

SENSITIVE PUSHBUTTON SWITCHES • PIEZOELECTRIC TECHNOLOGY

DISTINCTIVE FEATURES

piezoelectric technology

IP68 & IP69K

no moving part

momentary or latched

NO or NC contact

laser hatched custom logo

Conventional electromechanical pushbuttons incorporate moving parts that inevitably wear out. Their reliability can be reduced by contaminants such as humidity and dust that will clog the contact points. Thanks to their IP68 & IP69K sealing, our **Lufo** piezoelectric pushbuttons answer to those problems and their very long lifespan (more than 50 million operations) make them ideal for your applications where reliability is essential. Our **Lufo** pushbuttons are perfectly suited for humid environments (yachting, spa, swimming pool, etc.) or in industries requiring regular cleaning of control panels (medical environment, food industry, etc.).

ELECTRICAL SPECIFICATIONS

Current : 20mA 24VAC/DC - 1A 24VAC/DC

Contact resistance ON : 10 Ω max

Contact resistance OFF : 5 MΩ min

Electrical life : 50.000.000 cycles, nominal

Switch energy consumption : none

LED energy consumption : 10 to 20 mA max

MECHANICAL SPECIFICATIONS

Mechanical life : 50.000.000 cycles mini.

Materials : see **BUILD YOUR PART NUMBER** section

ENVIRONMENTAL SPECIFICATIONS

Operating temperature = from -40°C to +75°C

Ingress protection :

IP68 compliant IEC529,

IP69K compliant DIN40050-9

Vibration resistance :

10-500 Hz / 10g compliant IEC60068-2-6

EMC compatibility :

version 200mA : compliant EN61058-1

version 1A : compliant EN61000-4 & EN61000-6-2

GENERAL SPECIFICATIONS

Mounting hole : following version

Panel thickness : from 0,5 to 4,5mm following version

Torque applied to nut : 11,5 Kgf/cm max

IDEAL FOR...

Showers



Spas & S.Pools



Car wash



Marine



Medical



and much more !

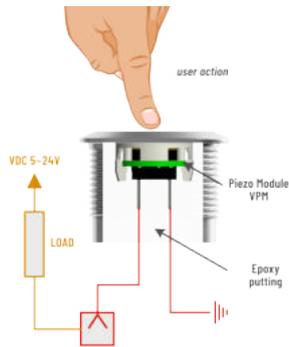


HOW IT WORKS ?

The piezoelectric effect (from the Greek "Piezein", to press) was demonstrated in 1881 by the Curie brothers.

This is the property of certain bodies (such as quartz, topaz, ceramic, certain crystals and polymers) to become electrically polarized under the action of a force deforming them (Direct effect); reciprocally to deform when an electric field is applied to them (Indirect effect).

It is this Direct effect which is implemented in the piezoelectric buttons: the pressure of the finger applied to the surface of the button very concretely "pinches" the piezo element installed under the latter (imagine a drum head). The piezo crystal converts this change in mechanical state into an electrical signal which is amplified by the electronics embedded in the body of the button. This brief "on" type pulse can vary depending on the pressure applied; higher pressures generate higher voltages which take longer to dissipate. A capacitor can be used to store charge to extend the closing time constant of the circuit and therefore the length of the pulse.



The technology used in Lupo buttons is based on a single VPM mechanically assembled without the use of adhesives, glues or welding - which age over time and environmental variations (ambient temperature, humidity level...). The VPM is encapsulated in a custom-designed, industry-standard one-piece metal housing giving our buttons one of the best levels of reliability and durability on the market.



WORKING DIAGRAMS

These diagrams show the opening/closing of the circuit when the button is pressed.

Finger pressure
1 = finger pressure active
0 = no pressure

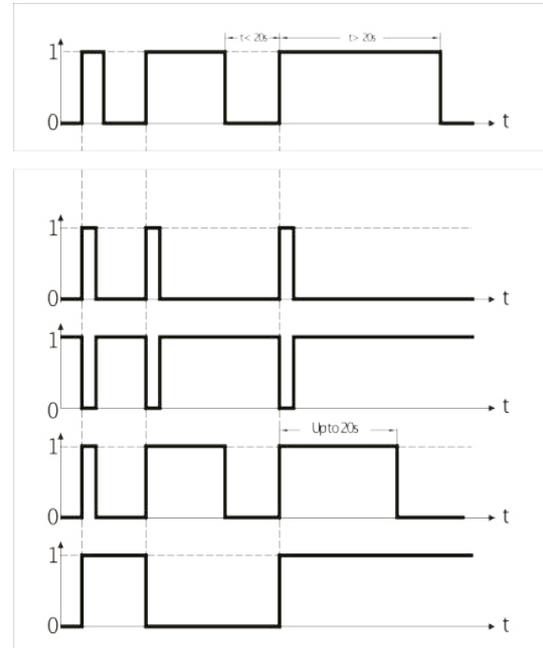
Contact state
1 = closed contact
0 = open contact

