

## 12 CONTACT SWITCHES

Type 1P ceramic - Type 1V epoxyglass

Low current switches, minimum contact resistance.
Tweezers contact system.
Adjustable stop.
BCD version: 2 sectors switches, 10 positions,
$30^{\circ}$ index angle, COM-2-4-8 contacts.
Available: natural BCD, complementary BCD.
$\begin{array}{lll}\text { Features: } & 1 \text { pole } & 11 \text { pos for each sector } \\ & 2 \text { poles } & 5 \text { pos for each sector } \\ 3 \text { poles } & 3 \text { pos for each sector } \\ & 4 \text { poles } & 2 \text { pos for each sector }\end{array}$ max 8 sectors

Non shorting contacts (shorting on demand).
Index angle: $30^{\circ}\left(60^{\circ} 90^{\circ}\right.$ on demand).
Index torque: 1 / 1.5 Kgm (other values on demand).
HV version (on demand) available
with insulated shaft glass-polyester (max 4 decks).
Nylon screws (max 1 deck) on demand.
WATERPROOF version (on demand)
an O-ring is mounted on the shaft inside the threated bushing and a rubber washer is placed rear side the customer panel.

SPRING RETURN (see the picture)
from first and second position OR from the last to the last but one position. The system can't exceed 5 positions.

DOUBLE SPRING RETURN
from first and second position AND from the last to the last but one position. The system can't exceed 5 positions.

Type 1 P single deck $\mathrm{L}=23,5 \mathrm{~mm}$. Add 11 mm each further deck. Type 1 V single deck $\mathrm{L}=21 \mathrm{~mm}$. Add 8.5 mm each further deck. Special mounting: see form
$\therefore$ printable page (PDF)

| Current breaking capacity: |  | $0.4 \mathrm{~A} 220 \mathrm{Vac} / 1.3 \mathrm{~A} 30 \mathrm{Vdc}$ <br> (resistive load) |
| :--- | :--- | :--- |
| Contact resistance: |  | $<5 \mathrm{mohm}$ <br> (average initial value) |
| Insulation: | type 1P | $1500 \mathrm{Vac} 2 \times 10^{12}$ ohm |$\left|\begin{array}{ll}1300 \mathrm{Vac} 100 \times 10^{9} \mathrm{ohm}\end{array}\right|$| $>300.000$ switching operations |
| :--- |
| (test current $=0.1$ max value) |

RohS Conformity: this product is compliant to
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Customize a standard switch, fill the form, send e-mail

Switches' materials and finishing
A new switch on costumer's specifications (big productions)


## PBC TERMINALS

12 CONTACTS SWITCHES
Type 1VCS epoxyglass

Single PCB deck switches, low resistance tweezer contacts.
Adjustable stop.
The rivets of the contacts on type 1 V are replaced here by special terminals turned on the lather: their mechanical strenght permit to place the switch on the PCB without other support.

The insulating material of 1VCS type get the switch suitable for a FR4 class PCB.

| Features: | 1 pole | 11 pos for each sector |
| :--- | :--- | :--- |
|  | 2 poles | 5 pos for each sector |
| 3 poles | 3 pos for each sector |  |
|  | 4 poles | 2 pos for each sector |
|  | max 8 sectors |  |

Non shorting contacts (shorting on demand).
Index angle: $30^{\circ}\left(60^{\circ} 90^{\circ}\right.$ on demand).
Index torque: 1 / 1.5 Kgm (other values on demand).
Te standard 19 mm measure, may be changed on request ( 17 mm min.).
Type 1 V single deck $\mathrm{L}=21 \mathrm{~mm}$
Add 8.5 mm each further deck.
PCB holes Ø 1.5 mm .
HV version (on demand) available
with insulated shaft glass-polyester (max 4 decks).
Nylon screws (max 1 deck) on demand.
WATERPROOF version (on demand)
an O-ring is mounted on the shaft inside the threated bushing and a rubber washer is placed rear side the customer panel.

