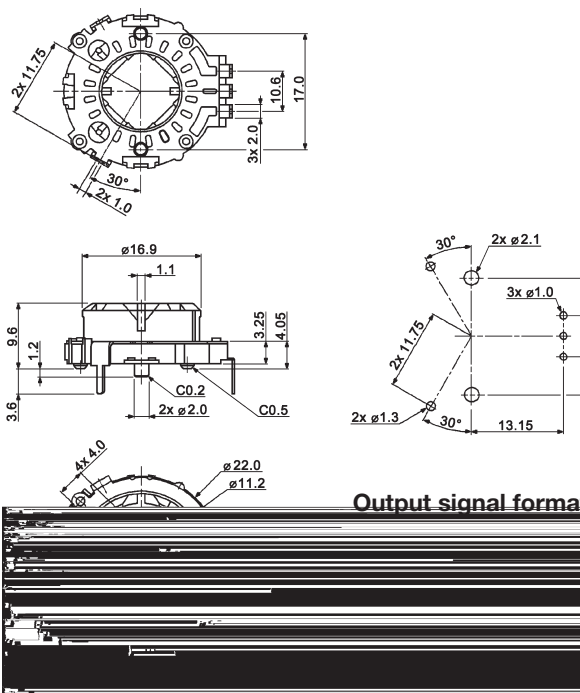
MER10-12 R7, bulk, 400 pcs.

Specifications:

Contact rating:	5 V DC, 10 mA
Contact resistance:	$<1 \Omega$
Insulation resistance:	$>100 \text{ M}\Omega$
Dielectric strength:	100 V, 50 Hz for the duration of 1 minute
Operating temperature:	-10°C to $+70^\circ\text{C}$
Rotational torque:	$0.6 \pm 0.41 \text{ Ncm}$
Pulses/Detents per turn:	20/20
Mechanical life:	minimum 30 000 turns
Material:	Contacts: stainless steel, silver-plated
Contacts and terminals:	silver-plated
Mounting:	on pc-board with pin-contact
Soldering conditions:	wave-soldering: max. 5 s max. 250°C ; pre-heat: max. 60 s max. 100°C

Model:

MER23-20



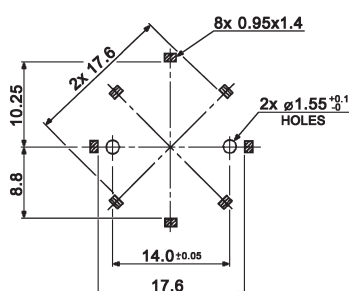
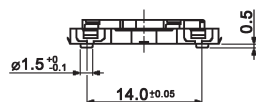
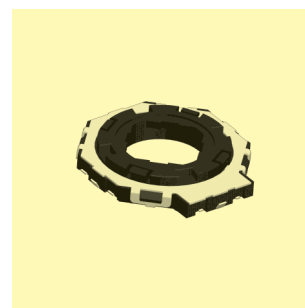
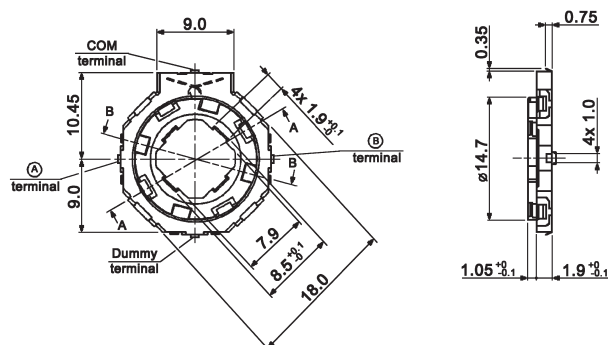
Hollow Shaft Encoder

Specifications:

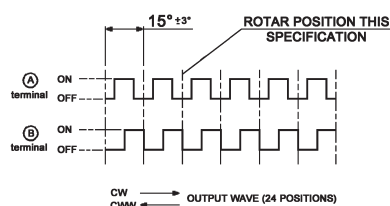
Contact rating:	5 V DC, 10 mA
Contact resistance:	< 1 Ω
Insulation resistance:	> 100 MΩ
Dielectric strength:	100 V, 50 Hz for the duration of 1 minute
Operating temperature:	−10 °C to +60 °C
Rotational torque:	0.3 ± 0.05 Ncm
Pulses/Detents per turn:	24/24
Mechanical life:	minimum 50 000 turns
Contacts and terminals:	silver-plated
Mounting:	on pc-board – SMD
Soldering conditions:	reflow-soldering, max. 10 sec, max. 240 °C

Models:

MER1045-24



Output signal format:

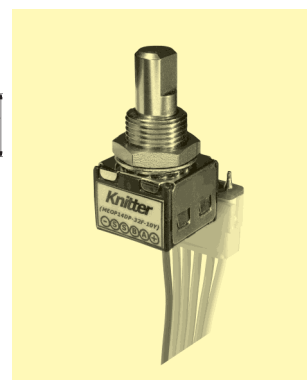
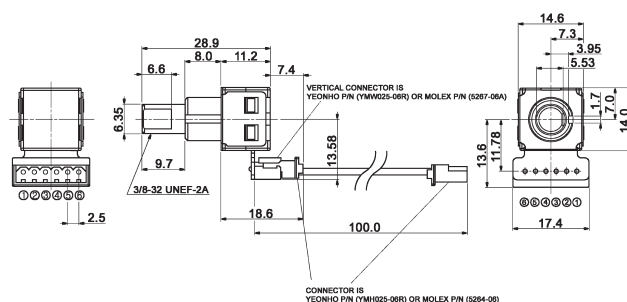


Specifications:

Power supply:	3.3 or 5 V DC, 20 mA max.
Insulation resistance:	> 100 M Ω
Dielectric strength:	300 V, 50 Hz for the duration of 1 minute
Operating temperature:	-10 °C to +50 °C
Rotational torque:	1 or 2 Ncm
Pulses/Detents per turn:	4/16, 8/32
Frequency response:	100 Hz max.
Electrical life:	> 1 000 000 turns
Pushbutton:	Contact rating: 12 V DC, 10 mA, min. 0.1 mA
	Contact resistance: < 10 Ω
	Operating force: 10 N
	Electrical Life: > 1 000 000 cycles
	Travel: 0.3 mm
Mounting:	single hole mounting, thread 3/8-32 UNEF-2A

Model:

MEOP 14 DP32F10-Y



Optical Encoder



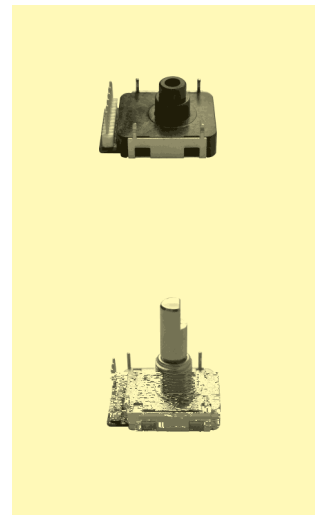
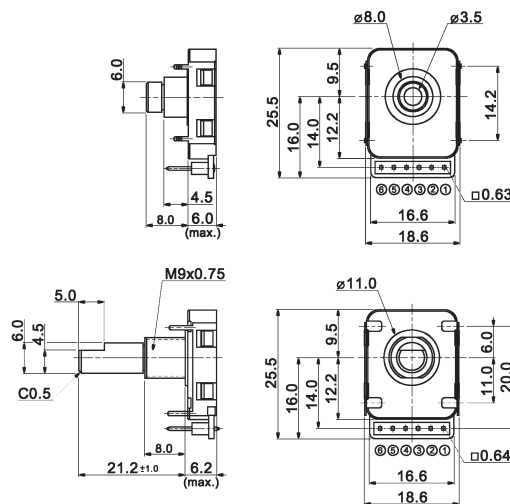
Specifications:

Power supply:	3.3 or 5 V DC (+/- 5%), 20 mA max.
Insulation resistance:	>100 MΩ
Dielectric strength:	300 V, 50 Hz for the duration of 1 minute
Operating temperature:	-20 °C to +70 °C
Rotational torque:	0.5 ± 0.2 Ncm
Pulses/Detents per turn:	6/0, 6/24, 16/0, 16/16, 24/0, 24/24
Frequency response:	100 Hz max.
Electrical life:	> 1 000 000 turns
Pushbutton:	Contact rating: 12 V DC, 10 mA, min. 0.1 mA Contact resistance: <10 Ω Operating force: 5 ± 2 N Mechanical Life: > 1 000 000 cycles Travel: 0.3 or 1 mm
Mounting:	on pc-board with pin-contact single hole mounting M 9 x 0.75
Soldering conditions:	wave soldering, max. 5 s, 260 °C, pre-heat max. 60 s, 100 °C

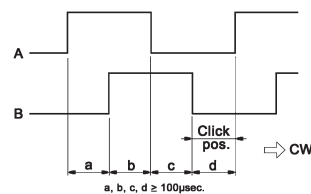
Models:

MEOP 19 VGP-06C-P2R08-PF-3F

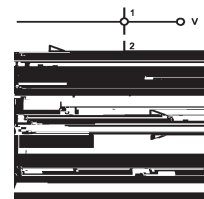
MEOP 19 VGM-24C-M2F21-PF-5F



Output signal format:



Pin assignment:



4 location pins:

- [F] front
- [R] rear
- [N] none

Ordering code:

MEOP 19 [] [] [] - [] [] [] [] - [] [] [] [] - [] [] [] []

Shaft direction:

- [H] horizontal
- [V] vertical

Case material:

- [M] metal
- [P] plastic

Switch travel:

- [D] 1 ± 0.2 mm
- [G] 0.3 ± 0.05 mm

Pulse:

- [06]
- [16]
- [24]

Detents:

- [C] with
- [N] no detent

Shaft material:

- [M] metal
- [P] plastic

Shaft diameter:

- [1] 6.35 mm
- [2] 6.00 mm
- [3] 4.00 mm

Shaft type:

- [F] flat
- [R] round

Shaft length:

- [08] 8 mm
- [17] 17 mm
- [21] 21 mm
- other on request

Connector type:

- [P] pin-header
- [Y] (*)
- [T] (**)

Voltage:

- [3] 3.3 V
- [5] 5 V

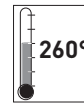
Connector direction:

- [F] front
- [R] rear

(*) Molex 5264 -06 (or compatibel) with 100 mm cable
 (**) AMP 215083-6 (or compatibel) with 100 mm cable

