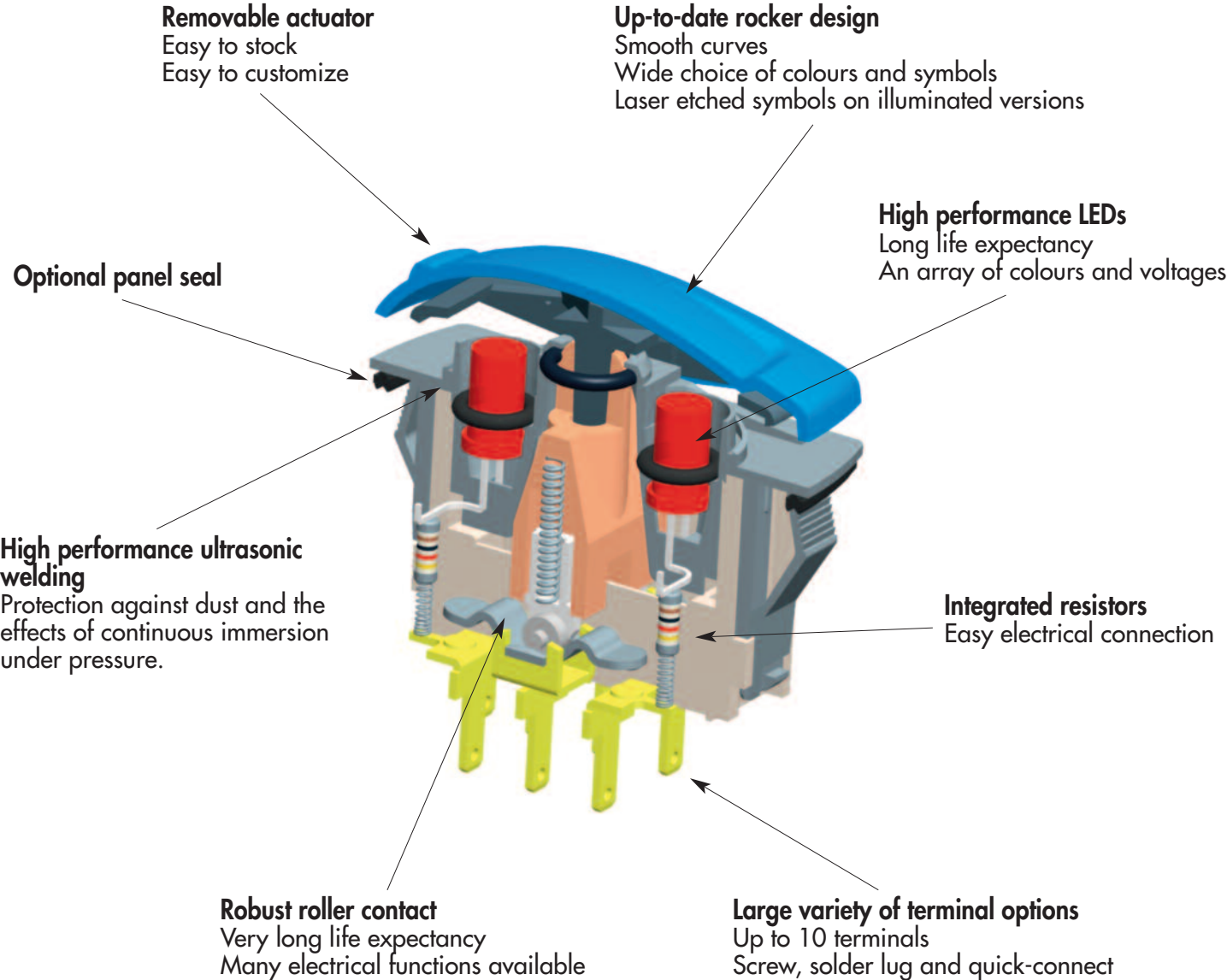


KR series

Power rocker switches

Distinctive features

Attractive rugged rocker switch



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

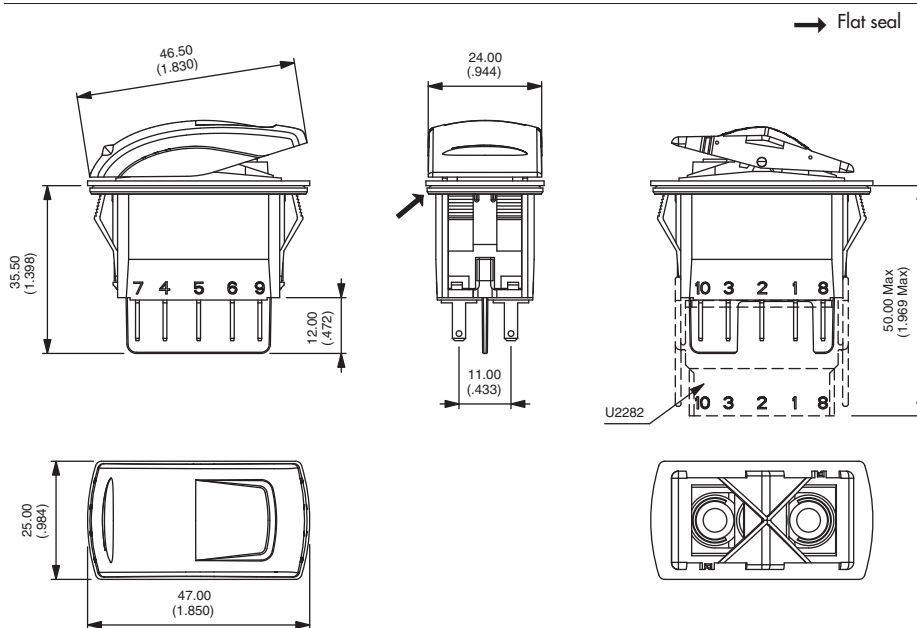
ELECTRICAL SPECIFICATIONS

- Current/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 $\pm 0,3$ (.012). Overall dimension tolerance is $\pm 0,5$ (.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 + LEADS

KR							Side A	Side B																																																																									
SERIES	Electrical functions			Contacts	Sealing	LEDS		Wiring																																																																									
Poles	<table border="1"> <tr><td>1</td><td>ON</td><td>-</td><td>OFF</td></tr> <tr><td>4</td><td>ON</td><td>ON</td><td>ON</td></tr> <tr><td>4-1R</td><td>ON</td><td>ON</td><td>MOM</td></tr> <tr><td>5</td><td>MOM</td><td>-</td><td>ON</td></tr> <tr><td>6</td><td>ON</td><td>-</td><td>ON</td></tr> <tr><td>7</td><td>MOM</td><td>OFF</td><td>MOM</td></tr> <tr><td>8</td><td>ON</td><td>OFF</td><td>MOM</td></tr> <tr><td>9</td><td>ON</td><td>OFF</td><td>ON</td></tr> </table>			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	<table border="1"> <tr><td>A</td><td>Silver</td></tr> <tr><td>D</td><td>Gold plated</td></tr> </table>	A	Silver	D	Gold plated	<table border="1"> <tr><td>X</td><td>No</td></tr> <tr><td>K</td><td>Yes</td></tr> </table>	X	No	K	Yes	<table border="1"> <tr><td>X</td><td>None</td></tr> <tr><td>A</td><td>LED 6V red</td></tr> <tr><td>B</td><td>LED 6V green</td></tr> <tr><td>C</td><td>LED 6V yellow</td></tr> <tr><td>M</td><td>LED 6V blue</td></tr> <tr><td>R</td><td>LED 6V white</td></tr> <tr><td>D</td><td>LED 12V red</td></tr> <tr><td>E</td><td>LED 12V green</td></tr> <tr><td>F</td><td>LED 12V yellow</td></tr> <tr><td>N</td><td>LED 12V blue</td></tr> <tr><td>S</td><td>LED 12V white</td></tr> <tr><td>J</td><td>LED 24V red</td></tr> <tr><td>K</td><td>LED 24V green</td></tr> <tr><td>L</td><td>LED 24V yellow</td></tr> <tr><td>P</td><td>LED 24V blue</td></tr> <tr><td>T</td><td>LED 24V white</td></tr> </table>		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	See diagrams page 9.	