ADD WIRED DECKS (see the picture):
If you need more poles,
we'll make multideck switches.
The standard 23 mm measure may be changed on demand ( 17 mm min .)
Special mounting: see form
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printable page (PDF)

| Current breaking capacity: | $0.4 \mathrm{~A} 220 \mathrm{Vac} / 1.3 \mathrm{~A} \mathrm{30Vdc}$ <br> (resistive load) |
| :--- | :--- | :--- |
| Contact resistance: | $<5 \mathrm{mohm}$ <br> (average initial value) |
| Insulation: | $1300 \mathrm{Vac} \quad 100 \times 10^{9} \mathrm{ohm}$ |
| Life expectancy: | $>300.000$ switching operations <br> (test current $=0.1 \mathrm{max}$ value) |

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Switches materials and finishings
New switches on costumer specifications (big productions)


## PBC TERMINALS

## 24 CONTACTS SWITCHES

## Type 2VCS epoxyglass

Single deck, low power signals switches.

ADD WIRED DECKS:
This switch can have one PCB deck only,
but if you need more poles,
we can make a multideck switches as well,
using normal wired wafers.
You'll connect these wafers to your PCB by short stiff cables.
Sliding pad contact system.
Adjustable stop.
In these models, the pole lugs are enclosed in a single set of 24 lugs on 32.5 mm diameter:
their position is indicated in the following list:
(see also techinical drawnings in this page)

Features:
1 pole 23 positions, pole lug in $A$
2 poles 11 positions, pole lugs in $A, D$
3 poles 7 positions, pole lugs in $A, C, E$
4 poles 5 positions, pole lugs in $A, B, D, F$

Shorting contacts only.
Index angle: $15^{\circ}\left(30^{\circ}, 60^{\circ}\right.$ or $90^{\circ}$ on demand $)$.
Index torque: 1.5 / 2 Kgcm (other values on demand).
The standard 20 mm measure may be changed on demand ( 18 mm min .)
PBC holes $\varnothing 1.4 \mathrm{~mm}$.
HV version (on demand) available with insulated shaft glass-polyester. Nylon screws (max 1 deck) on demand.

WATERPROOF version (on demand)
an O-ring is mounted on the shaft inside the threated bushing and a rubber washer is placed rear side the customer panel.

Special mounting: see form
$\therefore$ printable page (PDF)

| Current breaking capacity: |  | $1.3 \mathrm{~A} \mathrm{110Vac/4A} \mathrm{30Vdc}$ <br> (resistive load) |
| :--- | :--- | :--- |
| Contact resistance: |  | $<9 \mathrm{mohm}$ <br> (average initial value) |
| Insulation: | 1400 Vac | $200 \times 10^{9}$ ohm |
| Life expectancy: | 1300 Vac | $100 \times 10^{9}$ ohm |

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complete drawing


## PLASTIC CASE SWITCHES

PCB TERMINALS FOR SMALL HOUSEHOLD SETS

| Type 3R112 | 1 pole, 12 positions, snap: $30^{\circ}$ |
| :--- | :--- |
| Type 3R206 | 2 poles, 6 positions, snap: $30^{\circ}$ |
| Type 3R108 | 1 pole, 8 positions, snap: $45^{\circ}$ |
| Type 3R204 | 2 poles, 4 positions, snap: $45^{\circ}$ |
| Type 3R106 | 1 pole, 6 positions, snap: $60^{\circ}$ |
| Type 3R203 | 2 poles, 3 positions, snap: $60^{\circ}$ |
| Type 3R104 | 1 pole, 4 positions, snap: $90^{\circ}$ |
| Type 3R202 | 2 poles, 2 positions, snap: $90^{\circ}$ |

The standard types have non shorting contacts .
Shorting version: please complete the type name with an S. (3R112S, 3R206S, and so on)

Balanced roller contact system.
Internal adjustable stop, set in production.
The customer must specify the number of positions required.

SPRING RETURN available, from first to second position, on $30^{\circ}$ types only.

