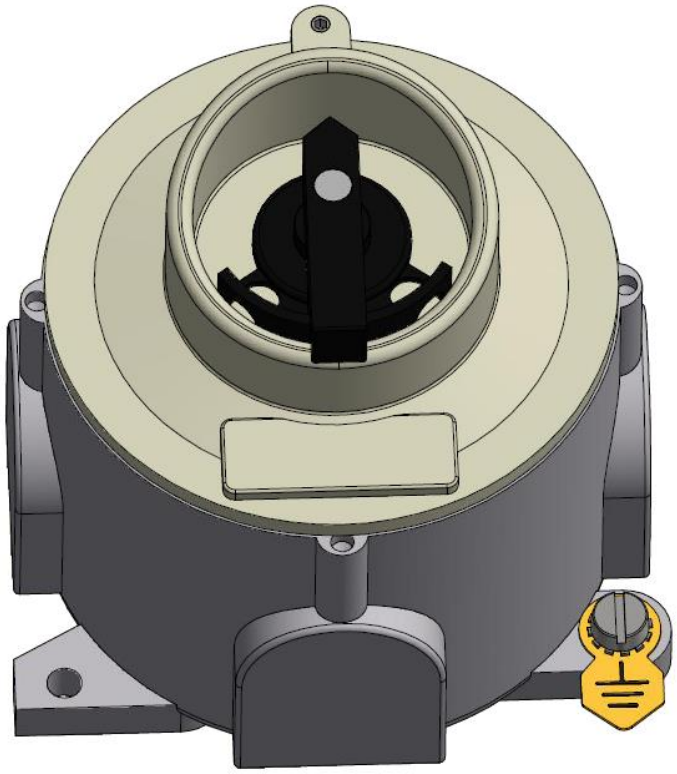
SHOMAL Engineering & Manufacturing Co. (PIROOZ)

ماشین سازی شمال پیروز

Safety maintenance and operating instruction

LJB1S

Explosion protected switch



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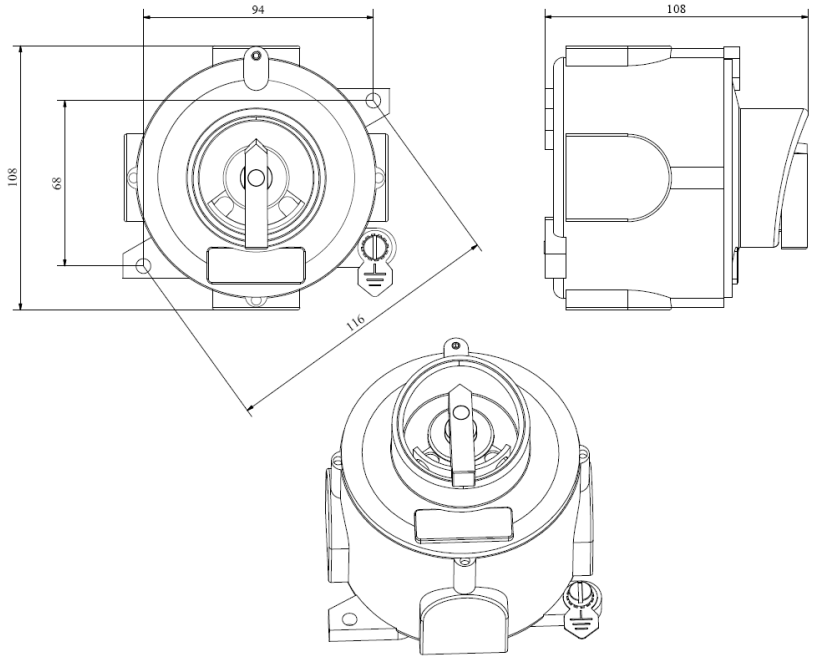
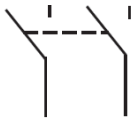
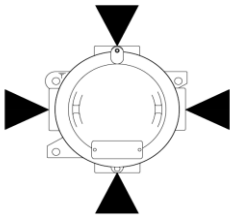
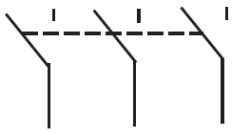
THIS GUIDE SHOULD BE READ CAREFULLY BEFORE INSTALLATION.
INCORRECT INSTALLATION AND USE OF THE SWITCH CAN INVALIDATE THE GUARANTEE!

