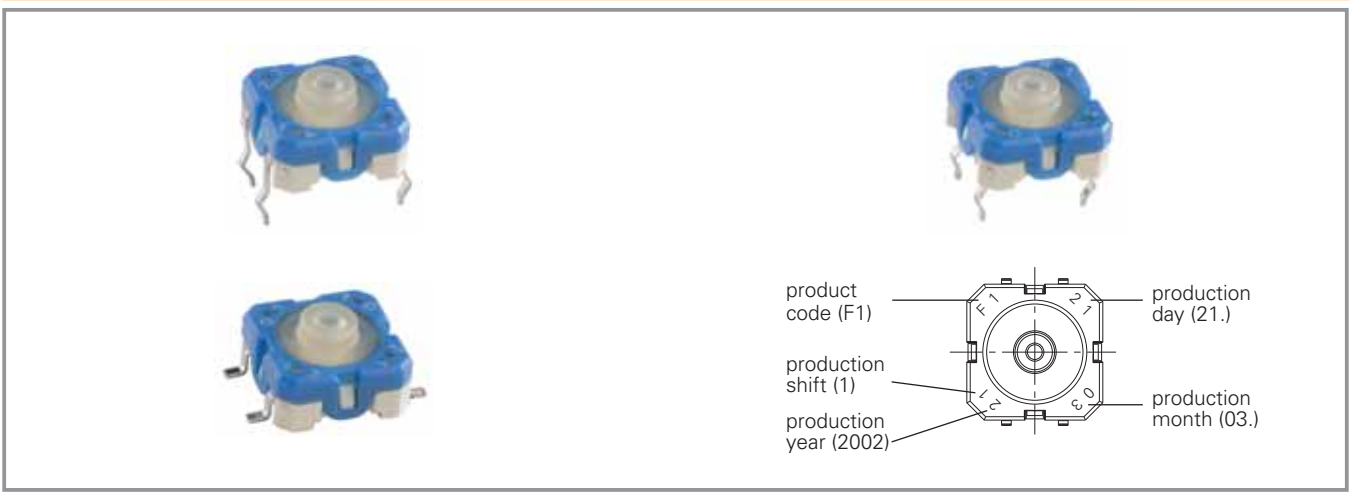


RACON 8 - Short-travel keyswitch



General Data

RACON 8 short-travel keyswitches offer an extremely high switching reliability while needing very little space. They can be arranged as single keys, in rows or key blocks. When arranged under an overlay, RACON keyswitches should be combined with plungers.

The features at a glance:

- Suitable for the most common soldering methods
 - Wave soldering bath for THT versions
 - Reflow soldering for SMT version
 - Vapour phase soldering for SMT versions
 - Manual soldering
- SMT version suitable for processing with an automatic SMT assembly machine
- IMDS listed

You can download actual product information from our internet site www.rafi.de / Catalogues and Downloads

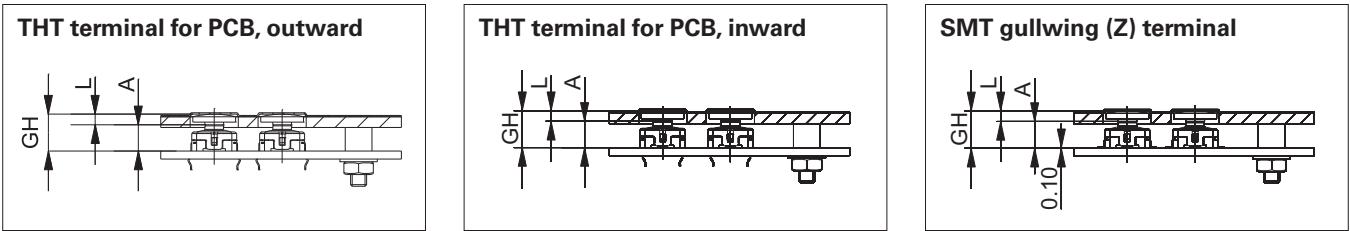
4

Technical Data

Dimensions		Rated current min.		0.01 mA
Length of housing	8.4 mm	Rated current max.		100 mA
Width of housing	8.4 mm	Rated power max.		1 W
Height of housing	see order block	(ohmic load)		
Mechanical design		Contact resistance when new max.		100 mΩ
Mounting	soldering	Insulation resistance		10 ⁹ Ω
Terminals	see order block	Other specifications		
Contact system	snap-action contact	Ambient temp. operating min.		-40 °C
Contact arrangement	1 NO	Ambient temp. operating max.		+90 °C
Contact materials	Au	Resistance to environment		DIN EN 60068-2 -14, -30,-33 and -78
Illumination	no	Operating life		1,000,000
Mechanical characteristics		Solderability / Solder heat resistance		see order block
Operating force	3.3±0.6 N	Flammability of materials		UL 94 HB
Switching travel	0.34±0.1 mm	Packing		see order block
Electrical characteristics		Produkt code		see order block
Rated voltage min.	0.02 V			
Rated voltage max.	35 V			

