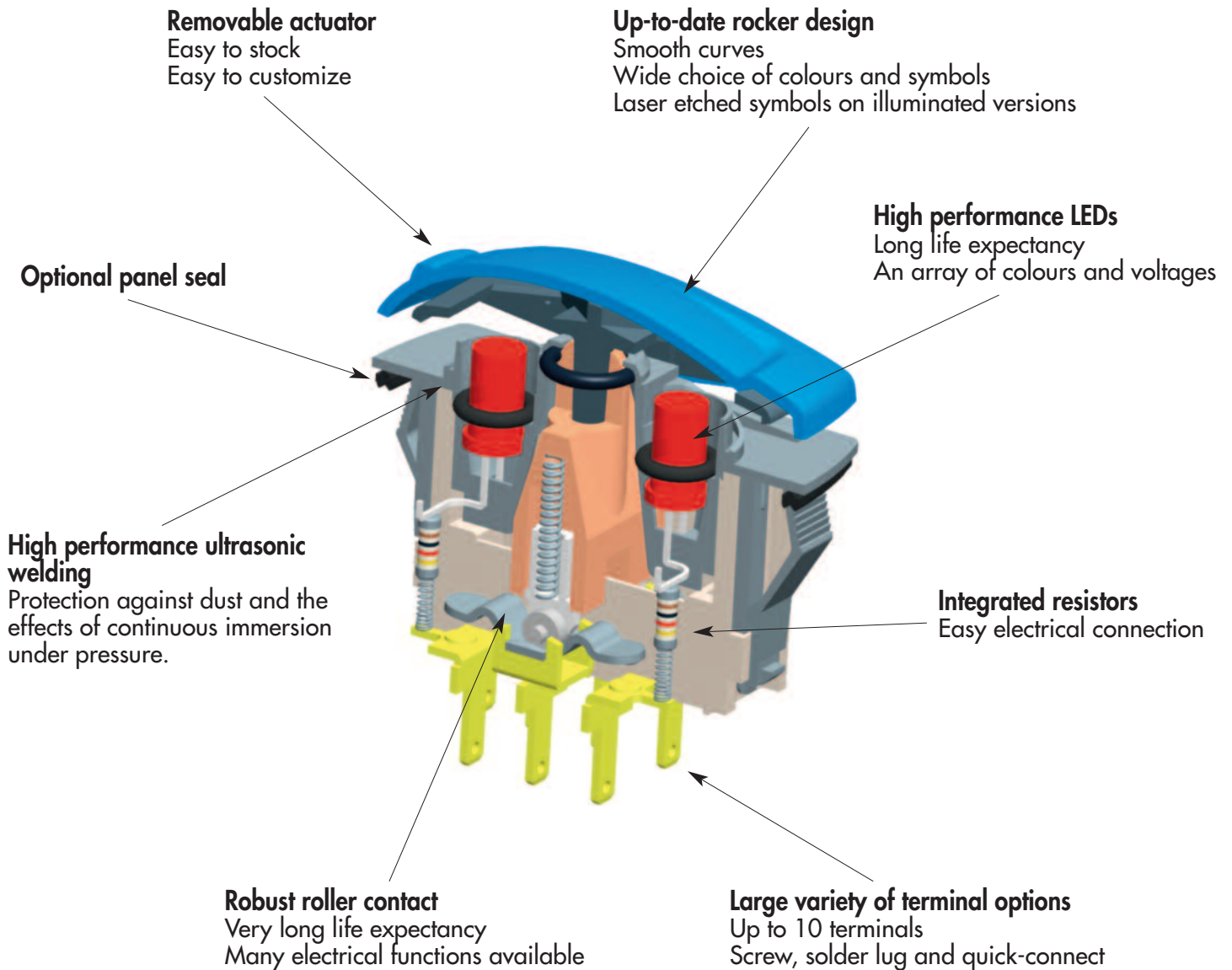


Attractive rugged rocker switch



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.