1	ON	-	OFF																																																																														
4	ON	ON	ON																																																																														
4-1R	ON	ON	MOM																																																																														
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ACTUATOR

Type	Colour																								
<table border="1"> <tr><td>1</td><td>For non-illuminated application</td></tr> <tr><td>2</td><td>For illuminated application</td></tr> </table>	1	For non-illuminated application	2	For illuminated application	<table border="1"> <tr><td>1</td><td>Blue</td></tr> <tr><td>1/4</td><td>Dark blue</td></tr> <tr><td>2</td><td>Black</td></tr> <tr><td>3</td><td>Green</td></tr> <tr><td>4</td><td>Grey</td></tr> <tr><td>5</td><td>Yellow</td></tr> <tr><td>6</td><td>Red</td></tr> <tr><td>7</td><td>Ivory</td></tr> <tr><td>9</td><td>Orange</td></tr> <tr><td>A</td><td>Aluminium bright</td></tr> </table>	1	Blue	1/4	Dark blue	2	Black	3	Green	4	Grey	5	Yellow	6	Red	7	Ivory	9	Orange	A	Aluminium bright
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ACTUATOR MARKING

	Area A	Area M	Area B									
Orientation	Symbols											
<table border="1"> <tr><td>N</td><td></td></tr> <tr><td>O</td><td></td></tr> <tr><td>S</td><td></td></tr> <tr><td>E</td><td></td></tr> </table>	N		O		S		E		<table border="1"> <tr><td></td></tr> </table>			
N												
O												
S												
E												
	<p>Symbols : see page 31.</p> <p>Accessories : see page 34.</p>											



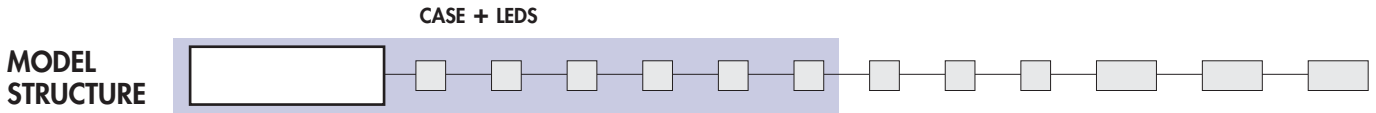
NOTICE : please note that not all combinations of above numbers are available. Refer to the following pages for further information.