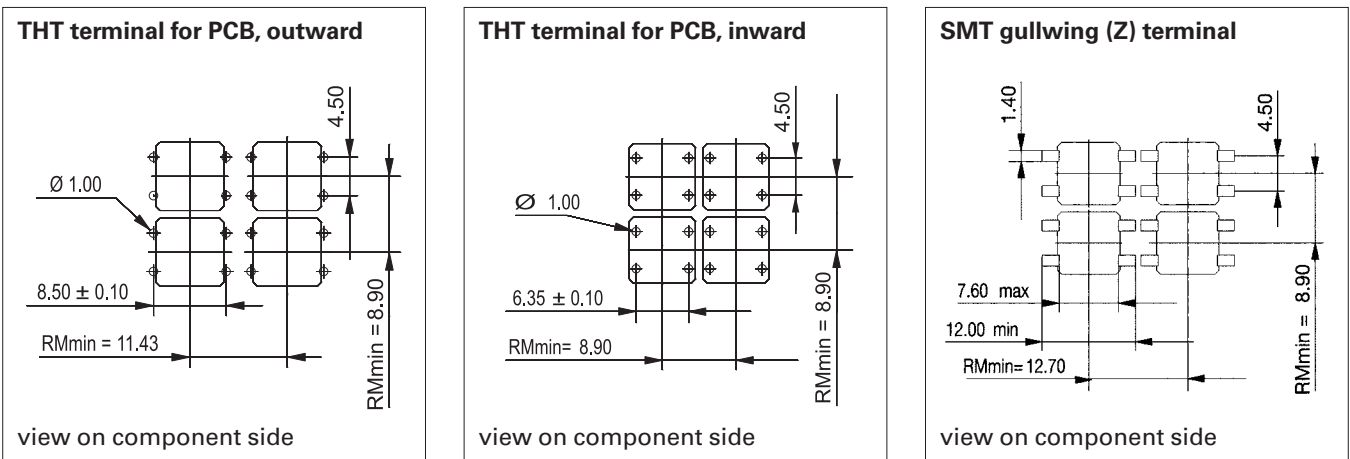
RACON

RACON 8, Typical System Assembly with Plunger under Overlay



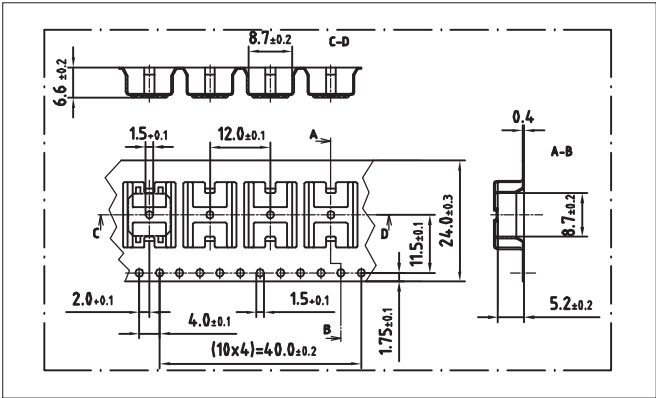
Variable	Declaration	THT terminal outward	THT terminal inward	SMT-terminal
A	Height of keyswitch	$A = 4.90 \pm 0.1 \text{ mm}$		
GH	Overall height		$GH = A + L$	$GH = A + L + 0.1 \text{ mm}$
L	Length of plunger		$L = GH - A$	$L = GH - A - 0.1 \text{ mm}$

