



# Elektrosvit

Svatobořice, a. s.

## TECHNICAL DESCRIPTION - ASSEMBLY INSTRUCTIONS - DIMENSIONAL SKETCH

**Non-explosive luminaire SIRIUS LED**

**Type: 591 44 01(K), 591 44 02(K)**



**II 2G Ex db eb op is IIC T4-T5 Gb**

**II 2D Ex tb op is IIIC T81/90°C Db**

**IP 66**

The product complies with EN 60079-0:2018, EN 60079-1:2015, EN 60079-7:2016, EN 60079-31:2014, EN 60079-28:2016 and ATEX Directive 2014/34/EU.

### Use of the luminaire:

The luminaire is designed to illuminate indoor, under shelter and outdoor industrial areas with ambient temperature -40°C to +50°C for 591 44 01 and -40°C to 55°C for 591 44 02. Its design meets the requirements of ČSN 33 2000-5-51 ed. 3 for use in environments with water AD6, with foreign solids AE6, with corrosive or polluting substances AF1, AF2, AF3, with mechanical stress AG2 and with vibrations AH2.

It is also designed for environments according to the substances processed or stored in accordance with the requirements of the relevant regulations:

**EN 60079-0:2018**

**EN 60079-1:2015**

**EN 60079-7:2017**

**EN 60079-31:2014**

**EN 60079-28:2016**

### Description of the luminaire:

The luminaire consists of a housing, LED module and a flange with protective glass. In the case of type K, the luminaire also includes a protective basket. The body is made of cast AlSi alloy. A steel hanger is fixed at the top with two screws. On the side of the body there is a connection compartment in "e" explosion-proof design, with a connection terminal block, two cable glands Ex M 25x1,5(M 20x1,5), closed with a lid with silicone flat seal.

An aluminium base plate with LED module is fixed in the luminaire body. The LED module consists of LED light sources and a cooling unit. The LEDs are powered by 2 TRIDONIC LCO 90 W 200-1050mA 165V one4all NFC C EXC3 drivers, which are set to a max. current of 330mA for 591 44 01 and 250mA for 591 44 02 (see driver wiring picture). Between the LED PCB and the driver there is a 500 mA roller fuse for 591 44 01(K) and 315 mA for 591 44 02(K) (see driver wiring diagram). The luminaires cannot be regulated! A flange is screwed into the housing, the thread of which forms the joint of the "d" hinge. The flange is made of AlSi alloy and is sealed with a polyurethane sealant with protective tempered glass, for types 591 44 01(K) and 591 44 02(K).

The surface of the luminaire is treated with polyester powder paint in RAL 1005. The steel components are galvanised.

The light source is a 100/80 W LED PCB, using Philips Lumileds LUXEON diodes and a light output of 152 lm/W for 591 44 01 and 153 lm/W for 591 44 02.

### Assembly and installation:

The luminaire can be hung or fixed by a bracket with a 16 mm diameter eye. When mounting, suitable fixings (steel anchors or screws) must be used. After removing the connection cap, the cable is fed through the gland and connected to a terminal block sized for connecting conductors with a minimum cross-section of 1,5 mm<sup>2</sup> and a maximum cross-section of 2,5 mm<sup>2</sup>. The 5-pole terminal block allows 3 phases to be alternated. Inside the connection space there are also 3 terminals for connecting protective conductors with a cross section of max. 2.5 mm<sup>2</sup>. On the outer surface of the luminaire, there is a terminal for conductive bonding with a conductor with a minimum cross section of 1.5 mm<sup>2</sup> and a maximum cross section of 4 mm<sup>2</sup>, with a solid core (wire) or a rope core (wire) with a press-fitted mesh Ø6.2 mm<sup>2</sup>. If the luminaire is wired as an end luminaire, it is necessary to replace the second cable gland with a blanking screw or insert a blanking plug into the unused gland. These elements are supplied on special order. The cable gland is designed for cables with an outer diameter of 10-16 mm. On request, the luminaire can be equipped with a gland for cables with an outer diameter of 6-12 mm. A maximum of 10 luminaires can be connected consecutively on a single branch. Assembly and installation must comply with the above conditions, local operating regulations and other applicable regulations.