Type	Operating		Terminals		Size	Special feature	Pages
	top	side	T/H	SMT			
DTS 110 BBP-RT		•		•	5.55x4.0	NC, gold contacts	194
DTS 110 CBP-RT-1		•		•	5.55x4.0	gold contacts	
DTS 110 CB PRT1S-LF		•		•	5.55x4.0	contacts 0,15 µm gold	
DTS 110 CB PRT2S-LF		•		•	5.55x4.0	contacts 0,5 µm gold	
DTS 110 C P R-T		•		•	5.55x4.0		
DT 101 C-P	•		•		6.5x3.9		195
DTS 101 C P-T		•		•	6.5x3.9		
DTS 101 C P T-1	•			•	6.5x3.9		
DTS 03	•			•	5.2x3.0		196
DT 103 CP-R		•	•		6.4x3.7		
DTS 103 CP-R		•		•	6.4x4.25		
DT 106 C-P	•		•		5.0x4.0		197
DTS 06 A-T	•			•	5.0x4.0		
DTS 06 A1 C-T	•			•	5.0x4.0		
DTS 201 C P-T		•		•	3.5x2.8		198
DTS 01		•		•	3.5x2.8		
DTS 226 C-T		•		•	3.35x2.2		
DTS 204 C P-T		•		•	3.5x3.3		199
DTS 204 C-T		•		•	3.5x3.3		
DTS 205 CP-T		•		•	4.2x3.6		
DTS 205 C-T		•		•	4.2x3.6		200
DTS 205 CPJ-T		•		•	4.2x3.6		
DTS 205 CJ-T		•		•	4.2x3.6		
DTS 207 CP R T-1		•		•	5.7x4.9		201
DTS 208 CP R T-1		•		•	5.7x4.9		
DTS 209 BPR-T		•		•	3.5x3.3	NC	202
DTS 209 BR-T		•		•	3.5x3.3	NC	
DTS 209 CPR-T		•		•	3.5x3.3		
DTS 209 CR-T		•		•	3.5x3.3		
DT 220 C-P		•	•		9.0x3.5		203
DT 223 F		•	•		8.0x5.6	SPDT	204
DTS 302 C P R T-1		•		•	5.0x4.15		205
DTS 11 LCP 0.7-T	•			•	6.0x4.5	NC	
DT 316 C		•		•	7.5x5.6	3 Mio. operations	206
DTS 316 C-T		•		•	7.5x5.6		
DT 316 C-R		•	•		7.5x5.6	3 Mio. operations	207
DTS 316 CPR-T		•		•	7.5x5.6	3 Mio. operations	
DTS 309 C-T		•		•	4.7x3.8		208
DTS 309 C T-K		•		•	4.7x3.8		
DTS 312 CP-T		•		•	4.7x3.8		
DTS 312 C-T		•		•	4.7x3.8		

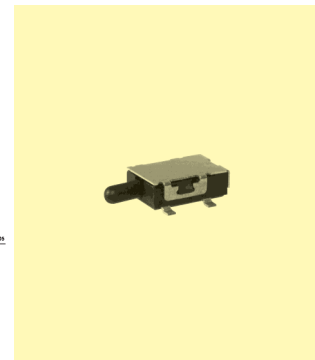
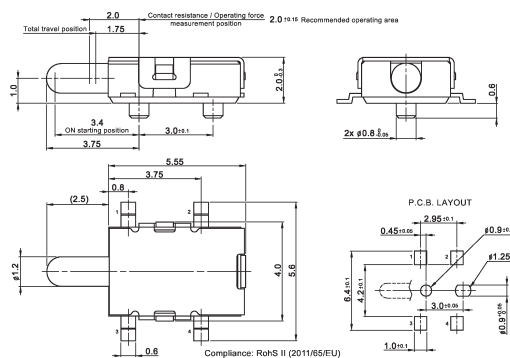
Detector Switches



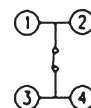
Specifications:

Contact rating:	5 V DC, 1 mA (DTS 110 CBP-RT-1: 12 V DC, 100 mA)
Contact resistance:	$< 1 \Omega$
Insulation resistance:	$> 100 \text{ M}\Omega$
Dielectric strength:	100 V, 50 Hz for the duration of 1 minute
Operating temperature:	-40°C to $+85^\circ\text{C}$ (DTS 110 CBP-RT-1: -25°C to $+85^\circ\text{C}$)
Operating force:	$< 1.2 \text{ N}$
Mechanical life:	minimum 100 000 operations
Material:	Contacts: copper alloy, silver- or gold-plated Terminals: brass, silver- or gold-plated Case and actuator: PA9T / PPS / HTN Cover: stainless steel

Models: Switching functions



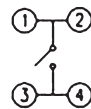
DTS 110 BBP-RT (gold-plated) on – (mom)



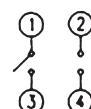
DTS 110 CBP-RT-1 (gold-plated) off – mom

DTS 110 CB PRT1S-LF (gold-plated) off – mom

DTS 110 CB PRT2S-LF (for Smoke Detector, gold-plated 0.5 μm) off – mom



DTS 110 C P R-T off – mom



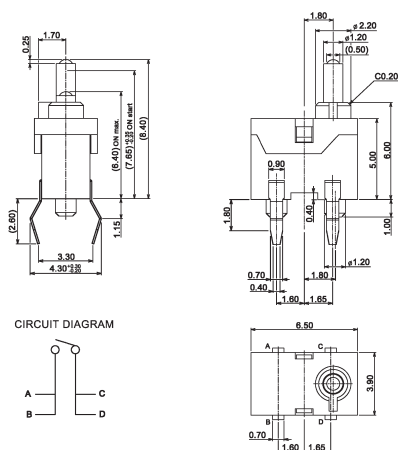
Further types on request

Specifications:

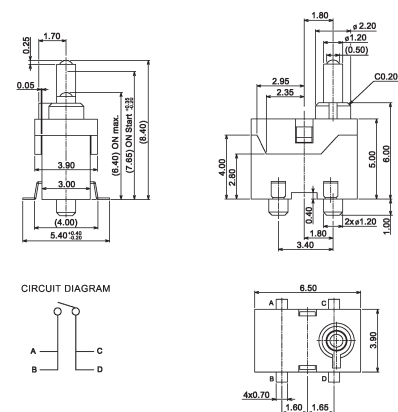
Contact rating:	5 V DC, 5 mA
Contact resistance:	< 500 mΩ
Insulation resistance:	> 100 MΩ
Dielectric strength:	250 V, 50 Hz for the duration of 1 minute
Operating temperature:	-20 °C to +70 °C
Operating force:	< 0.35 N
Mechanical life:	minimum 50 000 operations
Material:	Contacts: stainless steel, silver-plated Terminals: phosphor bronze, silver-plated Case and actuator: HTN / LCP, black

Models: Switching functions

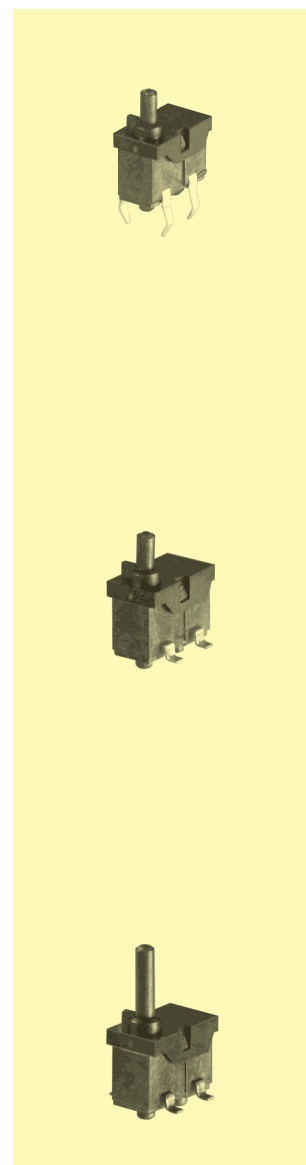
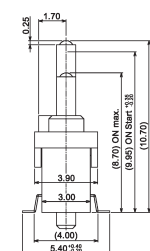
DT 101 C-P off – mom



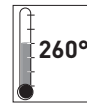
DTS 101 C P-T off – mom



DTS 101 C P T-1 off – mom



Detector Switches

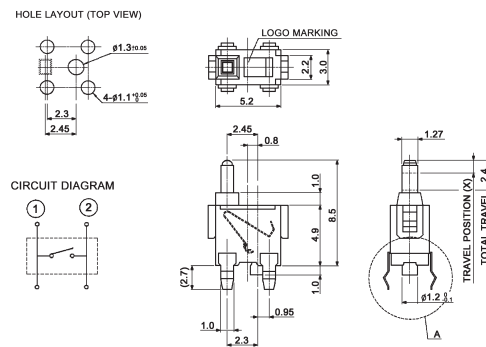


Specifications:

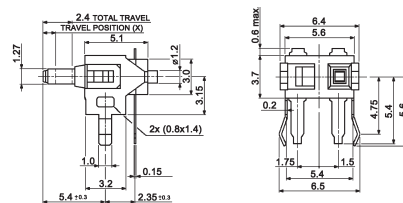
Contact rating:	5 V DC, 10 mA
Contact resistance:	< 0.5 Ω
Insulation resistance:	> 100 M Ω
Dielectric strength:	100 V, 50 Hz for the duration of 1 minute
Operating temperature:	-10 °C to +60 °C (DTS 103 CP-R: -40 °C to +85 °C)
Operating force:	< 0.35 N
Mechanical life:	minimum 50 000 operations
Material:	Contacts: phosphor-bronze, silver-plated Terminals: brass, silver-plated Case and actuator: PA, LCP