RACON 8, PCB Hole Pattern, Smallest Grid

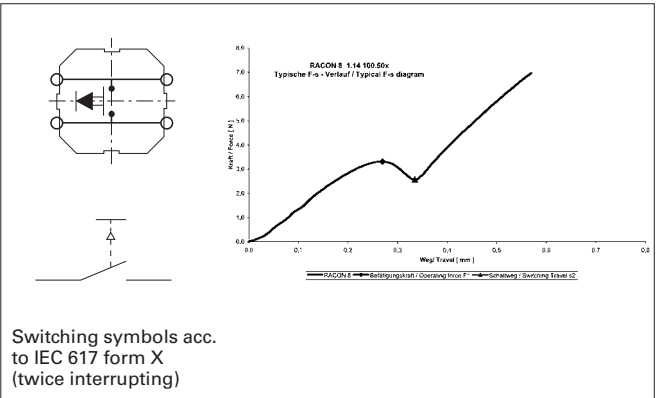


4

RACON 8, SMT Terminal, Tape and Reel Drawing



Circuit Diagram RACON 8 Typical Force-Travel Diagram

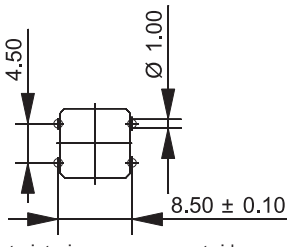
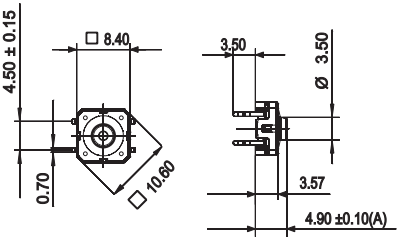


Typical accessories RACON 8 - Short-travel keyswitch

Description	Photo	Order no.	Additional accessories see page
Spacer, round, length 6.25 mm, red		5.30.759.034/0000	2 - 239, 4 - 82, 5 - 30
Plunger round		5.46.167.311/0209	4 - 32
RK 90 - Keycap body, for lenses 9 x 9 mm		5.55.103.265/1013	4 - 93

For other plungers, refer to the chapter „RACON special accessories“; for keycaps, refer to the chapter „RK 90“

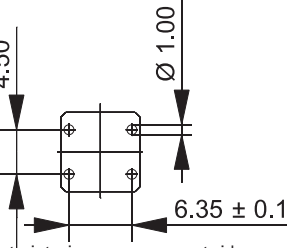
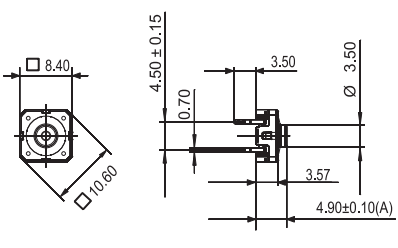
RACON 8 - Short-travel keyswitch, THT outward

 PCB footprint, view on component side					
Terminals	Operating force	Solderability / Solder heat resistance	Produkt code	Packing	Order no.
THT outward	3.3±0.6 N	E DIN IEC 600 68-2-20	A1	tubes à 60 piece	1.14.100.501/0000

Technical data see page 4 - 18

For keycaps refer to chapter „RK 90“, plungers see „RACON special accessories“

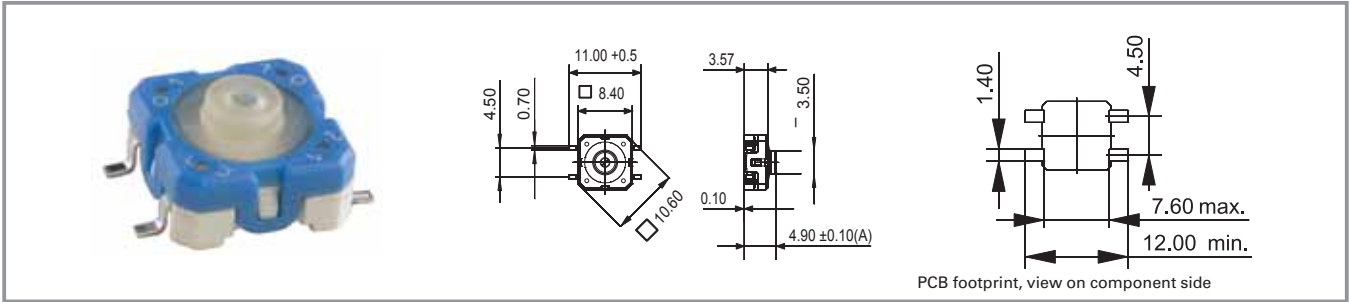
RACON 8 - Short-travel keyswitch, THT inward

 PCB footprint, view on component side					
Terminals	Operating force	Solderability / Solder heat resistance	Produkt code	Packing	Order no.
THT inward	3.3±0.6 N	E DIN IEC 600 68-2-20	B1	tubes à 60 piece	1.14.100.502/0000

