

# КОНТРОЛЛЕРЫ ПОЛОЖЕНИЯ КЛАПАНА LSB-7000



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**With built-in solenoid valve**



**Explosion-proof robust valve position monitor with built-in solenoid and more feedback options and designed to provide an outstanding performance under harsh working environments**

### Features

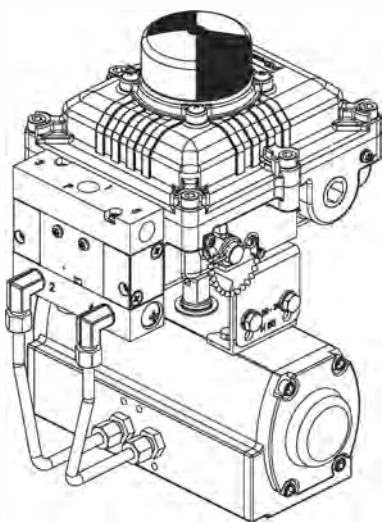
- ▶ Flameproof ATEX / IECEx / TR-CU / KC Ex d IIB+H<sub>2</sub> T6
- ▶ Rugged aluminum die-cast or stainless steel housing
- ▶ Compact single unit with built-in solenoid valve
- ▶ More economical in costs and simple wiring to a single unit comparison with separate installations of explosion proof limit switches and explosion proof solenoid valve
- ▶ Auto / Manual button easy to convert
- ▶ NAMUR mounting shaft or fork lever shaft adjustable for a non-NAMUR pneumatic actuator

### Options

- ▶ 4 x SPDT mechanical limit switch
- ▶ 4 x P&F proximity sensor
- ▶ 2 x Hermetically-sealed magnetic sensor
- ▶ 4 - 20mA output position transmitter

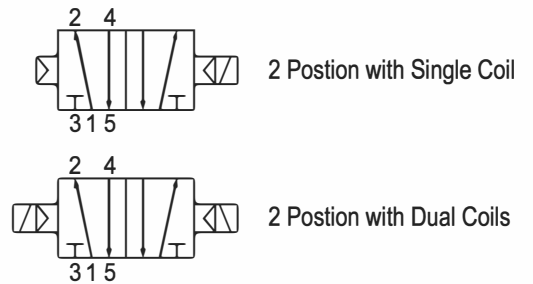
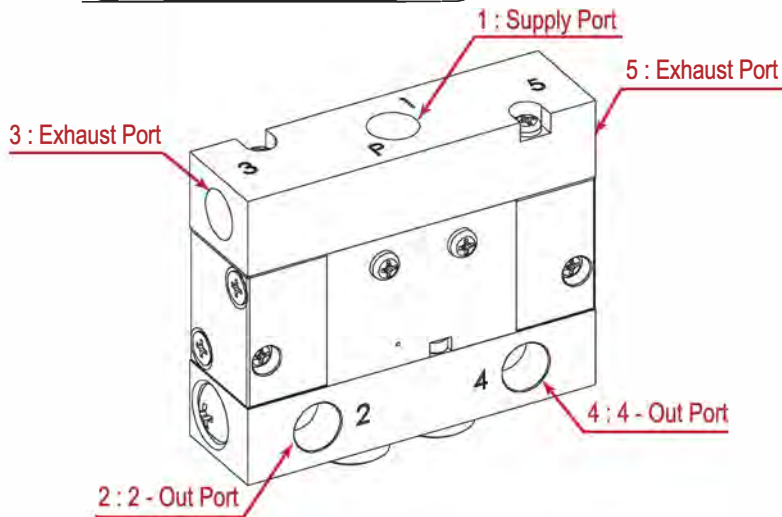
### Specifications