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

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

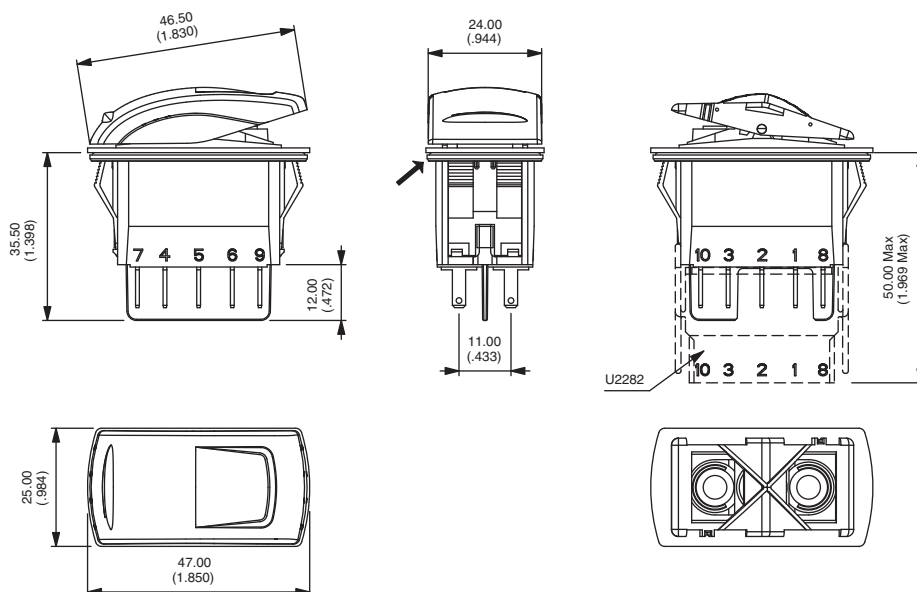
SEALING

Sealing is optional.

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

DIMENSIONS

→ Flat seal



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.

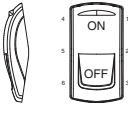
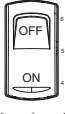
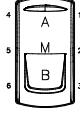
CASE + LEDS

KR							Side A	Side B	
SERIES	Electrical functions			Contacts	Sealing	LEDS		Wiring	
Poles				A Silver	X No	X None		See diagrams page 9.	
3 Single pole 4 Double pole	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			D Gold plated	K Yes	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			
				Terminals	Terminals (continued)				
				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	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				

ACTUATOR

Type	Colour
1 For non-illuminated application 2 For illuminated application	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	Symbols		
N  O  S  E 			

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



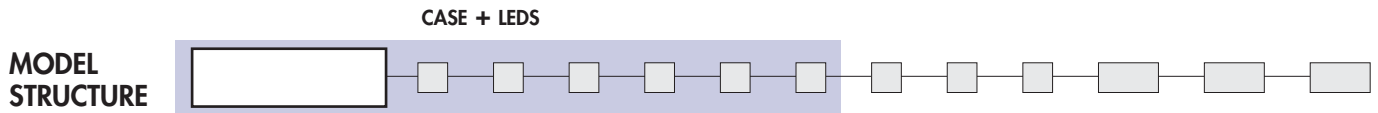
NOTICE : please note that not all combinations of above numbers are available. Refer to the following pages for further information.

KR series

Power rocker switches

Case

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



	Bottom view		Contact area		Contact & LED area	
	10 terminal version		6 terminal version			
	Single pole	Double pole	2-3	1-2		
			5-6	4-5		
KR31	ON	ON	OFF	ON		
KR35	MOM	MOM	ON	ON		
KR36	ON	ON	ON	ON		
KR37	MOM	MOM	OFF	MOM		
KR38	ON	ON	OFF	MOM		
KR39	ON	ON	OFF	ON		
KR41	ON	ON	ON	ON		
KR44*	ON	ON	MOM	ON		
KR44-1R*	MOM	MOM	ON	ON		
KR45	ON	ON	ON	ON		
KR46	ON	ON	ON	ON		
KR47	MOM	MOM	OFF	MOM		
KR48	ON	ON	OFF	MOM		
KR49	ON	ON	OFF	ON		

* Function 4 : single pole in double pole case

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).