Technical data see page 4 - 18

For keycaps refer to chapter „RK 90“, plungers see „RACON special accessories“

RACON 8 - Short-travel keyswitch, SMT gullwing (Z) terminals

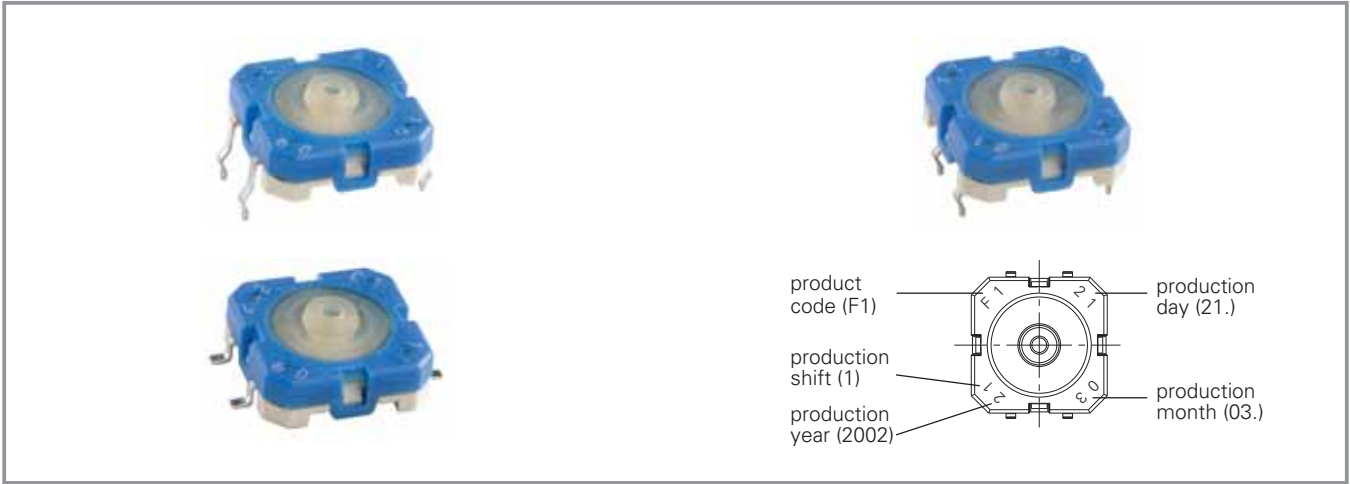


Terminals	Operating force	Solderability / Solder heat resistance	Produkt code	Packing	Order no.
SMT Gullwing (Z) terminals	3.3±0.6 N	E DIN IEC 600 68-2-58	C1	tape and reel à 1000 pieces	1.14.100.503/0000

Technical data see page 4 - 18

For keycaps refer to chapter „RK 90“, plungers see „RACON special accessories“

RACON 12 - Short-travel keyswitch



General Data

RACON 12 short-travel keyswitches offer an extremely high switching reliability while needing very little space. They can be arranged as single keys, in rows or key blocks. When arranged under an overlay, RACON keyswitches should be combined with plungers.

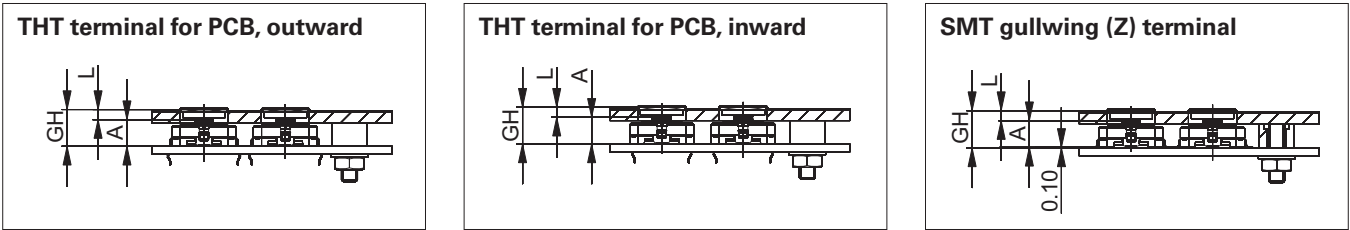
- The features at a glance:
- Suitable for the most common soldering methods
 - Wave soldering bath for THT versions
 - Reflow soldering for SMT versions
 - Vapour phase soldering for SMT versions
 - Manual soldering
 - SMT version suitable for processing with an automatic SMT assembly machine
 - IMDS listed