KR series

Power rocker switches

Case

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



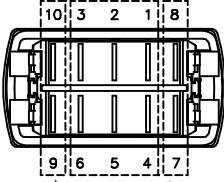


		2-3 5-6	1-2 4-5	
Single pole	Double pole			
KR31	KR41	ON - OFF		
	KR44*	ON ON ON		
	KR44-1R*	ON ON MOM		
KR35	KR45	MOM - ON		
KR36	KR46	ON - ON		
KR37	KR47	MOM OFF MOM		
KR38	KR48	ON OFF MOM		
KR39	KR49	ON OFF ON		

* Function 4 : single pole in double pole case

Bottom view

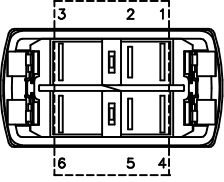
Contact area



LED area

10 terminal version

Contact & LED area

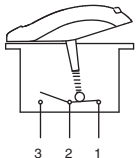
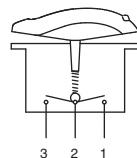
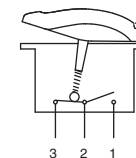
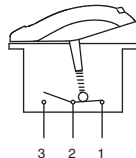
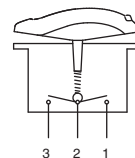
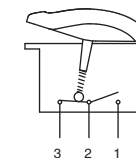
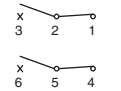

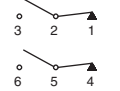
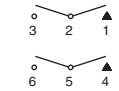



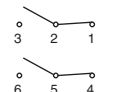
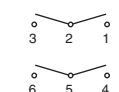
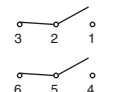
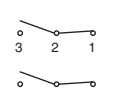
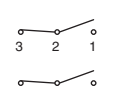
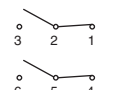
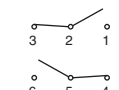
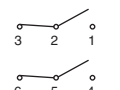
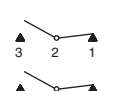

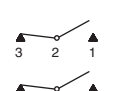
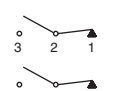
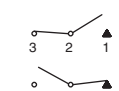
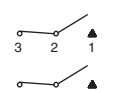


6 terminal version

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				Positions		
							
Function 1 * KR31-KR41				Function 8 KR38-KR48			
Function 5 KR35-KR45				Function 9 KR39-KR49			
Function 6 KR36-KR46				Function 4 KR44			
Function 7 KR37-KR47				Function 4-1R KR44-1R			

* Function 1 only available for 6 terminal versions.