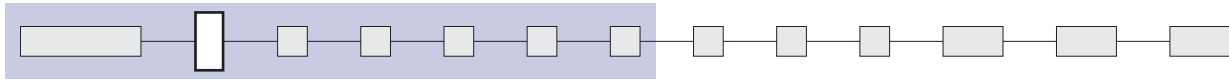
x = w/o terminal
o = with terminal
▲ = momentary

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

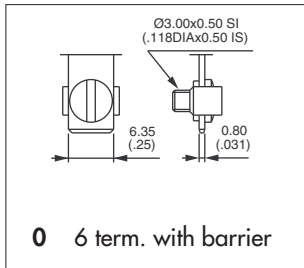
* Function 1 only available for 6 terminal versions.

TERMINALS

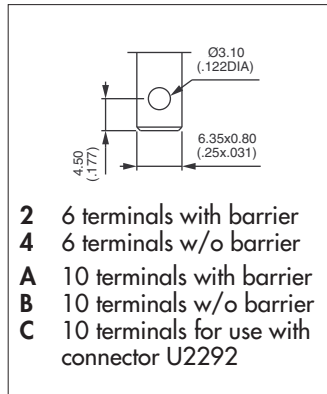
CASE + LEDS



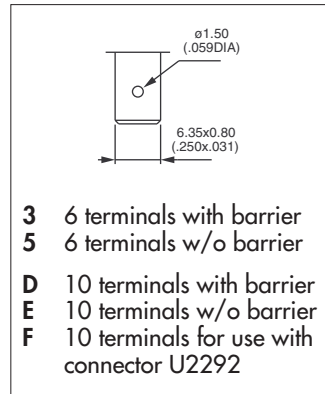
Screw



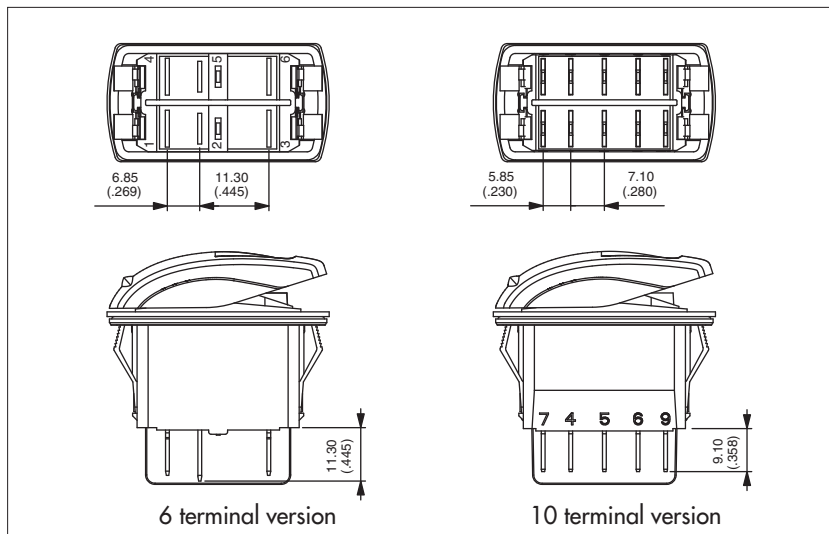
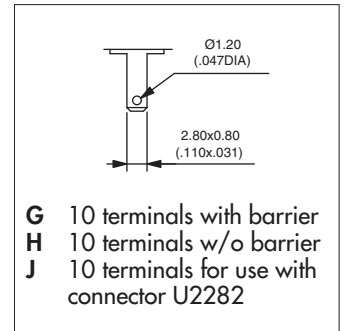
Solder lug / quick-connect



Normalized quick-connect 6,35x0,8



Normalized quick-connect 2,8x0,8

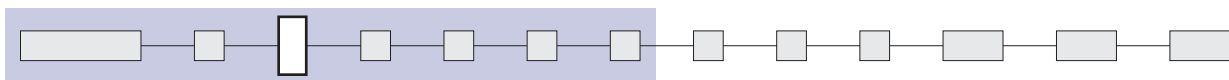


Terminals are marked on the case.

The drawings show the maximum possible number of terminals.

