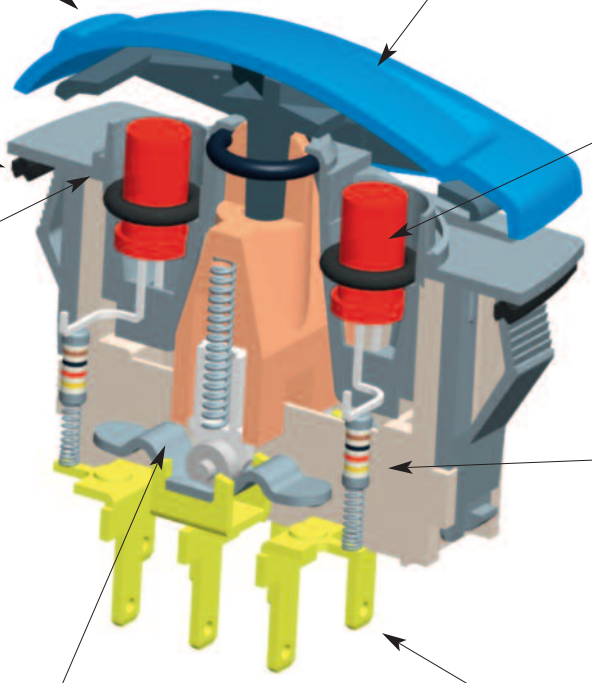
Attractive rugged rocker switch

Removable actuator
Easy to stock
Easy to customize

Up-to-date rocker design
Smooth curves
Wide choice of colours and symbols
Laser etched symbols on illuminated versions

High performance LEDs
Long life expectancy
An array of colours and voltages

Optional panel seal



High performance ultrasonic welding
Protection against dust and the effects of continuous immersion under pressure.

Integrated resistors
Easy electrical connection

Robust roller contact
Very long life expectancy
Many electrical functions available

Large variety of terminal options
Up to 10 terminals
Screw, solder lug and quick-connect

APEM will be happy to develop custom product solutions. Please contact us with your requirements.

KR series

Power rocker switches

Specifications



- ❑ **Unique rocker design**
- ❑ **Wide choice of colours**
- ❑ **Laser etched symbols**
- ❑ **Illuminated or non-illuminated**
- ❑ **Optionally sealed to IP68**

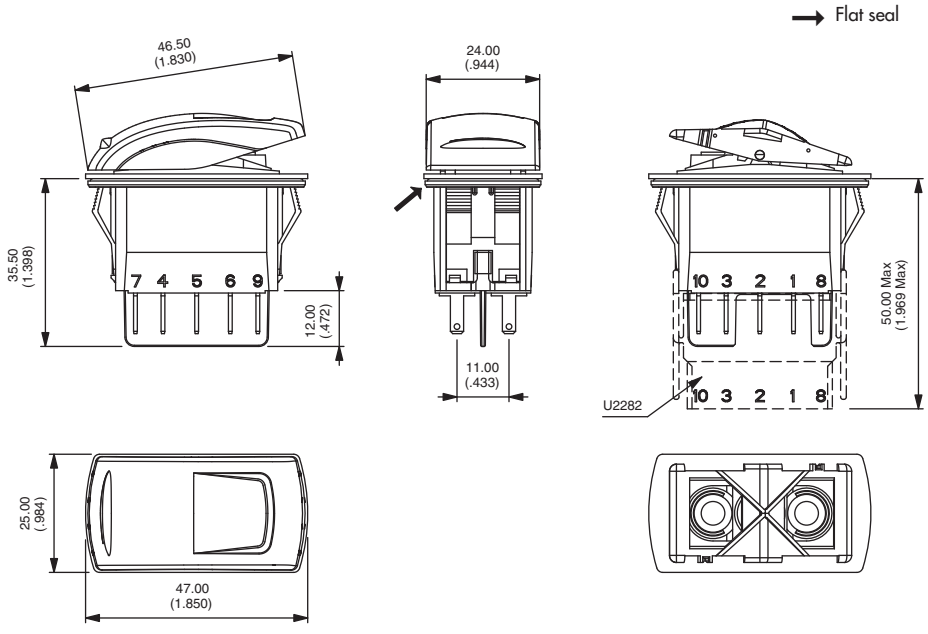
ELECTRICAL SPECIFICATIONS

- Currrent/voltage rating with resistive load :
  - Silver contacts (A) : 5A 24VDC, 100.000 cycles
  10A 24VDC, 10.000 cycles (terminals 6.35 x 0.8 only)
  - Gold plated contacts (D) : 20mA 12V, 150.000 cycles
- Initial contact resistance : 10 mΩ max.
- Insulation resistance : 1.000 MΩ min. at 500VDC
- Dielectric strength : 2.000 Vrms 50 Hz min. between terminals
- Mechanical life :150.000 cycles min.

ENVIRONMENTAL SPECIFICATIONS

- Degree of protection of sealed versions : frontal sealing to IP68 according to IEC 60529 (submersion under 1 meter of water for more than 30 minutes)
- Salt spray resistance : 96 hours according to IEC 512-6, test 11f
- Vibration resistance : 10-500 Hz / 10 g per IEC 60068-2-6
- Operating temperature : -40°C to +85°C

DIMENSIONS



MATERIALS

- Case : PA 6-6
- Actuator : ABS
- Bezel : PA 6-6
- Terminals : brass, silver plated
- Contacts : silver (A)
  or silver, gold plated (D)
- Contact roller : brass, nickel plated

SEALING

Sealing is optional.