Standard index torque 08.11 .2 Kgcm .
Light $0.5 / 0.7$ or heavy $1.8 / 2.2 \mathrm{Kgcm}$ index torque are optional.
Storage cap for contact protection.
PCB holes $\varnothing 1.1 \mathrm{~mm}$.
WATERPROOF version (on demand)
an O-ring is mounted on the shaft inside the threated bushing and a rubber washer is placed rear side the customer panel.

Special mounting: see form
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COMPLIANCE STATEMENT to EEC
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| Current breaking capacity: | $0.8 \mathrm{~A} 110 \mathrm{Vac} / 3 \mathrm{~A} \mathrm{30Vdc}$ <br> (resistive load) |
| :--- | :--- |
| Contact resistance: | $<9 \mathrm{mohm}$ <br> (average initial value) |
| Insulation between poles: | $1200 \mathrm{Vac} 40 \times 10^{9}$ ohm |
| Life expectancy: | $>120.000$ switching operations <br> (test current $=0,1$ max value) |

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european directive 2002/95/CEE - 27/01/2003

Customize a standard switch, fill the form, e-mail
Switches materials and finishings
New switches on costumer specifications (big productions)


## COMPACT 12 CONTACT SWITCHES

Type 4V epoxyglass, whit dust proof covers.

Small switches for low power signals.
Sliding pad contact system.
Keylock on demand.
Features: 1 pole 12 positions in each sector
2 poles 6 positions in each sector
3 poles 4 positions in each sector
max 6 sectors


Make before break (shorting) contacts only.
Adjustable stop.
Index angle: $30^{\circ}\left(60^{\circ} 90^{\circ}\right.$ on demand).
Index torque: 1,2/1,7Kgm (other values on demand).
On single deck switch $L=23 \mathrm{~mm}$ add 7.5 mm each further deck.
WATERPROOF version (on demand)
an O-ring is mounted on the shaft inside the threated bushing and a rubber washer is placed rear side the customer panel.

Special mounting: see form
$\therefore$ printable page (PDF)

| Current breaking capacity: | $1.3 \mathrm{~A} \mathrm{110Vac} \mathrm{/} \mathrm{4A} \mathrm{30Vdc}$ <br> (resistive load) |
| :--- | :--- | :--- |
| Contact resistance: | $<9 m o h m$ <br> (average initial value) |
| Insulation: | $1300 \mathrm{Vac} 150 \times 10^{9}$ ohm |

Customize a standard switch, fill the form, e-mail
Switches materials and finishings

New switches on costumer specifications (big productions)


## PCB TERMINALS, COMPACT

12 CONTACTS SWITCHES
Type 4VCS epoxyglass

Single deck, small switches for low power signals.

ADD WIRED DECKS (see the picture):
If you need more poles,
we'll make multideck switches.

Sliding pad contact system.

Keylock on demand.

In these models, the pole lugs are enclosed in a single set of 12 lugs on 23.5 mm diameter.

Their position is indicated in the following list (see also the drawing in this page):

Features: $\quad 1$ pole 11 positions, pole lugs in $A$
2 poles 5 positions, pole lugs in A,C
3 poles 3 positions, pole lugs in $A, B, D$
4 poles 5 positions, pole lugs in $A, B, D, F$

See also type 4V.
The standard 20 mm measure may be changed on demand ( 18 mm min .)
WATERPROOF version (on demand)
an O-ring is mounted on the shaft inside the threated bushing and a rubber washer is placed rear side the customer panel.