CONTACT MATERIALS

CASE + LEDS



- A** Silver
D Silver, gold plated

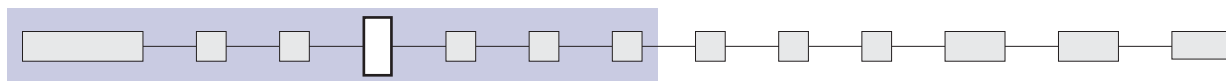
KR series

Power rocker switches

Case - LEDs

SEALING

CASE + LEDS

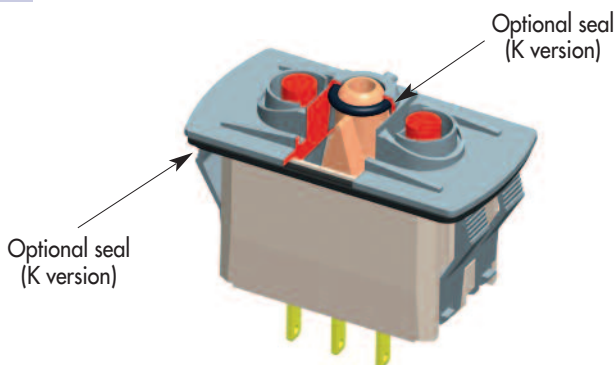


X No sealing

K IP68 (switch assembled on panel)

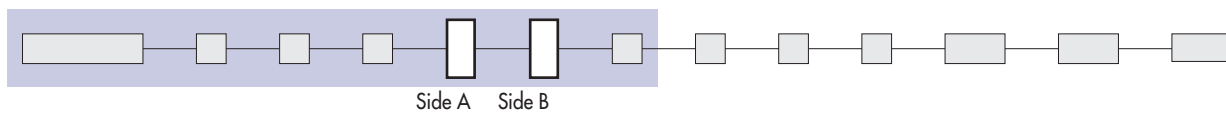
Ultrasonic welding of frame to case is standard on all versions.
The ultrasonic welding and the optional panel seal prevent water and dust from introducing into the switch housing.

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



LEDS

CASE + LEDS



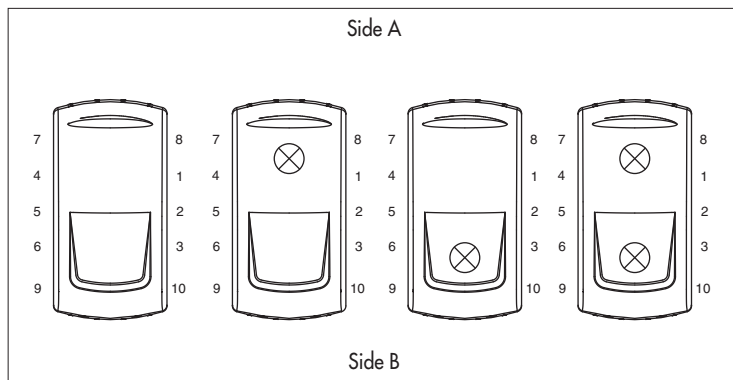
Complete each enlarged box with one of the codes listed below.

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)

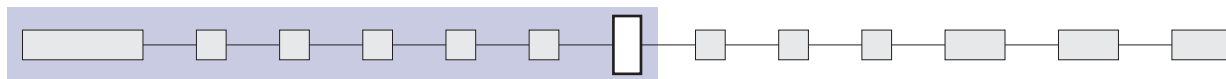
Other illumination solutions : on request.



WIRING

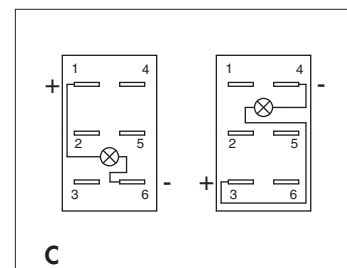
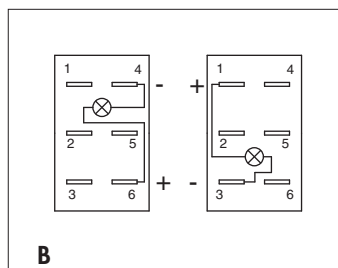
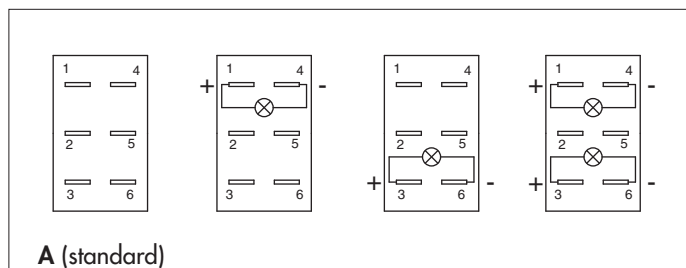
The LED wiring diagram is shown on the case.