Model	LSB-7000	LSB-7100	LSB-7200
Explosion proof / Protection Class	ATEX / IECEx / TR-CU / KC - Ex d IIB+H <sub>2</sub> - IP66&67		
Operating Air Pressure	1.5 ~ 10 bar		
Air Supply Pressure	Max. 10 bar		
Mechanical Switches/Proximity Sensors	See page 5		
Operating Voltage of Solenoid Valve	24 VDC / 48 VDC / 110 VAC / 220 VAC		
Manual Override of Solenoid Valve	Push button type		
Response Time of Solenoid Valve	25 ms		
Coil Insulation Class	Class F		
Operating Temperature	-30 ~ +75 °C		
Pneumatic Connections	PT(Rc) 1/4, NPT 1/4		NTP 1/4
Electrical Connections	PT 1, NPT 1 PT 3/4, NPT 3/4, PF 1/2, NPT 1/2		NPT 1, NPT 3/4, NPT 1/2
Body Material	Aluminum die-cast		Stainless steel 316
Solenoid Valve Body Material	Aluminum die-cast	Stainless steel 316	
Weight	2.5 kg	3.5 kg	5.8 kg



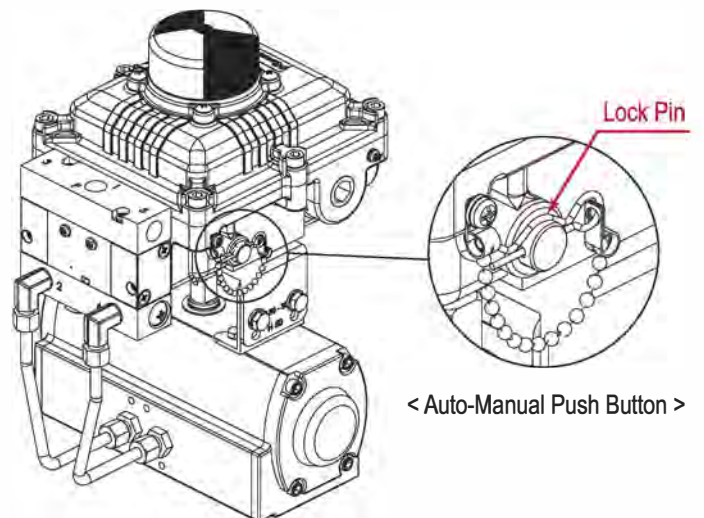


## Solenoid Valve



< Symbols of Operation >

Supply Air		Filtered, compressed, dry and non-oiled air
Supply Air Pressure	2 position with single coil	1.5 ~ 9.9 bar
	2 position with dual coils	1.0 ~ 9.9 bar
Eff. Sectional Area (5 kgf/cm <sup>2</sup> )		19.0 mm <sup>2</sup>
Manual Override		Push button type
Response Time		25 ms or less
Max. Working Frequency		5 c/sec
Power Consumption		AC : 4.5 / 3.6VA (60Hz/50Hz) DC : 2.8W
Coil Insulation Class		Class F or equivalent
Permissible Voltage Variation		±10% of rated voltage
Lubrication		Not required



< Auto-Manual Push Button >

# Specifications of Switches / Sensors

## Mechanical Switches



< SPDT Mechanical Switch - GSM >

< SPDT Mechanical Switch - V7/V15 >

< DPDT Mechanical Switch - 22104 >

Maker	Standard
Switch type	SPDT (Form C)
Contacts	Silver-plated
Approvals	UL, CSA
Electrical Rating	
16 amps / 250 VAC	
16 amps / 8 VDC , 10amps / 30 VDC	
Operating Temp.	-30 ~ +130°C

Maker	Honeywell
Switch type	SPDT (Form C)
Contacts	Silver-plated or gold-plated
Approvals	UL, CSA
Electrical Rating	
Silver : 16 amps / 125 / 250 VAC	
Gold : 0.1 amps / 125 / 250 VAC	
Operating Temp.	-40 ~ +125°C

Maker	Licon
Switch type	DPDT (Form CC)
Contacts	Silver-plated
Approvals	UL, CSA
Electrical Rating	
10 amps / 125 / 250 VAC	
10 amps / 28 VDC	
Operating Temp.	-30 ~ +80°C

