


# EEx Electro-Optic Level Switch



## Summary

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 Modena - Italy CE 0470 Ex II 1 G EEx ia IIC T6 Nemko 02ATEX087 Production Year: 2006 Rev 04 <a href="http://www.teklab.biz">www.teklab.biz</a>	<b>Safe Parameters:</b> Ii: 160mA Ui: 30 VDC Pi:1.2W	Temperature range: -20÷+60°C Operating Voltage: 9÷28 VDC Max. output sink current: 40mA OUTPUT TYPE: OPEN COLLECTOR CONTACT: <input type="checkbox"/> NC in air / <input checked="" type="checkbox"/> Code 5125 CONTACT: <input type="checkbox"/> NO in air / <input checked="" type="checkbox"/> Code 5124
	<b>CABLE COLORS:</b> BN: Power; BK: Output; BU: GND (Brown) (Black) (Blue)	The device must be mounted only by qualified persons in strict accordance with the technical brochure. Failure to observe this warning could result in serious injury or damages.

**Ex II 1 G EEx ia IIC T6**  
**Nemko 02ATEX087**

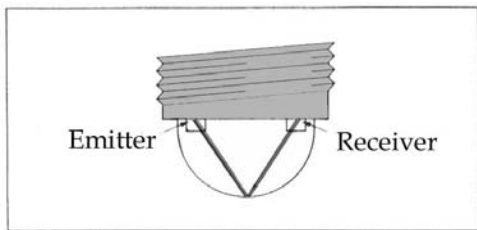
### Safety notes

The sensor has been manufactured to achieve the **ia** intrinsically safety, and to work in potential explosive environment – **IIC Group** – in the **T6** (85°C) temperature class.

The device shall be mounted **only by qualified and authorized persons**.

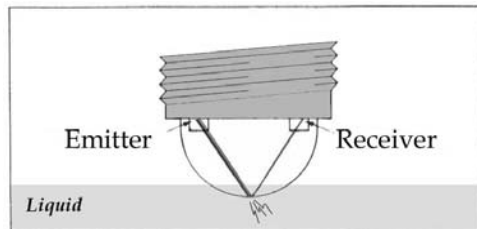
Since the sensor primary use is in hazardous location, **an appropriate intrinsically safe interface must be used and installed in strict accordance with this technical brochure**. Failure to observe this warning could result in serious injury or damages.

### Principle of functioning



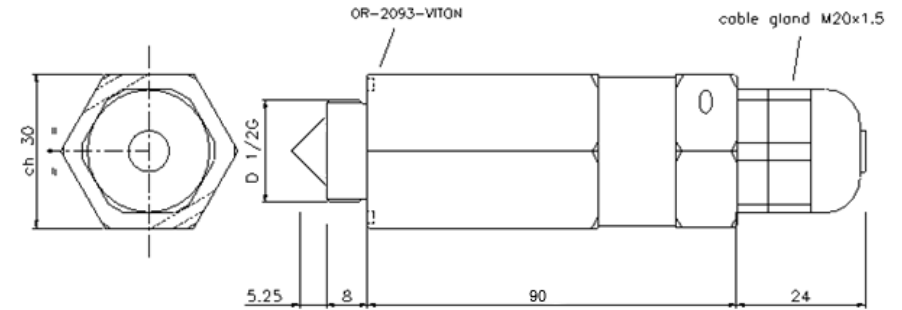
The sensors produced by Teklab contain an infrared-ray emitter and an optical receiver.

In air (liquid not present), all the light emitted is reflected - internally - by the dome and then redirected to the receiver.



When the liquid reaches the sensor, a big amount of the light emitted is lost in the liquid because of the change of the refractive between the dome and outside. So the amount of light picked up by the receiver changes and the sensor senses the presence of the liquid.

### Mechanical drawing

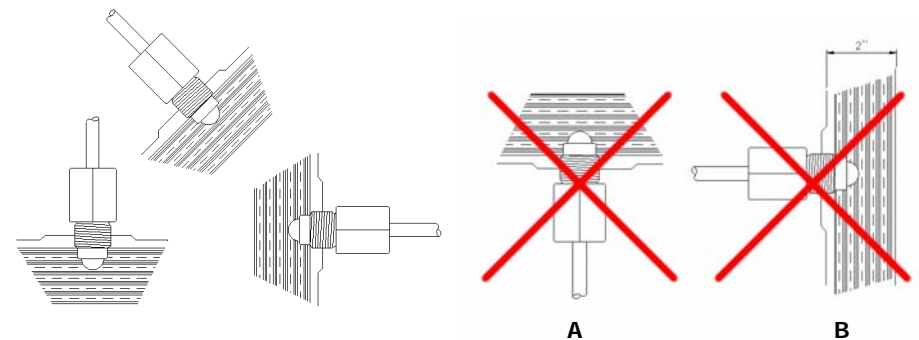


### Case features

Body materials:  
 Dome materials:  
 Available Body threads:

Stainless Steel AISI 303, 304, 316L  
 Glass  
 from 3/8" up to 3/4" GAS cylindrical;  
 from 3/8" up to 3/4" GAS conic;  
 from 3/8" up to 3/4" NPT;  
 from 5/8"-24 up to 1" 1/8-18 UNEF;  
 from M18 up to M30 ISO metric.

