

# LSBG / LSBX Series - Limit Switch Boxes

Schematic Representation Only



## Features :

- Solid and flexible design Aluminium die-casting housing and powder coating.
- Bolts on visual position indicator. Quick-set” cam. Spring loaded splined cam. No need to adjust again after initial setting. Easy setting without tool.
- Dual cable entries.
- Captive cover bolts. No worry to loose bolts while cover open. Spring loaded cover bolts(APL-5N).
- Easy mounting bracket. NAMUR standard stainless steel shaft and bracket.

## Standard Specifications :

Specification	Model	LSBG- 2N Series	LSBG- 3N Series	LSBX- 4N Series	LSBX- 5N Series
Enclosure		Weatherproof IP67/NEMA4&4X	Weatherproof IP67/NEMA4&4X	Weatherproof IP67/NEMA4&4X Explosionproof E EX d IIB T6	Weatherproof IP67/NEMA4&4X Explosionproof E EX d IIC T6
Cable entries		Two NPT1/2”	Two NPT1/2”	Two NPT3/4”	Two NPT3/4”
Ambient temperature		-20℃ ~ 80℃	-20℃ ~ 80℃	-20℃ ~ 60℃	-20℃ ~ 60℃
Terminal strips		8 points (0.08-2.5mm <sup>2</sup> )	8 points (0.08-2.5mm <sup>2</sup> )	8 points (0.08-2.5mm <sup>2</sup> )	8 points (0.08-2.5mm <sup>2</sup> )
Position indicator		0 ~ 90° (90° turn free join) close:red open:yellow	0 ~ 90° (90° turn free join) close:red open:yellow	0 ~ 90° (90° turn free join) close:red open:yellow	0 ~ 90° (90° turn free join) close:red open:yellow
Switches		Mechanical switch x2 proximity sensor x2	Mechanical switch x2 proximity sensor x2	Mechanical switch x2 proximity sensor x2	Mechanical switch x2 proximity sensor x2
Painting		Chromate Polyester powder coating(black)	Chromate Polyester powder coating(black)	Chromate Polyester powder coating(black)	Chromate Polyester powder coating(black)

## Option Specification :

Specification	Model	LSBG- 2N Series	LSBG- 3N Series	LSBX- 4N Series	LSBX- 5N Series
Enclosure		Weatherproof IP68	Weatherproof IP68	Weatherproof IP68	Weatherproof IP68 Explosionproof E EX d IIB T6 E EX ia IIC T6
Cable entries		Two PF1/2”, PT1/2” M20, PG13.5	Two PF1/2”, PT1/2” M20, PG13.5	FOUR PF3/4”, PT3/4” M20, M25	Two NPT3/4” PT3/4”
Option temperature		-	-40℃ ~ 80℃ -20℃ ~ 150℃	-	-
Terminal strips		-	16 points (0.08-2.5mm <sup>2</sup> )	20 points (0.08-2.5mm)	-
Position indicator		three position close:red open:Green	three position close:red open:Green	three position close:red open:Green	three position close:red open:Green
Switches		-	Mechanical switch x4 proximity sensor x4	Mechanical switch x4 proximity sensor x4	Mechanical switch x4 proximity sensor x4
Potentiometer		-	1k ohm standard. 5k ohm. 0-10k ohm	1k ohm standard. 5k ohm. 0-10k ohm	1k ohm standard. 5k ohm. 0-10k ohm
Current output signal unit		-	4~20mA DC 12.5 to 37VDC (24V typical)	4~20mA DC 12.5 to 37VDC (24V typical)	4~20mA DC 12.5 to 37VDC (24V typical)
Painting		Nylon others on request red, green, blue, yellow, silver	Nylon others on request red, green, blue, yellow, silver	Nylon others on request red, green, blue, yellow, silver	Nylon others on request red, green, blue, yellow, silver

# LSBG / LSBX Series - Limit Switch Boxes

Schematic Representation Only



(IP67,IP68)

## MODEL : LSBG -2N SERIES

- Enclosure : Weatherproof IP67/NEMA4&4X (Standard ) IP68(Option)
- Solid and compact design
- Bolts on visual position indicator  
(Re-adjustment available upon required direction)
- Dual cable entries : 2 x 1/2 NPT(Standard)  
M20, PG13.5, PF1/2", PT1/2" .(Option)
- Terminal Strips : 8 points(0.08-2.5 mm<sup>2</sup>)
- Captive cover bolts
- Easy mounting bracket  
NAMUR standard stainless steel shaft and bracket.