4

Technical Data

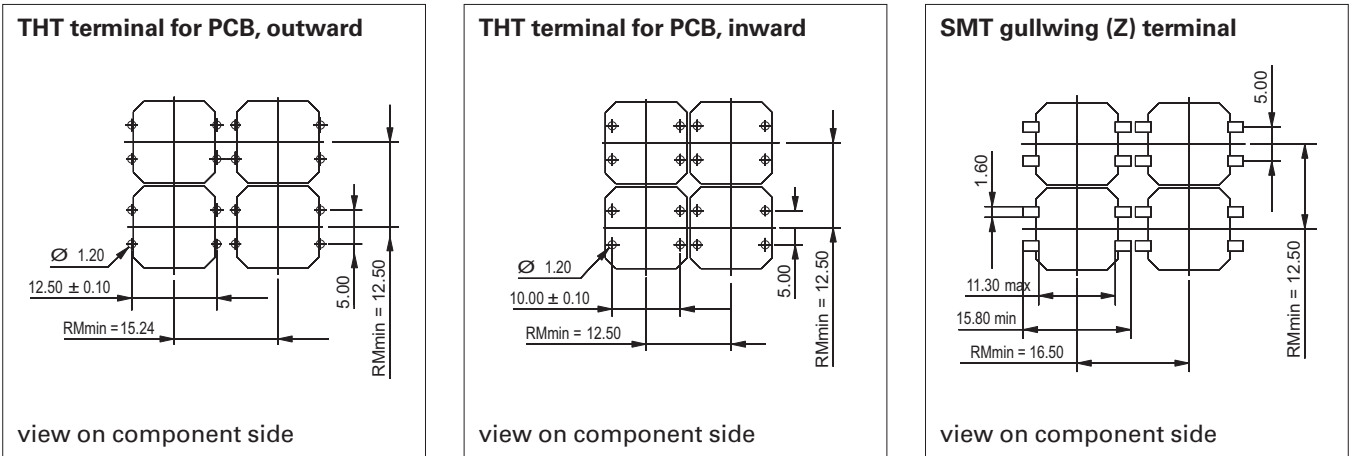
RACON	Dimensions			
	Length of housing	12 mm	Rated current min.	0.01 mA
	Width of housing	12 mm	Rated current max.	100 mA
	Overall height	see order block	Rated power max. (ohmic load)	1 W
	Mechanical design		Contact resistance when new max.	100 mΩ
	Mounting	soldering	Insulation resistance	10 ⁹ Ω
	Terminals	see order block	Other specifications	
	Contact system	snap-action contact	Ambient temp. operating min.	-40 °C
	Contact arrangement	1 NO	Ambient temp. operating max.	+90 °C
	Contact materials	Au	Resistance to environment	DIN EN 60068-2 -14, -30, -33 and -78
Mechanical characteristics			Operating life	1,000,000
Operating force		see order block	Solderability / Solder heat resistance	see order block
Switching travel		see order block	Flammability of materials	UL 94 HB
Electrical characteristics			Packing	see order block
Rated voltage min.		0.02 V	Produkt code	see order block
Rated voltage max.		35 V		

RACON 12, Typical System Assembly with Plunger under Overlay

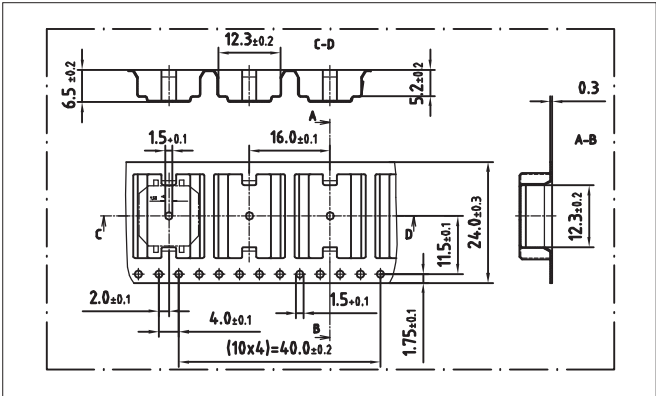


Variable	Declaration	THT terminal outward	THT terminal inward	SMT-terminal
A	Height of keyswitch		$A = 4.95 \pm 0.1 \text{ mm}$	
GH	Overall height		$GH = A + L$	$GH = A + L + 0.1 \text{ mm}$
L	Length of plunger		$L = GH - A$	$L = GH - A - 0.1 \text{ mm}$

