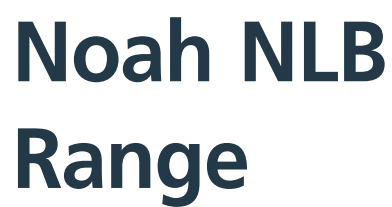


## Keeping the World Flowing for Future Generations



A **rotork** Brand

**NOAH**

Actuation

## Delivering Intelligent Flow Control Solutions

Helping customers to improve efficiency, reduce emissions, minimise their environmental impact and assure safety.

## Keeping the World Flowing through...



Automation



Efficiency



Electrification



Digitalisation

# 3

End Markets



Oil and Gas



Water and Power



Chemical, Process and Industrial

# 60+

years of innovation and industry knowledge

## Leaders in Sustainability



Committed to achieving net-zero by 2035 for scopes 1 & 2 and by 2045 for scope 3



 **64** Offices

 **17** Manufacturing Sites

 Serving **170** Countries

 **3,500+** Employees

Rotork is a market-leading global provider of mission-critical flow control and instrumentation solutions for the industrial actuation and flow control markets. These include oil and gas, water and wastewater, power, chemical, process and industrial applications.

Customers rely on us for innovative, high quality and dependable solutions for managing the flow of liquids, gases and powders. We help customers around the world to improve efficiency, reduce emissions, minimise their environmental impact and assure safety.

Our reliability record is second to none. Our products are designed with safety and performance at their core and are put through vigorous testing and certified to international standards. Our products are certified for use in the world's most dangerous and hazardous areas.

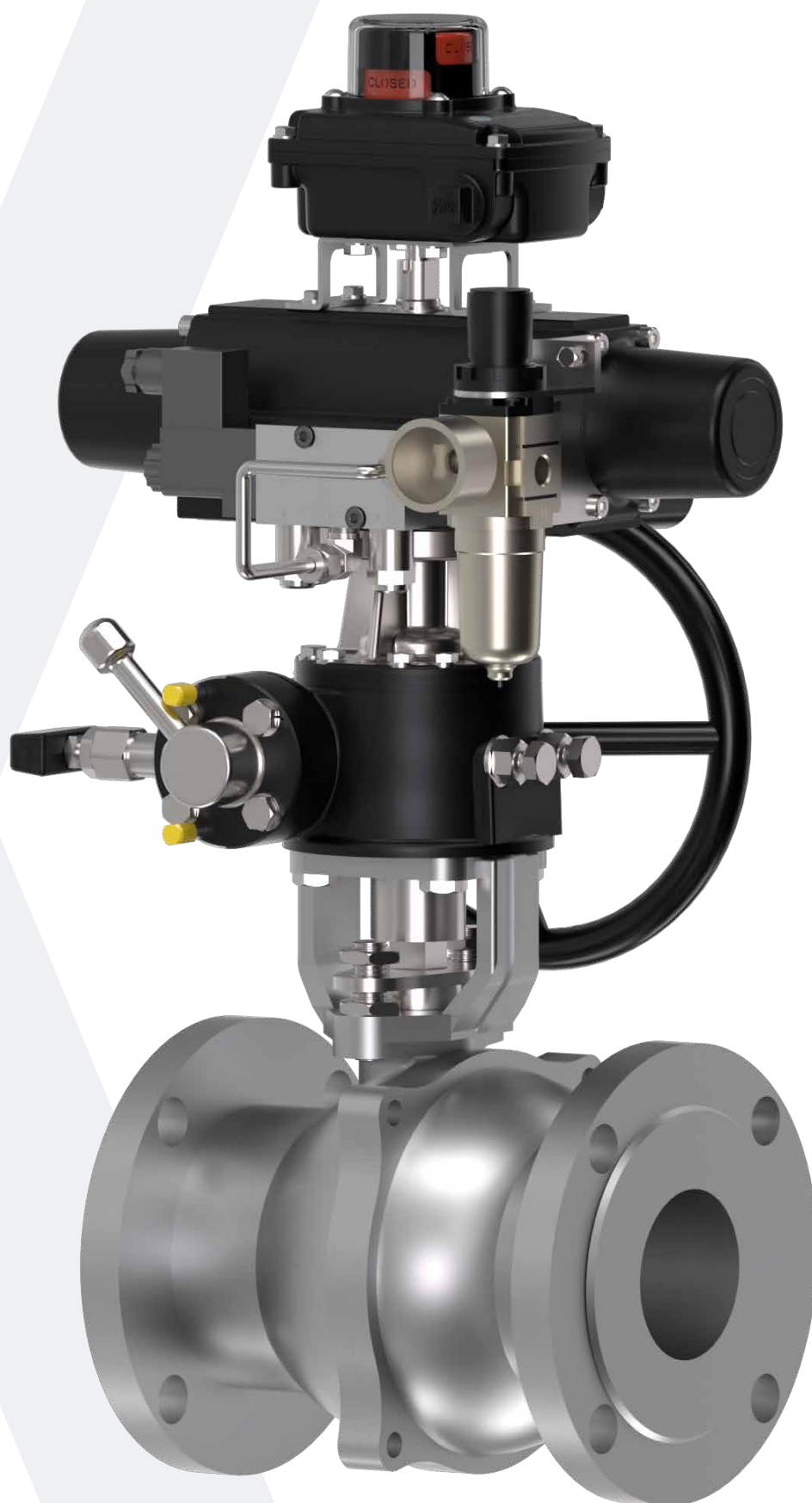
### Partnering with us provides the following:

- Assured safety and reliability
- Industry leading accuracy and efficiency
- Proven technology that works with all network control systems
- Product range with solutions to suit every application
- Assistance with plant planning, development and maintenance through our local support services
- We have innovative research and development centers throughout the world



## Contents

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The NLB range is an essential device designed for precise position monitoring of industrial valves and actuators.

This device is used in various process automation systems, and accurately detects the opening and closing of valves and transmits a signal to the control system.

Main applications include:

- Petrochemical
- Essential oil
- Water treatment
- Power plants
- Marine
- General industry

### Main features

#### Accurate position detection

The NLB range accurately detects the position of valves and actuators through fixed-reliability switches, enabling reliable process control.

#### Rugged durability

The NLB range is designed for high durability in industrial environments. Waterproof and dustproof functions protect internal components from dust and moisture.

#### Various options

The NLB range offers various options to meet customer's specific needs. The choice of explosionproof models and additional contact configurations allows for flexible application.

#### Easy installation and maintenance

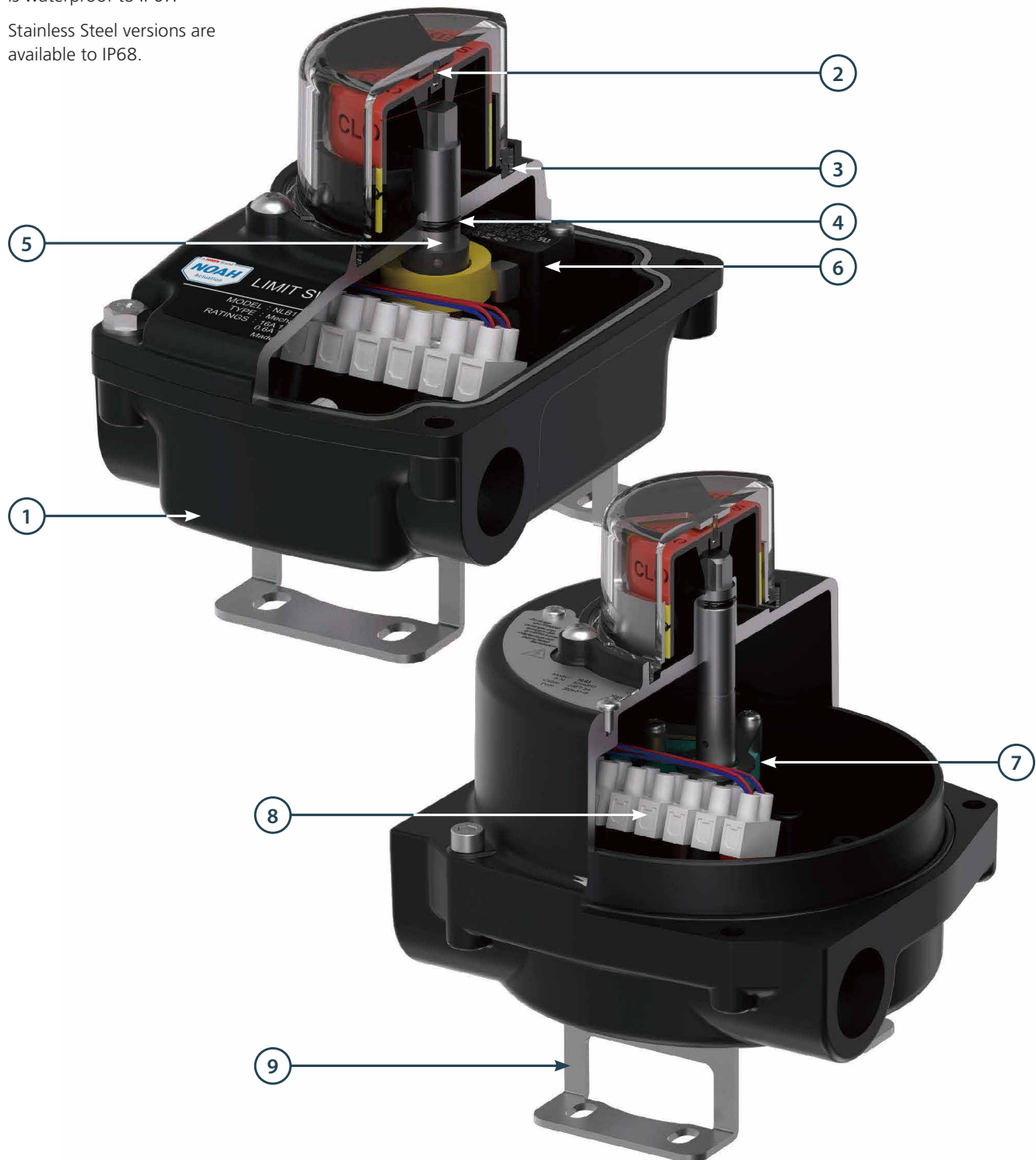
The simple mounting bracket and standard electrical interface enable quick and easy installation. Maintenance is also minimised, reducing installation time and cost.



### Noah NLB

The Noah NLB limit switch box is waterproof to IP67.

Stainless Steel versions are available to IP68.





### 1. Outer case

The standard aluminium housing provides both lightness and durability, ensuring reliable performance in a variety of industrial environments.

Option: Stainless steel

### 2. Indicator

NLB range limit switch boxes feature a position indicator that provides accurate position indication. This indicator displays the current position of the valve and actuator in real time, allowing operators to monitor the process at a glance.

The shock-resistant dome-style indicator provides visual indication of the open/closed status. The open/closed time output can be easily reversed by removing the dome and rotating it 90 degrees.



### 3. Double-sealed structure

Separates the indicator area from the interior, providing a double seal to prevent water from entering even if the dome or dome seal is damaged due to adverse conditions.



### 4. Waterproof

The O-ring seal between the cover and base provides waterproofing and prevents internal corrosion.

### 5. SensorCam

The spline cam design allows for easy and accurate switch operation setup without tools.