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## **Maintenance of the luminaire:**

The luminaire does not require extraordinary maintenance. Cleaning of the light-active parts is carried out in the normal way.

When inspecting the explosion-proof closure according to the preventive maintenance plan, particular care must be taken to ensure that:

- the parts forming the non-explosive closure were in an undamaged state
- the luminaire had all the screws properly tightened
- damaged or missing elastic washers were replaced by new ones
- the glass flange was completely screwed into the body and secured with a screw
- the seating surfaces of the hinge parts, including the threaded joints, are clean, undamaged and must be protected against corrosion by a fine vaseline coating which must be renewed according to the preventive maintenance plan
- cable glands are properly tightened
- damaged end seals have been replaced with faultless ones

**The surface of the luminaire must be cleaned regularly so that a layer of dust does not settle!**

**Warning:** *Spare parts and light sources other than those specified in the instructions must not be used in the luminaires!  
For fixing the luminaire all elements as described in the picture must be used!  
All screws of the luminaire must be properly tightened, seals must be intact!  
If the seals and rubber grommets are damaged, they must be replaced!  
The manufacturer accepts no liability for the consequences caused by any arbitrary interference with the luminaire.*

## **Spare parts: (on request)**

Sealing ring No. 421.2563A Ø175 x 5

Flat gasket (connection terminal block) Art. no. 451.2561

Pin: Ex eb M25x1,5 HSK-M-Ex KEMA 99ATEX6971 X

Ex eb M20x1,5 HSK-M-Ex KEMA 99ATEX6971 X

Protective glass in flange no.2-99.6310 (clear glass)

Protective basket no.2-99.6325

Shield No.v 154.5041/2

## **Accessories on request:**

Blanking plug Ex e M 25x1,5 HSK-V-Ex BVS 03 ATEX E 298

Blanking screw Ex e M 25x1,5 V-MS-VMQ-Ex DMT 03 ATEX E049

Blanking screw Ex e M 20x1,5 V-MS-VMQ-Ex DMT 03 ATEX E049

Blanking plug Ex e M20x1,5 HSK-V-Ex BVS 03 ATEX E 298

Reducer Ex e M25x1,5/M20x1,5 RSD-MS-Ex DMT 03 ATEX E049

Bracket 4-99.5903

## **Packaging, delivery, storage:**

The packing carton is filled with sealing bubble wrap.

During delivery, the product must be protected from external influences, impact and moisture penetration.

The product must be stored indoors with a maximum relative humidity of 75% and a temperature of 5 °C - 30 °C.



## Supporting documentation on delivery:

Technical description - assembly instructions - dimensional sketch

Declaration of conformity

Certificate of quality and completeness - Warranty certificate

## Technical data

Type of luminaire:	591 44 01 (K)	591 44 02 (K)
Explosion-proof designation:	II 2G Ex db eb op is IIC T4 Gb II 2D Ex tb op is IIIC T90°C Db	II 2G Ex db eb op is IIC T5 Gb II 2D Ex tb op is IIIC T81°C Db
ATEX number:	FTZÚ 20 ATEX 0092X	
Light source:	LED DPS SIRIUS 100/80W	
LED Type:	LUXEON 3030 HE Plus	
LED driver	2x TRIDONIC LCO 90W 200–1050mA 165V one4all NFC C EXC3	
Luminous flux rating:	152 lm/W	153 lm/W
Luminous flux:	15025 lm	11475 lm
Wattage:	99,2 W	75 W
Voltage:	198 – 264 V AC / 176 – 280 V DC	
Current:	0,44 A	0,35 A
Protection Class:	I	
Degree of protection:	IP66	
Connecting cable diameter range:	6-12 mm for M20x1,5 10-16 mm for M25x1,5	
Temperature class and surface temperature:	T4 90°C	T5 81°C
Operating temperature:	-40°C to +50°C	-40°C to +55°C
Weight:	15 kg	
Packaging:	350x330x330	