Special mounting: see form
A printable page (PDF)

| Current breaking capacity: | $0.2 \mathrm{~A} \mathrm{110Vac/0.4A} \mathrm{30Vdc}$ <br> (resistive load) |
| :--- | :--- | :--- |
| Contact resistance: | $<9$ mohm <br> (track resistance to be added) |
| Insulation: | $900 \mathrm{Vac} 20 \times 10^{9}$ ohm |$|$| $>120.000$ operations |
| :--- |
| (test current $=0,1$ max value) |
| Life expectancy: |

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Customize a standard switch, fill the form, e-mail
Switches materials and finishings
New switches on costumer specifications (big productions)


PCB TERMINALS
24 CONTACTS SWITCHES

Type 5V epoxyglass FR4 class, with dust proof covers.
Multi deck switches for signals
with sliding pad contact system.
Adjustable stop.

| Features: | 1 pole | 24 positions in each sector |
| :--- | :--- | :--- |
|  | 2 poles | 12 positions in each sector |
|  | 4 poles | 6 positions in each sector | Max number of sectors: 8

Non shorting contacts (break before make).
Index angle: $15^{\circ}\left(30^{\circ}, 60^{\circ}\right.$ or $90^{\circ}$ on demand $)$.
Index torque: 1.2 / 1.7Kgcm (other values on demand).
On single deck switch $\mathrm{L}=23 \mathrm{~mm}$.
Add 8.5 mm each further deck.
PCB holes $\varnothing 1 \mathrm{~mm}$.
HV version (on demand) available
with insulated shaft glass-polyester (max 4 decks).
Nylon screws (max 1 deck) on demand.
WATERPROOF version (on demand)
an O-ring is mounted on the shaft inside the threated bushing and a rubber washer is placed rear side the customer panel.

Special mounting: see form
$\mathcal{L}$ printable page (PDF)

| Current breaking capacity: |  | $0.2 \mathrm{~A} \mathrm{110Vac/0.4A} \mathrm{30Vdc}$ <br> (resistive load) |
| :--- | :--- | :--- |
| Contact resistance: | $<9 \mathrm{mohm}$ <br> (track resistance to be added) |  |
| Insulation between contancts <br> and mass: | $1300 \mathrm{Vac} 150 \times 10^{9}$ ohm |  |$|$| Insulation between poles: | $900 \mathrm{Vac} 20 \times 10^{9}$ ohm |
| :--- | :--- |
| Life expectancy: | $>120.000$ switching operations <br> (test current $=0,1$ max value) |

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Customize a standard switch, fill the form, e-mail

Switches materials and finishings

New switches on costumer specifications (big productions)


## IN LINE, PC TERMINALS

## 24 CONTACTS SWITCHES

Type 5VCS epoxyglass FR4 class

Multi deck switches for signals with sliding pad contact system.

Adjustable stop.
Features: 1 pole, 24 positions in each sector 2 poles, 12 positions in each sector 4 poles, 6 positions in each sector max 8 sectors

Not shorting contacts (break before make).
Index angle: $15^{\circ}\left(30^{\circ}, 60^{\circ}\right.$ or $90^{\circ}$ on demand $)$.
Index torque: 1.5 / 2 Kgcm (other values on demand).

## PCB layout:

drawing here left, shows the poles type.
See on file 5.2 all contact arrangements.
Read pin numbers from left, track-side wafer, terminals down.
On 1 pole type connect all $V$ terminals.
On 2 poles type, connect Va with Va and Vb with Vb .
On single deck switch $L=23 \mathrm{~mm}$. Add 10.16 mm (4/10") each further deck.
PCB holes Ø 1.3 mm .
HV version (on demand) available
with insulated shaft glass-polyester (max 4 decks).
Nylon screws (max 1 deck) on demand.
WATERPROOF version (on demand)
an O-ring is mounted on the shaft inside the threated bushing and a rubber washer is placed rear side the customer panel.

On single deck switch $L=23 \mathrm{~mm}$. Add 10.16 mm (.400") each further deck. Special mounting: see form

Contacts sequence IN LINE switches
$A$ printable page (PDF)

| Current breaking capacity: |  | $0.3 \mathrm{~A} 110 \mathrm{Vac} / 0.4 \mathrm{~A} 30 \mathrm{Vdc}$ (resistive load) |
| :---: | :---: | :---: |
| Contact resistance: |  | <9mohm <br> (track resistance to be added) |
| Insulation: | 1300 Vac | $400 \times 10^{9} \mathrm{ohm}$ |
|  | 900 Vac | $20 \times 10^{9}$ ohm |
| Life expectancy: |  | >100.000 switching operations (test current $=0,1$ max value) |



PBC TERMINALS, 4 POSITION
SLIDE SWITCHES

Type 6RCS14A: vertical knob.
Type 6RCS14C: horizontal knob.