To order a sealed product, complete the appropriate box of ordering format on the following pages.

Dimensions : First dimensions are in mm while inches are shown as bracketed numbers.

Tolerance : The general tolerance for dimensions in this brochure is ± 0,3 (.012). Overall dimension tolerance is ± 0,5 (.020).

Packaging unit : 40 pieces

Dimensions, specifications and data shown in this brochure are subject to change without notice.

HOW TO ORDER

• To order a complete product, fill in all the boxes of the following order guide.

• To order case only (without actuator), finish your order number with the LED wiring code.

• To order actuator only (without case), begin the order number with code KRR, then follow the order format from "actuator type" until the end of the options.

CASE + LEDS

KR						Side A	Side B	

SERIES

Poles

3	Single pole
4	Double pole

Electrical functions

1	ON	-	OFF
4	ON	ON	ON
4-1R	ON	ON	MOM
5	MOM	-	ON
6	ON	-	ON
7	MOM	OFF	MOM
8	ON	OFF	MOM
9	ON	OFF	ON

Terminals

Screw

0	6 terminals with barrier

Solder lug/quick-connect

2	6 terminals with barrier
4	6 terminals w/o barrier
A	10 term. with barrier
B	10 term. w/o barrier
C	10 terminals for use with connector U2292

Quick-connect 6,35x0,8

3	6 terminals with barrier

Terminals (continued)

Quick-connect 6,35x0,8

5	6 terminals w/o barrier
D	10 term. with barrier
E	10 term. w/o barrier
F	10 term. for use with connector U2292

Quick-connect 2,8x0,8

G	10 term. with barrier
H	10 term. w/o barrier
J	10 terminals for use with connector U2282

Contacts

A	Silver
D	Gold plated

Sealing

X	No
K	Yes

LEDS

X	None
A	LED 6V red
B	LED 6V green
C	LED 6V yellow
M	LED 6V blue
R	LED 6V white
D	LED 12V red
E	LED 12V green
F	LED 12V yellow
N	LED 12V blue
S	LED 12V white
J	LED 24V red
K	LED 24V green
L	LED 24V yellow
P	LED 24V blue
T	LED 24V white

Wiring

See diagrams page 9.

ACTUATOR

Type

1	For non-illuminated application
2	For illuminated application

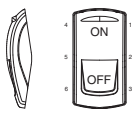
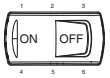
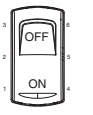
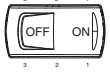
Colour

1	Blue
1/4	Dark blue
2	Black
3	Green
4	Grey
5	Yellow
6	Red
7	Ivory
9	Orange
A	Aluminium bright

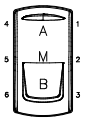
ACTUATOR MARKING

	Area A	Area M	Area B

Orientation

N	
O	
S	
E	

Symbols



Symbols : see page 31.
Accessories : see page 34.

NOTICE : please note that not all combinations of above numbers are available. Refer to the following pages for further information.

KR series

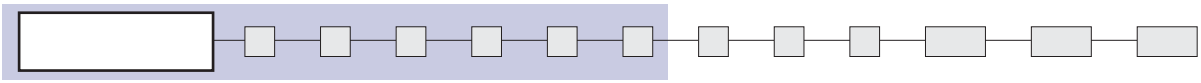
Power rocker switches

Case

• **To order case only (without rocker), finish your order number with the LED wiring code.**

CASE + LEDS

MODEL STRUCTURE

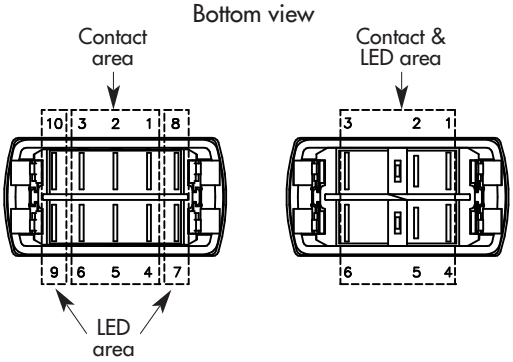




Single pole	Double pole	2-3 / 5-6		1-2 / 4-5
KR31	**KR41**	ON	-	OFF
	KR44*	ON	ON	ON
	KR44-1R*	ON	ON	MOM
KR35	**KR45**	MOM	-	ON
KR36	**KR46**	ON	-	ON
KR37	**KR47**	MOM	OFF	MOM
KR38	**KR48**	ON	OFF	MOM
KR39	**KR49**	ON	OFF	ON

* Function 4 : single pole in double pole case

Bottom view



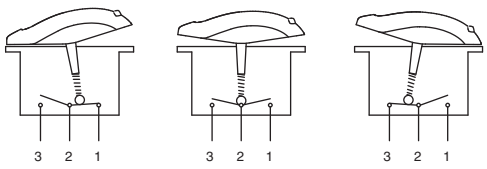
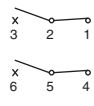
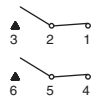
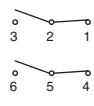
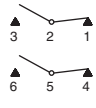
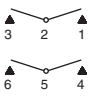
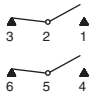
10 terminal version