Models: Switching functions

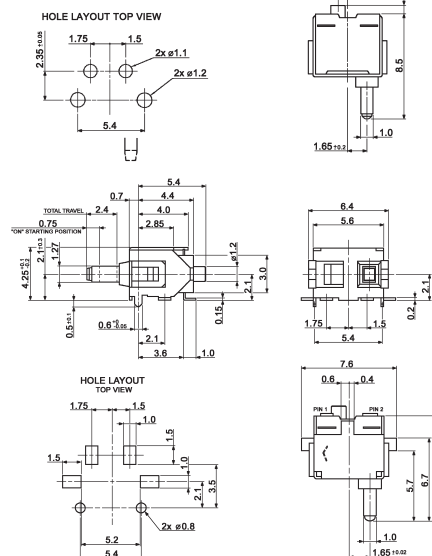
DTS 03 off – mom



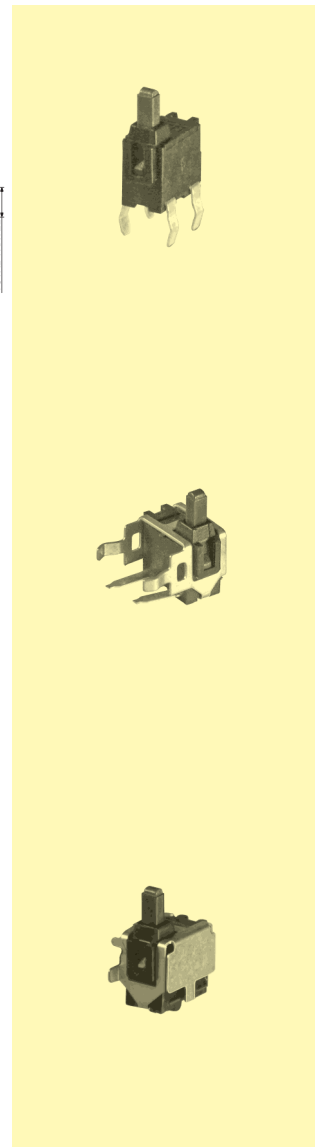
DT 103 CP-R off – mom

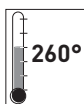


DTS 103 CP-R off – mom



Packing: 1000 pcs/bag





Detector Switches

Specifications:

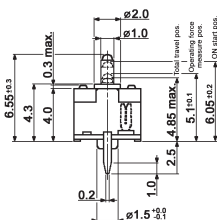
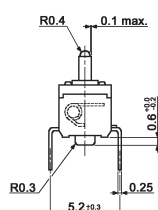
Contact rating:	30 V DC, 100 mA
Contact resistance:	< 500 mΩ, DTS 106 CBT-1: < 1 Ω
Insulation resistance:	> 100 MΩ
Dielectric strength:	100 V, 50 Hz for the duration of 1 minute
Operating temperature:	–10 °C to +60 °C, DTS 06 A1 C-T and DTS 106 CBT-1: –40 °C to +85 °C
Operating force:	< 0.4 N
Mechanical life:	minimum 50 000 operations
Material:	Contacts: silver-plated, DTS 106 CBT-1: gold-plated Terminals: silver-plated, DTS 106 CBT-1: gold-plated Case, Actuator: PA

Models:

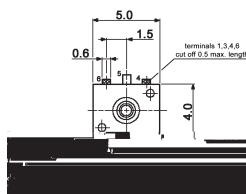
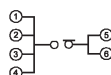
Switching functions

DT 106 C-P

off – mom

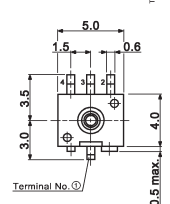
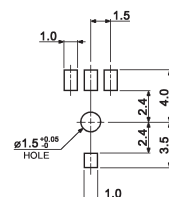
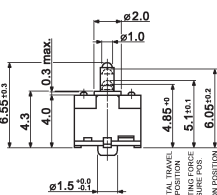
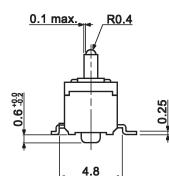


CIRCUIT DIAGRAM

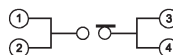


DTS 06 A-T

off – mom



CIRCUIT DIAGRAM



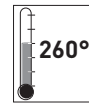
DTS 06 A1 C-T
DTS 106 CBT-1

off – mom

as DTS 06 A-T, but without posts



Detector Switches



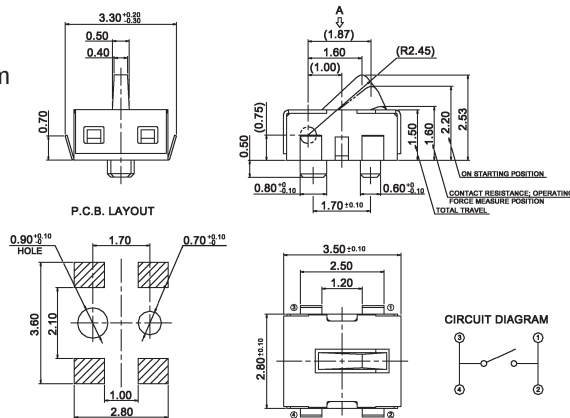
Specifications:

Contact rating:	5 V DC, 1 mA (DTS 226 C-T: 10 mA)
Contact resistance:	$< 2 \Omega$
Insulation resistance:	$> 100 \text{ M}\Omega$
Dielectric strength:	100 V, 50 Hz for the duration of 1 minute
Operating temperature:	-40°C to $+85^\circ\text{C}$
Operating force:	$< 0.5 \text{ N}$
Mechanical life:	minimum 100 000 operations (DTS 226 C-T: 50 000)
Material:	Contacts: phosphor-bronze, silver-plated Terminals: brass (DTS 226 C-T: phosphor bronze), silver-plated Case and actuator: LCP

Models: Switching functions

DTS 201 C P-T

off – mom



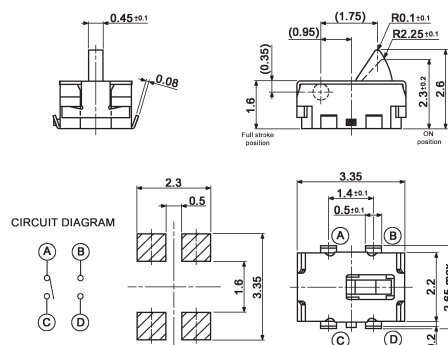
DTS 01

off – mom as above, but without posts

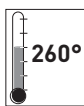


DTS 226 C-T

off – mom



Packing: 2600 pcs/reel (DTS 226 C-T: 3000 pcs/reel)



Detector Switches

Specifications:

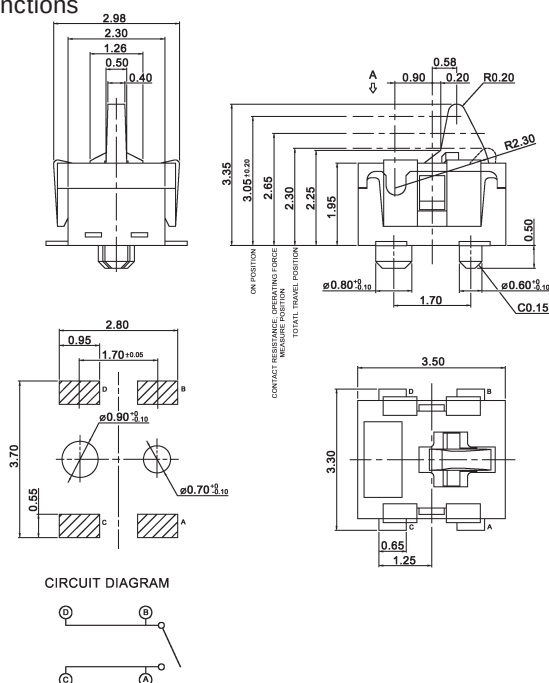
Contact rating:	5 V DC, 100 mA
Contact resistance:	< 0.5 Ω
Insulation resistance:	> 100 M Ω
Dielectric strength:	250 V, 50 Hz for the duration of 1 minute
Operating temperature:	-15 °C to +70 °C
Operating force:	< 0.35 N
Mechanical life:	minimum 80 000 operations
Material:	Contacts: stainless steel, silver-plated Terminals: phosphor bronze, silver-plated Case and actuator: HTN, black

Models:

Switching functions

DTS 204 C P-T

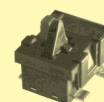
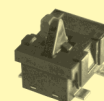
off – mom



DTS 204 C-T

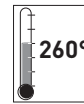
off – mom

as above, but without posts



Packing: 1800 pcs/reel

Detector Switches

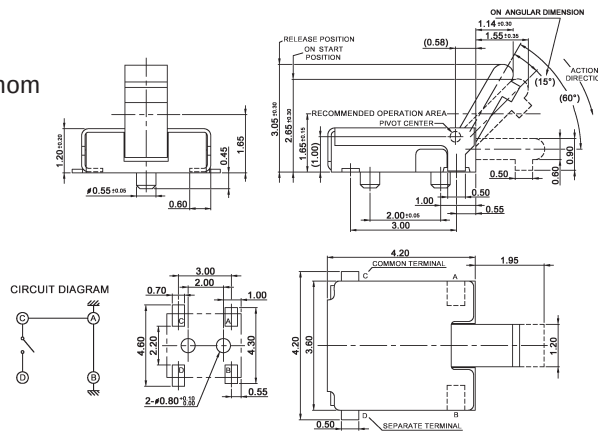


Specifications:

Contact rating:	5 V DC, 10 mA and 3.6V, 100 mA
Contact resistance:	$< 1 \Omega$
Insulation resistance:	$> 100 \text{ M}\Omega$
Dielectric strength:	100 V, 50 Hz for the duration of 1 minute
Operating temperature:	-40°C to $+85^\circ\text{C}$
Operating force:	$\leq 0.4 \text{ N}$
Mechanical life:	minimum 100 000 operations
Material:	Contacts: copper-alloy, gold-plated Terminals: brass, silver-plated Case and actuator: HTN, black Cover: stainless steel

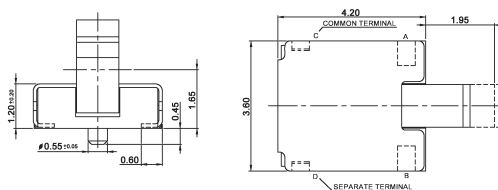
Models: Switching functions

DTS 205 CP-T off – mom

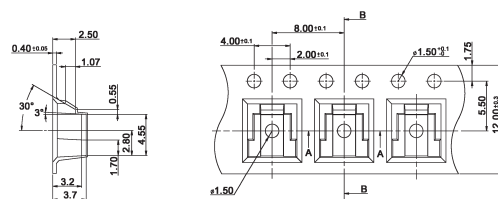


DTS 205 C- T off – mom as above, but without posts

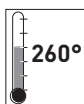
DTS 205 CPJ-T off – mom



DTS 205 CJ-T off – mom as above, but without posts



Packing: 2300 pcs/reel



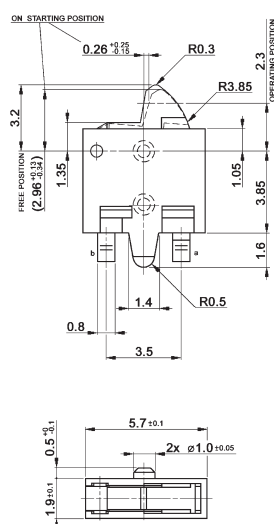
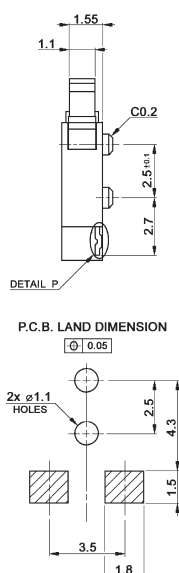
Detector Switches

