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Subject to technical change.
All dimensions in mm (inch).

We assume no liability for content errors.
Different variations than specified are possible.
Please contact our technical consultants.

Safety notes / Technical support

Special attention must be paid to warnings and notes as follows:

- Installation, maintenance and commissioning may be accomplished only by qualified technical personnel.
- The product must be used only in the manner outlined in this instruction manual.



WARNING

Relates to a caution symbol on the product: A failure to observe the necessary precautions can result in death, serious injury and/or considerable material damage.



WARNING

Relates to a caution symbol on the product: Risk of electric shock.



WARNING

A failure to observe the necessary precautions can result in death, serious injury and/or considerable material damage. This symbol is used, when there is no corresponding caution symbol on the product.

CAUTION A failure to observe the necessary precautions can result in considerable material damage.

Safety symbols (in manual and on product)



CAUTION: refer to accompanying documents (manual) for details.



Earth (ground) Terminal



Protective Conductor Terminal

Technical support

Please contact your local supplier (for address see www.uwtgroup.com). Otherwise you can contact:

UWT GmbH
Westendstr. 5
D-87488 Betzigau
Germany

Tel.: 0049 (0)831 57123-0
Fax: 0049 (0)831 76879
info@uwtgroup.com
www.uwtgroup.com

Introduction

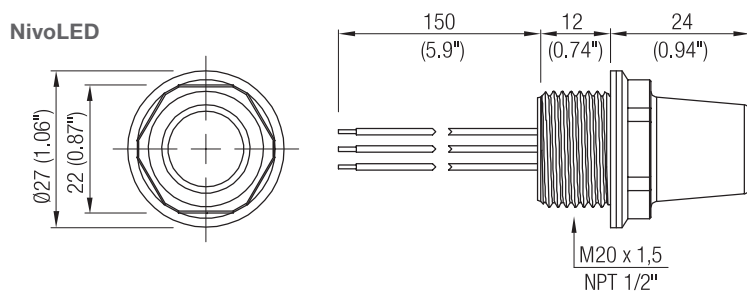
Indented use

- The signal lamp is a certified explosion-proof equipment.
- Suitable for installation in an external electrical equipment that meets the respective approvals:
 - Installation in a housing cable entry, housing wall or cover
 - Installation in control panels or control cabinets

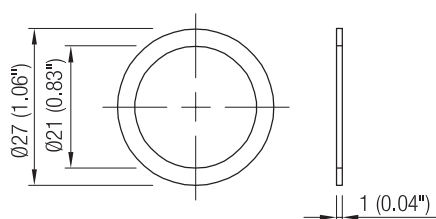
Features

- LED Signal lamp
- High luminosity, visible from all sides
- 2-color (red/green)
- ATEX, IEC-Ex, cFMus approvals

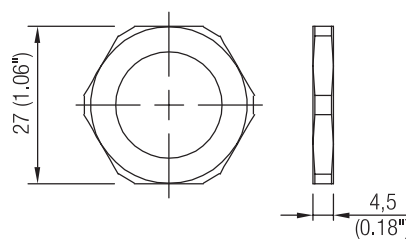
Dimensions



Flat sealing
 For connection thread M20 x 1.5



Counter nut M20 x 1.5 Metal
 Accessory



Technical data

Electrical data

Power supply	20 .. 30V DC 90 .. 127V 50-60Hz 195 .. 253V 50-60Hz incl. ±10% of EN 61010-1
Installed load	0.3 W Version 20-30V DC 1.5 VA Version 90-127V 50-60Hz 3 VA Version 195-253V 50-60Hz Values apply when one color is powered (nominal use)
Connecting wires	0.38 mm ² (AWG 22) Isolation ETFE, Ø 1.1 mm (0.04")
Overvoltage category	II
Protection class	II
Pollution degree	2 (backside of the signal lamp)

Mechanical data

Connection thread	M20 x 1.5 NPT 1/2" ANSI B1.20.1
Luminous colors	Red / green
Material housing	PVDF
Material flat sealing	Silicone (for connection thread M20 x 1.5)
Degree of protection	IP66, Type 4X
Weight (ca.)	20 g (0.04 lbs)

Operating conditions

Ambient temperature	-40 .. +60°C (-40 .. +140°F)
Vibration	1.5 (m/s ²) ² /Hz according to EN 60068-2-64
Relative Humidity	0 - 100%, suitable for outdoor use
Altitude	max. 3000 m (9843 ft)
Position of use	Any position
Expected product lifetime	Following parameters have a negative influence on the expected product lifetime: High ambient- and process temperature, corrosive environment, high vibration

Approvals

General Purpose	CE cFMus	EN 61010-1
Dust Hazardous Locations	ATEX IEC-Ex cFMus	II 2D Ex tb IIIC T120°C Db Ex tb IIIC T120°C Db DIP Cl. II, III, Div. 1, Group E,F,G, T4A
Gas Hazardous Locations	ATEX IEC-Ex cFMus	II 3G Ex ec IIC 120°C (T4) Gc Ex ec IIC 120°C (T4) Gc NI Cl. I, Div. 2, Group A-D, T4A
EMC	EN 61326-1	
RoHS conform	According to directive 2011/65/EU	

Technical data

Transport and Storage

Transport

Observe the instructions as stated on the transport packaging, otherwise the products may get damaged.