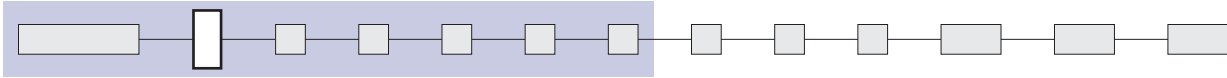
KR series

Power rocker switches

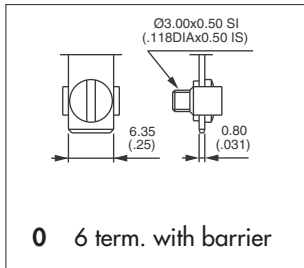
Case

TERMINALS

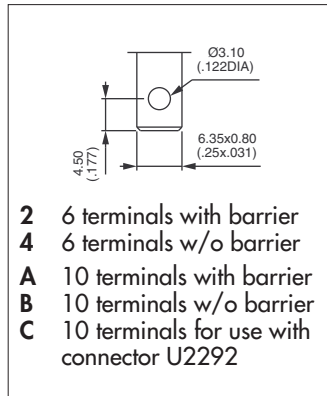
CASE + LEDS



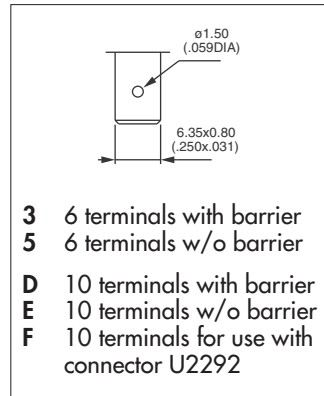
Screw



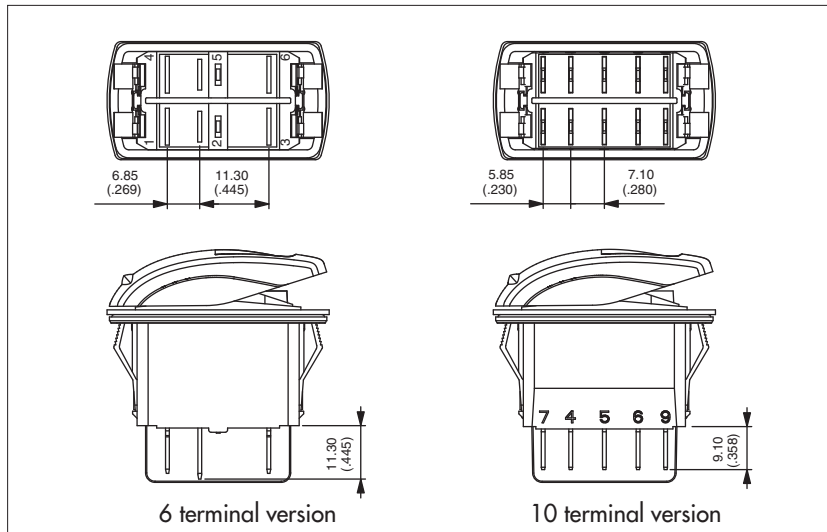
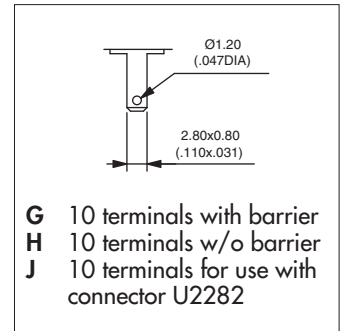
Solder lug / quick-connect



Normalized quick-connect 6,35x0,8



Normalized quick-connect 2,8x0,8

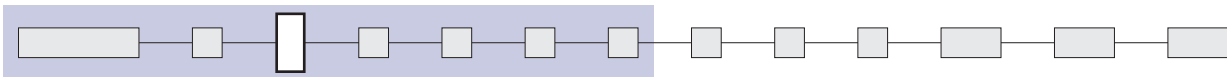


Terminals are marked on the case.

The drawings show the maximum possible number of terminals.

CONTACT MATERIALS

CASE + LEDS



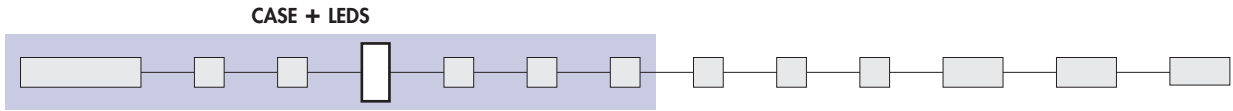
- A** Silver
- D** Silver, gold plated

KR series

Power rocker switches

Case - LEDs

SEALING

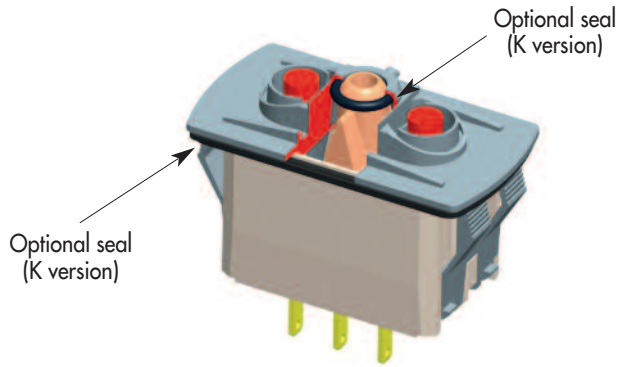


X No sealing

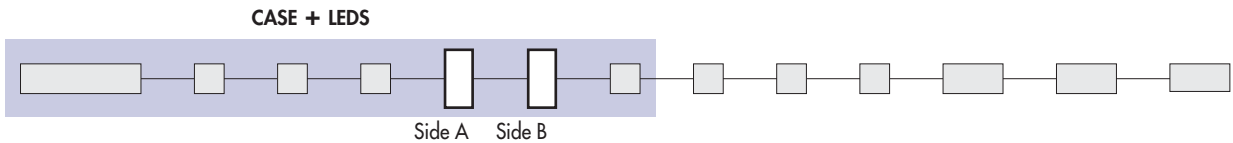
K IP68 (switch assembled on panel)

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



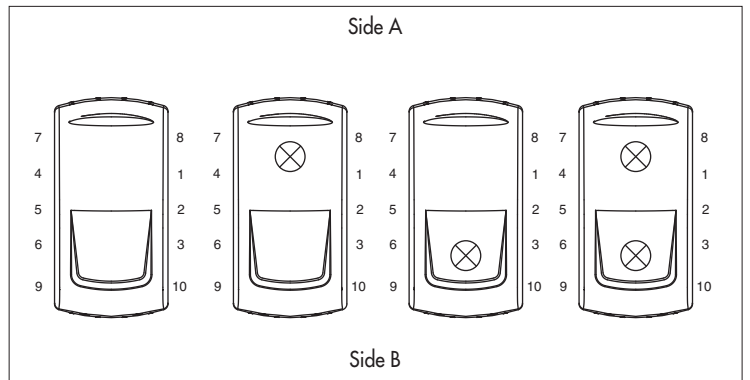
Complete each enlarged box with one of the codes listed below.

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)

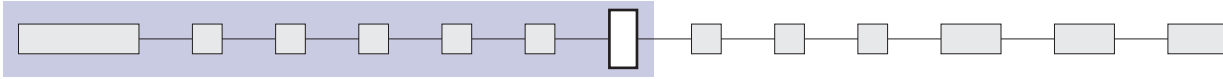
Other illumination solutions : on request.



