Leaders in Engineering, Innovation and Quality
LANGIR brings Piezo Technology to perfection
THE LANGIR VPM (VERSATILE PIEZO MODULE)

The principle behind the Langir Piezo technology is the assembly of all the necessary components into a single unit (the Module) which eliminates the need to handle multiple components for every single Push Point Manufactured.

The VPM is a solid state (no moving parts), stand alone module which may be easily arranged in any configuration by simply clicking it in to the housing. The VPM also features a few significant advantages:

NO SOLDERING NO ADHESIVE

Unlike other common Piezo electric technologies, the VPM is a mechanically assembled structure. It features a very stable structure unaffected by extreme temperature fluctuations and not prone to deterioration of components.

No adhesive is used in the assembly process and there is no need for soldering wires directly to the sensitive Piezo ceramic.

Dependency on employee skills and workmanship is greatly reduced and the module, placed behind a 0.6mm thick metal membrane, is extremely durable and reliable.

APPLICATIONS

Bath

Car wash

Shower

Marine

Medical
### Distinctive Features
- Bushing diameter: 16 (.630), 19 (.748), 22 (.866) or 30 mm (1.181)
- Sealed to IP68 and IP69K (switches mounted on panel)
- Easy to clean metal surface
- Very long life expectancy
- Illumination or Non-illumination

### Materials
- Case: aluminum, anodized or stainless steel 316L
- Multi-wire leads section 0.22 mm² length 300 mm, twisted by pair
- Cable, length 300 mm, section depending on switch model
- PC terminals: bronze, tin plated

Note: to maintain the ESD performance, always add a ground washer when the panel is made of non-conductive material (PVC, polycarbonate).

### Electrical Specifications
- Max. current/voltage rating with resistive load:
  - Function NO: standard 200 mA 24 VAC/DC, 1 A 24 VAC/DC or request
  - Function NC: standard max. 600 mA 24 VAC/DC
- Switch resistance ON: 10 Ω max.
- Switch resistance OFF: 5 MΩ min.
- Life expectancy: 50 million cycles
- LED consumption: Illuminated dot 10 mA - Illuminated ring 20 mA

### General Specifications
- Operating force: 2 to 6 N
- Torque: 2.5 Nm min. - 3 Nm max.

### Environmental Specifications
- Sealing: IP68 per IEC 60529, IP69K per DIN 40050-9 (switches mounted on panel)
- Vibration resistance: 10-500 Hz / 10 g per IEC 60068-2-6
- Operating temperature: -40 °C to +75 °C (-40 °F to +167 °F)
- EMC compatibility according to EN 61058-1 for the whole range
- EMC compatibility according to EN 61000-4 & EN61000-6-2 for 1A

### Sealing
**Sealing IP68**
- Continuous immersion in water
- IP68 test conditions
- Continuous immersion in water
- (1.5 m, 24 hours)

**Sealing IP69K**
- High pressure, high temperature wash down
- IP69K test conditions
  - Pressure: 80 - 120 bars
  - Distance: 15 cm
  - Temperature: 80 °C ± 5 °C (176 °F ± 41 °F)
  - Flow: 14 - 16 l/min
  - Duration: 30 seconds per position

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**ELECTRICAL FUNCTIONS**

**FINGER PRESSURE**

applied to switch

1 = pressure

0 = no pressure

**OUTPUT**

Momentary NO (pulse)
No external power supply required

Momentary NC (pulse)
No external power supply required

Latch (ON - OFF)
Requires external power supply

1 = closed output  0 = open output

**WIRING DIAGRAMS**

<table>
<thead>
<tr>
<th>Function</th>
<th>Non-illuminated</th>
<th>1 LED *</th>
<th>2 LEDs</th>
<th>3 LEDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Momentary NO</td>
<td><img src="image1" alt="Diagram" /></td>
<td><img src="image2" alt="Diagram" /></td>
<td><img src="image3" alt="Diagram" /></td>
<td><img src="image4" alt="Diagram" /></td>
</tr>
<tr>
<td>Momentary NC</td>
<td><img src="image5" alt="Diagram" /></td>
<td><img src="image6" alt="Diagram" /></td>
<td><img src="image7" alt="Diagram" /></td>
<td><img src="image8" alt="Diagram" /></td>
</tr>
<tr>
<td>Momentary NO prolonged pulse</td>
<td><img src="image9" alt="Diagram" /></td>
<td><img src="image10" alt="Diagram" /></td>
<td><img src="image11" alt="Diagram" /></td>
<td><img src="image12" alt="Diagram" /></td>
</tr>
<tr>
<td>Latching (ON - OFF)</td>
<td><img src="image13" alt="Diagram" /></td>
<td><img src="image14" alt="Diagram" /></td>
<td><img src="image15" alt="Diagram" /></td>
<td><img src="image16" alt="Diagram" /></td>
</tr>
</tbody>
</table>