Signal and low power switches.

Have rotating roller for both contact and detent system.

Features: 1 pole 4 positions
(connecting a contact line)
or multi-pole functions.
Shorting contacts only (make before break)
Special mounting: see form
$\therefore$ printable page (PDF)

| Current breaking capacity: | $3 \mathrm{~A} 110 \mathrm{Vac} / 6 \mathrm{~A} 30 \mathrm{Vdc}$ (resistive load) |
| :---: | :---: |
| Contact resistance: | <9mohm (average initial value) |
| Insulation between near contacts: | $800 \mathrm{Vac} 5 \times 10^{9}$ ohm |
| Life expectancy: | $>300.000$ switching operations (test current $=0,1$ max value) |
| RohS Conformity: $\begin{array}{ll}\text { this pro } \\ \text { europe }\end{array}$ | this product is compliant to european directive 2002/95/CEE - 27/01/2003 |

Customize a standard switch, fill the form, e-mail
Switches materials and finishings
New switches on costumer specifications (big productions)

PCB TERMINALS
KEY OPERATED MINISWITCHES

Type 7VCS14 has nylon-glass moulded body, nickel-plated rotor.

High quality contact, signal switches.
Spring brush contact system.
Adjustable stop not available.
Features: 1 pole
2, 3, 4 positions and 4 positions non stop.
Non shorting contacts (shorting not available).
Index angle: $90^{\circ}$.
Index torque: 0.4 / 0.6 Kgm .
Key entry/withdrawal in all positions.
This product is ESD (electrostatic discharge) resistant.
Conforms to rule EN 61000-4-2
Insulation among key and contacts :
on air 8000 V in contact 4000 V
PCB holes $\varnothing 1.1 \mathrm{~mm}$.
Special mounting: see form
A printable page (PDF)

| Current breaking capacity: |  | $0.3 \mathrm{~A} 220 \mathrm{Vac} \mathrm{0.8A} \mathrm{30Vdc}$ <br> (resistive load) |
| :--- | :--- | :--- |
| Contact resistance: | $<9 \mathrm{mohm}$ <br> (average initial value) |  |
| Insulation between contacts: | $1200 \mathrm{Vac} 30 \times 10^{9}$ ohm |  |
| Life expectancy: | $>100.000$ operations <br> (test current $=0,1$ max value) |  |

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[^0]Switches materials and finishings

New switches on costumer specifications (big productions)


PRINTED bASES
12 CONTACT SWITCHES

Type 8V epoxyglass FR4 class.
Multi deck switches for signals with sliding pad contact system.
Adjustable stop.
Keylock on demand.
Features: 1 pole 12 pos in each sector
2 poles 6 pos in each sector
3 poles 4 pos in each sector
max 8 sectors

with insulated shaft glass-polyester (max 2 decks).
Nylon screws (max 1 deck) on demand.
WATERPROOF version (on demand)
an O-ring is mounted on the shaft inside the threated bushing and a rubber washer is placed rear side the customer panel.

On single deck switch $L=23 \mathrm{~mm}$. Add 7.62 mm (.300") each further deck. Special mounting: see form
printable page (PDF)

| Current breaking capacity: |  | 0.3 A 110 Vac 0.4 A 30 Vdc <br> (resistive load) |
| :--- | :--- | :--- |
| Contact resistance: | $<9 \mathrm{mohm}$ <br> (tracks resistance to be added) |  |
| Insulation contacts/mass: | $1300 \mathrm{Vac} 150 \times 10^{9} \mathrm{ohm}$ |  |
| Insulation between near <br> poles: | $900 \mathrm{Vac} 20 \times 10^{9} \mathrm{ohm}$ |  |$|$| Life expectancy: | $>100.000$ switching operations <br> (test current $=0,1 ~ m a x ~ v a l u e) ~$ |
| :--- | :--- |

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IN LINE, PCB TERMINALS
12 CONTACTS SWITCHES

Type 8VCS epoxyglass FR4 class.
Multi deck switches for signals with sliding pad contact system.
Adjustable stop.
Keylocks on demand.