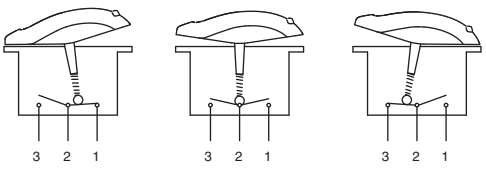
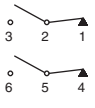
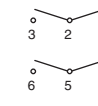
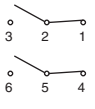
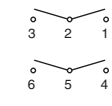
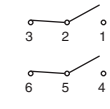
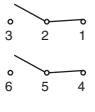
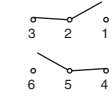
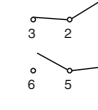
6 terminal version

ELECTRICAL FUNCTIONS AND CONNECTIONS

In the tables below, terminal connections as viewed from bottom of switch.
Only the contact area is represented.
For single pole models, only terminals 1, 2 and 3 are to be considered (not terminals 6, 5, 4).

x = w/o terminal
o = with terminal
▲ = momentary

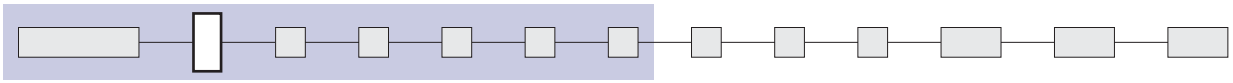
	Positions		
			
Function 1 * KR31-KR41			
Function 5 KR35-KR45			
Function 6 KR36-KR46			
Function 7 KR37-KR47			

	Positions		
			
Function 8 KR38-KR48			
Function 9 KR39-KR49			
Function 4 KR44			
Function 4-1R KR44-1R			

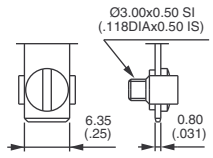
* Function 1 only available for 6 terminal versions.

TERMINALS

CASE + LEDS

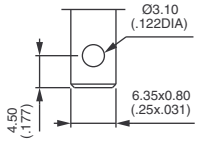


Screw



0 6 term. with barrier

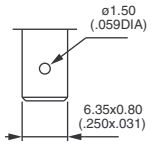
Solder lug / quick-connect



2 6 terminals with barrier
4 6 terminals w/o barrier

A 10 terminals with barrier
B 10 terminals w/o barrier
C 10 terminals for use with connector U2292

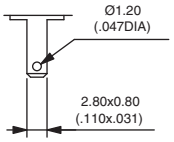
Normalized quick-connect 6,35x0,8



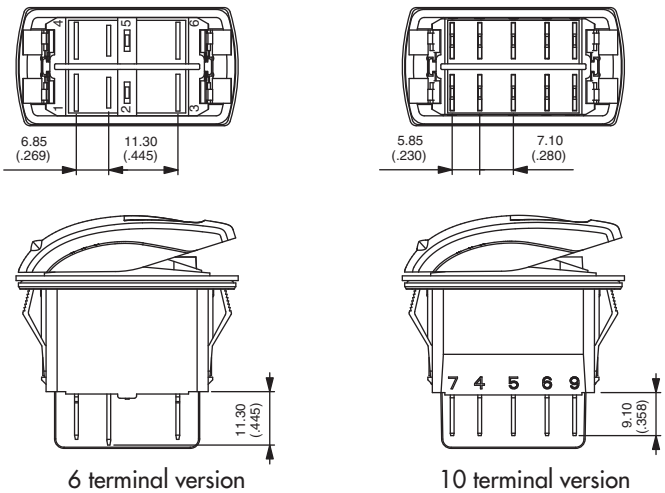
3 6 terminals with barrier
5 6 terminals w/o barrier

D 10 terminals with barrier
E 10 terminals w/o barrier
F 10 terminals for use with connector U2292

Normalized quick-connect 2,8x0,8



G 10 terminals with barrier
H 10 terminals w/o barrier
J 10 terminals for use with connector U2282



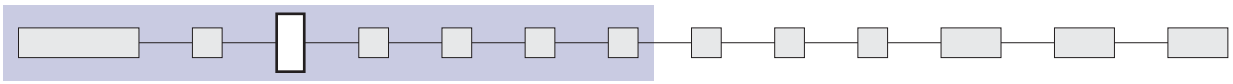
6 terminal version — 10 terminal version

Terminals are marked on the case.

The drawings show the maximum possible number of terminals.