### Mounting Positions

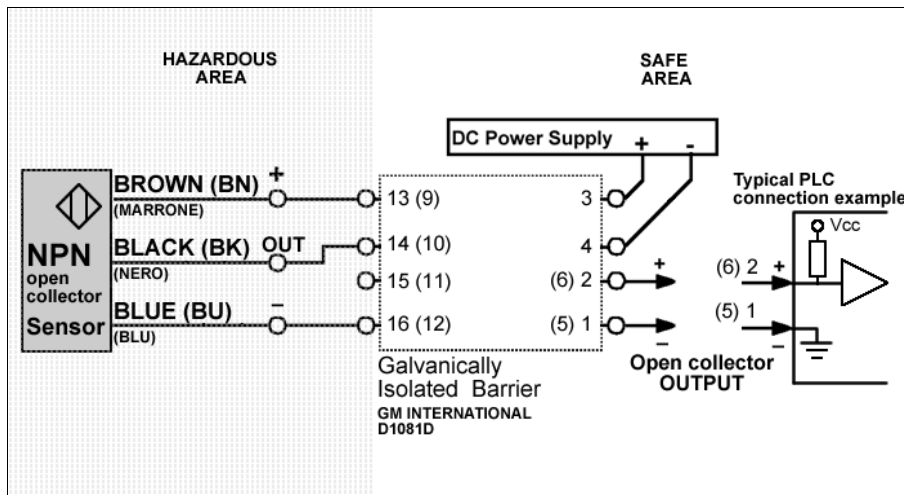
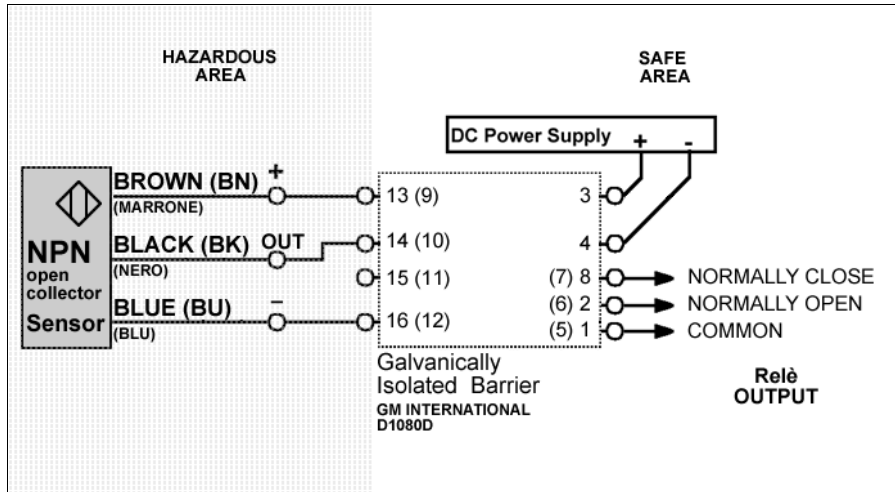


### WARNING

- Do not install sensor close to infrared sources.
- Do not install the sensor in a stagnation point of the liquid (*Example A*).
- Dome of the sensor must be at least 2" (~ 50mm) from any reflective surfaces (Please contact Teklab for lower distances). (*Example B*).
- Do not use to detect freezing liquids

## Wiring

The sensor is available with the following output types:  
 ✓ NPN OPEN COLLECTOR



## ATTENTION

Leads connection only as indicated in the picture: any other combination may damage the sensor in an irreversible way.

## Electrical features

Power supply	9 ÷ 28 Vdc
Work Temperature	-20°C ÷ 60°C
Storage Temperature	-20°C ÷ 60°C
Output Type	Open collector
Max. output NPN O.C. sink current	40 mA
Cable capacitance	140 pF/m
Cable inductance	1,25 µH/m
Cable resistance	39 mΩ/m

NOTE. Cable parameters can change from a production batch to another but they can never exceeds the values reported above

## Code number

Output Mode	Code Number
Normally Open in air	5124
Normally Closed in air	5125

## Safety Parameters

Ui = 30VDC, Ii = 160mA, Pi = 1,2W  
 Ingress Protection Code: In front IP68, 20 bar 30min

## Chemical compatibility

The sensor body material resists to several aggressive chemical agents; **it is strictly to the customer pertinence, the test of compatibility between the sensor itself and the liquid in which the sensor will be used.**

## Maintenance

Sensor may require a periodic cleaning of the photo-sensible dome surface. Eventual solids deposits shall be removed with a mild detergent.

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