Product description:

The LJB1S is an Exd explosion protected control unit made of aluminum alloy and equipped up to 3pole internal switch to switch and control circuit in area 1,2,20 and 22

DIMENSIONS & TYPES
Figure 1



Type	Contacts / poles		Ie / Ve Max.	Entry arrangement	Entry size(s)
LJB1S - A	0 - 1		20A / 690v		Entries shall be threaded with any combination of following thread forms/sizes: A. Standard: ISO M16 to M25 to BS 3643 pt2 1.5mm pitch (medium fit 6H) B. Alternative: 1/2 NPT to 3/4 NPT to ANSI/ASME B1.20.1, gauging flush to 2 turns large, with L1 plug gauge. Unused entries shall be plugged with a suitable "Ex d" certified stopping plugs. Max. number of entries = 4 Max.
LJB1S - B	1 - 2		20A / 690v		
LJB1S - C	1 - 0 - 2		20A / 690v		
LJB1S - D	0 - 1		20A / 690v		

The cable entry holes must be fitted with suitably certified cable glands or suitably certified stopping plugs, which are capable of maintaining the IP66 rating of the equipment.

1. Safety Instructions (!)

For skilled electricians and instructed personnel in accordance with national regulation, including the relevant standard and, where applicable, in accordance with EN 60079-17 on electrical apparatus for explosive atmospheres.

1.1 The switch must not be operated in Zones 0 and 20.
1.2 The switch shall not be used in dust layers > 50 mm to EN IEC 60079-0:2018 & EN/IEC 60079-14:2014
1.3 The temperature class and gas group marked on the switch shall be observed.
1.4 The technical data indicated on the switch are to be observed
1.5 Changes of the design and modifications to the switch are not permitted!
1.6 The switch shall be operated as intended and only in undamaged and perfect conditions.
1.7 Only genuine **SEMC** spare parts may be used for replacement.
1.8 Repairs that affect the explosion protection may only be carried out by **SEMC** or a qualified "electrician" and will subsequently have to be checked by an "expert" in compliance with the respective national regulation.
1.9 Prior to taking switch into operation, they shall be checked in accordance with the "Taking into operation" of this manual.
1.10 Before the initial operation, any foreign matter shall be removed from the switch.
1.11 Do not keep these operating instructions inside the switch during operation.
1.12 **The national safety rules and regulations for prevention of accidents and the following safety instructions which are marked with an (!) in theses operating instructions will have to be observed.**

2. Conformity with standards

This explosion protected switch meets the requirement of EN IEC 60079-0:2018, EN/IEC 60079-1:2014 &, EN 60079-31:2014 & IEC 60079-31: 2013.It also complies with the EU Directive for "Apparatus and protective systems for use in explosive atmospheres" (2014/34/EU).

It has been designed, manufactured and tested in accordance to the state of the art and according to DIN EN ISO9001:2008.
The switch is suitable for use in explosive atmospheres, Zone 1 and 2 acc. to EN/IEC60079-10-1&2:2015. And Zones 21 and 22 acc. EN IEC 60079-0:2018 & EN/IEC 60079-14:2014 and EN 60079-31:2014 & IEC 60079-31: 2013
The relevant code of practice is according to EN/IEC 60079-14:2014

3. Technical data

Field of application

CAT II 2G for use in zone 1 or zone 2. Area as defined in EN/IEC 60079-14:2014.
CAT II 2D for use in zone 21 or 22. Area as defined in EN IEC 60079-0:2018

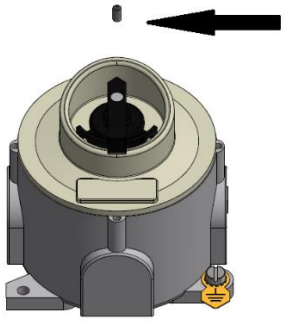
Full equipment	
EU type examination certificate	TÜV 11 ATEX 7152 X
Marking acc. to 2014/34/EU directive	⟨Ex⟩ II 2 G D Ex db IIC T6 Gb Ex tb IIIC T85°C Db
IEC certificate of conformity	IECEx TUR 11.0019 X
Marking acc. to IEC	Ex db IIC T6 Gb Ex tb IIIC T85°C Db
Ingress protection	IP66
Material	Light metal
Entries	See table 1
Dimension	See figure 1
Maximum ambient temperature	-20°C TO +40°C -30°C TO +55°C

4. Installation (!)

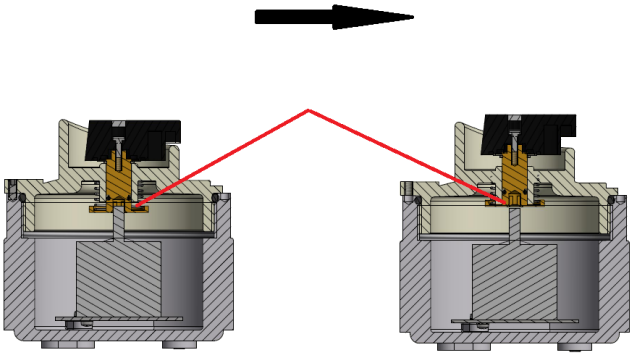
The respective national regulations as well as the general rules of engineering which apply to the installation and operation of explosion protected apparatus should be observed. Transport and storage of the switch is permitted in original packaging only