Legend: B = black, A = same colour as LED

* LED colour is indicated by the bottom of the product.
**PIEZOELECTRIC SWITCH**

**15.50 (.610)**

**1.50 (.059)**

Non-illuminated

**Ø17.00 Ø13.00**

Piezo switch Ø 12 (.480)

**Switch size**

12 = 12mm

**Colours / Materials**

A0 Natural anodized aluminum
A1 Blue anodized aluminum
A2 Black anodized aluminum
A3 Green anodized aluminum
A5 Gold anodized aluminum
A6 Red anodized aluminum
B Stainless steel 316L

**Switch function**

M Momentary

**Switch status**

NO Normally open

**Ratings**

1 200mA 24VAC/DC
2 1A 24VAC/DC

**Operator**

R5 Operator with finger location, height 1.30
Blank Flat operator, height 1.30

The operator can be customized

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**Non-illuminated**

**Flat**

**Finger location**

**PZ1201NOM**

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

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**Mounting accessories standard hardware supplied**: 1 hex nut and 1 O-ring

**Packaging unit**: 20 pieces

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For options not listed above, please contact LANGIR.

The appearance of the products listed on this file, color, parameters are for reference only, issued a kind of LANGIR Company shall prevail.

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++ Langir Electric + T 86 (577) 62737672 F 86 (577) 62737671 + langir@langir.com + www.langir.com ++
Piezo switch Ø 16 (.630)

Switch size
16 = 16mm

Switch function
M Momentary
L Latching

Switch status
NO Normally open
NC Normally closed
K NO prolonged pulse

Colours / Materials
A0 Natural anodized aluminum
A1 Blue anodized aluminum
A2 Black anodized aluminum
A3 Green anodized aluminum
A5 Gold anodized aluminum
A6 Red anodized aluminum
B Stainless steel 316L

Tri-colours
Blank Non-illum.
TA Red/green/blue
TB Red/green/yellow
TD Red/green/white
TE Red/blue/yellow
TF Red/blue/white
TG Red/yellow/white
TH Green/blue/yellow
TI Green/blue/white
TJ Green/yellow/white
TK Blue/yellow/white

Double colours
Blank Non-illum.
RG Red/green
RY Red/yellow
RB Red/blue
RW Red/white
GB Green/blue
GY Green/yellow
GW Green/white
BY Blue/yellow
BW Blue/white
YW Yellow/white

Type of illum.
Blank Non-illuminated
A Standard ring 5VDC
N Standard ring 12VDC
K Standard ring 24VDC
D Standard dot 5VDC
E Standard dot 12VDC
S Standard dot 24VDC

Operator
R5 Operator with finger location, height 4.50
R6 Operator with finger location, height 1.30
R1 Flat operator, height 4.50
Blank Flat operator, height 1.30
The operator can be customized

Flyingleads
F

Cable
C

The terminals can be customized

Terminals

M

L

Operator options
R5
R6
R1
Blank

The operator can be customized

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

Mounting accessories standard hardware supplied: 1 hex nut and 1 O-ring

Packaging unit: 20 pieces

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Shown with flying lead terminals.

### Non-illuminated

- **Flat**
  - **Finger location**
  - **Dimension:** Ø18.00 (.708 DIA)
  - **AWG:** 26
  - **Length:** 30CM
  - **Part Number:** PZ16A6R11NOM

### Dot-illuminated

- **Flat**
  - **Finger location**
  - **Dimension:** Ø16.00x1.00 SI (.630 DIAx1.00 IS)
  - **LED:** Ø3.00 PUSH
  - **AWG:** 26
  - **Length:** 30CM
  - **Part Number:** PZ16BFS1NOMG

### Ring Illuminated

- **Flat operator, height 4.50 (.177)**
  - **Finger location**
  - **Dimension:** Ø16.20 (.637 DIA)
  - **AWG:** 26
  - **Length:** 30CM
  - **Part Number:** PZ16B1FN1NOMR
### Piezo switch Ø 19 (.748)

<table>
<thead>
<tr>
<th>Switch size</th>
<th>19 – 19mm</th>
</tr>
</thead>
</table>

**Colours / Materials**
- A0: Natural anodized aluminum
- A1: Blue anodized aluminum
- A2: Black anodized aluminum
- A3: Green anodized aluminum
- A5: Gold anodized aluminum
- A6: Red anodized aluminum
- B: Stainless steel 316L

**Operator**
- RA: Operator with finger location, height 3.00
- R2: Flat operator, height 3.00
- Blank: Flat operator, height 1.30

The operator can be customized.

### Terminals
- F: Flyingleads
- C: Cable

The terminals can be customized.