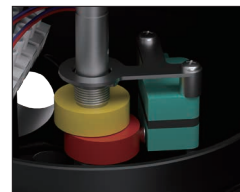


### 6. Limit switch

It has a built-in mechanical cam-type limit switch that can accurately check the position of valves and rotating devices. Its simple structure makes it easy to adjust.

### 7. Proximity sensor

A reliable and accurate proximity sensor is available as an option. This sensor detects the position of valves and actuators without contact, providing excellent performance in a variety of industrial applications.



NBB2 Sensor

### 8. Terminal block

The intuitive design allows for easy electrical wiring connections, reducing installation time.

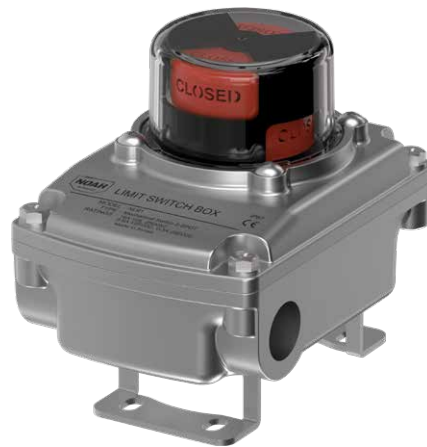
### 9. Mounting bracket

We provide high-quality mounting brackets for easy and secure installation. These brackets are designed to easily attach to a variety of valves and actuators, saving installation time and increasing reliability.

## Design Features

### Limit Switch Box NLB1

- **Visual position indication:** 360° viewing angle
- **Multiple output signals:** Terminal port 8/12 contacts
- **Universal compatibility:** Suitable for all rotary motion actuators (ISO5211)
- **Easy configuration:** Simple adjustment of cam position
- **Two cable inlets:** Separate power and signal cables
- **Options:** Proximity sensor (non-contact switch selection available for reliability and accuracy)



### Standard specifications

Item type	NLB1
Switch type	Mechanical switch / Proximity sensor
Ingress protection	IP67 Option: IP68 <sup>1</sup>
Operating temperature	-20 to +80 °C (-4 to +176 °F)
Cable entry	2 x PF ½", M20 (Pitch 1.5), NPT ½" 2 x PF ¾", M25 (Pitch 1.5), NPT ¾"
Terminal	8 points Option: 12 points
Mounting bracket	Type 1 – 30 x 80 Type 2 – 30 x 130
Material	Aluminium diecasting Stainless Steel (SUS316L) Option: SUS304, SUS316
Weight	Aluminium version: 752 g (1.66 lbs) SUS316L version: 2,222 g (4.9 lbs)

### Product code

NLB 1 - A P2 A - 1 - T

#### Model

A = Standard

#### Material

A = Aluminium diecasting  
B = SUS316L  
C = SUS304  
D = SUS316

#### Cable entry

P2 = PF ½"  
M0 = M20 x 1.5P  
N2 = NPT ½"  
P4<sup>1</sup> = PF ¾"  
M5<sup>1</sup> = M25x1.5P  
N4<sup>1</sup> = NPT ¾"

#### Switch type

A = 2-SPDT  
B = POT  
C<sup>1</sup> = 2 - SPDT + POT  
H = 2 - PSN17

#### Bracket

1 = 30 x 80  
2 = 30 x 130

#### Option

T = TERMINAL 12 POINT  
I<sup>1</sup> = IP68

Notes:

1 - Only available with Stainless Steel versions.