NO Momentary OFF-(ON)

NC Momentary ON-(OFF)

NO Momentary OFF-(ON)
Prolonged pulse (K option)

NO Alternate ON - OFF
(External power supply required)



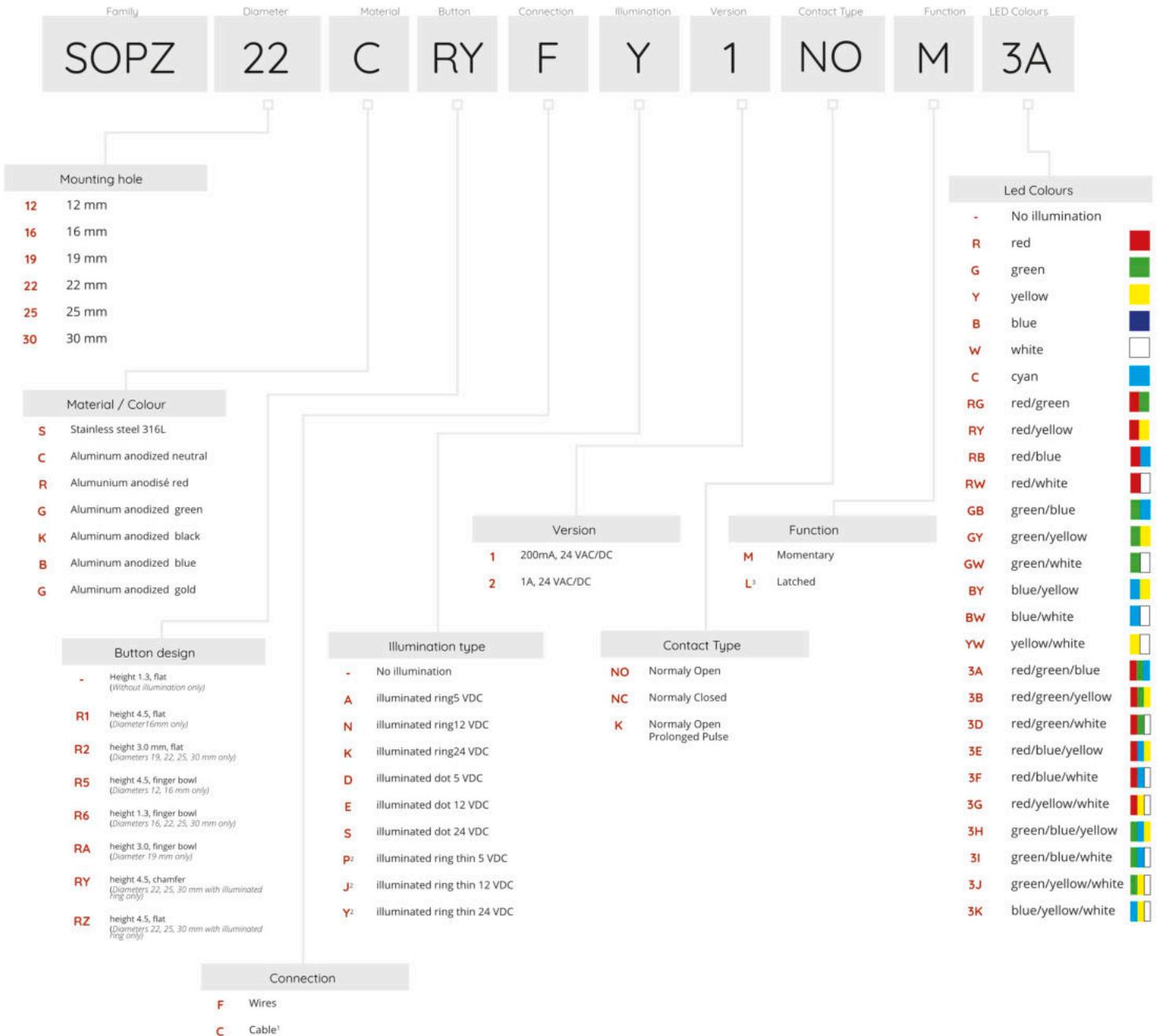
CONCEPTION & DESIGN

- Lighting by light ring (mono, bi or tri colors), or light point.
- No moving part: IP68/IP69K waterproofing ensured, no mechanical aging.
- Very robust one-block metal body in 316L stainless steel or anodized aluminum. From drilling diameter 16mm to 30mm.
- resin potting ensuring protection of the piezo module and on-board electronics as well as IP67 rear waterproofing
- Connection by wire as standard: 1 pair for the contact / 1, 2 or 3 pairs for the lighting function. Optional: cable or connector
- Versatile Piezo Module (VPM) and on-board electronics ensuring a lifespan of more than 50 million cycles