(IP67,IP68)

## MODEL : LSBG -3N SERIES

- Enclosure : Weatherproof IP67/NEMA4&4X (Standard ) IP68(Option)
- Solid and Flexible design & various options available
  - 3~4 additional switches
  - 8~16 points Terminal Strips
- Bolts on visual position indicator
- Dual cable entries : 2 x 1/2 NPT(Standard)  
M20, PG13.5, PF1/2", PT1/2" .(Option)
- Terminal Strips : 8 points(0.08-2.5 mm<sup>2</sup>)
- Captive cover bolts
- Easy mounting bracket  
NAMUR standard stainless steel shaft and stainless steel or steel bracket.



(E EX d IIB T 6)

## MODEL : LSBX -4N SERIES

- Enclosure : Weatherproof IP67/NEMA4,4X,7, 9(Standard ) IP68(Option)  
Explosionproof : E EX d IIB T 6
- Solid and Durable design & various options available
  - 3~4 additional switches
  - 8~20 points Terminal Strips
  - various options switches
- Bolts on visual position indicator
- Cable entries : 2 x 3/4 NPT(Standard)  
M20, M25, PF3/4", PT3/4", 4Cable entries(Option)
- Terminal Strips : 8 points(0.08-2.5 mm<sup>2</sup>)
- Captive cover bolts
- Easy mounting bracket  
NAMUR standard stainless steel shaft and stainless steel or steel bracket.



(E EX d IIC T 6)

## MODEL : LSBX -5N SERIES

- Enclosure : Weatherproof IP67/NEMA4,4X,7, 9 (Standard ) IP68(Option)  
Explosionproof : E EX d IIC T 6, E EX ia IIC T 6, E EX d IIB T 6
- Solid and compact design
- Shaft holder built in the cover(Dual shaft)  
Easy to set the visual position indicator.  
Unique design to put the visual indicator on the threaded joint type cover.
- Bolts on visual position indicator
- Dual Cable entries : 2 x 3/4 PF(Standard)  
M20, M25, NPT3/4", PT3/4" (Option)
- Terminal Strips : 8 points(0.08-2.5 mm<sup>2</sup>)
- Captive cover bolts & Spring loaded cover bolts  
No worry to loose bolts while cover open  
& Unique design to hold bolts inside cover
- Easy mounting bracket  
NAMUR standard stainless steel shaft and stainless steel or steel bracket.

# LSBG / LSBX Series - Limit Switch Boxes

Schematic Representation Only

## LSBG-2N & LSBG-3N Weatherproof Design

**a) Enclosure**

Solid and Compact design  
aluminium die-casting  
IP67

**b) Painting**

Powder coating

**c) Housing Body**

Aluminium die-casting

**d) Quick-Set Cam**

Easy to set, Splined cam  
Open-Yellow , Close-Red

**e) O-rings**

**f) Various Switches**

Mechanical  
Proximity(P & F)  
Reed Proximity



APL-210N

APL-310N

**g) Shaft**

Stainless steel  
NAMUR

**h) Mounting Bracket**

**i) Visual Position**

Indicator  
Poly-carbonated  
Open-Yellow , Close-Red

**j) Name Plate**

**k) Housing Cover**

Aluminium die-casting

**l) Captive Bolts**

Stainless steel

**m) Terminal Strip**

Standard 8 points

**n) Earth lug**

## LSBX-4N & LSBX-5N Explosionproof Design

**a) Enclosure**

Solid and Durable design  
aluminium die-casting  
IP67 & Explosionproof  
design

**b) Painting**

Powder coating

**c) Housing Body**

Aluminium die-casting

**d) Quick-Set Cam**

Easy to set, Splined cam  
Open-Yellow , Close-Red

**e) O-rings**

**f) Various Switches**

Mechanical  
Proximity(P & F)  
Reed & Proximity

**g) Shaft**

Stainless steel  
NAMUR



APL-410N

APL-510N

**h) Mounting Bracket**

**i) Visual Position**

Indicator  
Poly-carbonated  
Open-Yellow , Close-Red

**j) Name Plate**

**k) Housing Cover**

Aluminium die-casting

**l) Captive Bolts**

Stainless steel

**m) Terminal Strip**

Standard 8 points

**n) Earth lug**

Multi-Ports

Main.2Ports

APL-4N:Max.4Ports

# LSBG / LSBX Series - Limit Switch Boxes

## Switch Specification :

### Mechanical Switch :

#### Standard switches :

2SPDT switches

#### Contact arrangement :

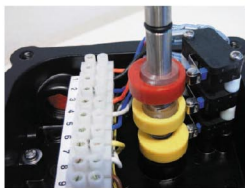
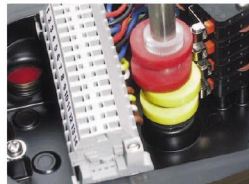
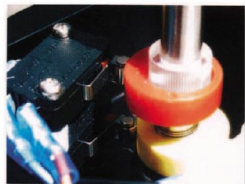
250VAC/16A, 250VDC/0.3A