## Design Features

### Limit Switch Box NLB2

- **Visual position indication:** 360° viewing angle
- **Multiple output signals:** Terminal port 8/12 contacts
- **Universal compatibility:** Suitable for all rotary motion actuators (ISO5211)
- **Easy configuration:** Simple adjustment of cam position
- **Two cable inlets:** Separate power and signal cables
- **Options:** Proximity sensor (non-contact switch selection available for reliability and accuracy)



### Standard specifications

Item type	NLB2
Switch type	Mechanical switch / Proximity sensor
Ingress protection	IP67
Operating temperature	-20 to +80 °C (-4 to +176 °F)
Cable entry	2 x PF 3/4", M25 (Pitch 1.5), NPT 3/4"
Terminal	8 points / 12 points
Mounting bracket	Type 1 – 30 x 80 Type 2 – 30 x 130
Material	Aluminium diecasting
Weight	1,111 g (2.45 lbs)

### Product code

NLB 2 - A P4 A - 1 - T

#### Model

2 = Option

#### Material

A = Aluminium diecasting

#### Cable entry

P4 = PF 3/4"

M5 = M25 x 1.5P

N4 = NPT 3/4"

#### Switch type

A = 2 - SPDT

C = 2 - SPDT + POT

D<sup>1</sup> = 2 - SPDT + CPT

E = 3 - SPDT

F = 4 - SPDT

G = 2 - DPDT

H = 2 - PSN17

I = 2 - NJ4-12GM-N

J = 2 - NBB2-V3-E2

K = 4 - NBB2-V3-E2

L = 2 - NJ2-V3-N

M = 4 - NJ2-V3-N

#### Bracket

1 = 30 x 80

2 = 30 x 130

#### Option

T = TERMINAL 12 POINT

Notes:

1 - Pending.

## Design Features

### Limit Switch Box NLB3

- **Visual position indication:** 360° viewing angle
- **Multiple output signals:** Terminal port 8/12 contacts
- **Universal compatibility:** Suitable for all rotary motion actuators (ISO5211)
- **Easy configuration:** Simple adjustment of cam position
- **Two cable inlets:** Separate power and signal cables
- **Options:** Proximity sensor (non-contact switch selection available for reliability and accuracy)



### Standard specifications

Item type	NLB3
Switch type	Mechanical switch / Proximity sensor
Ingress protection	IP67 Option : IP68 <sup>1</sup>
Certifications	Pending: ATEX <sup>2</sup> , IECEx <sup>2</sup> Planned: ABS, CCC, CE, CSA, EAC, KCs, SIL2,
Operating temperature	-20 to +60 °C (-4 to +140 °F)
Cable entry	2 x NPT ¾", M25 (Pitch 1.5) 2 x NPT ½", M20 (Pitch 1.5) <sup>1</sup>
Terminal	8 points / 12 points
Mounting bracket	Type 1 – 30 x 80 Type 2 – 30 x 130
Material	Aluminium diecasting Stainless Steel (SUS316L) Option: SUS304, SUS316
Weight	Aluminium version: 1,170 g (2.58 lbs) SUS316L version: 3,452 g (7.61 lbs)

#### Notes:

- 1 - Only available with Stainless Steel versions.  
2 - Pending.

### Product code

NLB 3 - A M0 A - 1 - T

#### Model

3 = EXP

#### Material

A = Aluminium diecasting  
B = SUS316L  
C = SUS304  
D = SUS316

#### Cable entry

M0<sup>1</sup> = M20 x 1.5P  
N2<sup>1</sup> = NPT ½  
M5 = M25 x 1.5P  
N4 = NPT ¾

#### Switch type

A = 2 - SPDT  
C = 2 - SPDT + POT  
D<sup>2</sup> = 2 - SPDT + CPT  
E = 3 - SPDT  
F = 4 - SPDT  
G = 2 - DPDT  
H = 2 - PSN17  
I = 2 - NJ4-12GM-N  
J = 2 - NBB2-V3-E2  
K = 4 - NBB2-V3-E2  
L = 2 - NJ2-V3-N  
M = 4 - NJ2-V3-N