## Special conditions of use:

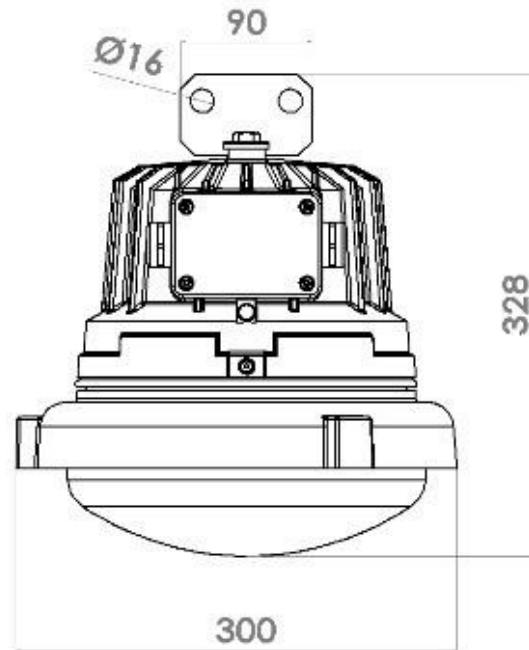
1. The verified values of the maximum width and minimum length of the structural joints of this closure are different from the corresponding minimum or maximum values given in the technical standard. The manufacturer must be contacted for information on the joint dimensions.
2. Ambient temperature: -40°C ≤ Ta ≤ +50°C for 591 44 01 (K)  
-40°C ≤ Ta ≤ +50°C for 591 44 02 (K)
3. For explosive atmospheres with dust, the shutter must be installed in such a way as to prevent the risk of creeping discharge.



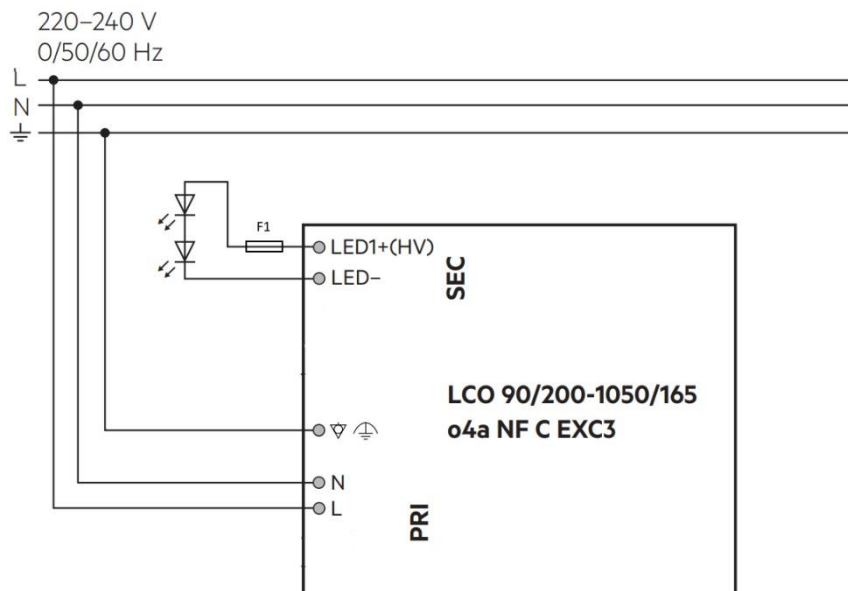
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## Dimensional sketch:



## Driver and LED PCB wiring



The picture shows the wiring of only one circuit. There are 2 circuits in the luminaire.