WIRING SCHEMES

	NO LED	1LED*	2LEDs	3LEDs
Momentary NO OFF-(ON)				
Momentary NC ON-(OFF)				
Momentary NO Prolonged Pulse OFF-(ON)				
Alternate OFF-ON				<p>momentary : RED : contact B (black wires) : Led COM A (wires of color of Led) : +V</p> <p>alternate : BR (brown wire) : +V BK (black wire) : GND BL (blue wire) : contact</p>

BUILD YOUR PART NUMBER



ABOUT THIS RANGE

¹ service U.DESIGN : custom wiring on request, subject to MOQ.

² Diameters 22mm, 25mm et 30mm only.

³ latched version : 2 LED colours max, no prolonged pulse available

Our pushbuttons are always supplied with hex or knurled nut and washer.

⚠ SOME CONFIGURATIONS MIGHT NOT BE AVAILABLE OR SUBMITTED TO M.O.Q.

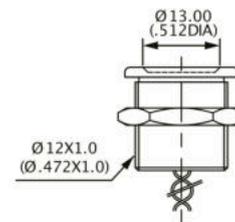
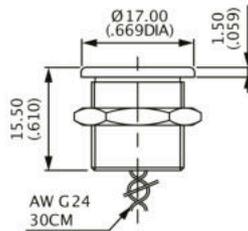
FOR ALL YOUR CUSTOM REQUESTS, CONTACT US !

sales@hynoppe.com

CONFIGURATION EXAMPLES

Diameter 12 - NO LED

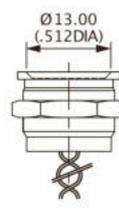
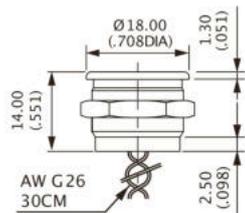
SOPZ12SF1NOM



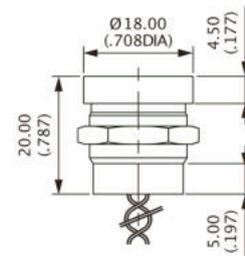
R5

Diameter 16 - NO LED

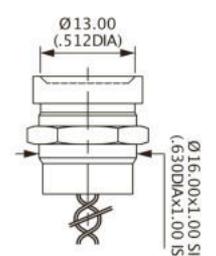
SOPZ16RF1NOM



R6



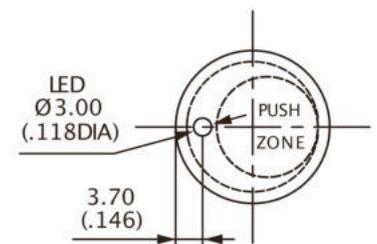
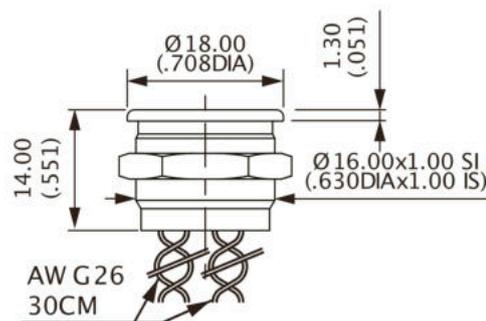
R1



R5

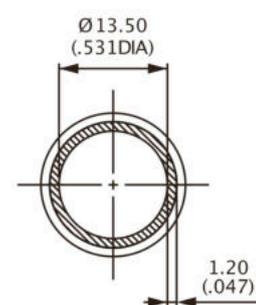
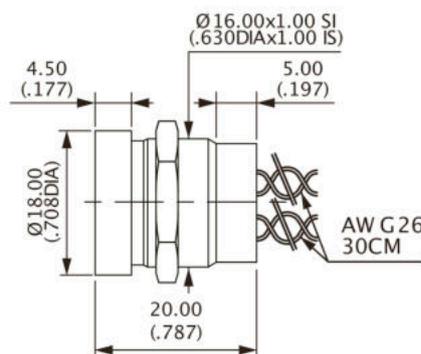
Diameter 16 - illuminated dot