CONTACT MATERIALS

CASE + LEDS



A Silver
D Silver, gold plated

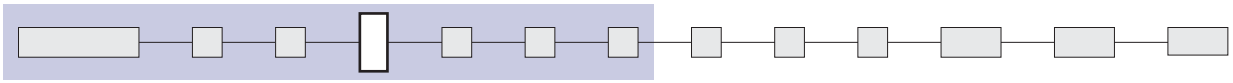
KR series

Power rocker switches

Case - LEDs

SEALING

CASE + LEDS

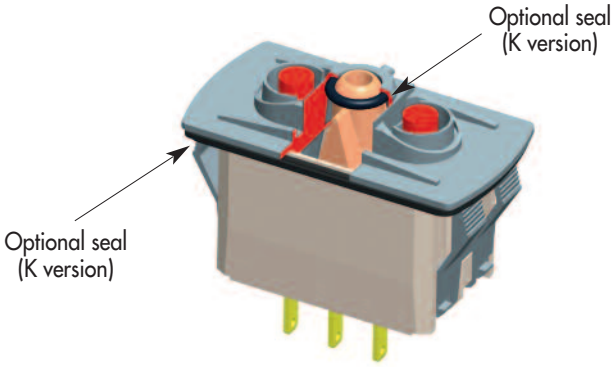


X No sealing

K IP68 (switch assembled on panel)

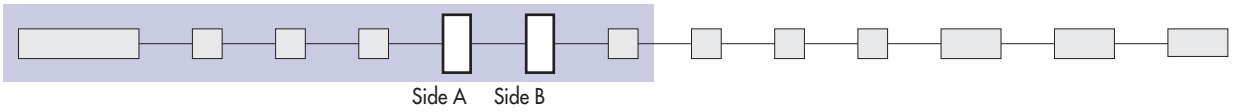
Ultrasonic welding of frame to case is standard on all versions.
The ultrasonic welding and the optional panel seal prevent water and dust from introducing into the switch housing.

The product shall be installed professionally.
Test conditions available on request.



LEDS

CASE + LEDS



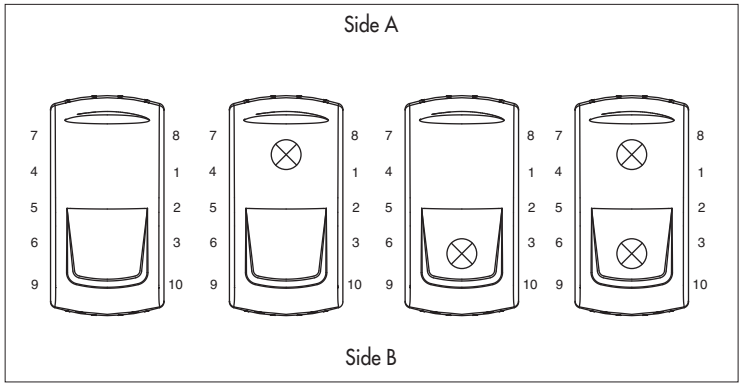
Complete each enlarged box with one of the codes listed below.

X Without LED

	Red	Green	Yellow	Blue	White
6VDC	**A**	**B**	**C**	**M**	**R**
12VDC	**D**	**E**	**F**	**N**	**S**
24VDC	**J**	**K**	**L**	**P**	**T**

LED consumption : 20mA @ nominal voltage (25°C)

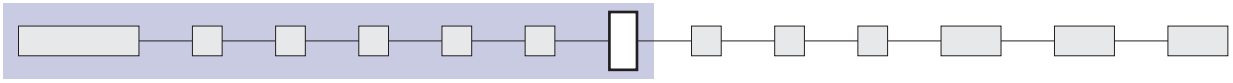
Other illumination solutions : on request.



WIRING

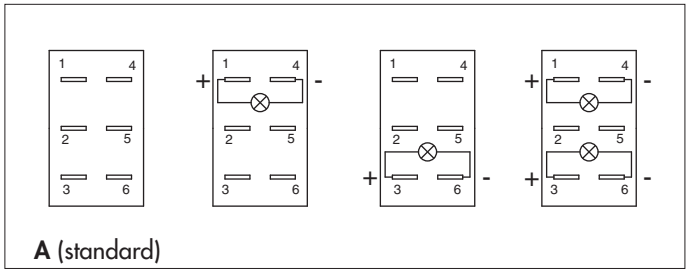
The LED wiring diagram is shown on the case.

CASE + LEDS

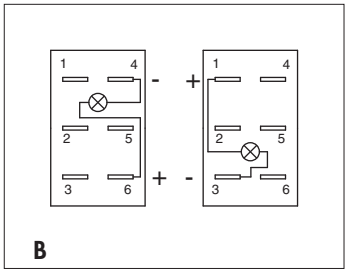


• For 6 terminal versions

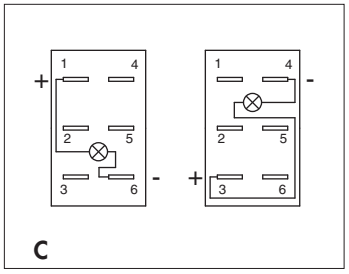
LED connected to the load



A (standard)

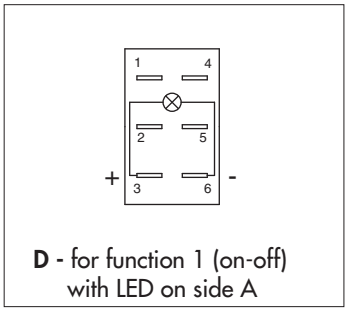


B

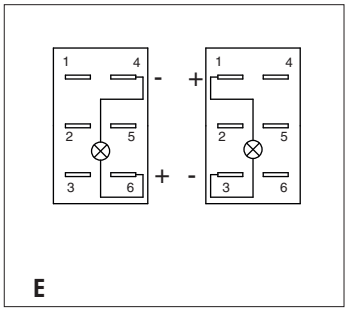


C

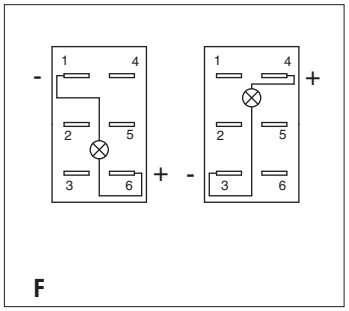
Note : If not available, terminals are added to connect the LED.