125VDC/0.6A, 30VDC/10A,

#### Operating frequency :

600 operating per minute  
max (mechanical)

60 operating per minute  
max (electrical)



#### Option switches :

3SPDT switches

#### Contact arrangement :

250VAC/16A, 250VDC/0.3A

125VDC/0.6A, 30VDC/10A,

Except LSBG 2N series

#### Option switches :

4SPDT switches

#### Contact arrangement :

250VAC/16A, 250VDC/0.3A

125VDC/0.6A, 30VDC/10A,

Except LSBG 2N series

#### DPDT switches :

#### Contact arrangement :

20amp 125/250VAC

1HP 125 VAC

2HP 250VAC

0.5amp 250VDC

Except LSBG 2N, 3N, LSBX 5N series

### Proximity Sensor :

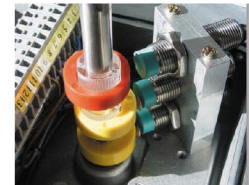
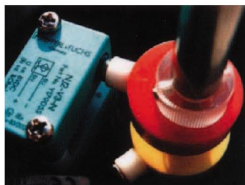
#### NJ2-V3-N P&F :

(intrinsically safe)

Inductive proximity sensor

Voltage range : 8V DC

Operating distance : 2mm



#### NPS17-5DN :

Inductive proximity sensor

Voltage range : 10~30V DC

AC110V or 220V

Operating distance : 5mm

Except LSBG 2N series



#### Optional sensor :

NBB2-V3-E2/E3 (PNP) : 10-30V DC

NBB2-V3-E0 (NPN) : 10-30V DC

NBB2-V3-Z4/Z5 : 5-60V DC

LSBX 4N Proximity sensor

NJ2-12GM-40-E2 : 10-60V DC

NJ4-12GM-40-E2 : 10-60V DC

NBB2-12GM-40 : 6-60V DC

Except LSBG 2, 3, LSBX 5N series

### Reed Proximity Sensor :

#### 2SPST switches :

Contact Form : NO. NC

Contact Rating : 10W max

Switching Voltage : 200VDC max

Switching Current : 1A max

Breakdown Voltage : 250VDC min

Contact Resistance(initial) : 0.3 Ohm max

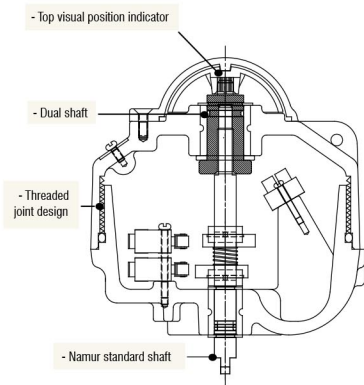
Electrical Life :  $10^7$  (6VDC, 10mA)



# LSBG / LSBX Series - Limit Switch Boxes

## Structure : LSBX - 5N Series

Schematic Representation Only



### Captive spring - loaded cover bolts :

Cover bolts are specially designed to prevent loosening it during maintenance or installation.



(LSBX 5N Series)

### Position Monitor :

- Continuous visual position indicator.
- Made of high impact, heat, chemical resistance and transparent carbonate.
- Excellent corrosion protection.
- High visibility and reliability.
- Re-adjustment available upon required direction.



(LSBG 2, LSBX 5N SERIES)



(LSBG 3, LSBX 4N SERIES)



Flow Port Monitor 3-way valve:  
L port, T port.