### Type of illum.
- Blank: Non-illuminated

**Voltage**
- A: Standard ring 5VDC
- N: Standard ring 12VDC
- K: Standard ring 24VDC
- D: Standard dot 5VDC
- E: Standard dot 12VDC
- S: Standard dot 24VDC

### Switch function
- M: Momentary
- L: Latching

**Switch status**
- NO: Normally open
- NC: Normally closed
- K: NO prolonged pulse

**Ratings**
1. 200mA 24VAC/DC
2. 1A 24VAC/DC

### Tri-colours
- Blank: Non-illumin.
- TA: Red/green/blue
- TB: Red/green/yellow
- TD: Red/green/white
- TE: Red/blue/yellow
- TF: Red/blue/white
- TG: Red/yellow/white
- TH: Green/blue/yellow
- TI: Green/blue/white
- TJ: Green/yellow/white
- TK: Blue/yellow/white

### Double colours
- Blank: Non-illumin.
- RG: Red/green
- RY: Red/yellow
- RB: Red/blue
- RW: Red/white
- GB: Green/blue
- GY: Green/yellow
- GW: Green/white
- BY: Blue/yellow
- BW: Blue/white
- YW: Yellow/white

### Single colours
- Blank: Non-illumin.
- B: Blue
- G: Green
- R: Red
- Y: Yellow
- W: White

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

**Mounting accessories**: standard hardware supplied: 1 hex nut and 1 O-ring.

**Packaging unit**: 20 pieces.

**For options not listed above, please contact LANGIR.**

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Piezo switch Ø 19 (.748)

Shown with flying lead terminals.

Non-illuminated

Flat

Chamfer

Dot-illuminated

Flat

Ring illuminated

Flat

Chamfer

++ Langir Electric + T 86 (577) 62737672 F 86 (577) 62737671 + langir@langir.com + www.langir.com ++
Piezo switch
Ø 22(.866), Ø 25(.984) and Ø 30(1.181)

Switch size
22 = 22mm
25 = 25mm
30 = 30mm

Colours / Materials
A0 Natural anodized aluminum
A1 Blue anodized aluminum
A2 Black anodized aluminum
A3 Green anodized aluminum
A5 Gold anodized aluminum
A6 Red anodized aluminum
B Stainless steel 316L

Operator
R2 Flat, operator height 3.0mm (.118)
   Not available with illuminated ring.
R6 With finger location, operator height 3.0mm (.118).
   Not available with illuminated ring.
RY With chamfer, operator height 4.5 mm (.177).
   Available with thin or large illuminated ring only.
RZ Flat, operator height 4.5 mm (.177).
   Available with thin or large illuminated ring only.
Blank Flat, operator height 1.30
   The operator can be customized

Terminals
F Flyingleads
C Cable
The terminals can be customized

Type of illum.
Voltage
Blank Non-illuminated
A 13.5 Large ring 5VDC
N 13.5 Large ring 12VDC
K 13.5 Large ring 24VDC
P 16.5 Thin ring 5VDC
J 16.5 Thin ring 12VDC
Y 16.5 Thin ring 24VDC
D Standard dot 5VDC
E Standard dot 12VDC
S Standard dot 24VDC

Tri-colours
Blank Non-illumin.
TA Red/green/blue
TB Red/green/yellow
TD Red/green/white
TE Red/blue/yellow
TF Red/blue/white
TG Red/yellow/white
TH Green/blue/yellow
TI Green/blue/white
TJ Green/yellow/white
TK Blue/yellow/white

Double colours
Blank Non-illumin.
RG Red/green
RY Red/yellow
RB Red/blue
RW Red/white
GB Green/blue
GY Green/yellow
GW Green/white
BY Blue/yellow
BW Blue/white
YW Yellow/white

Single colours
Blank Non-illumin.
B Blue
G Green
R Red
Y Yellow
W White

Switch function
M Momentary
L Latching

Switch status
NO Normally open
NC Normally closed
K NO prolonged pulse

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

Mounting accessories standard hardware supplied: 1 hex nut and 1 O-ring
Packaging unit: 20 pieces

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Piezo switch Ø 22 (.866)

Shown with flying lead terminals.

**Non-illuminated**

![Non-illuminated Piezo Switch](image)

Flat

Finger location

AWG26 30 CM

**Dot illuminated**

![Dot Illuminated Piezo Switch](image)

Flat

Finger location

**Ring illuminated**

![Ring Illuminated Piezo Switch](image)

Flat

Chamfer

Thin ring

Large ring

AWG26 30 CM

++ Langir Electric + T 86 (577) 62737672 F 86 (577) 62737671 + langir@langir.com + www.langir.com ++
Piezo switch Ø 25(.984)

Shown with flying lead terminals.

Non-illuminated

Dot illuminated

Ring illuminated

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Shown with flying lead terminals.

**Non-illuminated**

- **Flat**
  - PZ30BR2F1NOM

**Dot-illuminated**

- **Flat**
  - PZ30BF1NOMG

**Ring illuminated**

- **Flat**
  - PZ30A2RFY1NOMRY
- **Chamfer**
  - PZ30A2RFY1NOMRY

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