#### Bracket

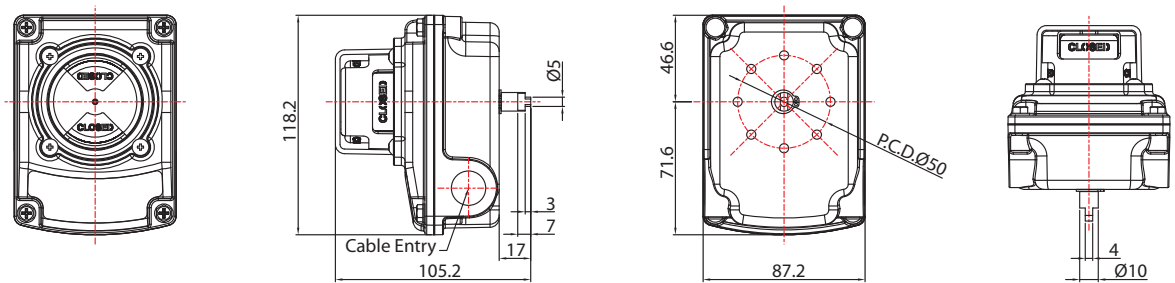
1 = 30 x 80  
2 = 30 x 130

#### Option

T = TERMINAL 12 POINT  
I<sup>1</sup> = IP68

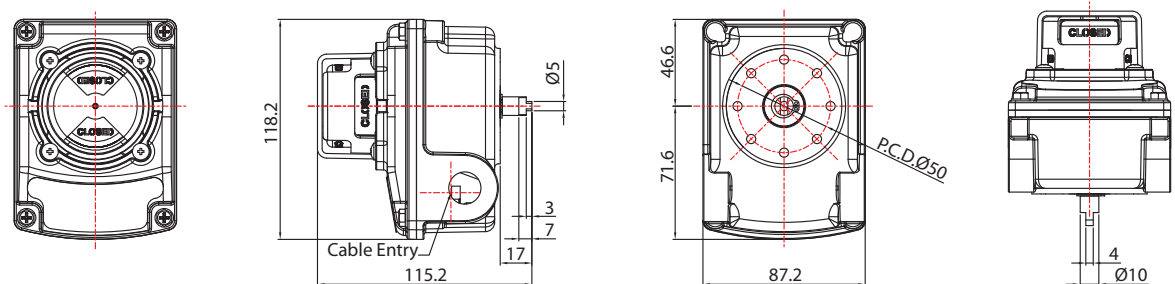
## Dimensional Data

### NLB 1 (Aluminium versions)



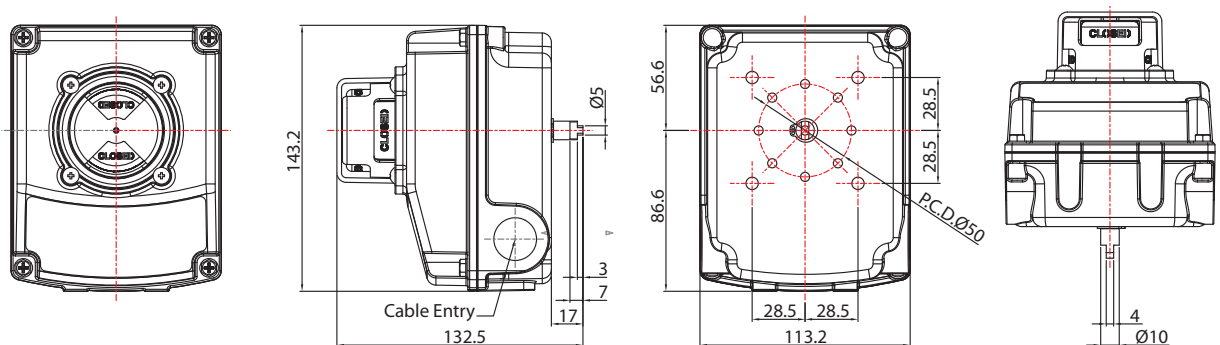
All dimensions in millimetres

### NLB 1 (Stainless Steel versions)



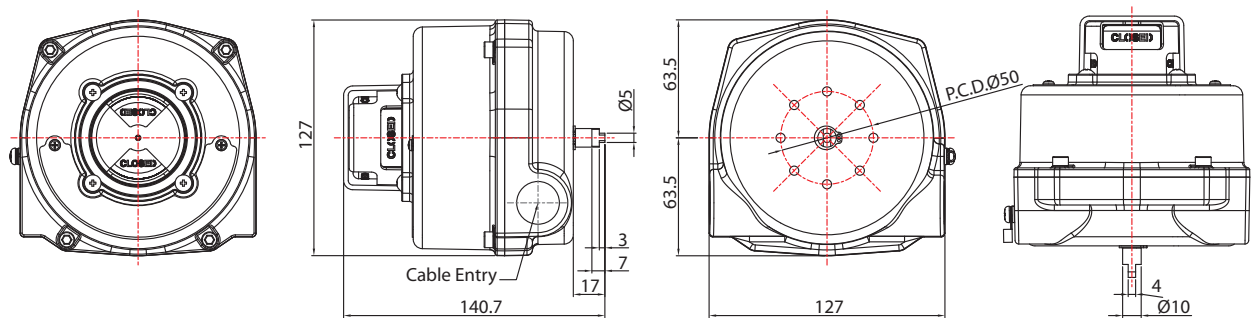
All dimensions in millimetres

### NLB 2



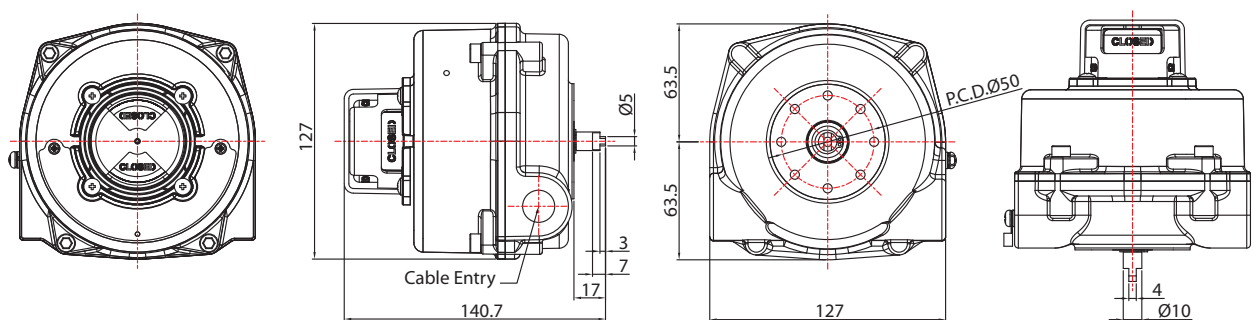
All dimensions in millimetres

## NLB 3 (Aluminium versions)



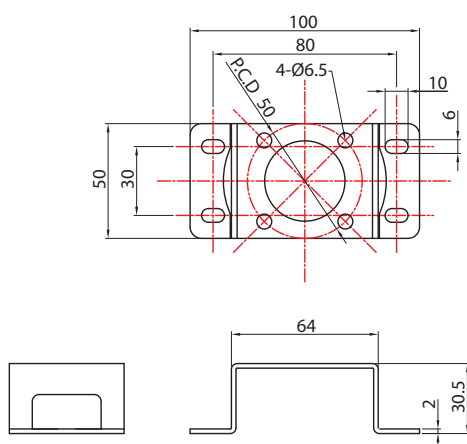
All dimensions in millimetres

## NLB 3 (Stainless Steel versions)

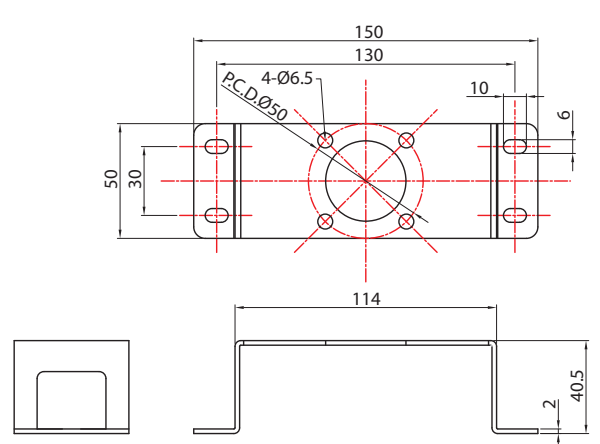


All dimensions in millimetres

## TYPE 1



## TYPE 2



All dimensions in millimetres

<p><b>1. Mechanical Switch</b></p> <ul style="list-style-type: none"> <li>Manufacturer: STARION (SZM-V16-SFA-61)</li> <li>Type: SPDT (1C)</li> <li>Approvals: UL, CSA, SEMKO, CQC, KC</li> <li>Electrical specifications: 16 A 125/250 VAC, 0.6 A 125 VDC, 0.3 A 250 VDC ½HP 125, 250 VAC NOTE: If EXP type, the rating is 11A (125/250 VAC).