## Proximity Sensors



Part Number / Maker	NJ2-V3-N / P&F
Switching element function	NAMUR NC
<b>Nominal Ratings</b>	
Nominal voltage	8.2 VDC
Switching frequency	0 ~ 1000 Hz
Hysteresis	0.01 ~ 0.1 mm
Current consumption	
Measuring plate not detected	> 3 mA
Measuring plate detected	< 1 mA
Operating Temperature	-25 ~ +100°C

Part Number / Maker	NJ2(4)-12GK-SN / P&F
Switching element function	NAMUR NC
<b>Nominal Ratings</b>	
Nominal voltage	8 VDC
Switching frequency	0 ~ 2000 Hz
Hysteresis	3%
Current consumption	
Measuring plate not detected	> 3 mA
Measuring plate detected	< 1 mA
Operating Temperature	-40(-50) ~ +100°C

## Magnetic Proximity Sensors



Part Number / Maker	MS Series / Power-genex
Switch type	SPDT (Form C)
Contacts	Rhodium / Tungsten
Approvals	UL, CSA
Electrical Ratings	
MS20 : 830 mA / 24VDC, 180 mA / 120VAC	
MS25 : 1 A / 24VDC, 200 mA / 120VAC	
MS100 : 2 A / 24VDC, 3 A / 120VAC, 1.5 A / 240VAC	
Operating Temperature	-40 ~ +130°C

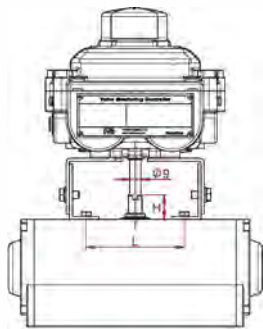
Part Number / Maker	ESI-V3-CR / Euroswitch
Switch type	SPDT (Form C)
Contacts	Rhodium
Approvals	ATEX / IECEx / INMETRO Ex ia IIC T6
Electrical Ratings	
830 mA / 24VDC, 180 mA / 120VAC	
Ex : Ui = 30V, Ii = 250mA, Pi = 1.3w	
Operating Temperature	-20 ~ +80°C

Switch Box Type	Body Material	Switches / Sensors	Position Transmitter	Explosion Proof	Beacon / Indicator	Electrical Connections	Number of Electrical Connections	Feedback Shaft	Mounting Bracket	Coil type	Power Supply	Pneumatic Connections
LSB-7 000 Explosion-proof type (built-in solenoid v/v)	0 Aluminum die-cast	(Amp@24VDC) A (2) MS-25 (1A) B (4) MS-25 (1A) C (2) MS-20 (0.8A) D (4) MS-20 (0.8A) E (2) MS-100 (2A) F (4) MS-100 (2A) G (2) ESI-V3-CR H (4) ESI-V3-CR I (2) MONAS I(2A)	0 None	K KC Ex d IIB+H <sub>2</sub> - IP67	N None	A PF 3/4	2 2 pcs	Rotary type N NAMUR shaft	Rotary type N None	N None	N None	N None
	1 Aluminum die-cast switch box / 316SS solenoid V/V	T 4~20mA output signal	A ATEX / IECEx Ex d IIB+H <sub>2</sub> - IP67	A Beacon indicator 90° (Open / Close)	B NPT 3/4	3 3 pcs	F Fork lever	M Multi-size Bracket	S Single coil	A 220VAC	1 PT 1/4	
	2 316SS switch box & solenoid V/V	Honeywell switches J (2) SPDT(SILVER) K (4) SPDT(SILVER) L (2) SPDT(GOLD) M (4) SPDT(GOLD)			T T port indicator	C PF 1/2	4 4 pcs	Linear type B Stroke 5 ~ 65mm	R Other on request	B 110VAC	2 NPT 1/4	
		Other on request			L L port indicator	D NPT 1/2		C Stroke 5 ~ 130mm		C 24VDC		
						E M20 x 1.5		D Stroke 80 ~ 200mm		D 48VDC		
						I M25 x 1.5						
						F PF 1						
						G NPT 1						