Specifications:

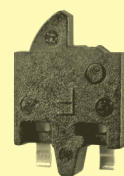
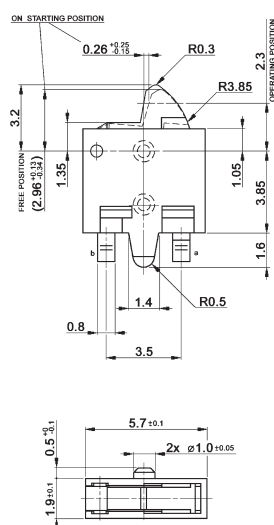
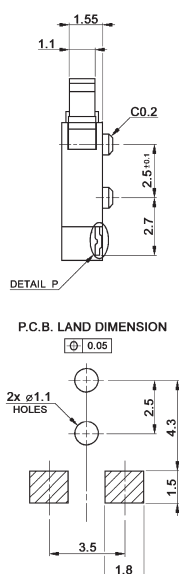
Contact rating:	5 V DC, 10 mA
Contact resistance:	< 500 mΩ
Insulation resistance:	> 100 MΩ
Dielectric strength:	500 V, 50 Hz for the duration of 1 minute
Operating temperature:	-20 °C to +70 °C
Operating force:	< 0.28 N
Mechanical life:	minimum 100 000 operations
Material:	Contacts: stainless steel, silver-plated Terminals: brass, silver-plated Case and actuator: PA9T, black

Models: Switching functions

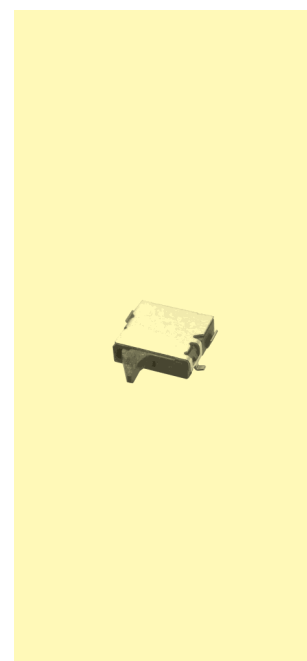
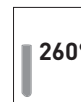
DTS 207 CP R T-1 off – mom



DTS 208 CP R T-1 off – mom



Packing: 2500 pcs/reel





Detector Switches

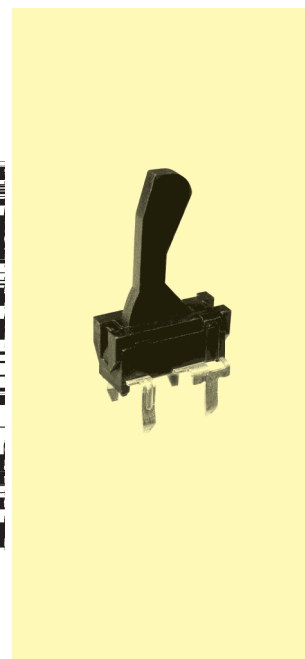
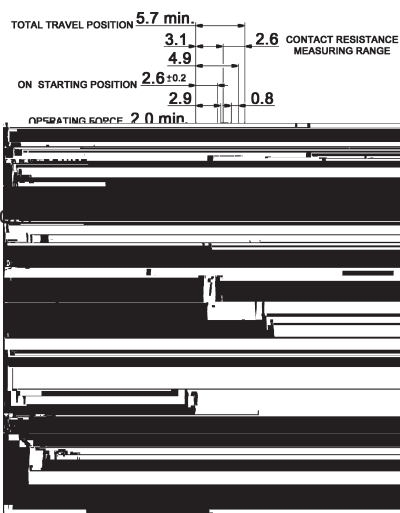
Specifications:

Contact rating:	5 V DC, 1 mA
Contact resistance:	< 500 mΩ
Insulation resistance:	> 100 MΩ
Dielectric strength:	500 V, 50 Hz for the duration of 1 minute
Operating temperature:	– 20 °C to + 70 °C
Operating force:	< 0.25 N
Mechanical life:	minimum 100 000 operations
Material:	Contacts: copper-alloy, silver-plated Terminals: brass, silver-plated Case: PA Actuator: POM

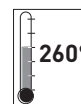
Models: Switching functions

DT 220 C-P

off – m



Detector Switches

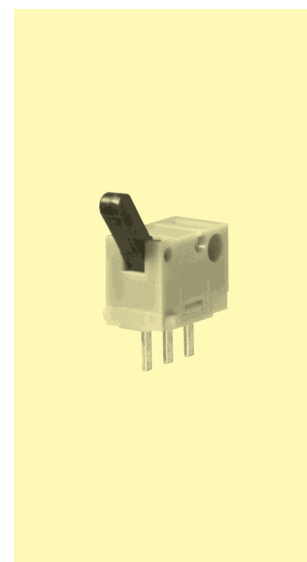
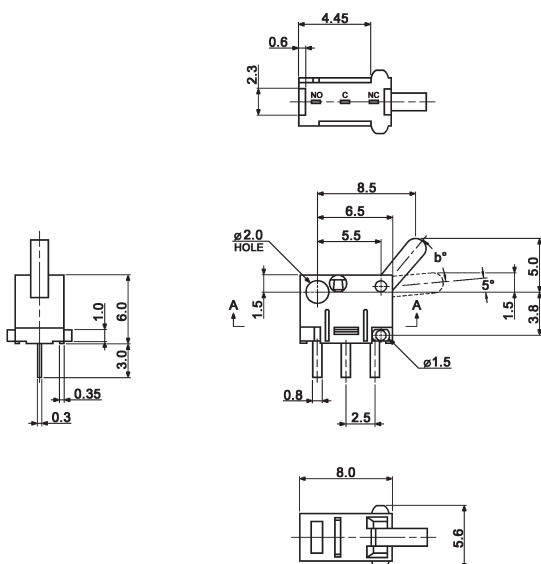


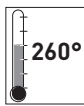
Specifications:

Contact rating:	30 V DC, 100 mA
Contact resistance:	< 30 mΩ
Insulation resistance:	> 100 MΩ
Dielectric strength:	500 V, 50 Hz for the duration of 1 minute
Operating temperature:	-10 °C to +60 °C
Operating force:	< 0.9 N
Mechanical life:	minimum 10 000 operations
Material:	Contacts: phosphor-bronze, silver-plated Terminals: brass, silver-plated Case and actuator: PA

Models: Switching functions

DT 223 F mom – on





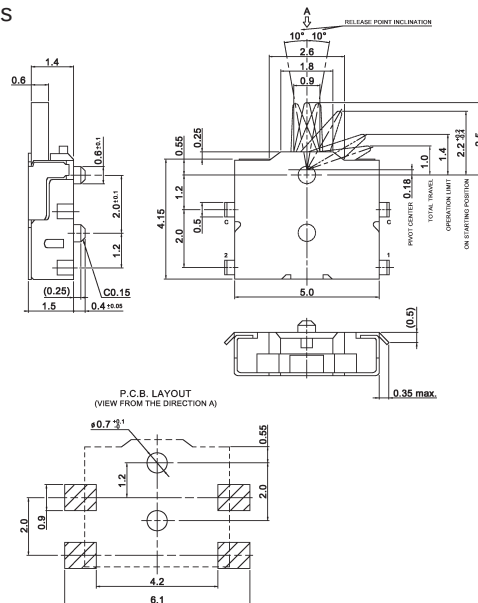
Detector Switches

Specifications:

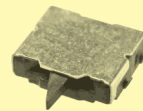
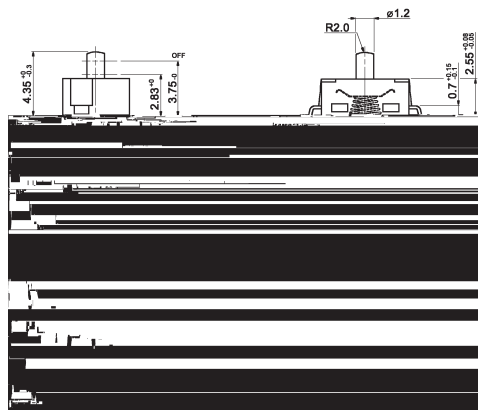
Contact rating:	5 V DC, 10 mA (DTS 11: 5 mA)
Contact resistance:	< 0.5 Ω (DTS 11: < 1 Ω)
Insulation resistance:	> 100 M Ω
Dielectric strength:	100 V, 50 Hz for the duration of 1 minute (DTS 11: 250 V)
Operating temperature:	-20 °C to +60 °C (DTS 11: -40 °C to +80 °C)
Operating force:	< 0.35 N
Mechanical life:	minimum 1 000 000 operations (DTS 11: 100 000)
Material:	Contacts: phosphor-bronze, silver-plated Terminals: copper alloy, silver-plated Case and actuator: PPA, LPC (DTS 11: LCP, HTN)

Models: Switching functions

DTS 302 C P R T-1 mom – off – mom

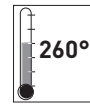


DTS 11 LCP 0.7-T on – (mom)



Packing: 3000 pcs/reel (DTS 11: 1500 pcs/reel)

Detector Switches

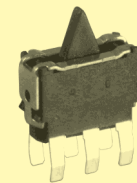
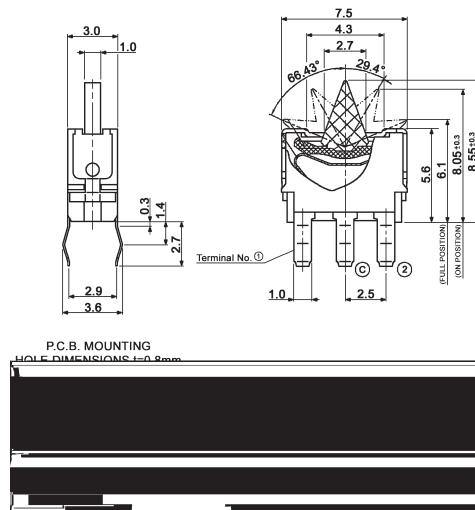