SOPZ16SFS1NOMR



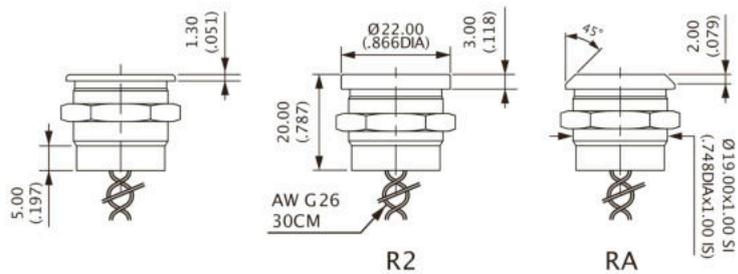
Diameter 16 - illuminated ring

SOPZ16CR1FN1NOMR



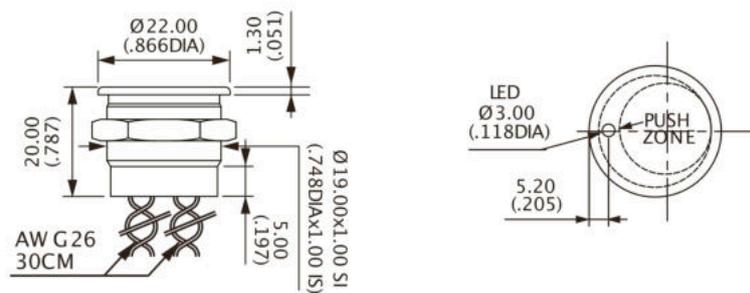
Diameter 19 - NO LED

SOPZ19GF1NOM



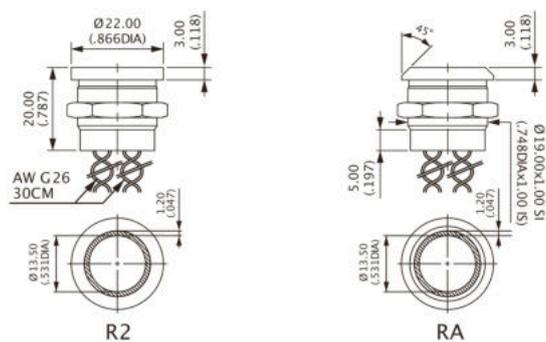
Diameter 19 - illuminated dot

SOPZ19SFE1NOMR



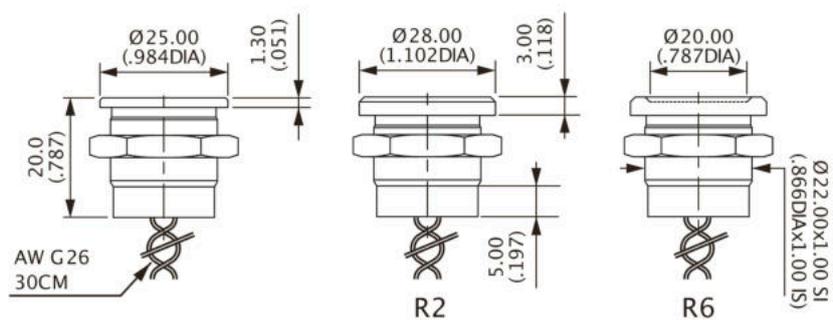
Diameter 19 - illuminated ring

SOPZ19SRAFKNOMR



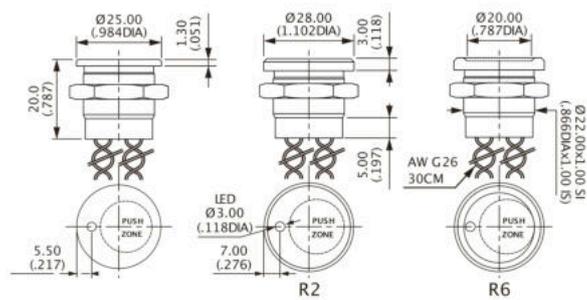
Diameter 22 - NO LED

SOPZ22RR6F1NOM



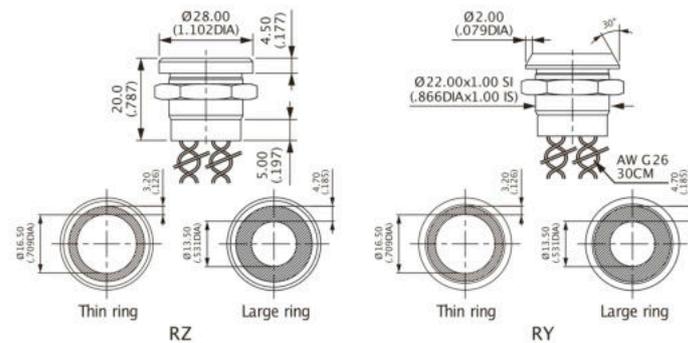
Diameter 22 - illuminated dot

SOPZ22SR2FD1NOMR