Features: $\quad$| 1 pole 12 positions |
| :--- |
| 2 poles 6 positions |
| 3 poles 4 positions |
|  |
|  |

Non shorting contacts (break before make), shorting contacts on demand.

Index angle: $30^{\circ}\left(60^{\circ} 90^{\circ}\right.$ on demand).
Index torque: 1.2 Kgcm (other values avaliable).
WATERPROOF version (on demand)
an O-ring is mounted on the shaft inside the threated bushing and a rubber washer is placed rear side the customer panel.

On single deck switch $L=23 \mathrm{~mm}$. Add 7.62 mm (.300") each further deck.
Special mounting: see form

Contacts sequence IN LINE switches
$\therefore$ printable page (PDF)

| Current breaking capacity: | 0.3 A 220 Vac 0.4 A 30 Vdc <br> (resistive load) |
| :--- | :--- |
| Contact resistance: | $<9 \mathrm{mohm}$ <br> (average initial value) |
| Insulation contacts/mass: | $1300 \mathrm{Vac} 150 \times 10^{9}$ ohm |
| Insulation between near | $900 \mathrm{Vac} 20 \times 10^{9}$ ohm |
| poles: | >100.000 switching operations |
| (test current $=0,1$ max value) |  |

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IN LINE, PCB TERMINALS
6 POLES-A-DECK SWITCHES

Type 9VCS epoxyglass FR4 class.
Multi deck switches for signals with printed bases and spring brush contact system.

Adjustable stop.
Features:
1 pole, 12 pos in each sector
2 poles, 6 pos in each sector
3 poles, 4 pos in each sector
4 poles, 3 pos in each sector
6 poles, 2 pos in each sector

Per deck max 12 pos.
Not shorting contacts (break before make).
Index angle:: $30^{\circ}\left(60^{\circ}, 90^{\circ} \&\right.$ on demand).
Index torque: $1,5 / 2 \mathrm{Kgcm}$ (other values on demand).
WATERPROOF version (on demand)
an O-ring is mounted on the shaft inside the threated bushing
and a rubber washer is placed rear side the customer panel.
On single deck switch L = 23 mm . Add 10.16 mm (.400") each further deck.
Special mounting: see form

Contacts sequence IN LINE switches
$\therefore$ printable page (PDF)

| Portata in commutazione: | $0.3 \mathrm{~A} 110 \mathrm{Vac} / 0.4 \mathrm{~A} 30 \mathrm{Vdc}$ <br> (resistive load) |
| :--- | :--- |
| Contact resistance: | <mohm <br> (track resistance to be added) |
| Insulation contacts ground: | $1500 \mathrm{Vac} 200 \times 10^{9}$ ohm |
| Insulation between near <br> poles: | $1000 \mathrm{Vac} 90 \times 10^{9} \mathrm{ohm}$ |
| Life expectancy: | $>150.000$ witching perations <br> (test current $=0.1$ max value) |


complete drawing


LOW COST, PCB MOUNTING
12 CONTACTS ROTARY SWITCHES

| Type 10R111 | 1 pole, 11 positions, snap: $30^{\circ}$ |
| :--- | :--- |
| Type 10R206 | 2 poles, 6 positions, snap: $30^{\circ}$ |
| Type 10R304 | 3 poles, 4 positions, snap: $30^{\circ}$ |
| Type 10R403 | 4 poles, 3 positions, snap: $30^{\circ}$ |