WIRING

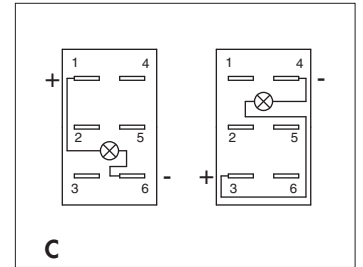
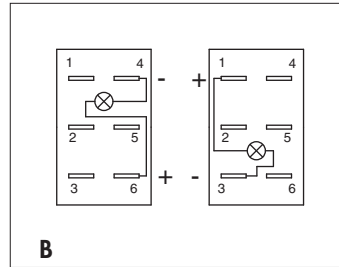
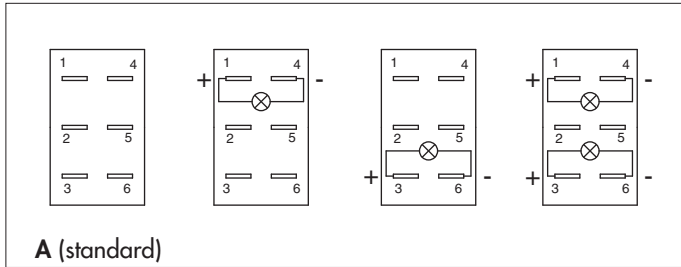
The LED wiring diagram is shown on the case.

CASE + LEDs

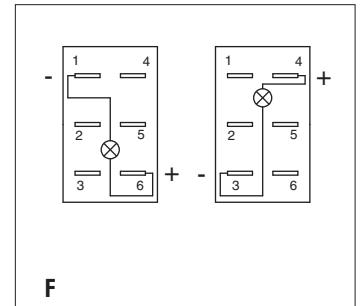
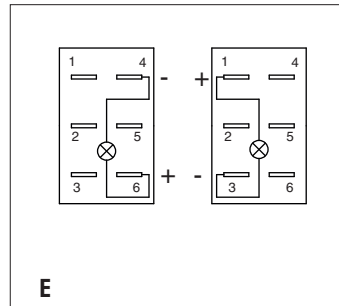
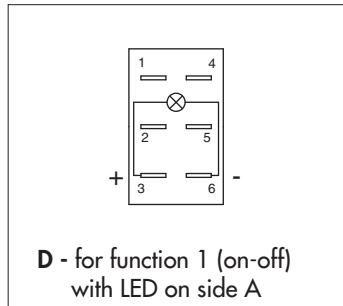


• For 6 terminal versions

LED connected to the load

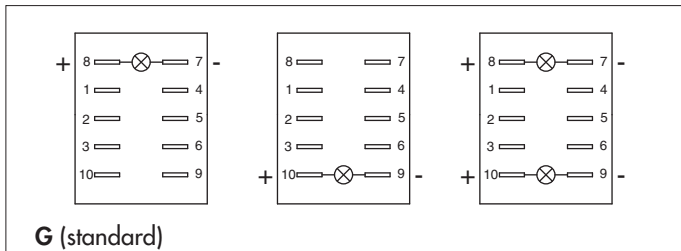


Note : If not available, terminals are added to connect the LED.

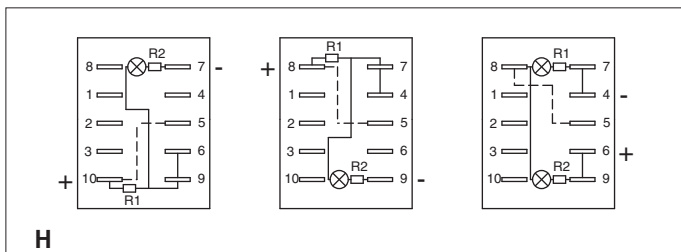


• For 10 terminal versions

Independent LED or integrated functions



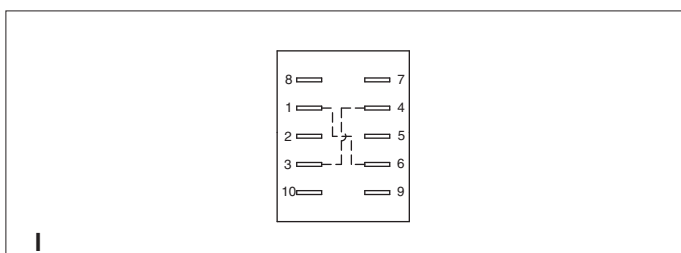
To have independent LEDs.



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

To obtain 2 symbol illumination levels (night illumination when OFF and higher illumination when ON).

Dotted line = external wiring, continuous line = internal wiring



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

To have a polarity inversion (typical application : fan motor).

Dotted line = internal wiring, continuous line = internal wiring

Please contact us for other wiring solutions.

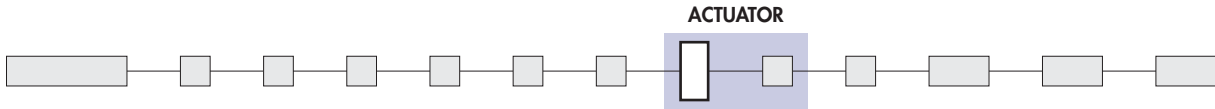
KR series

Power rocker switches

Actuator - Marking

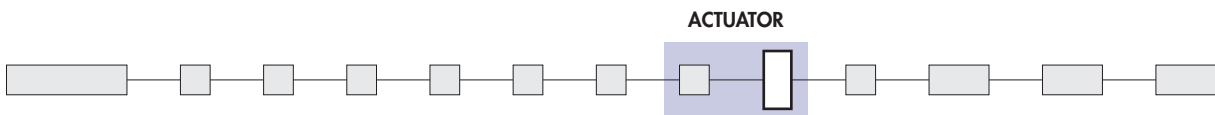
To order actuator only (without case), begin the order number with code KRR, then follow the order format from "actuator type" until the end of the options.