CASE + LEDs

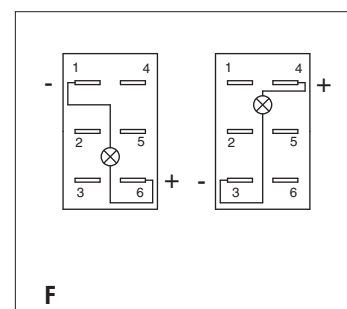
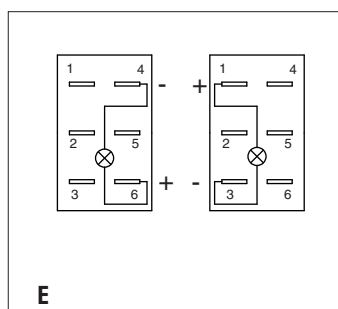
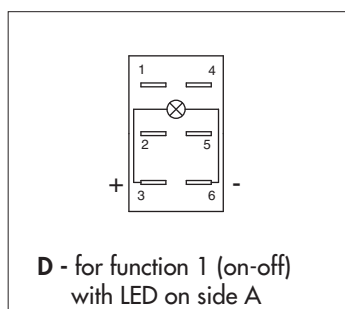


• For 6 terminal versions

LED connected to the load

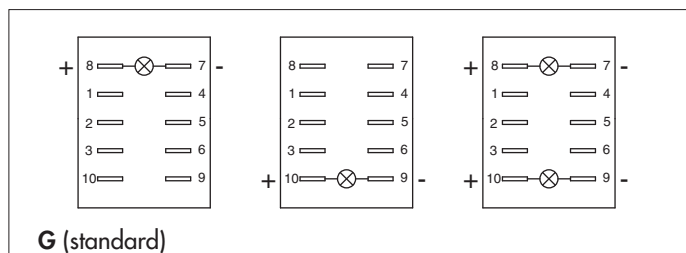


Note : If not available, terminals are added to connect the LED.

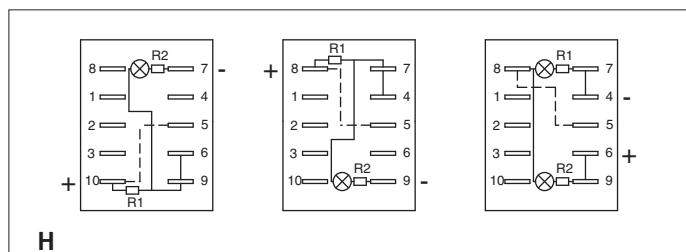


• For 10 terminal versions

Independent LED or integrated functions



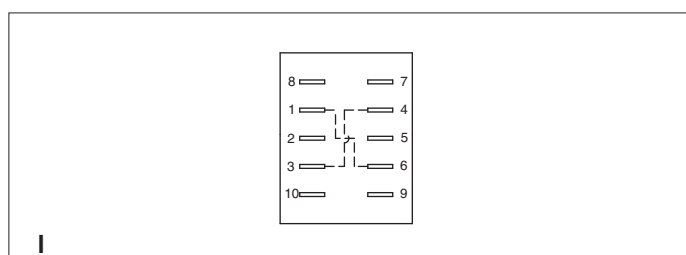
To have independent LEDs.



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.



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.

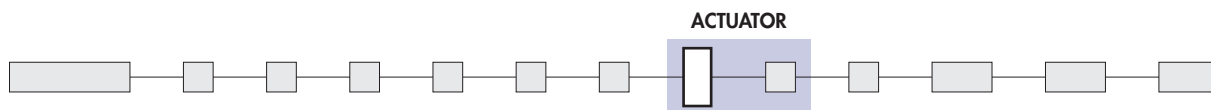
KR series

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.