Not shorting contacts.
Shorting version: add the type name with an S (10R111S, 10R206S, 10R304S ecc...)
they have spring brush contact system.
Low current switches, glass-filled nylon moulded,
Adjustable stop.
Storage contact protection cap.
Gold plating contacts only.
Inner inspectable.
Options:
shaft lenght up to 100 mm from PCB (with shaft extension), two pole switches output of poles in $B$ and $D$ location instead of standard $A$ and $C$ position (see drawing).
Shaft toolings on customer's layout (see file 7.3).
Tighting brass ring: increases the strengt
to an axial pressure on the shaft,
from standard 20 Kg to over 40 Kg .
A trade-mark-less production, is available
for retailers (10N types).
Operating torques:
medium spring ( $1 / 1.2 \mathrm{Kgcm}$ ) like standard
light spring ( $0,6 / 0,8 \mathrm{Kgcm}$ ) on demand.
The standard 42 mm measure, may be changed on request.
PCB holes $\varnothing 1.1 \mathrm{~mm}$.
WATERPROOF version (on demand)
an O-ring is mounted on the shaft inside the threated bushing and a rubber washer is placed rear side the customer panel.

Special mounting: see form
A printable page (PDF)

Conformity to 73/23 directive,
EN 61058-1 standard

| Current breaking capacity: | $300 \mathrm{~mA} 110 \mathrm{Vac} / 400 \mathrm{~mA} 30 \mathrm{Vdc}$ (resistive load) |
| :---: | :---: |
| Contact resistance: | <10mohm (average initial value) |
| Insulation between contacts: | $1200 \mathrm{Vac} 20 \times 10^{9}$ ohm |
| Insulation between poles: | $1300 \mathrm{Vac} 22 \times 10^{9}$ ohm |
| Operating temperature: | $-20+80^{\circ} \mathrm{C}$ |
| Life expectancy: | $>120.000$ switching operations (test current $=0,1$ max value) |
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## LOW COST, SOLDER/WIRING TERMINALS 12 CONTACTS ROTARY SWITCHES



| Type 11R111 | 1 pole, 11 positions, snap: $30^{\circ}$ |
| :--- | :--- |
| Type 11R206 | 2 poles, 6 positions, snap: $30^{\circ}$ |
| Type 11R304 | 3 poles, 4 positions, snap: $30^{\circ}$ |
| Type 11R403 | 4 poles, 3 positions, snap: $30^{\circ}$ |

Not shorting contacts.
Shortable version: add the type name with an S
(11R111S, 11R206S, 11R304S ecc...).
Low current switches, glass-filled nylon moulded,
they have spring brush contact system.
Adjustable stop.
Gold platings contacts only.
Inner inspectable.
Options:
shaft lenght up to 100 mm from PCB (with shaft extension).
Shaft toolings on customer's layout (see file).
WATERPROOF version (on demand)
an O-ring is mounted on the shaft inside the threated bushing and a rubber washer is placed rear side the customer panel.

Tighting brass ring:
increases the strengt to an axial pressure on the shaft,
from standard 20 Kg to over 40 Kg .
A trade-mark-less production (11N types),
is available for retailers.
Special mounting: see form
printable page (PDF)

Conformity to 73/23 directive, EN 61058-1 standard

| Current breaking capacity: | $300 \mathrm{~mA} 110 \mathrm{Vac} / 400 \mathrm{~mA} 30 \mathrm{Vdc}$ <br> (resistive load) |
| :--- | :--- | :--- |
| Contact resistance: | $<10 \mathrm{mohm}$ <br> (average initial value) |
| Insulation between near <br> contacts | $1300 \mathrm{Vac} 22 \times 10^{9} \mathrm{ohm}$ |
| Insulation between poles | $1200 \mathrm{Vac} 20 \times 10^{9} \mathrm{ohm}$ |
| Operating temperature | $-20+80^{\circ} \mathrm{C}$ |

[^1]Switches materials and finishings
New switches on costumer specifications (big productions)