</li> <li>Operating temperature: -25 to +130 °C (-13 to 266 °F)</li> </ul>	
<p><b>2. Mechanical Switch</b></p> <ul style="list-style-type: none"> <li>Manufacturer: OMRON (DZ-10GW-1B)</li> <li>Type: DPDT (2C)</li> <li>Approvals: UL, CSA</li> <li>Electrical specifications: 10 A 125/250 VAC, 2 A 480 VAC 0.5 A 125 VDC, 0.25 A 250 VDC</li> <li>Operating temperature: -25 to +80 °C (-13 to 176 °F)</li> </ul>	
<p><b>3. Proximity Sensor</b></p> <ul style="list-style-type: none"> <li>Manufacturer: Autonics (PSN17-5DNU)</li> <li>Type: NPN NO (Normally Open)</li> <li>Approvals: CE, UKCA, EAC / IP67</li> <li>Electrical specifications: Below 200 mA, 12~24 VDC</li> <li>Operating temperature: -25 to +70 °C (-13 to 158 °F)</li> </ul>	
<p><b>4. Proximity Sensor</b></p> <ul style="list-style-type: none"> <li>Manufacturer: PEPPERL+FUCHS (NJ4-12GM-N)</li> <li>Type: NAMUR NC (Normally Closed)</li> <li>Approvals: CE, ATEX, IEC, IECEX, cULus, CCC, DNV / SIL2 / IP67</li> <li>Electrical specifications: Not Detected 3 mA Detected 1 mA or less, 8.2 VDC (R approx. 1 kΩ)</li> <li>Operating temperature: -25 to +100 °C (-13 to 212 °F)</li> </ul>	
<p><b>5. Proximity Sensor</b></p> <ul style="list-style-type: none"> <li>Manufacturer: PEPPERL+FUCHS (NBB2-V3-E2)</li> <li>Type: PNP NO (Normally Open)</li> <li>Approvals: CE, cULus, UKCA / IP67</li> <li>Electrical specifications: Voltage drop below 3V, 10~30 VDC</li> <li>Operating temperature: -25 to +70 °C (-13 to 158 °F)</li> </ul>	
<p><b>6. Proximity Sensor</b></p> <ul style="list-style-type: none"> <li>Manufacturer: PEPPERL+FUCHS (NJ2-V3-N)</li> <li>Type: NAMUR NC (Normally Closed)</li> <li>Approvals: CE, ATEX, IEC, IECEX, cULus, CCC / SIL2 / IP67</li> <li>Electrical specifications: Not Detected 3 mA Detected 1 mA or less, 8.2 VDC (R approx. 1 kΩ)</li> <li>Operating temperature: -25 to +100 °C (-13 to 212 °F)</li> </ul>	



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