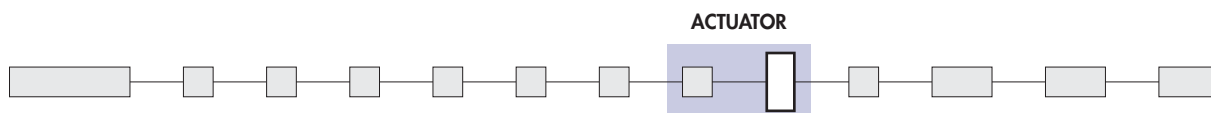
ACTUATOR TYPE



- 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

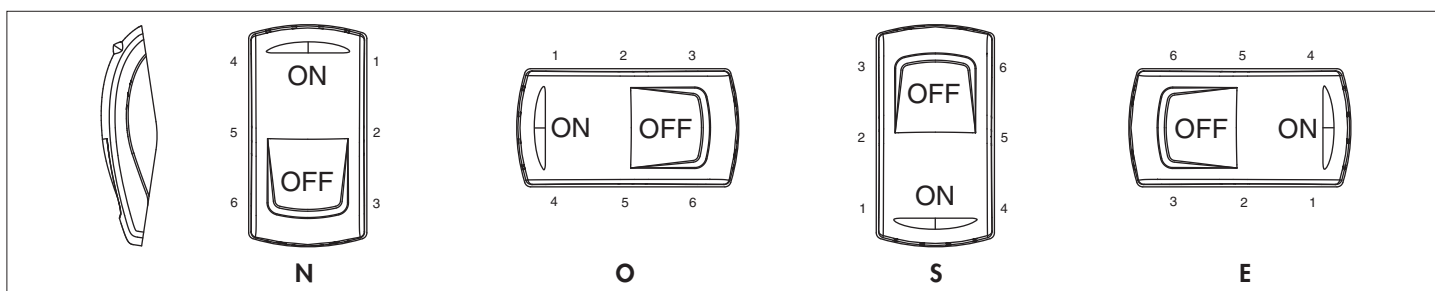
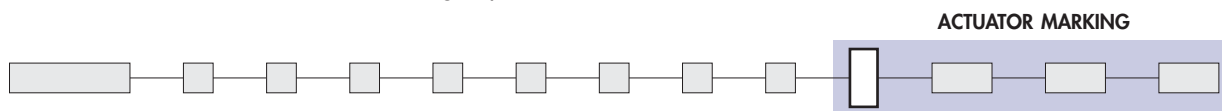
Note : colour 7 not available on illuminated versions.

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



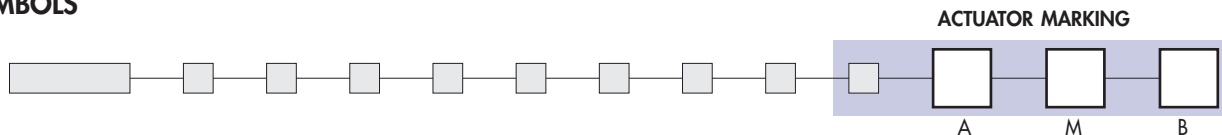
MARKING ORIENTATION

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.

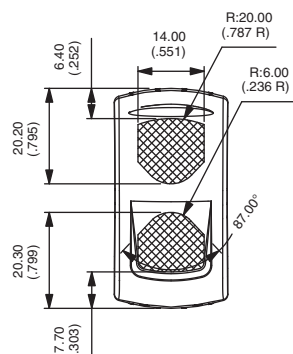
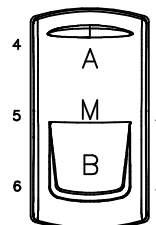
Laser etching resistance

- 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.

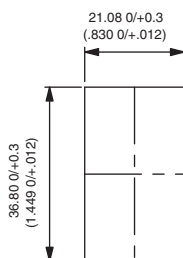
Marking in M are : on request.