D - for function 1 (on-off) with LED on side A



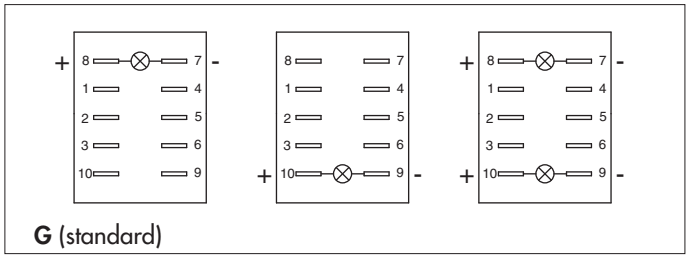
E



F

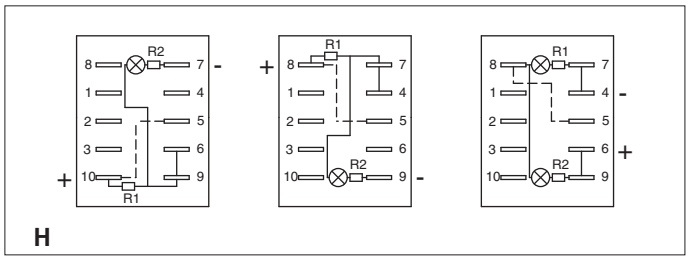
• For 10 terminal versions

Independent LED or integrated functions



G (standard)

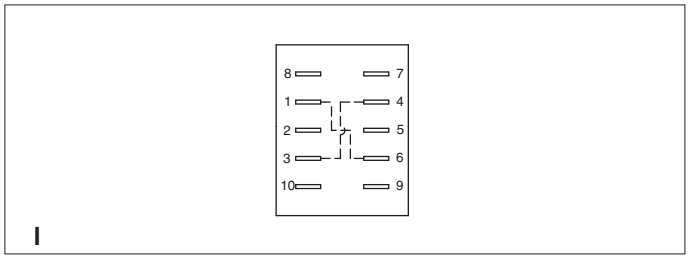
To have independent LEDs.



H

To obtain 2 symbol illumination levels (night illumination when OFF and higher illumination when ON).
Dotted line = external wiring, continuous line = internal wiring

Available in Single Pole only, with H and J quick-connect terminals.



I

To have a polarity inversion (typical application : fan motor).
Dotted line = internal wiring, continuous line = internal wiring

Power supply betweeen 2 and 5 - Load between 1 and 4 or 3 and 6.
Available with H and J quick-connect terminals.

Please contact us for other wiring solutions.

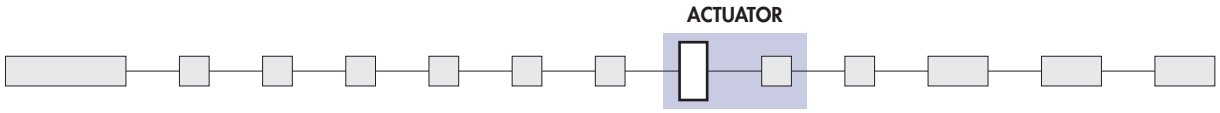
KR series

Power rocker switches

Actuator - Marking

To order actuator only (without case), begin the order number with code KRR, then follow the order format from "actuator type" until the end of the options.

ACTUATOR TYPE

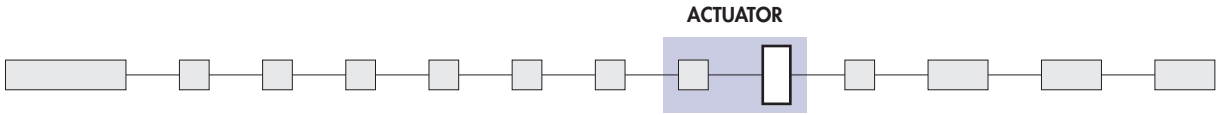




1 For non-illuminated application
2 For illuminated application

Other rocker design : on request.

ACTUATOR COLOUR



Code	Colour
1	Blue
1/4	Dark blue
2	Black
3	Green

Code	Colour
4	Grey
5	Yellow
6	Red
7	Ivory

Code	Colour
9	Orange
A	Aluminium bright

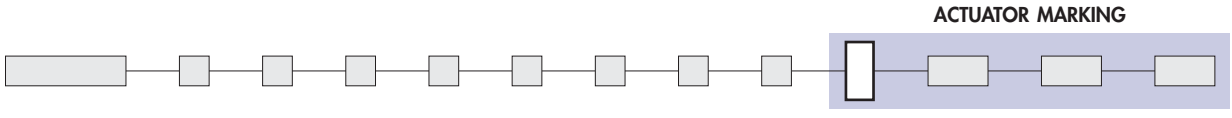
Note : colour 7 not available on illuminated versions.