Specifications:

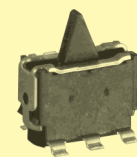
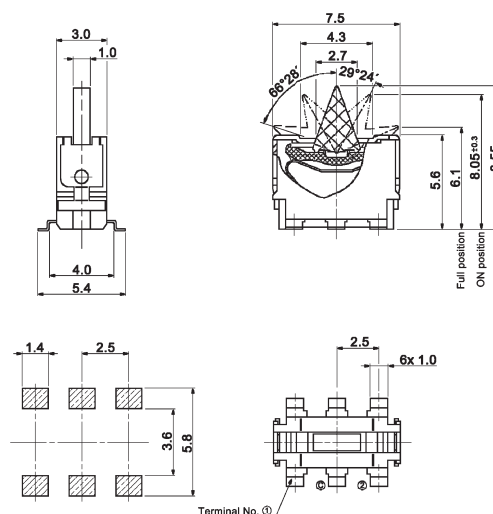
Contact rating:	5 V DC, 10 mA
Contact resistance:	< 500 mΩ
Insulation resistance:	> 100 MΩ
Dielectric strength:	100 V, 50 Hz for the duration of 1 minute
Operating temperature:	−40 °C to +85 °C
Operating force:	≤ 0.15 N
Mechanical life:	minimum 3 000 000 operations (DTS 316 C-T: 600 000)
Material:	Contacts, Terminals: phosphor-bronze, silver-plated Case and actuator: HTN, black Cover: steel, tin-plated

Models: Switching functions

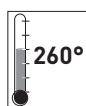
DT 316 C off – mom



DTS 316 C T off – mom



Packing: DT 316 C: bag
DTS 316 C-T: 550 pcs/reel



Detector Switches

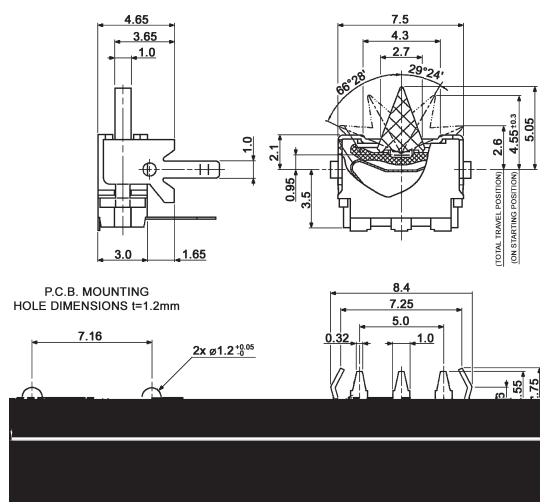
Specifications:

Contact rating:	5 V DC, 10 mA
Contact resistance:	< 500 mΩ
Insulation resistance:	> 100 MΩ
Dielectric strength:	100 V, 50 Hz for the duration of 1 minute
Operating temperature:	−40 °C to +85 °C (DT 316 C-R: −40 °C to +100 °C)
Operating force:	≤ 0.15 N
Mechanical life:	minimum 3 000 000 operations
Material:	Contacts, Terminals: phosphor-bronze, silver-plated Case and actuator: HTN, black Cover: steel, tin-plated

Models: Switching functions

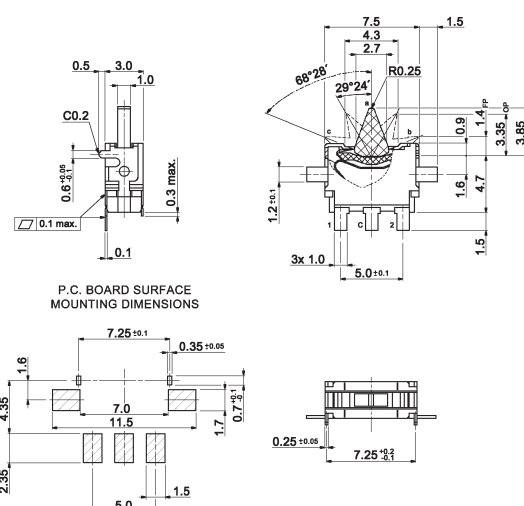
DT 316 C-R

off – mom

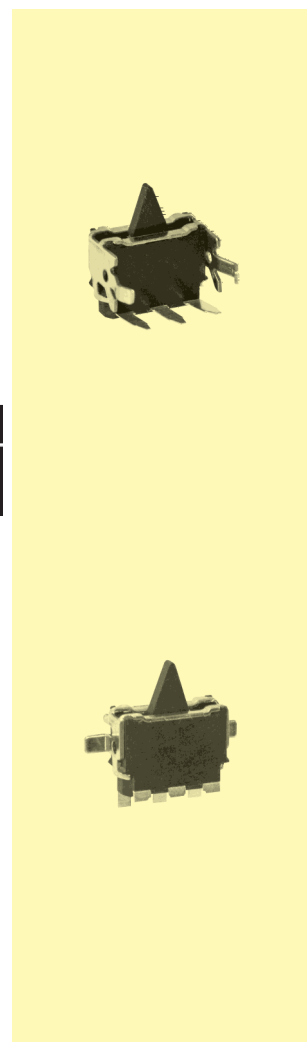


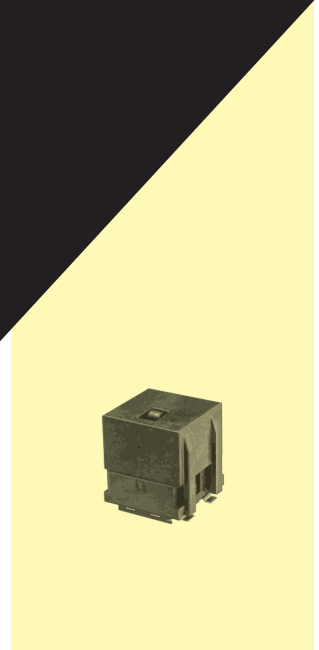
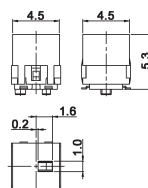
DTS 316 CPR-T

off – mom



Packing: DT 316 C-R: bag
DTS 316 CPR-T: 1000 pcs/reel

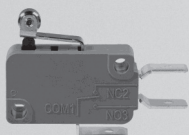




12

Micro / Snap Action Switches

12.1 Miniature Micro / Snap Action Switches



DM – VMG

210 – 212

12.2 Subminiature Micro / Snap Action Switches



DM – SMG

213 – 215

DM – SWG 3 IP 67

216 – 218

12.3 Microminiature Micro / Snap Action Switches



DM – DW IP 67

219

DM – DMG

220

DM – SSM

221

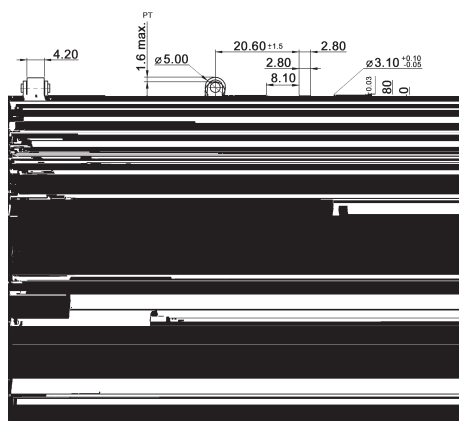
Miniature Micro / Snap Action Switches

Specifications:

Contact rating:	see ordering code
Contact resistance:	<100 mΩ
Insulation resistance:	>100 MΩ
Dielectric strength:	1000V, 50Hz for the duration of 1 minute
Operating temperature:	-25 °C to +125 °C
Mechanical life:	minimum 1 000 000 operations
Contacts:	silver-alloy, gold-plating on request
Terminals:	brass, silver-plated
Case:	PBT (UL 94 V-0), Phenolic resin on request
Mounting:	on pc-board, on panel
Timing:	non-shortng
Soldering conditions:	auto-soldering – max. 5 sec, max. 260 °C manual soldering – max. 3 sec, max. 350 °C

Models: Switching function

DM-VMG 16 L05C200 on – mom



Lever	Operation force [gf]							Operation position [mm]
00	15	25	50	100	200	300	400	14.7 ± 0.5
01	15	25	50	100	200	300	400	15.3 ± 0.5
02	10	15	30	60	120	180	240	15.3 ± 0.5
03	7	10	15	30	60	90	120	15.3 ± 0.3
04	10	15	30	60	120	180	240	18.3 ± 1.5
05	15	30	60	120	240	350	470	20.6 ± 0.8
06	10	15	30	60	120	180	240	20.6 ± 1.6

Ordering code:

DM-VMG ☐ -L ☐ ☐ ☐

Rating:

☐ 5 A / 250 V AC, 0.1 A / 48 V DC
☐ 10 A / 250 V AC, 1 A / 30 V DC
☐ 16 A / 250 V AC
☐ 22 A / 250 V AC
☐ 26 A / 250 V AC

Lever: **Terminals:**
(see following pages)

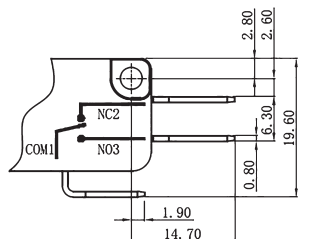
Operating force:

15	15 gf
25	25 gf
50	50 gf
100	100 gf
200	200 gf
300	300 gf
400	400 gf

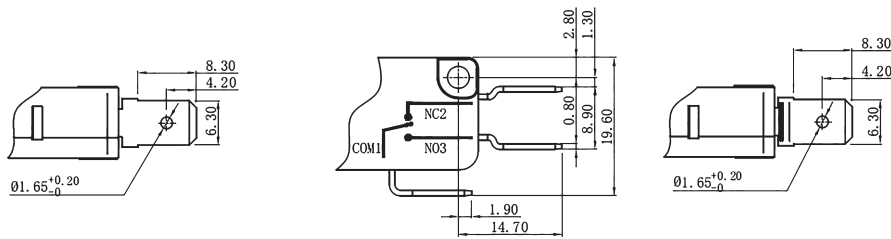
Notes: Operation force is nominal value for pin plunger (lever code 00).
Not all operation forces are available for all ratings.