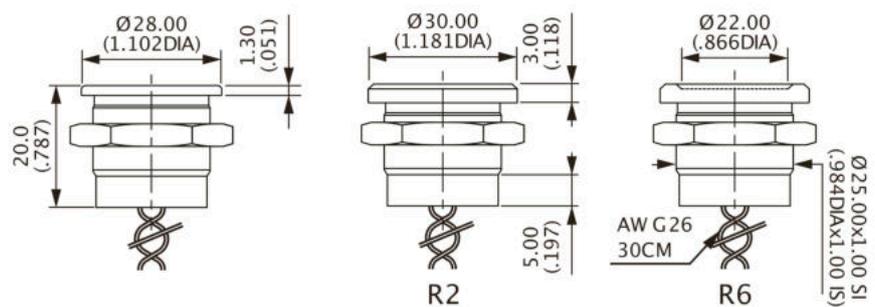
Diameter 22 - illuminated ring

SOPZ22SR2FYJ1NOMW



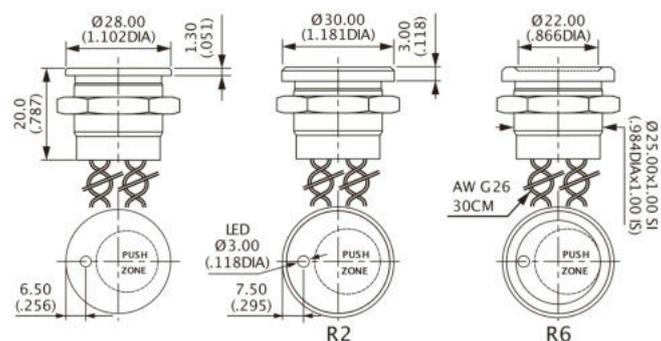
Diameter 25 - NO LED

SOPZ25SF1NOM



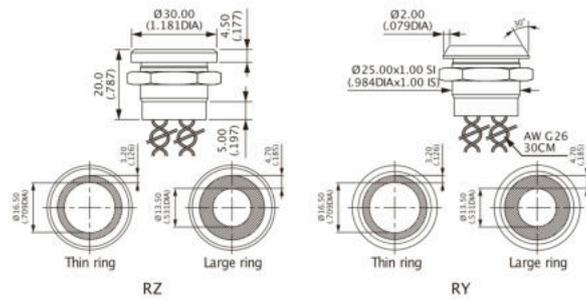
Diameter 25 - illuminated dot

SOPZ25SR2FS1NOMR



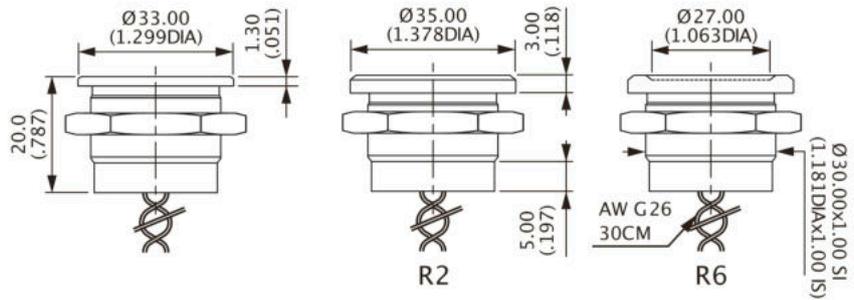
Diameter 25 - illuminated ring

SOPZ25SRZFN1NOMG



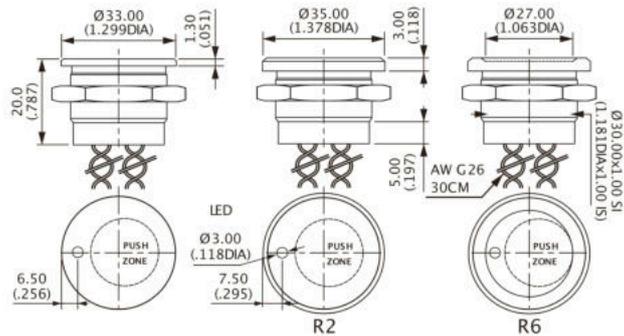
Diameter 30 - NO LED

SOPZ30CR2F1NOM



Diameter 30 - illuminated dot

SOPZ30SFE1NOMG



Diameter 30 - illuminated ring

SOPZ30KRYFJ1NOMRY