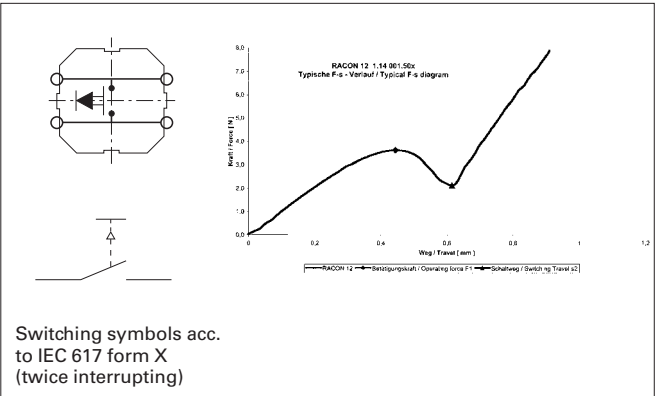
RACON 12, PCB Hole Pattern, Smallest Grid



RACON 12, SMT Terminal, Tape and Reel Drawing



Circuit Diagram Typical Force-Travel Diagram

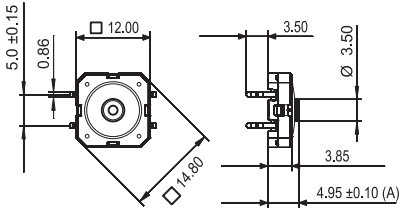
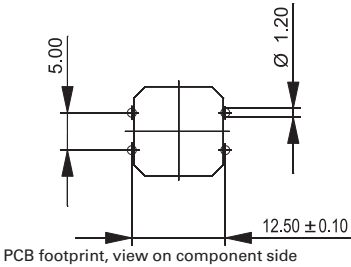


Typical accessories RACON 12 - Short-travel keyswitch

Description	Photo	Order no.	Additional accessories see page
Spacer, round, length 6.25 mm, red		5.30.759.034/0000	2 - 239, 4 - 82, 5 - 30
Square plunger for membrane data entry system		5.46.001.057/0209	4 - 34
Plunger round		5.46.168.050/0209	4 - 33
RK 90 - Keycap body, for lens 1 -module		5.55.103.030/1013	4 - 95

For other plungers, refer to the chapter „RACON special accessories“; for keycaps, refer to the chapter „RK 90“

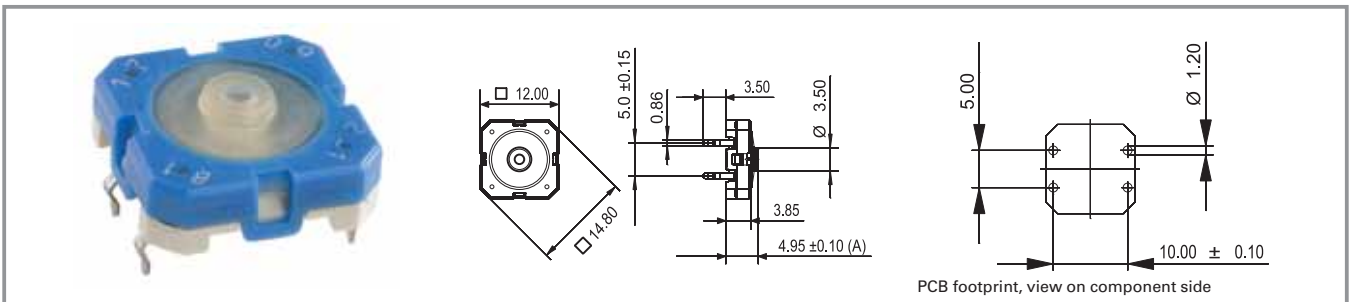
RACON 12 - Short-travel keyswitch solder terminals for PCB, outward

   PCB footprint, view on component side						
Terminals	Operating force	Switching travel	Solderability / Solder heat resistance	Produkt code	Packing	Order no.
THT outward	3.6±0.7 N	0.61±0.1 mm	E DIN IEC 600 68-2-20	A1	tubes à 45 pieces	1.14.001.501/0000