DM-VMG Terminals:

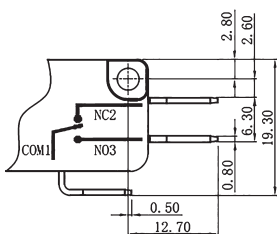
Terminal B



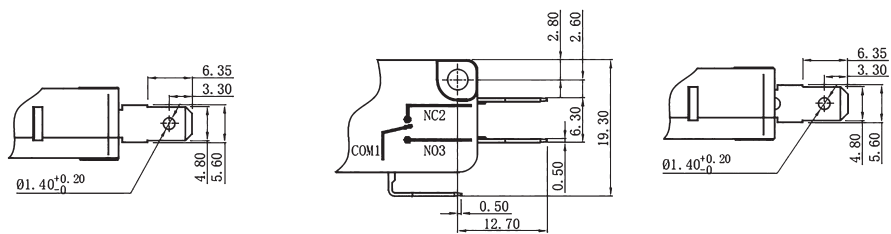
Terminal C



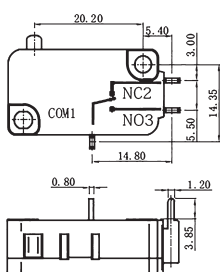
Terminal D



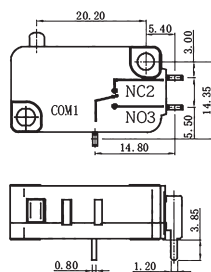
Terminal E



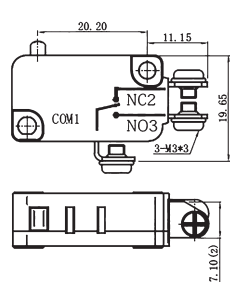
Terminal L



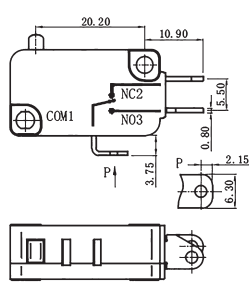
Terminal R



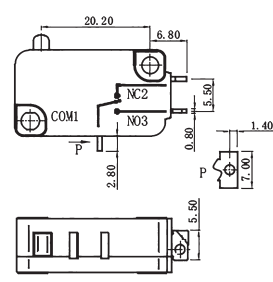
Terminal T



Terminal S



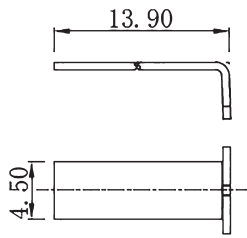
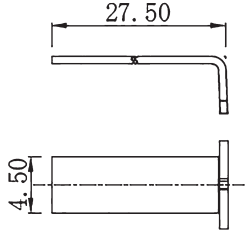
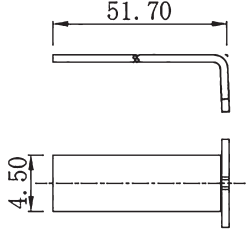
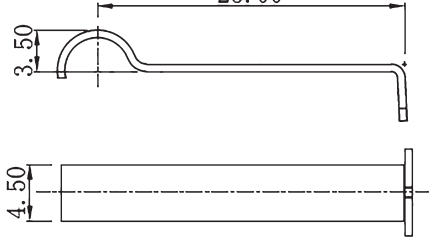
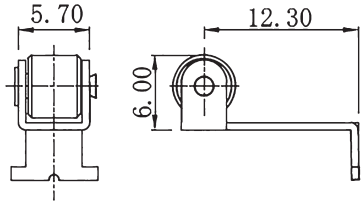
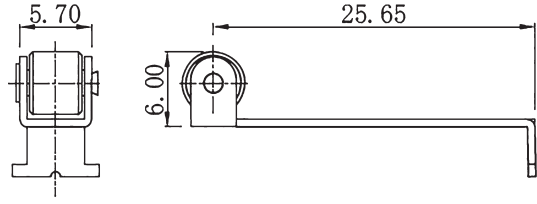
Terminal M



Miniature Micro / Snap Action Switches



DM-VMG Lever:

01 	02 
03 	04 
05 	06 



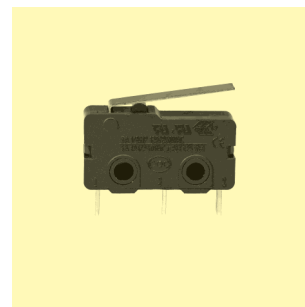
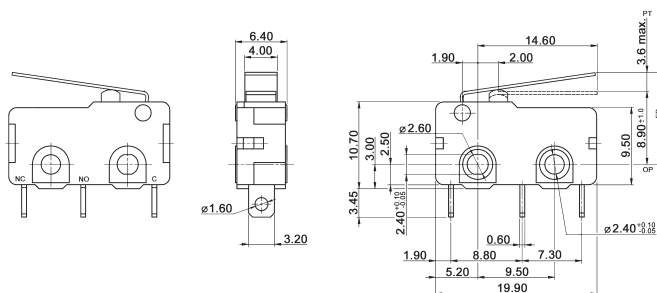
Subminiature Micro / Snap Action Switches

Specifications:

Contact rating:	see ordering code
Contact resistance:	<100 mΩ
Insulation resistance:	>100 MΩ
Dielectric strength:	1000 V, 50 Hz for the duration of 1 minute
Operating temperature:	–25 °C to +125 °C
Mechanical life:	minimum 1 000 000 operations
Contacts:	silver-alloy, gold-plating on request
Terminals:	brass, silver-plated
Case:	PBT (UL 94 V-0), Phenolic resin on request
Mounting:	on pc-board, on panel
Timing:	non-shorting
Soldering conditions:	auto-soldering – max. 5 sec, max. 260 °C manual soldering – max. 3 sec, max. 350 °C

Models: Switching function

DM-SMG 5 L01S100 on – mom



Lever	Operation force [gf]					Operation position [mm]
00	50	100	150	250	350	8.5 ± 0.3
01	–	40	50	80	110	8.9 ± 1.0
02	–	35	45	75	100	8.9 ± 1.2
03	–	25	35	55	–	8.9 ± 1.8
04	–	15	30	45	–	8.9 ± 2.0
05	–	35	45	75	100	12.2 ± 1.5
06	–	40	50	80	110	14.6 ± 1.0
07	–	40	50	80	110	10.8 ± 1.2

Ordering code:

DM-SMG -L

Rating:

01	0.1 A / 250 V AC, 48 V DC
5	5 A / 250 V AC, 30 V DC
10	10 A / 250 V AC

Lever:

(see following pages)

Terminals:

Operating force:

50	15 gf
100	100 gf
150	150 gf
250	250 gf
350	350 gf

Notes: Operation force is nominal value for pin plunger (lever code 00).

Not all operation forces are available for all ratings.

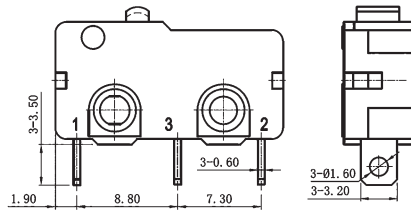
UL recognized components on request.

Subminiature Micro / Snap Action Switches

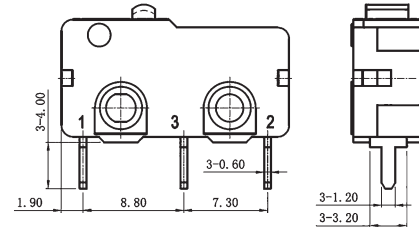


DM-SMG Terminals:

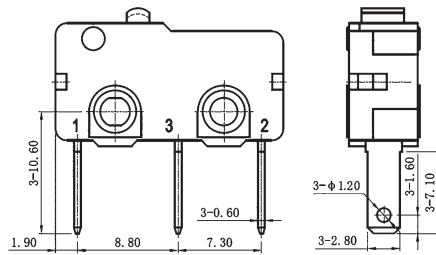
Terminal S



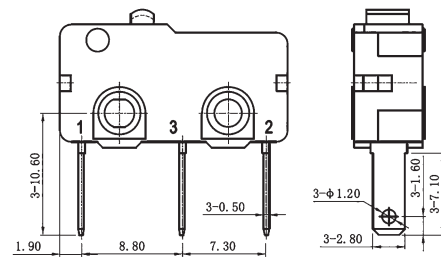
Terminal P



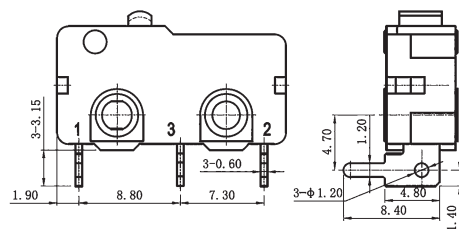
Terminal D



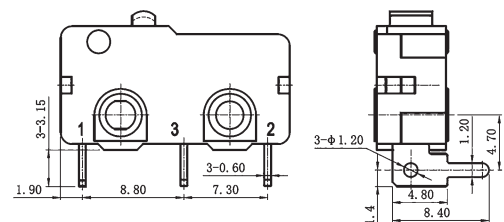
Terminal E



Terminal L

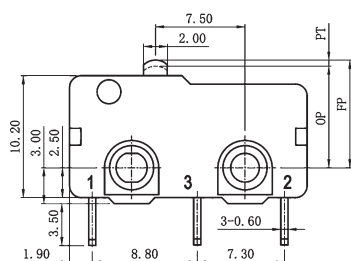


Terminal R

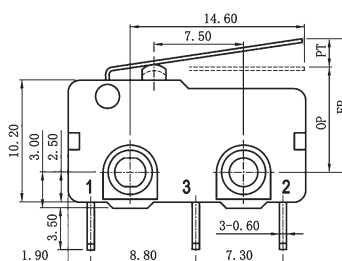


DM-SMG Lever:

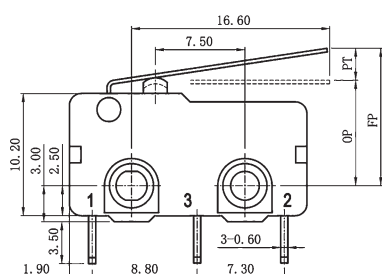
Lever 00



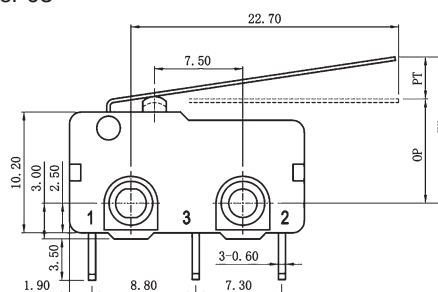
Lever 01



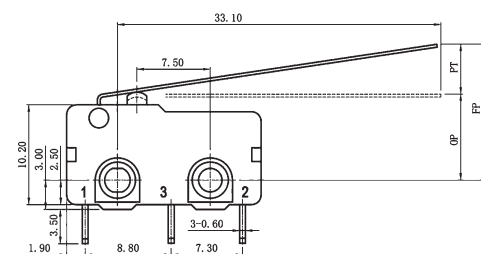
Lever 02



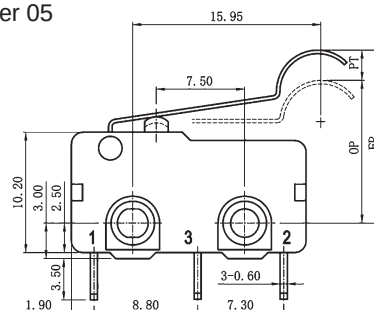
Lever 03



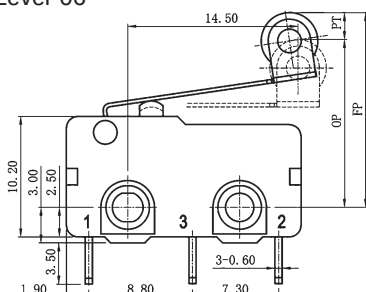
Lever 04



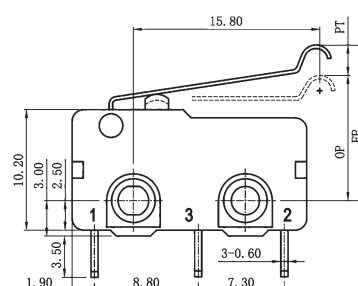
Lever 05



Lever 06



Lever 07



Subminiature Micro / Snap Action Switches

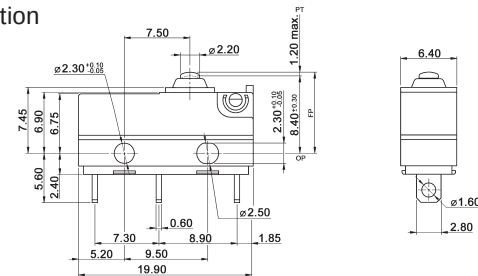


Specifications:

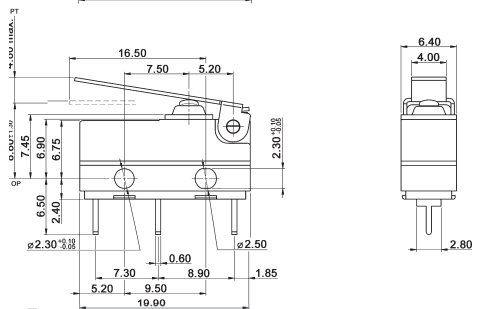
Contact rating:	see ordering code
Contact resistance:	<100 mΩ
Insulation resistance:	>100 MΩ
Dielectric strength:	1000 V, 50 Hz for the duration of 1 minute
Operating temperature:	-25 °C to +120 °C
Mechanical life:	minimum 500 000 operations
IP rating:	IP 67 (for models w/o wires, terminals are not sealed)
Contacts:	silver-alloy, gold-plating on request
Terminals:	brass, silver-plated (or 500 mm wire length)
Case:	PBT (UL 94 V-0)
Mounting:	on pc-board, on panel
Timing:	non-shorting
Soldering conditions:	auto-soldering – max. 5 sec, max. 260 °C manual soldering – max. 3 sec, max. 350 °C

Models: Switching function

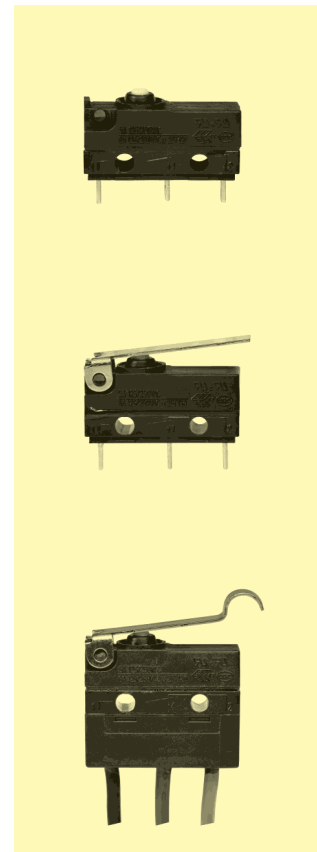
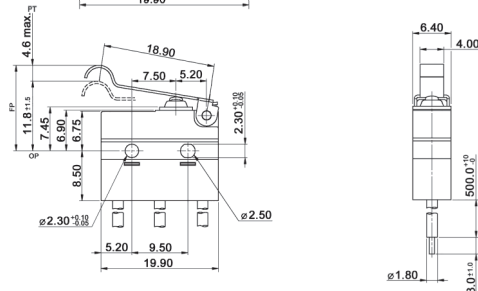
DM-SWG 5 L00S200 on – mom



DM-SWG 5 L02P200 on – mom



DM-SWG 5 L05E200-201007
on – mom



Ordering code: DM-SWG -L

Rating:

- ☐ 01 0.1 A / 250 V AC, 48 V DC
☐ 5 6 A / 250 V AC, 3 A / 30 V DC

Lever:

(see following pages)

Terminals:

Operating force:

- ☐ 150 150 gf max
☐ 200 200 gf max
☐ 300 300 gf max

AWG:

(for models with wires only, for reference)

- ☐ 20 0.518 mm²
☐ 22 0.326 mm²
☐ 24 0.205 mm²
☐ 26 0.129 mm²
☐ 28 0.081 mm²

UL:

- ☐ 1007 300 V, 80 °C, PVC
☐ 1015 600 V, 105 °C, PVC
☐ 1061 300 V, 80 °C, PVC semirigid
☐ 1330 600 V, 150 °C, FEP
☐ 1332 300 V, 200 °C, FEP
☐ 1430 300 V, 105 °C, PVC
☐ 1569 300 V, 105 °C, PVC
☐ 3266 300 V, 125 °C, XLPE
☐ AVSS (non UL) Automotive, Vinyl

Notes:

Operation force is nominal value for pin plunger (lever code 00).
Not all operation forces are available for all ratings.

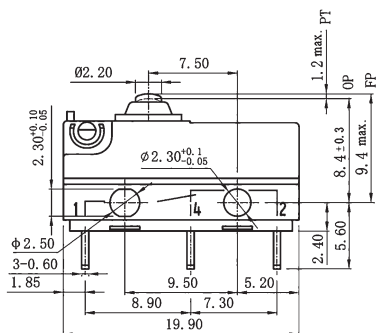


Subminiature Micro / Snap Action Switches

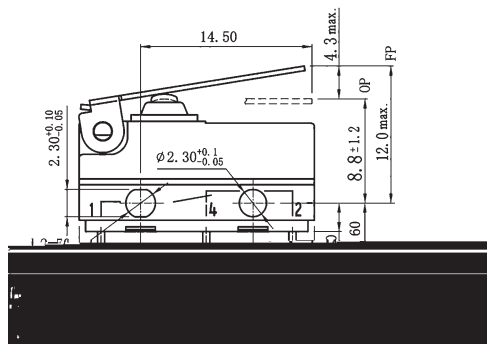


DM-SWG Lever:

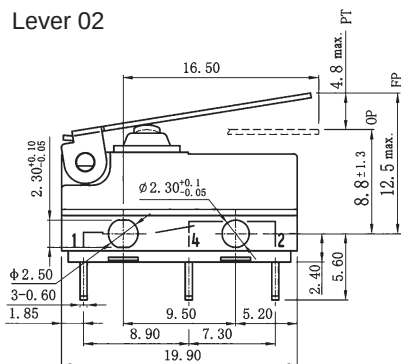
Lever 00



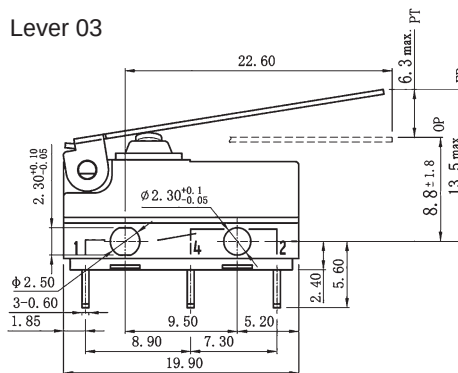
Lever 01



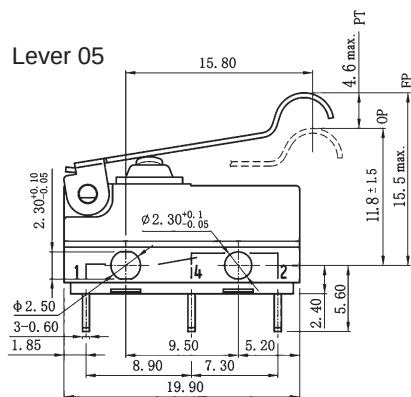
Lever 02



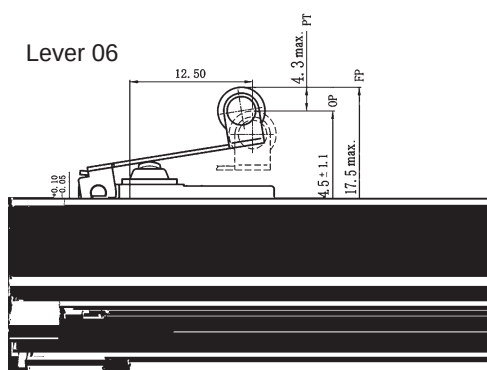
Lever 03



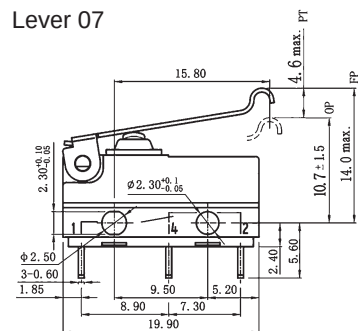
Lever 05



Lever 06



Lever 07





Subminiature Micro / Snap Action Switches

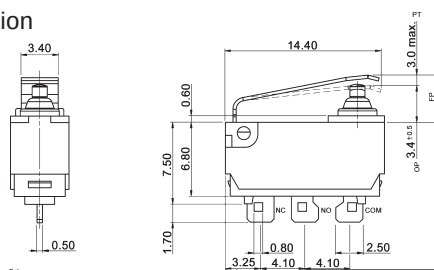
Specifications:

Contact rating:	125 V AC, 0.1 A; 48 V DC, 0.1 A; 12 V DC, 3 A
Contact resistance:	<100 mΩ
Insulation resistance:	>100 MΩ
Dielectric strength:	500 V, 50 Hz for the duration of 1 minute
Operating temperature:	-40 °C to +85 °C
Mechanical life:	minimum 500 000 operations
IP rating:	IP 67
Contacts:	silver-alloy
Terminals:	brass, silver-plated
Case:	PA (UL 94 V-0)
Mounting:	on pc-board, positive in case-parts
Timing:	non-shorting
Soldering conditions:	manual soldering – max. 3 sec, max. 350 °C auto-soldering – max. 5 sec, max. 260 °C

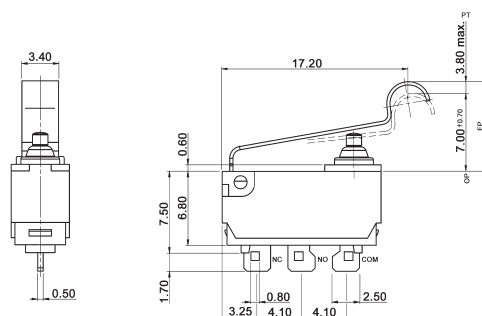
Models:

Switching function

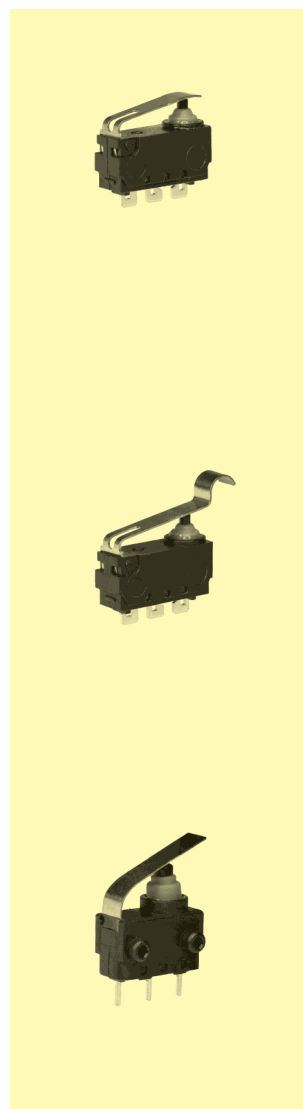
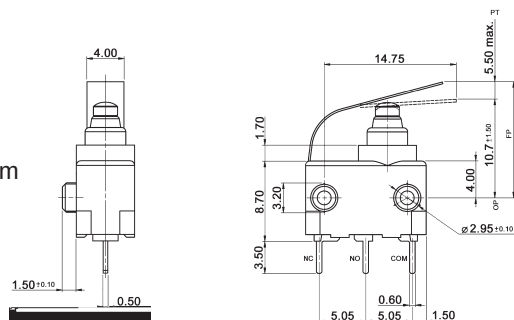
DM-DW 1 L01 S on – mom
(operation force 220 gf max)



DM-DW 1 L05 S on – mom
(operation force 180 gf max)



DM-DW 1 L03 P15 on – mom
(operation force 250 gf max)



Subminiature Micro / Snap Action Switches

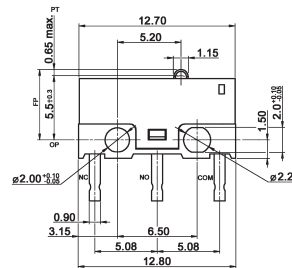
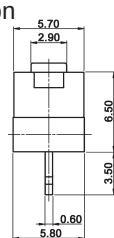


Specifications:

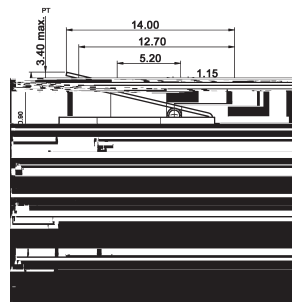
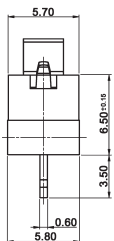
Contact rating:	125 V AC, 3 A
Contact resistance:	<100 mΩ
Insulation resistance:	>100 MΩ
Dielectric strength:	600 V, 50 Hz for the duration of 1 minute
Operating temperature:	-40 °C to +85 °C
Mechanical life:	minimum 1000 000 operations
Contacts:	silver-alloy, gold-plating on request
Terminals:	brass, silver-plated
Case:	PBT (UL 94 V-0)
Mounting:	on pc-board, on panel
Timing:	non-shorting
Soldering conditions:	auto-soldering – max. 3 sec, max. 260 °C

Models: Switching function

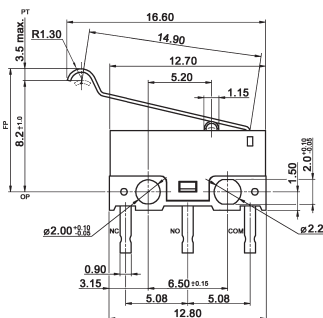
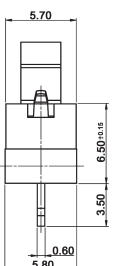
DM-DMG 3 L00P150 on – mom
(operation force 150 gf max)



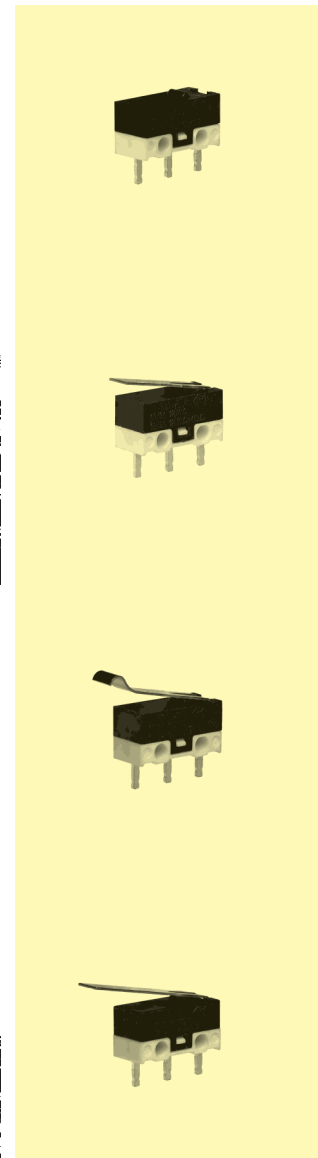
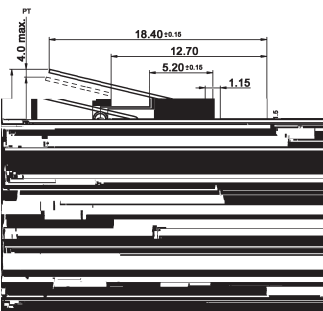
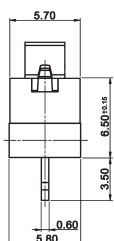
DM-DMG 3 L02P150 on – mom
(operation force 50 gf max)



DM-DMG 3 L07P150 on – mom
(operation force 50 gf max)



DM-DMG 3 L03P150 on – mom
(operation force 50 gf max)





Microminiature Micro / Snap Action Switches

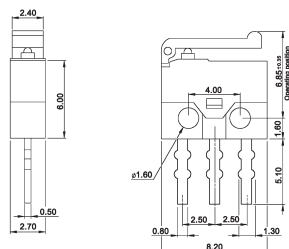
Specifications:

Contact rating:	30 V AC, 0.5 A
Contact resistance:	< 100 mΩ
Insulation resistance:	> 100 MΩ
Dielectric strength:	250 V, 50 Hz for the duration of 1 minute
Operating temperature:	-20 °C to +70 °C
Mechanical life:	minimum 300 000 operations
Operating force:	< 50 gf
Contacts:	copper alloy, silver-plated
Terminals:	brass, silver-plated
Case:	base: PBT cover, stem, lever: POM
Mounting:	on pc-board – hole diameter 1.5 mm, on panel – hole diameter 1.6 mm
Timing:	non-shorting
Soldering conditions:	auto-soldering – max. 3 sec, max. 260 °C

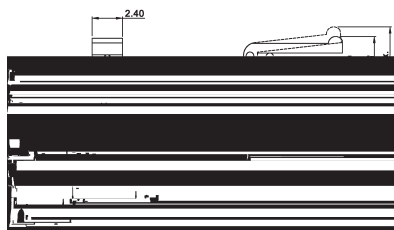
Models: Switching functions

S P D T

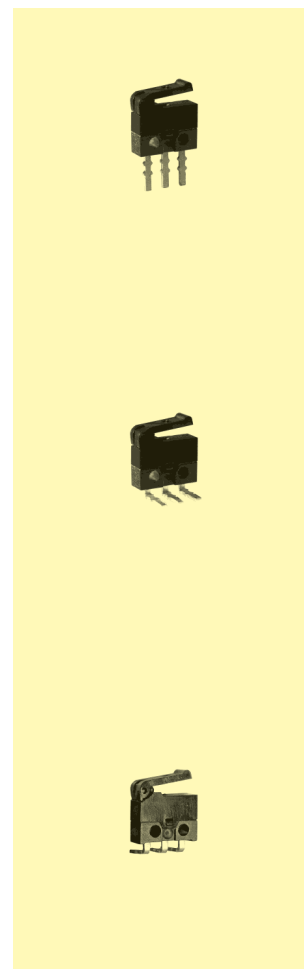
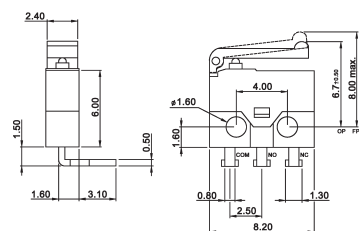
DM-SSM 01 L2 on – mom



DM-SSM 01 C L2 on – mom



DM-SSM 01 D L2 on – mom



Further types on request.