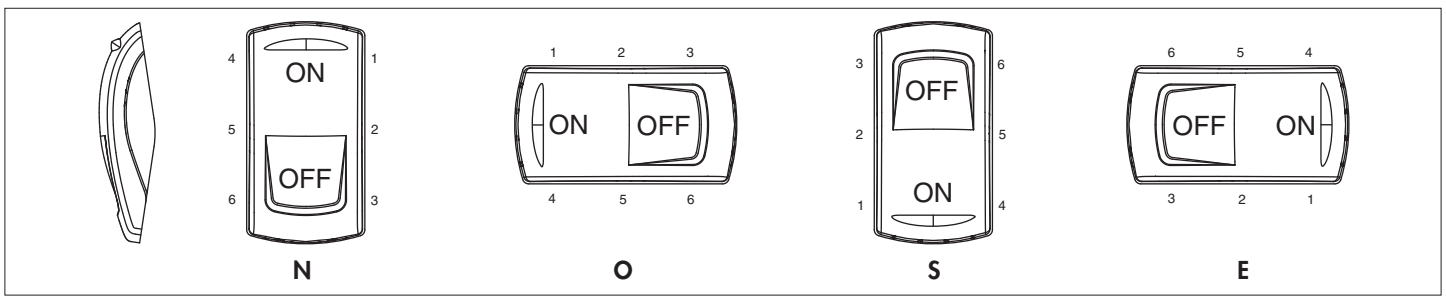
A **soft-touch varnish** can be added. Consult us.



MARKING ORIENTATION

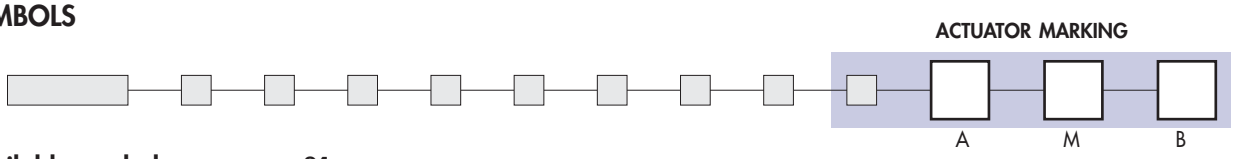
If no marking required, leave box blank.





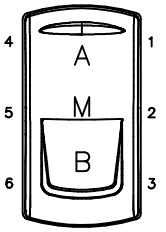
Other orientations : on request

SYMBOLS



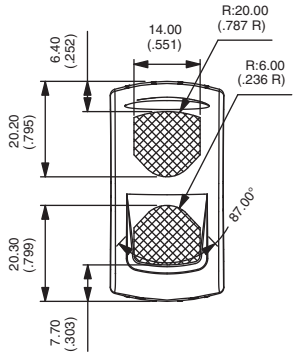
Available symbols : see page 31.

Marking colour
White marking for illuminated rockers (laser etching) and non-illuminated black rockers (pad printing). Black marking for non-illuminated colour rockers (pad printing). Other : on request.



Laser etching resistance
- Water and petrol resistant acccording to EN61058-1
- Tear resistant (cross-cut test) according to NF ISO 2409 : class 0
- UV resistant according to ISO 4892-2

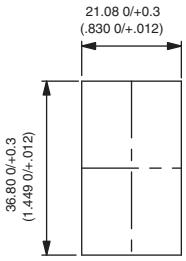
Marking area
For illuminated versions. The symbol will be included in the hatched area.
Marking in M are : on request.