Transport temperature: -40 .. +80°C (-40 .. +176°F)

Transport humidity: 20 .. 85%

Transport incoming inspections must be carried out to check for possible transport damage.

Storage

Products must be stored at a dry and clean place. They must be protected from influence of corrosive environment, vibration and exposure to direct sunlight.

Storage temperature: -40 .. +80°C (-40 .. +176°F)

Storage humidity: 20 .. 85%

Mounting

Safety Instructions

Type plate The technical data are given on the enclosed type plate. In Ex applications, this type plate can be attached near the NivoLED.

Chemical resistance against the medium If the equipment is likely to come into contact with aggressive substances, then it is the responsibility of the user to take suitable precautions that prevent it from being adversely affected, thus ensuring that the type of protection is not compromised. Aggressive substances: e.g. acidic liquids or gases that may attack metals, or solvents that may affect polymeric materials. Suitable precautions: e.g. establishing from the material's data sheet of the signal lamp that it is resistant to specific chemicals.

Installation of the NivoLED in an external electrical equipment



The signal lamp may only be operated when installed in the housing of an external equipment.

The NivoLED signal lamp and the electrical equipment are independent from each other. This results in following relevant topics:

- **Technical data:**
 Both equipments must be operated within the limits of their technical data. This applies to the supply voltage, ambient temperature and, if installed in Ex applications, the maximum surface temperature / temperature class.
- **Approvals:**
 Both approvals are independent from each other. Both equipments may only be operated under the respective permitted approval conditions. In case of installation of NivoLED with Ex-Approvals in an electrical equipment without Ex-Approvals, the Ex-Approval of the NivoLED does not affect the approval of the external electrical equipment.
- **Type plate:**
 The respective type plate with the contents listed therein is only valid for the equipment listed on the type plate.
- **Responsibility:**
 The responsibility for compliance with the above mentioned terms remains with the user and cannot be transferred to the manufacturer of the NivoLED. This also applies, if the NivoLED is installed in the external equipment by the manufacturer of the NivoLED.

Mounting

Installation in a mating thread

Mating thread

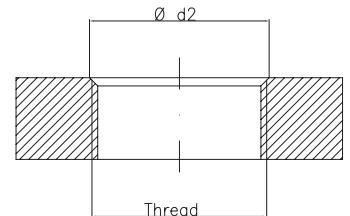
The NivoLED thread may only be screwed into a matching mating thread of the same type.

Dimensions mating thread:

- Version M20 x 1.5 - Thread: M20 x 1.5; \varnothing d2: max. 21 mm (0.83")
- Version NPT 1/2" - Thread: NPT 1/2"; \varnothing d2: -

All threads tolerance class 6g or better.

Version M20 x 1.5 - min. 2 threads fully engaged.
 Version NPT 1/2" - see sealing.



Tightening torque

The tightening torque for the installation of the NivoLED is:

- Version M20 x 1.5: 4.5 Nm
- Version NPT 1/2": 4.5 Nm

The signal lamp may only be tightened on the hexagonal area. Use appropriate tool to prevent damage of the hexagonal surface during installation.

Sealing

- Version M20 x 1.5:

For dust and gas applications:

The seal to comply with ingress protection is by use of the flat seal (attached). For safety reasons, the manufacturer's original flat seal must be used. There must be a suitable sealing surface flatness (max. 0.3 mm, roughness max. Ra 3.2) on which the seal can rest.

Additional requirements for use in Hazardous Locations: see chapter "Notes for use in Hazardous Locations".

- Version NPT 1/2":

For dust applications:

Sealing via threads - min. 3.5 threads fully engaged.

Additional requirements for use in Hazardous Locations: see chapter "Notes for use in Hazardous Locations".

For gas applications:

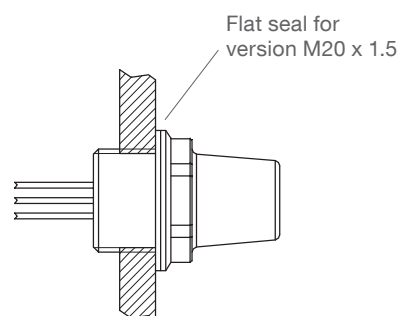
Sealing realized by user - Ingress protection sealing on the thread to the interface shall be realized in the application by appropriate sealing measures (e. g. use of PTFE sealing tape).