## Dimensions

## Valve Position Monitor

< LSB-7000 >

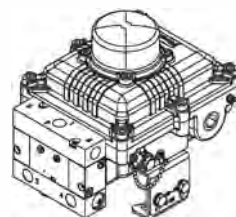
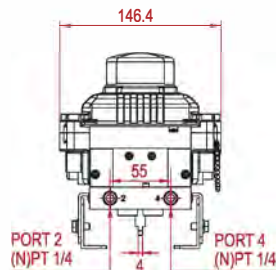
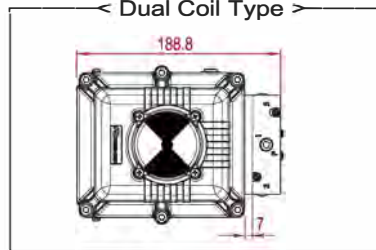


### Size Variation of Multi-Size Bracket

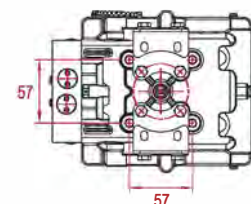
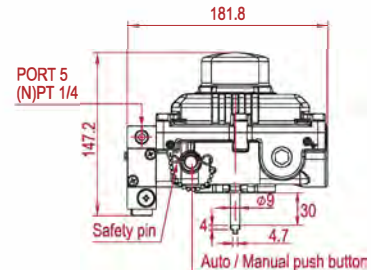
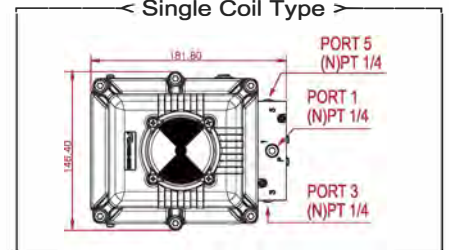
- 1) 80 x 30 x 20 (H), 4) 130 x 30 x 20 (H)
- 2) 80 x 30 x 30 (H), 5) 130 x 30 x 30 (H)
- 3) 80 x 30 x 50 (H), 6) 130 x 30 x 50 (H)

H : Rotary Actuator Shaft Height  
L : Length ( 80 or 130mm )

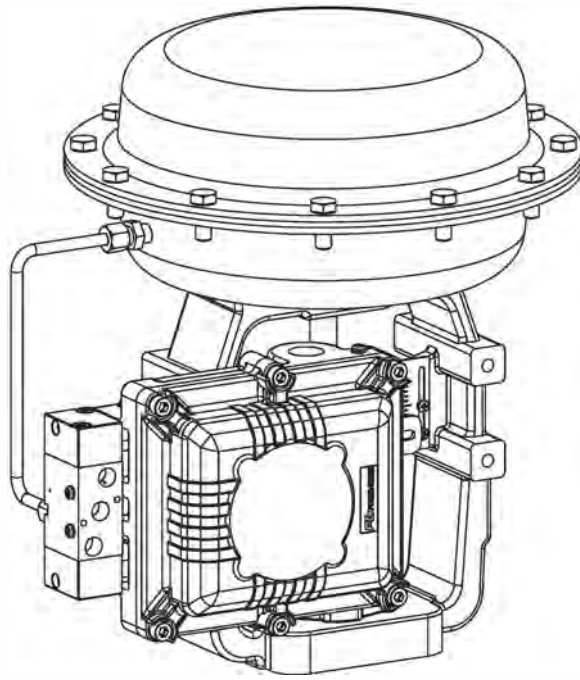
< Dual Coil Type >



< Single Coil Type >



# *Applications for Linear Valves*



**< Linear type - LSB-7000 >**



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