PLASTIC CASE SWITCHES, WIRING TERMINALS, FOR SMALL HOUSEHOLD SETS

| Type 13R112 | 1 pole, 12 positions, snap: $30^{\circ}$ |
| :--- | :--- |
| Type 13R206 | 2 poles, 6 positions, snap: $30^{\circ}$ |
| Type 13R108 | 1 pole, 8 positions, snap: $45^{\circ}$ |
| Type 13R204 | 2 poles, 4 positions, snap: $45^{\circ}$ |
| Type 13R106 | 1 pole, 6 positions, snap: $60^{\circ}$ |
| Type 13R203 | 2 poles, 3 positions, snap: $60^{\circ}$ |
| Type 13R104 | 1 pole, 4 positions, snap: $90^{\circ}$ |
| Type 13R202 | 2 poles, 2 positions, snap: $90^{\circ}$ |

Balanced roller contact system.
The standard types have non shorting contacts
Shorting version: please complete the type name with an S. (13R112S, 13R206S, and so on).

Internal adjustable stop, set in production.
The customer must specify the number of positions required.
Cabling specs on demand.
SPRING RETURN available, from first to second position, on $30^{\circ}$ types only.

Standard index torque 08./1.2 Kgcm.
Light $0.5 / 0.7$ or heavy $1.8 / 2.2 \mathrm{Kgcm}$ index torque are optional.

PCB holes Ø 1.1 mm .
Special mounting: see form
$\therefore$ printable page (PDF)
COMPLIANCE STATEMENT to EEC
$(\in$

| Current breaking capacity: | $0.8 \mathrm{~A} 110 \mathrm{Vac} / 3 \mathrm{~A} 30 \mathrm{Vdc}$ <br> (resistive load) |
| :--- | :--- | :--- |
| Contact resistance: | $<9$ mohm <br> (average initial value) |
| Insulation: | $1200 \mathrm{Vac} 40 \times 10^{9}$ ohm <br> (insulation between poles) |
| Life expectancy: | $>120.000$ switching operations <br> (test current $=0,1$ max value) |
| Rohs Conformity: | this product is compliant to <br> european directive 2002/95/CEE $-27 / 01 / 2003$ |

[^2]Switches materials and finishings
New switches on costumer specifications (big productions)

complete drawing


PLASTIC CASE SWITCHES PCB TERMINALS
2 POLES, 2 POSITION

| Type 14R202A | 2 poles, 2 positions, $\varnothing 6 \mathrm{~mm}$ shaft |
| :--- | :--- |
| Type 14R202C | 2 poles, 2 positions, special key operated |

Non shorting contacts.
Balanced roller contact system.
Index angle: $60^{\circ}$.
PCB holes $\varnothing 1.1 \mathrm{~mm}$.
WP version (optional), waterproof switch for automotive and industrial applicatic
The switch has a nitrilic rubber ring between rotor and body.
The contacts are encapsulated with epoxy resin.
Customized shaft toolings (lenght, flats, slots) on demand: please fill the form
$A$ printable page (PDF)

| Current breaking capacity: | $1.5 \mathrm{~A} 230 \mathrm{Vac} 3 \mathrm{~A} \mathrm{30Vdc}$ <br> (resistive load) |
| :--- | :--- |
| Contact resistance: | $<9 \mathrm{mohm}$ <br> (average initial value) |
| Insulation between poles: | $1200 \mathrm{Vac} 40 \times 10^{9}$ ohm |$|$| $>20.000$ switching operations |
| :--- | :--- |
| (test current $=0,1$ max value) |

RohS Conformity: this product is compliant to
european directive 2002/95/CEE - 27/01/2003



Customize a standard switch, fill the form, e-mail
Switches materials and finishings
New switches on costumer specifications (big productions)


[^0]:    Customize a standard switch, fill the form, e-mail

[^1]:    RohS Conformity: this product is compliant to
    european directive 2002/95/CEE - 27/01/2003

[^2]:    Customize a standard switch, fill the form, e-mail