Additional requirements for use in Hazardous Locations: see chapter "Notes for use in Hazardous Locations".

Mechanical protection

The back side of the signal lamp must be protected against mechanical damage and UV exposure.

Installation in a mating thread



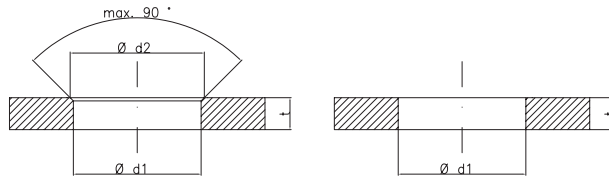
Mounting

Installation in wall with bore hole and counter nut M20 x 1.5

Bore hole diameter of the wall

Dimension bore hole:

- Ø d1: 20 ^{+0,5} mm (0.79 ^{+0.02} ")
- Ø d2: max. 20.5 mm (0.81")
- t: min. 0.5 mm (0.02"), max. 6 mm (0.24")



Note: required wall thickness in the application depends on the wall material and must be defined by the user.

Tightening torque

The tightening torque for the installation of the NivoLED is: 4.5 Nm
 The signal lamp may only be tightened on the hexagonal area. Use appropriate tool to prevent damage of the hexagonal surface during installation.

Counter nut

Material: Metal, coated or uncoated
 Thread: M20 x 1.5, min. 2 full threads

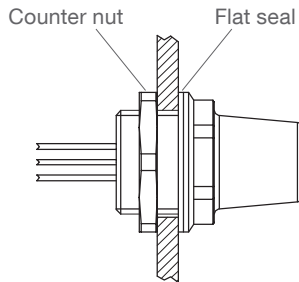
Sealing

The seal to comply with ingress protection is by use of the flat seal (attached). For safety reasons, the manufacturer's original flat seal must be used. There must be a suitable sealing surface flatness (max. 0.3 mm, roughness max. Ra 3.2) on which the seal can rest.
 Additional requirements for use in Hazardous Locations: see chapter "Notes for use in Hazardous Locations".

Mechanical protection

The back side of the signal lamp must be protected against mechanical damage and UV exposure.

Installation in wall with bore hole



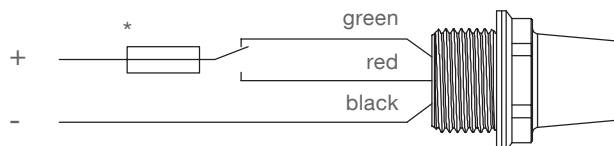
Electrical installation

! Safety Instructions

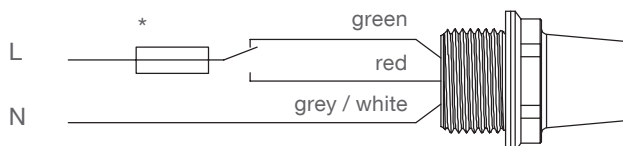
Handling	In the case of inexpert handling or handling malpractice the electric safety of the device cannot be guaranteed.
Installation regulations	The local regulations must be observed. With use of 24 V supply voltage, an approved power supply with reinforced insulation to mains is required.
Fuse	Use a fuse as stated in the connection diagram.
RCCB protection	In the case of a defect, the distribution voltage must automatically be cut off by a RCCB protection switch so as to protect the user of the device from indirect contact with dangerous electric tensions.
Wiring diagram	The electrical connections have to be made according to the wiring diagram.
Supply voltage	Compare the supply voltage applied with the specifications given on the attached type plate before switching the device on.
Connection terminals	The following applies to the connection terminals in the external equipment: <ul style="list-style-type: none"> • The clamping area must correspond to the cable cross-section of the strands of the signal lamp. A possible parallel connection with other circuits (insertion of several wires in the same terminal, if necessary using a double wire end sleeve) must be taken into account. • They must be designed for the maximum current and the operating voltage of the control lamp. A possible parallel connection with other circuits must be taken into account.
Treatment of the wires	<ul style="list-style-type: none"> • Shorten the wires to an appropriate length so that they fit neatly into the terminal compartment of the external equipment. • To insert several wires into the same terminal (parallel connection with other circuits), the use of a double wire end sleeve is recommended. • Make sure that the wires are only stripped so far, that bare strands do not protrude from the wire end sleeve or from the connection terminals. • Wire ends that are not used (e.g. when only one color is used) must be insulated accordingly (e.g. suitable shrinking tube, blind terminal). Cutting without additional insulation is not sufficient.