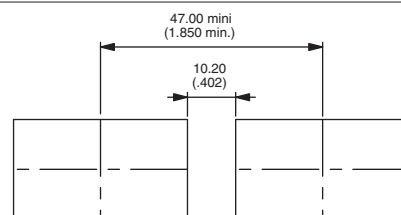
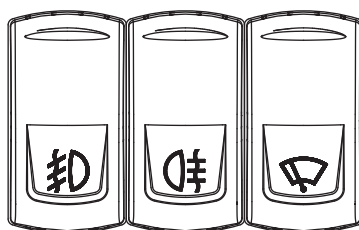
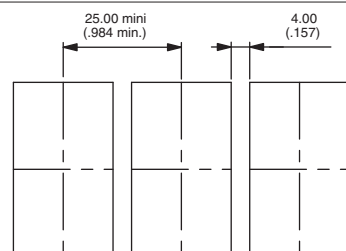
SWITCH PANEL CUT-OUT

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

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



MATRIX MOUNTING

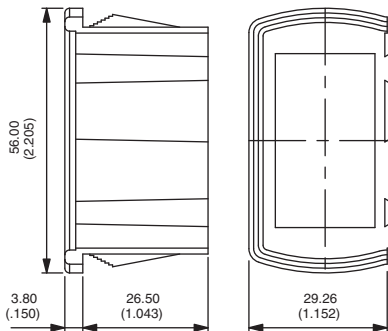


K range

Power rocker switches and indicators

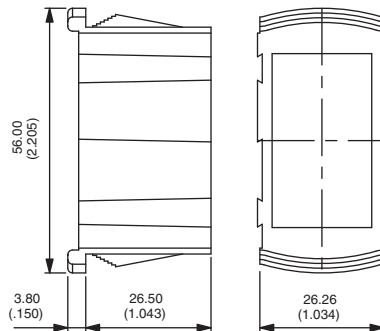
Accessories for KR, KL and KI series

MOUNTING PANEL END



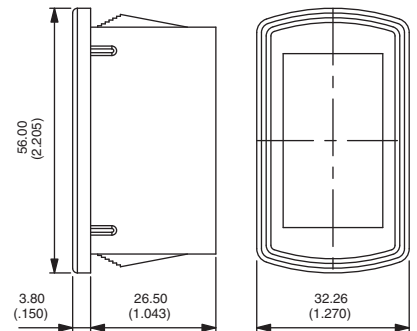
U2261

MOUNTING PANEL MIDDLE



U2262

SINGLE MOUNTING PANEL



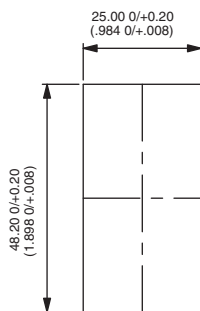
U2267

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

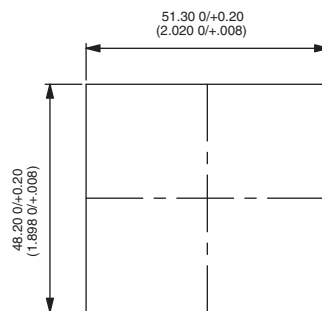
MOUNTING PANEL CUT-OUT

For additional elements, add 26,40 mm (1.039)

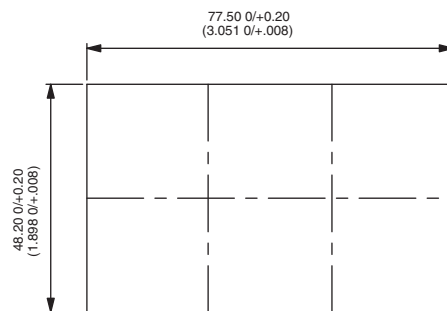
For 1 element U2267



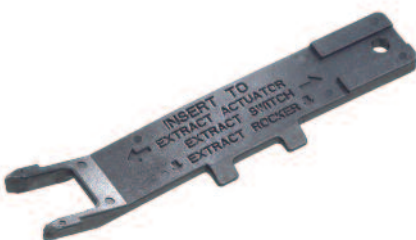
For 2 elements U2261



For 3 elements (2xU2261 + 1x U2262)



ACTUATOR REMOVING TOOL



U3052

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.