## Material :

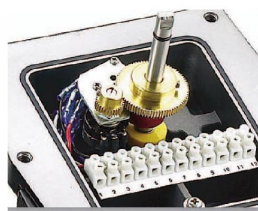
Housing cover&body	Aluminium die casting	O-ring	NBR
Shaft	Stainless steel	Bushing	Bronze
Indicator cover	Polycarbonate	E-ring(shaft)	Stainless steel
Cam	Polycarbonate	Earth lug	Stainless steel
Spring	Stainless steel	Indicator	ABS/Polycarbonate
Housing cover bolt	Stainless steel	Bracket	Stainless steel

## Electrical Connection :

### Position Transmitter & Potentiometer :

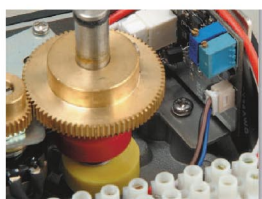
#### Potentiometer

- Potentiometer : 500~10K Ohm
  - Operating Temperature : -20 to 80
- Except LSBG 2N series

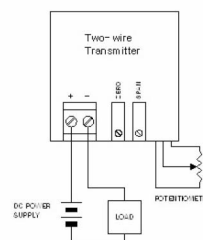


#### Position Transmitter

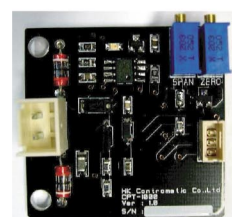
- Power Supply Range : 12.5 to 37VDC (24V typical)
  - Output signal range : 4~20mA
  - Potentiometer : 0~1K Ohm
  - Operating Temperature : -20 to 80
- Except LSBG 2N series