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

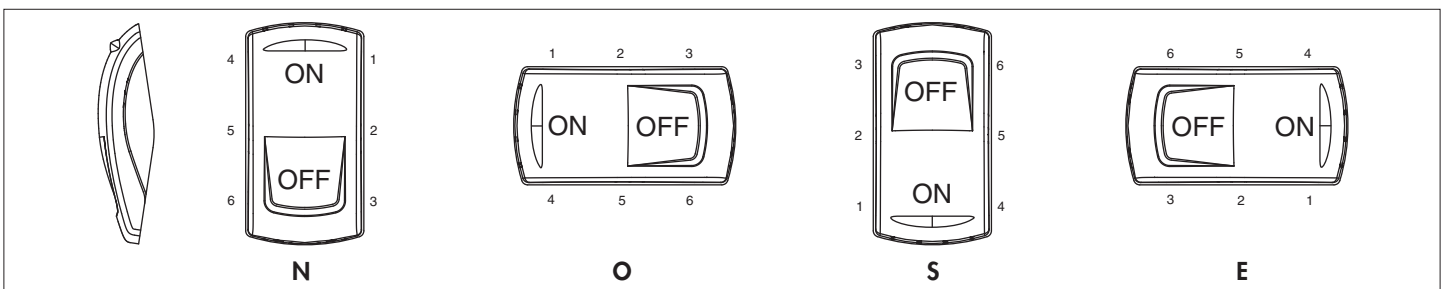
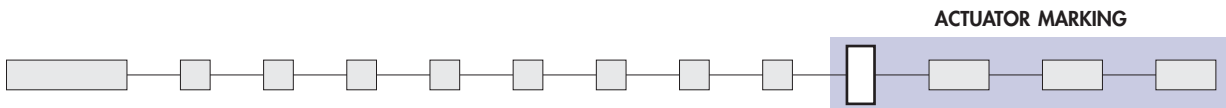
Note : colour 7 not available on illuminated versions.

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



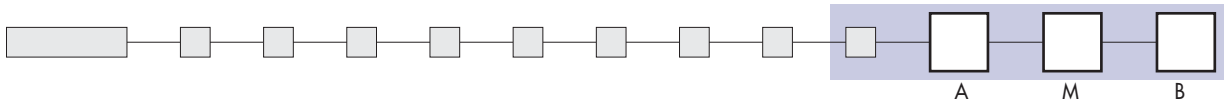
MARKING ORIENTATION

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.

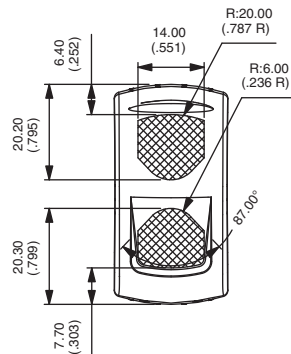
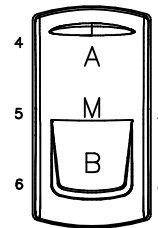
Laser etching resistance

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

Marking area

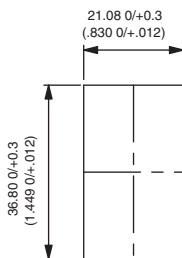
For illuminated versions. The symbol will be included in the hatched area.

Marking in M are : on request.

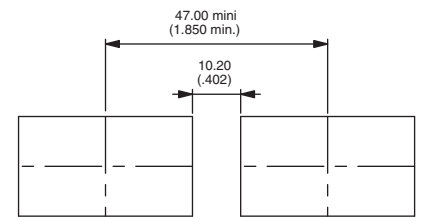
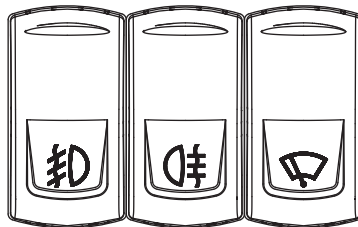
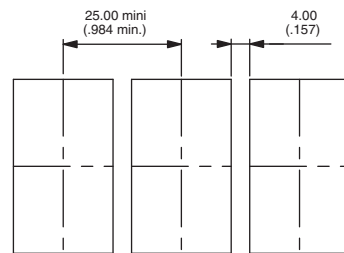


SWITCH PANEL CUT-OUT

Panel thickness : 0,8 mm to 4,6 mm
Recommended panel thickness :
between 2 mm and 3,5 mm