Technical data see page 4 - 22

For keycaps refer to chapter „RK 90“, plungers see „RACON special accessories“

RACON 12 - Short-travel keyswitch solder terminals for PCB, inward

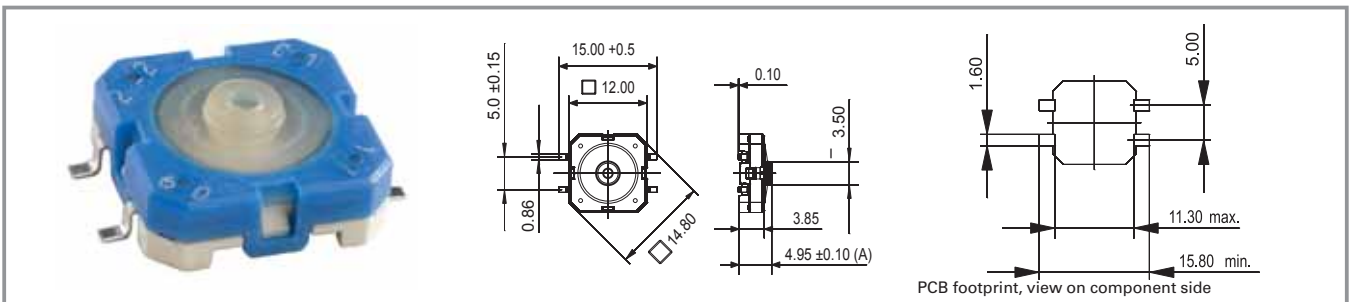


Terminals	Operating force	Switching travel	Solderability / Solder heat resistance	Produkt code	Packing	Order no.
THT outward	3.6±0.7 N	0.61±0.1 mm	E DIN IEC 600 68-2-20	B1	tubes à 45 pieces	1.14.001.502/0000

Technical data see page 4 - 22

For keycaps refer to chapter „RK 90“, plungers see „RACON special accessories“

RACON 12 - Short-travel keyswitch SMT gullwing (Z) terminals



Terminals	Operating force	Switching travel	Solderability / Solder heat resistance	Produkt code	Packing	Order no.
SMT Gullwing (Z)	3.6±0.7 N	0.61±0.1 mm	E DIN IEC 600 68-2-58	C1	tape and reel à 750 pieces	1.14.001.503/0000
SMT Gullwing (Z)	6.8±1.6 N	0.7±0.1 mm	E DIN IEC 600 68-2-58	ZD	tape and reel à 750 pieces	1.14.001.916/0000
SMT Gullwing (Z)	9.7±2.5 N	0.73±0.1 mm	E DIN IEC 600 68-2-58	ZE	tape and reel à 750 pieces	1.14.001.920/0000

Technical data see page 4 - 22

For keycaps refer to chapter „RK 90“, plungers see „RACON special accessories“

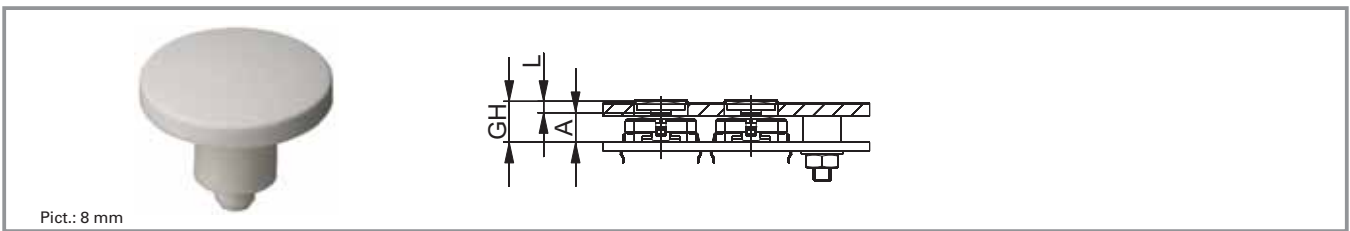
RACON - Special accessories



General Data

GH = „L“ length of plunger + „A“ height of keyswitch (+ 0.1 mm for SMT versions)
Front panel cut-out = size of plunger + 1 mm