Electrical connection

Version
 20 .. 30V DC



Version
 90 .. 127V 50-60Hz
 195 .. 253V 50-60Hz



* Fuse: max. 4 A, fast or slow, HBC, 250 V

Wire colors:


Green / red corresponds to the luminous color

Grey present at version 90 .. 127V 50-60Hz


White present at version 195 .. 253V 50-60Hz

Maintenance

Frequent check

-  To ensure durable safety in Hazardous Locations and with electrical safety, following items must be checked frequently depending on the application:
- Mechanical damage or corrosion of any components
 - Tight sealing of the connection thread

Cleaning

-  If cleaning is required by the application, following must be observed:
- Cleaning agent must comply with the materials of the signal lamp (chemical resistance)
 - The cleaning process must be done in a way, that no mechanical damage can happen.

A possible accumulation of dust on the unit does not increase the maximum surface temperature and must therefore not be removed for purposes of maintaining the surface temperature in Hazardous Locations.

Function test

A frequent function test may be required depending on the application.

Observe all relevant safety precautions related with a safe work depending on the application (e.g. Hazardous Locations, electric safety).

The function test is carried out by a visual check for correct lighting with sufficient luminosity after applying the supply voltage

Production date

The production date can be traced by the batch number on the attached type plate. Please contact the manufacturer or your local distributor.

Notes for use in Hazardous Locations

General notes

Use of this Manual	<ul style="list-style-type: none"> For use and assembly, refer to the instructions in this Manual. It does contain all instruction as required by ATEX Directive 2014_34_EU, Annex II, 1/0/6.
Classification	<ul style="list-style-type: none"> The signal lamp has not been assessed as a safety related device (as referred to by Directive 2014_34_EU Annex II, clause 1.5).
Qualification of staff	<ul style="list-style-type: none"> Installation and inspection of the signal lamp shall be carried out by suitably trained personnel in accordance with the applicable code of practice.
Repair / Service	<ul style="list-style-type: none"> Repair of the signal lamp is not intended.
Certificates / List of standards	<ul style="list-style-type: none"> The certificate numbers have an 'X' suffix, which indicates that specific condition of use apply. Those installing or inspecting this equipment must have access to the certificates. See www.uwtgroup.com for the latest certificates See EU - Declaration of conformity for the list of standards valid for ATEX certificates.
Year of manufacturing	Marking on the attached type plate is done according to IEC 60062 as follows:

Year of manufacturing	2024	2025	2026	2027	2028	2029	2030	2031	2032
Marking code	S	T	U	V	W	X	A	B	C

! Specific conditions of use

Electrical connection	<ul style="list-style-type: none"> The electrical connection of the provided conductors shall be done considering the type of protection of the equipment / enclosure / cabinet to which the LED signal lamp is installed. All measures are to be considered related to the different possible variants of field wiring, e. g. use of ferrules. The conductors shall be fixed or routed inside the enclosure, so that no pulling force is applied to line feed-trough after installation.
Temperature	<ul style="list-style-type: none"> Internal heating or cooling of the equipment / enclosure / cabinet at the place of installation shall be considered when taken into account the permissible ambient temperature range.
Electrostatic charge	<ul style="list-style-type: none"> High or repeating charging processes must be excluded if the LED signal lamp is used in potentially hazardous dust atmospheres (zone 21 / EPL Db).

! Ambient Temperature, Surface Temperature, Temperature Class

The maximum surface temperature (or the temperature class) specifies the maximum device temperature that can occur in the event of a fault (according to the Ex definition).

Max. ambient temperature	Max. surface temperature	Temperature class
60°C (140°F)	120°C (248°F)	120°C (T4)

Notes for use in Hazardous Locations

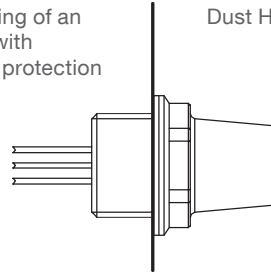
! Permitted zones (categories) for installation

	Applicable in Zone	Category	Equipment Protection Level (EPL)
Dust Hazardous Locations	21	2 D	Db
	22	3 D *	Dc
Gas Hazardous Locations	2	3 G	Gc

* In case of conductive dust additional demands for the installation are possible

Installation in Dust Hazardous Locations

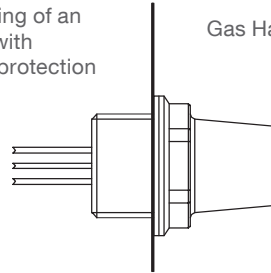
Area inside the housing of an external equipment with appropriate Dust-Ex protection method



Dust Hazardous Locations

Installation in Gas Hazardous Locations

Area inside the housing of an external equipment with appropriate Gas-Ex protection method



Gas Hazardous Locations

! Installation

Ex protection and sealing

Maintenance of protection types Ex t and / or Ex e is ensured by installation in accordance with the specifications in the chapter "Mounting".

Disposal

The product consists of materials which can be recycled, details of the used materials see chapter "Technical data - mechanical data". Recycling must be done by a specialised recycling company.