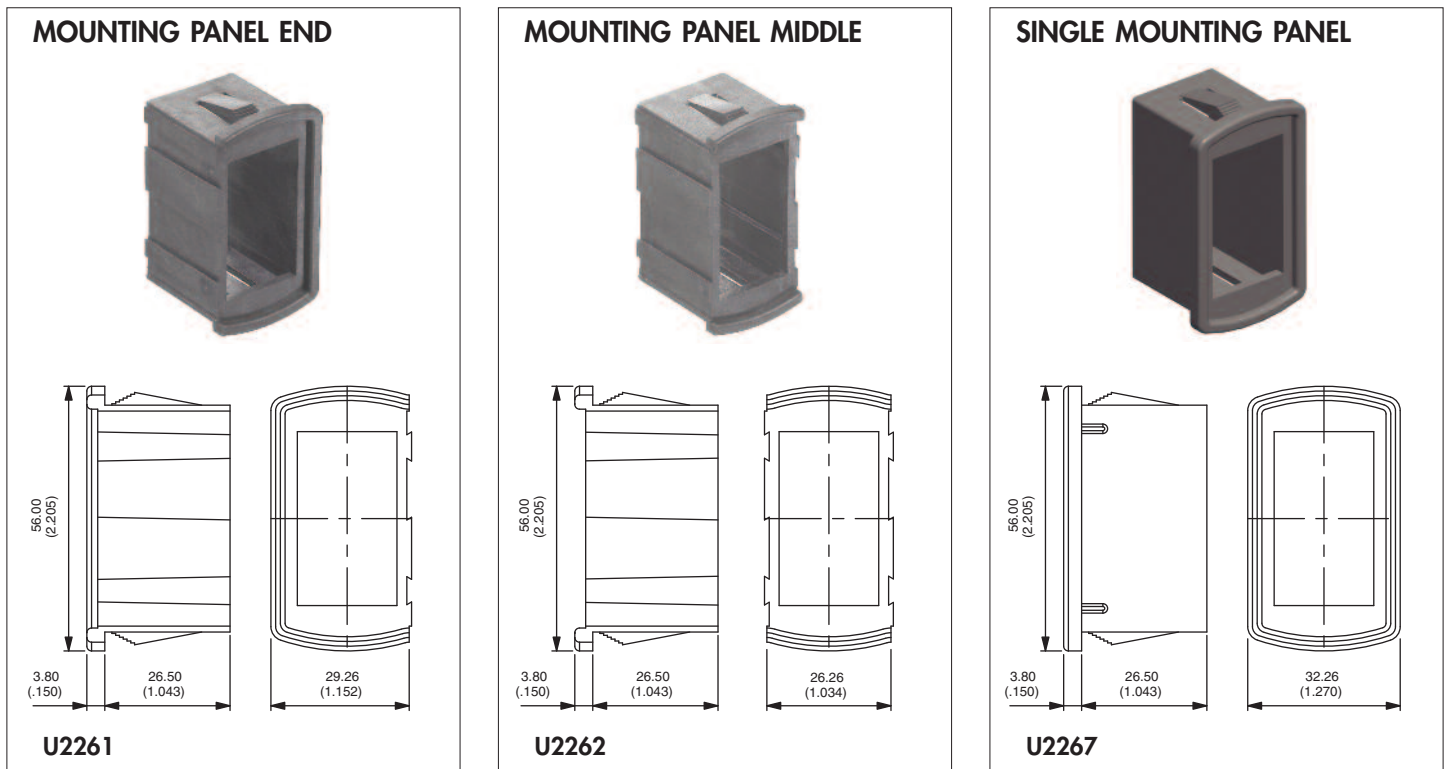
MATRIX MOUNTING



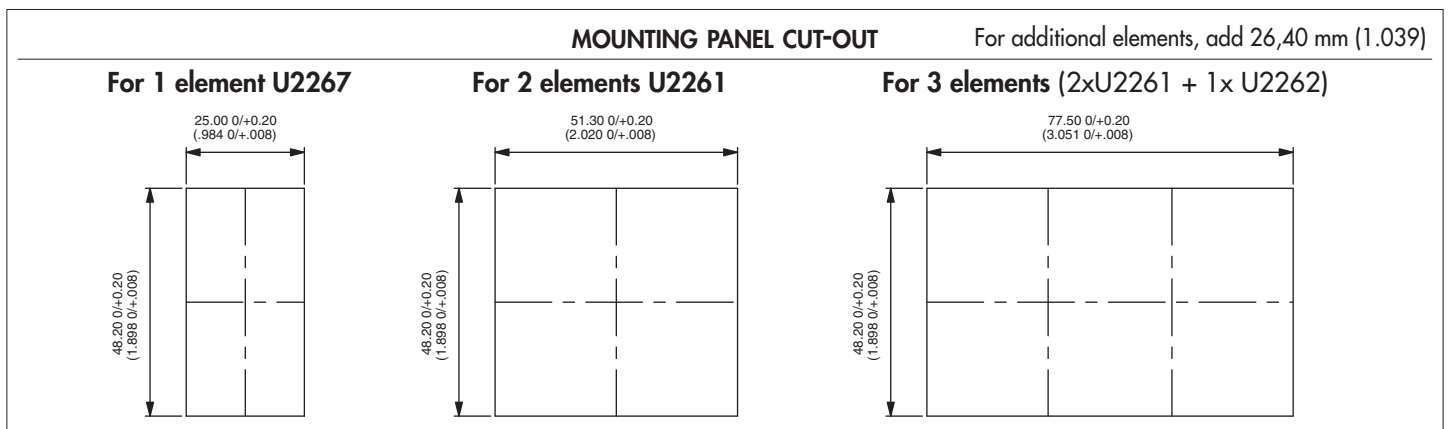
K range

Power rocker switches and indicators

Accessories for KR, KL and KI series



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



ACTUATOR REMOVING TOOL



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 arrow. 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.