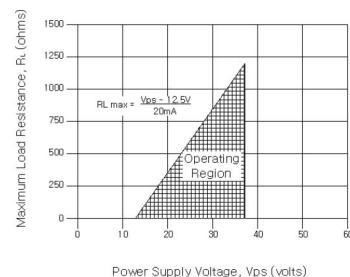
#### Wiring



#### GPT Card



#### Power Supply Requirements

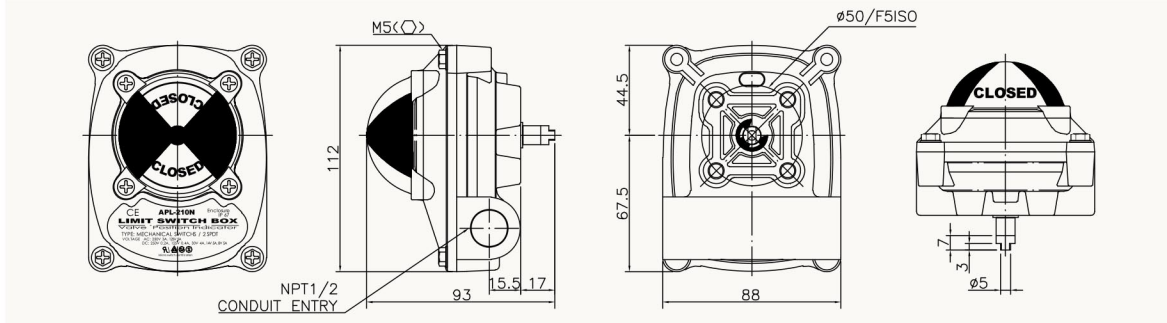


# LSBG / LSBX Series - Limit Switch Boxes

## Dimensions :

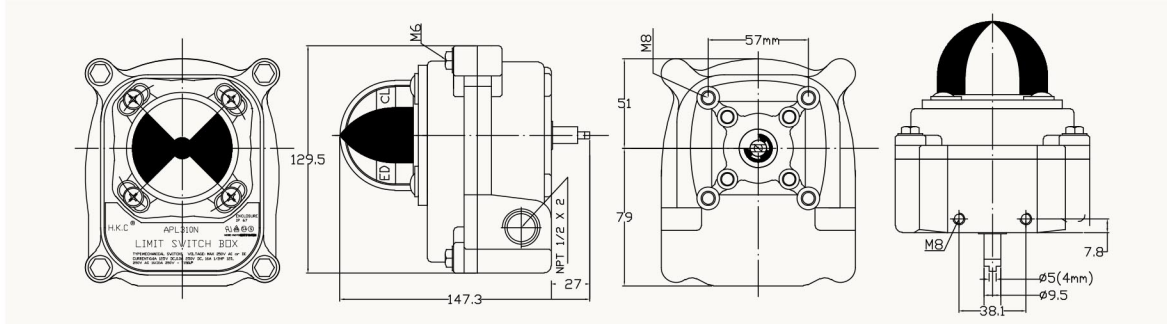
UNIT : mm

### LSBG 2N SERIES



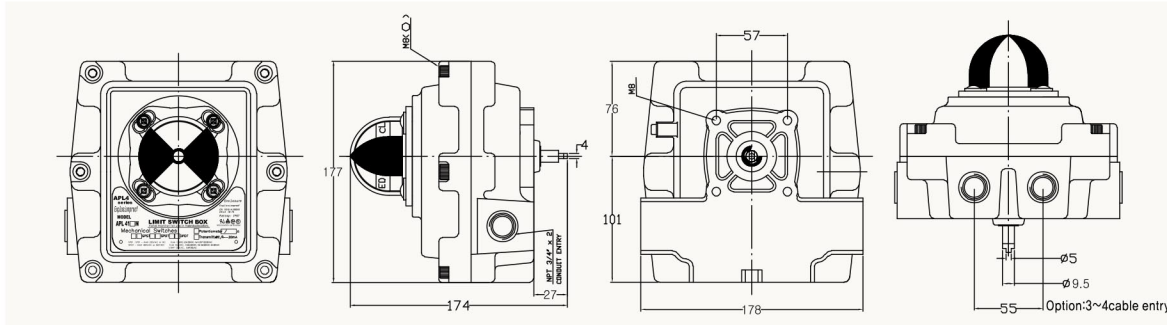
STANDARD NAMUR SHAFT

### LSBG 3N SERIES



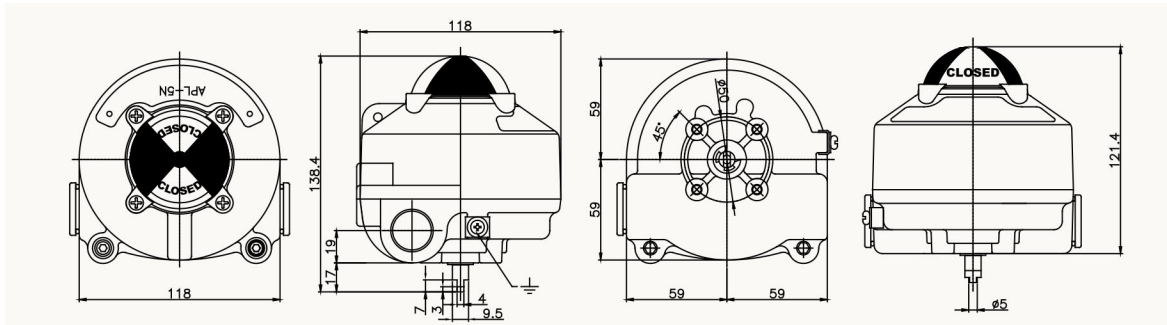
STANDARD NAMUR SHAFT

### LSBX 4N SERIES



STANDARD NAMUR SHAFT

### LSBX 5N SERIES






STANDARD NAMUR SHAFT

Schematic Representation Only

# LSBG / LSBX Series - Limit Switch Boxes

Bracket : NAMUR Standard

Schematic Representation Only

<b>Shape</b>			
<b>Size</b>	25 x 50 H:20 30 x 80 H:20 30 x 80(130) H:30(50)	30 x 80 H:20 30 x 80 H:30	30 x 130 H:30 30 x 130 H:50
<b>Model</b>	MBP-50 MBP-100 MBP-200 MBP-300 MBP-400	MB-P-O-1C MB-P-O-1S MB-P-O-2C MB-P-O-2S	MB-P-O-3C MB-P-O-3S MB-P-O-4C MB-P-O-4S

▪ Last alphabet in model : C means Plate Steel, S means Stainless Steel.

## How to Order :

Limit Switch Box, Weather Proof Enclosure, 2-SPDT  
Mechanical Switch; with Bolt on Position Indicator

### Enclosure

2. Enclosure - (LSBG)
3. Weather proof - (LSBG)
4. Explosion proof(E Exd IIB T6) - (LSBX)
5. Explosion proof(E Exd IIC T6) - (LSBX)

### Switch type

**LSBG / LSBX - 3 1 0 N**

**Bolt on  
Position  
Indicator**

#### Mechanical switch

- 10 2-SPDT
- 11 3-SPDT
- 12 4-SPDT
- 13 2-SPST
- 14 2-DPDT
- 15 2-SPDT + Potentiometer
- 16 2-SPDT + Signal unit (4-20mA)

#### Proximity sensor

- 20 P & F NJ2-V3-N
- 21 Autonics. PS17-5DNU
- 22 P & F NJ4-12GM-N
- 23 NBB2- V3

#### Reed type proximity sensor

- 30 General type