2 tools are supplied

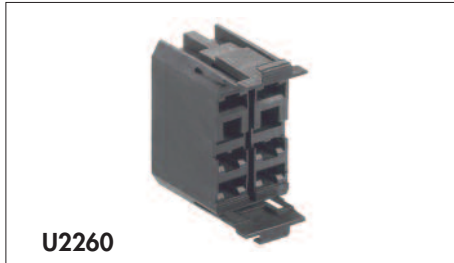
K range

Power rocker switches and indicators

Accessories for KR, KL and KI series

CONNECTORS

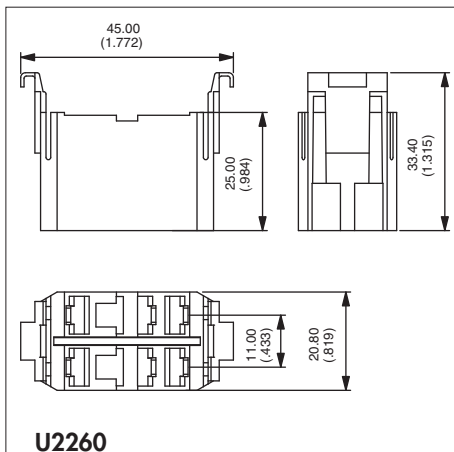
Standard colour : black. Other colours : on request.
Connectors cannot be combined with wiring types H and I.



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.



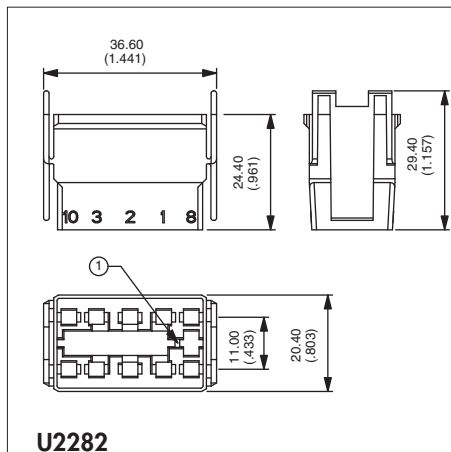
U2260



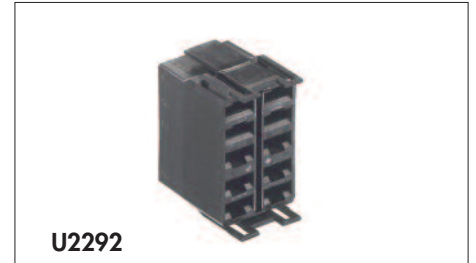
U2282

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).



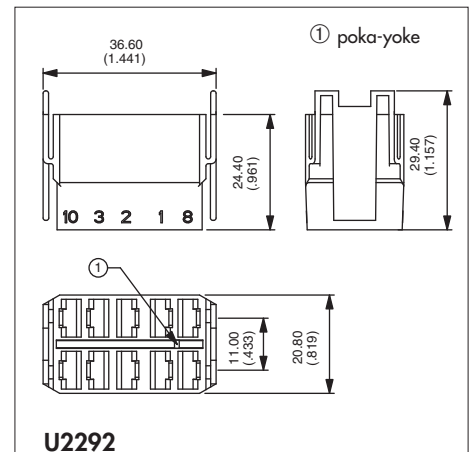
U2282



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).



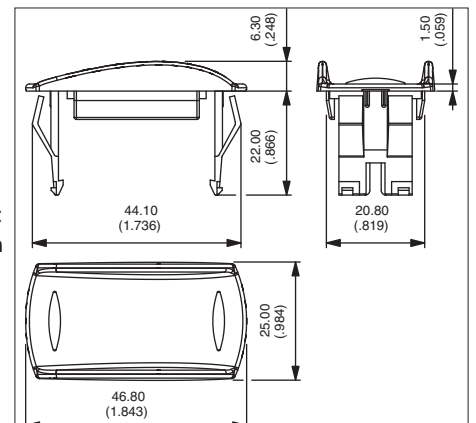
U2292

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.