Opening and closing the switch (!)
The opening of switch always shall be without voltage; the switch is well closed when covers are completely threaded on the switch enclosure.
Dimensions for mounting: See figure 1
Accessories: See **SEMC.** Catalogue or contact SEMC sales department

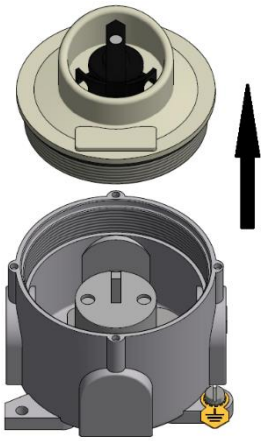
- Opening process
  Due to mechanical engagement of switch handle and switch shaft with rotary switch' shat, it is impossible to open the door by unscrewing it before disengage this connection.
  Following steps shall be taken before opening the door:
  a. Unscrew the lock screw.



  b. Pull out rotary handle 4mm (it stops after this course mechanically) and hold it



  c. Turning CCW door while holding out rotary handle



- Closing process
  Closing process is inverse of opening process
  a. Pulling up rotary handle
  b. Turning CW door on body while pulling up rotary switch
  c. Release rotary handle to engage it mechanically with rotary switch
  d. Screw locking screw to preventing door from tuning back and opening

Cable entries (!)

Mounting the selected cable entries (e.g. cable glands or seals) according to type and dimensions of the main connection cable, following their manufacturer instructions. The cable entries devices have to be the same protection mode of the enclosure, where they are mounting "Ex db IIC"
The cable entry holes must be fitted with suitably certified cable glands or suitably certified stopping plugs, which are capable of maintaining the IP66 rating of the equipment.

5. Taking into operation

Prior to taking the apparatus into operation, the test specified in the relevant national regulations should be carried out.
Apart from that, the correct functioning and installation of the apparatus in accordance with these operating instructions and other applicable regulations will have to be checked.
Incorrect installation and use of the switch can invalidate the guarantee.

- The IP rating of the enclosure must be maintained for the area of use, by the use of correct arrangement of Cable /gland /sealing arrangements and in accordance with the installation codes as detailed in EN/IEC 60079-14:2014, and this operating instructions.
- Where other certified components are part of assembly, the user must take in to account any limitations listed on relevant certificates.
- The enclosure shall be maintained at IP66 suitable sealing washer under the shoulder of the cable gland.
- All unused entry holes must be sealed by a suitable certified stopping plug with the same protection level of the switch.
- The apparatus must not be modified without reference to SEMC as this will invalidate certification.

6. Maintenance (!)

Observe the national rules applicable to maintenance, servicing, inspection and repairing of apparatus for explosive atmospheres, as well as the general rules of engineering.
For dust explosive application, pay special attention don't have present dust layers above 5mm on side of the apparatus.

Servicing

Before opening the enclosure make sure that the apparatus is disconnected from the supply voltage, or take appropriate protective measures.
The required maintenance intervals depend on the respective application and will therefore have to be determined by the user dependent on the conditions of use.

When servicing, in particular those components that affect the explosion protection, will have to checked, e.g.:

- The flameproof joints have to be clean, undamaged, without corrosion and perfectly greased.
- Gaskets/O-rings for their perfect conditions.
- Cable entries without corrosion.
- Terminals and blanking plugs for their firm fix.

If during servicing it proves that repairs are necessary, the Repair / Overhaul / Modification of this manual will have to be observed.

For servicing the internal switch, the manufacturer operating instruction shall be observed.

The flame paths of these apparatus have to be greased permanently in order to ensure protection in front of the corrosion, water ingress and seize-up problems. Cleaning rest of grease and corrosion no using sharp metallic devices who can damage the surface of the joint, and greasing they using appropriate grease thermally and Chemically stable with a drop point > 200ºC

Inspection/ Repair / Overhaul / Modification (!)

The national's regulations have to be observed

Repairing
The national's regulations have to be observed. The tasks of repairing have to be made by "qualified" personnel.

Repairs may only be carried out with genuine ***SHOMAL*** spare parts.
Repairs that affect the explosion protection may only be carried out by ***SHOMAL*** or a qualified electrician in compliance with the applicable rules.
Modifications to the apparatus or changes of its design are not permitted.

Earth connection

This switch has an external earth facility suitable for the largest conductor size used in the switch.

- In the case of painted switch, consideration must be given to the removal of paint e.g. under the earth screw/washers of the switch which may lead to corrosion of the enclosure and potential reduction in earth protection. This area following installation must be protected against corrosion.

DISPOSAL / RECYCLING

SEMC cares for the environmental protection and recommends therefore to dispose properly of the packing and wrapping of its goods, according to prescriptions and regulations in force in the destination country. The differential waste disposal strongly recommended. When the apparatus is disposed of, the respective national regulations on waste disposal will have to be observed.