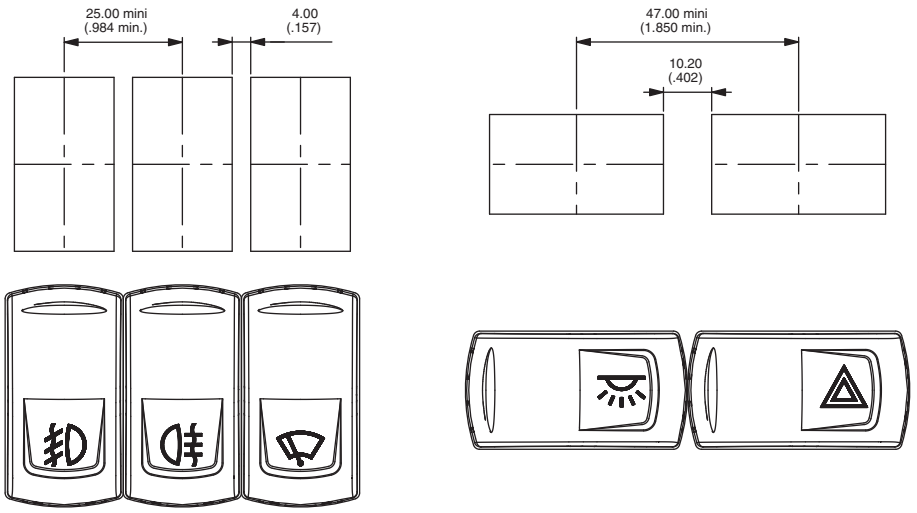
SWITCH PANEL CUT-OUT

Panel thickness : 0,8 mm to 4,6 mm

Recommended panel thickness :
between 2 mm and 3,5 mm



MATRIX MOUNTING



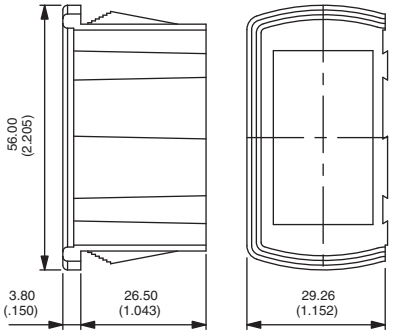
K range

Power rocker switches and indicators

Accessories for KR, KL and KI series

MOUNTING PANEL END

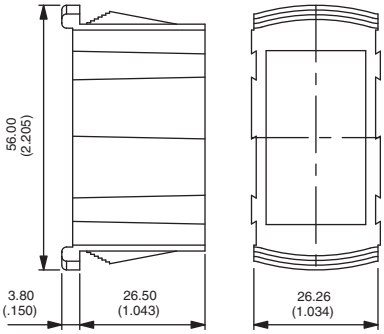




U2261

MOUNTING PANEL MIDDLE

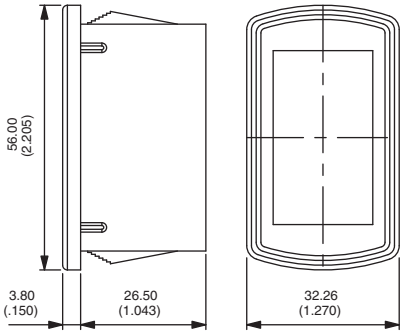




U2262

SINGLE MOUNTING PANEL



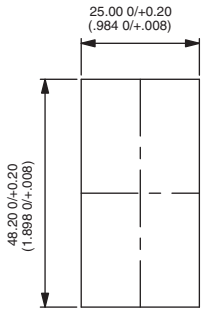


U2267

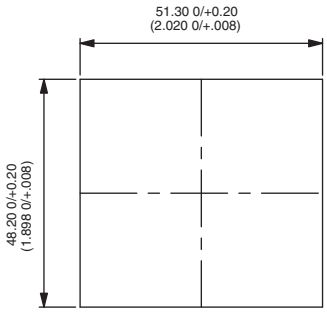
Recommended panel thickness : 1,10 mm - 1,80 mm - 2,60 mm - 3,40 mm - 4,20 mm - 5 mm - 5,80 mm

MOUNTING PANEL CUT-OUT For additional elements, add 26,40 mm (1.039)

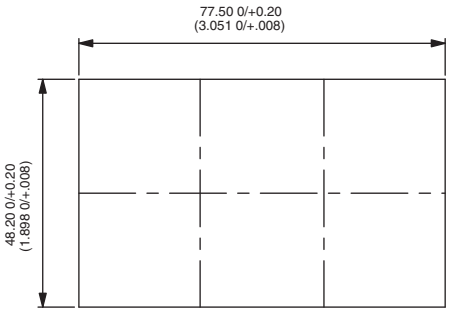
For 1 element U2267



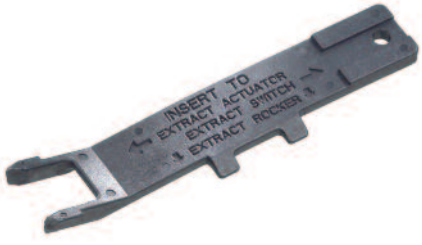
For 2 elements U2261



For 3 elements (2xU2261 + 1x U2262)



ACTUATOR REMOVING TOOL



U3052

2 tools are supplied

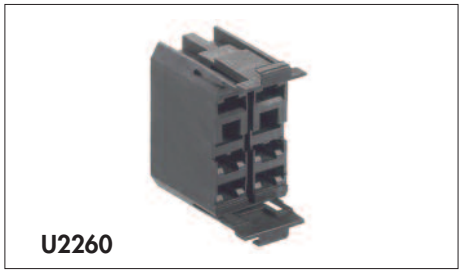
EXTRACT ACTUATOR (KR ONLY)
Allows the extraction of the rocker / rocker support assembly.
Place the 2 claws under the support and push as indicated by the arrow.

EXTRACT ROCKER (KR ONLY)
Allows to separate the rocker from its support.
Insert the tool between rocker and support as indicated by the arrrow. Pull out the tool in the opposite direction.

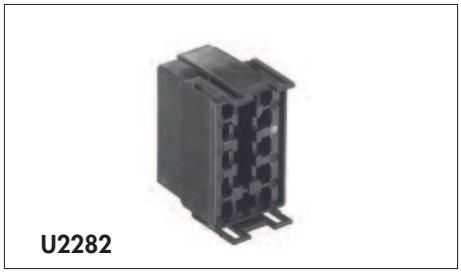
EXTRACT SWITCH (KR, KL AND KI)
Allows to extract switch from panel mounting units. 2 tools are necessary.
Insert the tools between switch and panel mounting units from the rear to compress the snap-in device. Pull off switch manually.