Plunger round



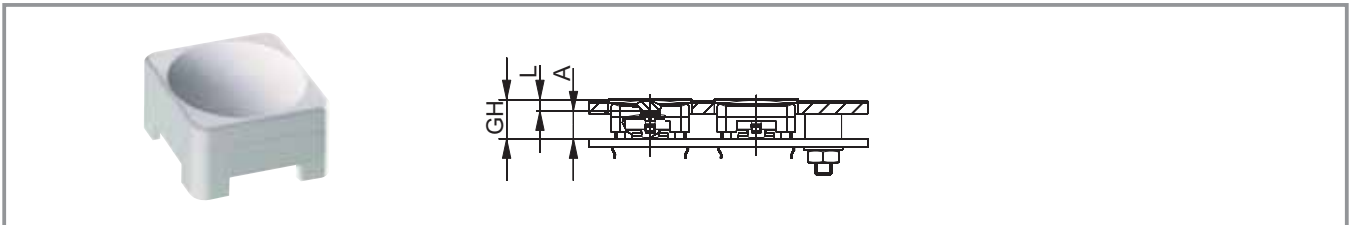
Plunger diameter/size	RACON version	Length of plunger L	Order no.
8 mm	RACON 8	1,4 mm	5.46.167.301/0209
8 mm	RACON 8	1.5 mm	5.46.167.102/0209
8 mm	RACON 8	1.6 mm	5.46.167.101/0209
8 mm	RACON 8/12	1,9 mm	5.46.167.090/0209
8 mm	RACON 8/12	2 mm	5.46.167.106/0209
8 mm	RACON 8/12	2.1 mm	5.46.167.107/0209
8 mm	RACON 8/12	4,6 mm	5.46.167.091/0209
8 mm	RACON 8/12	4.7 mm	5.46.167.311/0209
8 mm	RACON 8/12	4.8 mm	5.46.167.094/0209
8 mm	RACON 8/12	7,4 mm	5.46.167.092/0209
8 mm	RACON 8/12	7.5 mm	5.46.167.099/0209
8 mm	RACON 8/12	7.6 mm	5.46.167.096/0209

Plunger diameter/size	RACON version	Length of plunger L	Order no.
11.5 mm	RACON 8	1,4 mm	5.46.167.227/0209
11.5 mm	RACON 8	1.5 mm	5.46.167.061/0209
11.5 mm	RACON 8	1.6 mm	5.46.167.060/0209
11.5 mm	RACON 8/12	2 mm	5.46.167.067/0209
11.5 mm	RACON 8/12	2.1 mm	5.46.167.064/0209
11.5 mm	RACON 8/12	4,6 mm	5.46.167.043/0209
11.5 mm	RACON 8/12	4.7 mm	5.46.167.050/0209
11.5 mm	RACON 8/12	4.8 mm	5.46.167.047/0209
11.5 mm	RACON 8/12	7.5 mm	5.46.167.059/0209
11.5 mm	RACON 8/12	7.6 mm	5.46.167.058/0209
14.5 mm	RACON 8	1,4 mm	5.46.168.227/0209
14.5 mm	RACON 8	1.5 mm	5.46.168.061/0209
14.5 mm	RACON 8	1.6 mm	5.46.168.060/0209
14.5 mm	RACON 8/12	2 mm	5.46.168.067/0209
14.5 mm	RACON 8/12	2.1 mm	5.46.168.064/0209
14.5 mm	RACON 8/12	4,6 mm	5.46.168.043/0209
14.5 mm	RACON 8/12	4.7 mm	5.46.168.050/0209
14.5 mm	RACON 8/12	4.8 mm	5.46.168.047/0209
14.5 mm	RACON 8/12	7,4 mm	5.46.168.044/0209
14.5 mm	RACON 8/12	7.5 mm	5.46.168.059/0209
14.5 mm	RACON 8/12	7.6 mm	5.46.168.058/0209
19 mm	RACON 8	1.5 mm	5.46.169.061/0209
19 mm	RACON 8	1.6 mm	5.46.169.060/0209
19 mm	RACON 8/12	2 mm	5.46.169.067/0209
19 mm	RACON 8/12	2.1 mm	5.46.169.064/0209
19 mm	RACON 8/12	4.7 mm	5.46.169.050/0209
19 mm	RACON 8/12	4.8 mm	5.46.169.047/0209
19 mm	RACON 8/12	7.5 mm	5.46.169.059/0209

Plunger diameter/size	RACON version	Length of plunger L	Order no.
19 mm	RACON 8/12	7.6 mm	5.46.169.058/0209

Front panel cut-out = Plunger diameter + 1 mm.

Square plunger for membrane data entry system



Plunger diameter/size	RACON version	Length of plunger L	Order no.
14 x 14 mm	RACON 12THT	2.1 mm	5.46.001.064/0209
14 x 14 mm	RACON 12THT	4.8 mm	5.46.001.060/0209
14 x 14 mm	RACON 12THT	7.6 mm	5.46.001.063/0209
14 x 14 mm	RACON 12 SMT	2 mm	5.46.001.057/0209
14 x 14 mm	RACON 12 SMT	4.7 mm	5.46.001.058/0209
14 x 14 mm	RACON 12 SMT	7.5 mm	5.46.001.059/0209

Front panel cut-out = 15 x 15 mm.

4

RACON