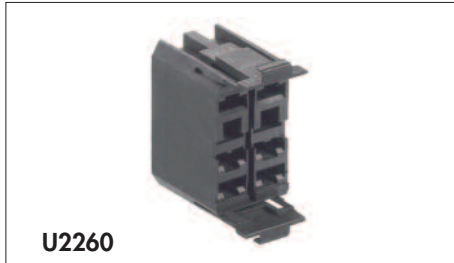
K range

Power rocker switches and indicators

Accessories for KR, KL and KI series

CONNECTORS

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



U2260

6 terminal version

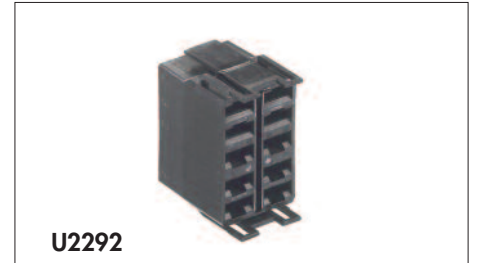
For use with terminals type 2, 3, 4 or 5.
6,35 (1/4) tabs to be fitted by the user
(example : AMP/Tyco 0-0141013-2).
Can be used for the KG series.



U2282

10 terminal version

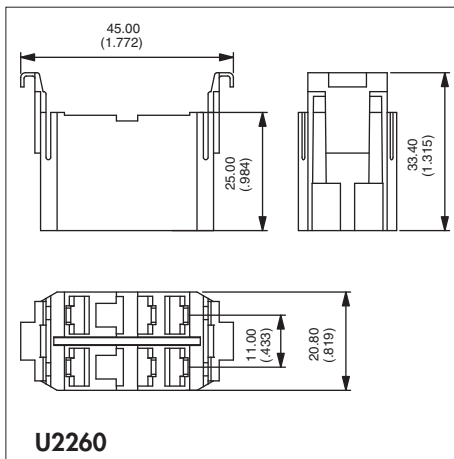
For use with terminals type H or J.
2,8 (.110) tabs to be fitted by the user
(example : AMP/Tyco 0-927779-3).



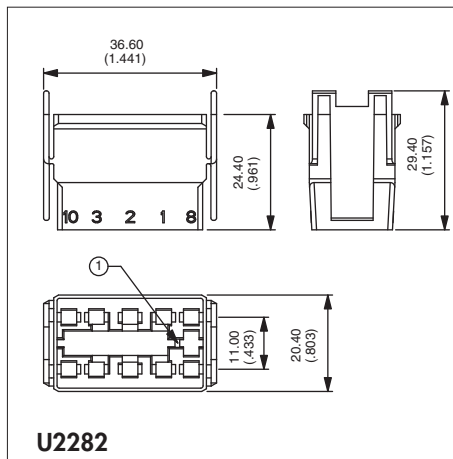
U2292

10 terminal version

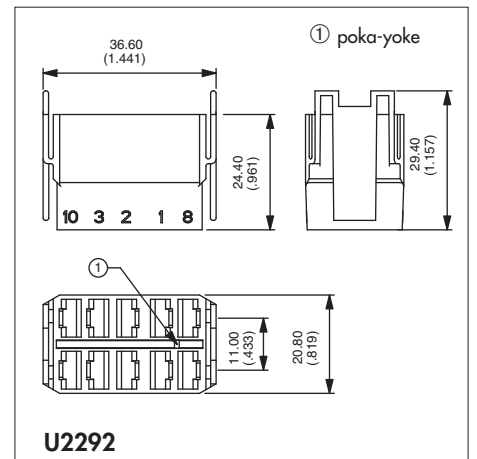
For use with terminals type B, C, E or F.
6,35 (1/4) tabs to be fitted by the user
(example : AMP/Tyco 0-0141013-2).



U2260



U2282



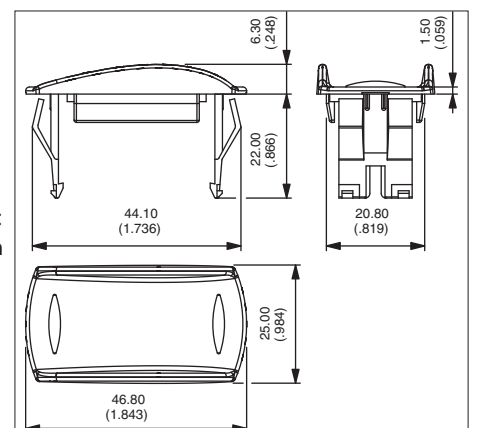
U2292

HOLE PLUGS

Usefull for future extensions.

Code	Colour	Code	Colour
U2271	Blue	U2274	Grey
U2271/4	Dark blue	U2275	Yellow
U2272	Black	U2276	Red
U2273	Green	U2277	Ivory
		U2279	Orange

Recommended panel thickness :
1,50 mm to 6 mm



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