CONNECTORS

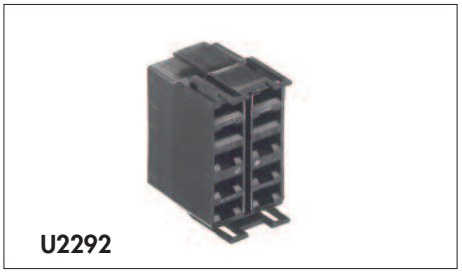
Standard colour : black. Other colours : on request.
Connectors cannot be combined with wiring types H and I.



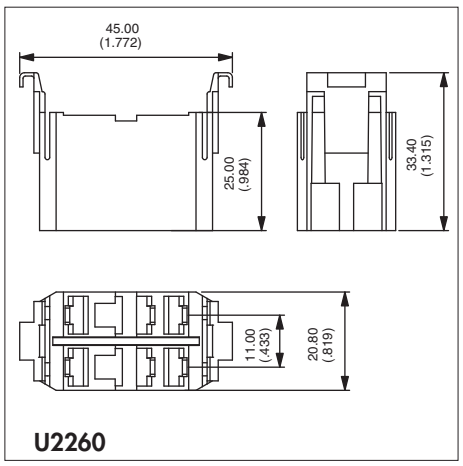
6 terminal version
For use with terminals type 2, 3, 4 or 5.
6,35 (1/4) tabs to be fitted by the user
(example : AMP/Tyco 0-0141013-2).
Can be used for the KG series.

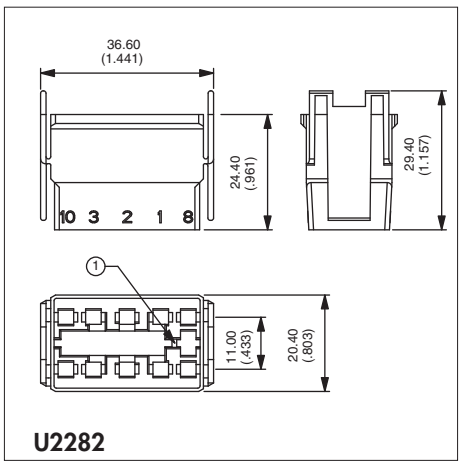


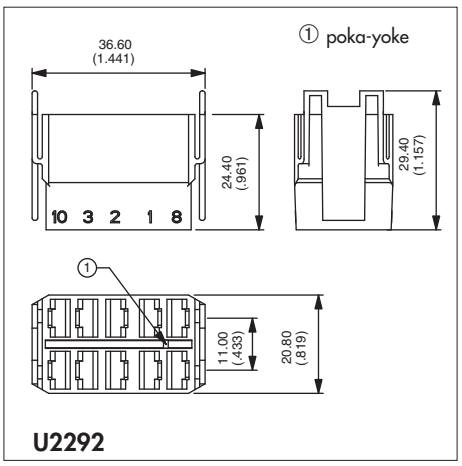
10 terminal version
For use with terminals type H or J.
2,8 (.110) tabs to be fitted by the user
(example : AMP/Tyco 0-927779-3).



10 terminal version
For use with terminals type B, C, E or F.
6,35 (1/4) tabs to be fitted by the user
(example : AMP/Tyco 0-0141013-2).







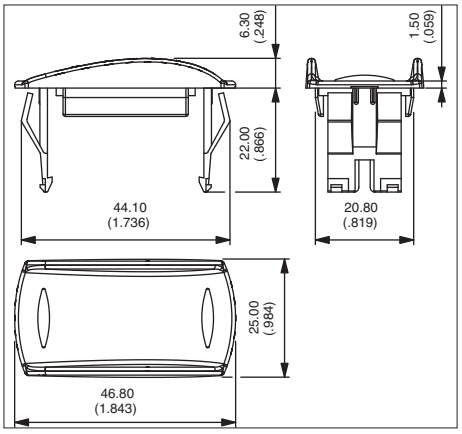
HOLE PLUGS

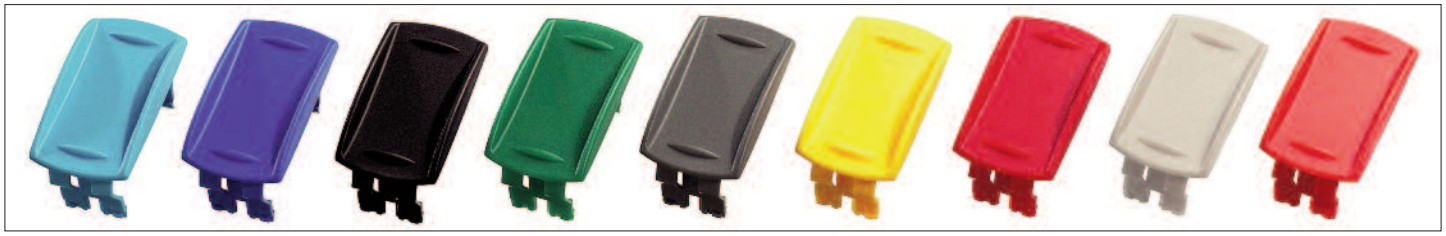
Usefull for future extensions.

Code	Colour
U2271	Blue
U2271/4	Dark blue
U2272	Black
U2273	Green

Code	Colour
U2274	Grey
U2275	Yellow
U2276	Red
U2277	Ivory
U2279	Orange

Recommended panel thickness :
1,50 mm to 6 mm





Connectors can be hanged on specific hole plugs. Contact APEM.