Operating and installation instruction for beacon Quadro F12-3G/3D

1. Description and use

The beacons Quadro F12-3G/3D are designed for requirements under industrial conditions and as visual danger signallers. The beacons suitable for indoor and outdoor use generate bright light pulses which achieve a high attention effect. The beacons are suitable for use in potentially explosive atmospheres of the zone 2 according to EN 60079-10-1 and zone 22 according to EN 60079-10-2. They can be used for gases of the temperature classes T1, T2, T3 and T4 as well as for environments with non-conductive dusts. The surface temperature of the housing does not exceed +105°C.

Standard conformity:
(Explosion protection)

Guideline 2014/34/EU (ATEX)
EN IEC 60079-0
EN 60079-15
EN 60079-31

Identification marking:

Special application conditions X

According to the requirements of EN IEC 60079-0, the operating equipment is suitable for uses with a low degree of mechanical hazard. Therefore care is to be taken to ensure that the beacons are fitted adequately protected from mechanical impact. A protecting cage is not mandatory.
Follow the instructions on installation and cleaning carefully in order to prevent any potential dangerous electrostatic charges building up on the casing surface in explosive gas atmospheres.
Only clean the device with water and protect it against unintentional and dry rubbing.
Prevent touching with insulating objects. For these reasons, an installation height of > 2.50 m or comparable protective measures are suggested.
Protect the device from direct air streams. This could lead to a transmitted charge.
The beacon is designed to be connected to permanent connection cables.
The cable screw connections are suitable for cables and lines installed in a stationary arrangement.
Opening the equipment after installation is not intended. If it should nevertheless become necessary to open the device, this can be done by a qualified electrician. The function of the device can only be guaranteed if the lens and base part are correctly joined together.
Routine inspection and testing is necessary before restarting. The test for vapor tightness in accordance with EN 60079-15, par. 23.2.3.2.1.2 is part of this test (change of a negative pressure from 3 kPa to 2.7 kPa not faster than in 27 s). Cable glands can be used as a test connection for the test. These must be closed with an ATEX plug after the test.

2. Technical Data

Elektrische Daten / Electrical Data / Caractéristiques électriques					
Bemessungs-spannung	Rated voltage	Tension nominale	230 V AC	115V AC	24V DC
Funktionsbereich	Voltage range	Domain de tension de service	195 V .. 253V	95 V .. 127 V	18 V .. 30 V
Netzfrequenz	Frequency	Fréquence du réseau	50Hz / 60Hz		
Stromaufnahme	Current consumption	Courant	90 mA	140 mA	360 mA
Einschaltstrom begrenzt auf	Inrush current limited to	Courant de fermeture du circuit limité	AC: < 7A / 150 µs	DC: < 5A / 2 ms	
Blitzfolge	Flash frequency	Fréquence d'éclair	0,83 Hz = 50 Blitze/ min. (50 flashes/min.)		
Blitzenergie	Flash energy	Energie de l'éclair	7,5 J		
Lebensdauer der Blitzröhre	Lifetime of flashtube	Durée de vie de l'ampoule du circuit limité	Nach 8.000.000 Blitzen noch ca. 70% Lichtemission After 8.000.000 flashes still approx. 70% light emission Après 8.000.000 d'éclairs, encore environ 70% de luminosité		
MTBF	MTBF	MTBF	25.000.000 Blitze/ flashes/ éclairs - Normale Bedingung, ohne Vibration, 25°C, trocken, Einschaltzyklus S50 - Normal condition: no vibration, 25°C, dry, duty cycle S50 - Condition normale, sans vibration, 25° C, sec, cycle de commutation S50		
Einschaltdauer	Duty cycle:	Durée de fonctionnement	100 %		
Mechanische Daten / Mechanical Data / Caractéristiques mécaniques					
Schutzart	Ingress protection	Indice de protection	IP 66 (EN 60529) - Montage beliebig/ mounting position arbitrary/ Position de montage au choix		
Schlagfestigkeit	Resistance against impact	Résistance aux chocs	IK08 (EN50102)		
Schutzklasse	Protection class	Type de protection	II		
Kabeleinführung	Cable entry	Entrée de câble	seitlich/ sideways/ lateralement: 2 x M20		
Anschlussklemmen	Terminals	Bornes de raccord	Federzugbügel/ Cage Clamp/ Etrier à ressort 0,08-2,5mm²		
Gewicht	Weight	Poids	0,6 Kg		
Material des Gehäuses	Material of housing	Matériau du boîtier	Polycarbonat (PC)		
Material der Haube	Material of lens	Matériau du capot	Polycarbonat (PC)		
Farbe des Gehäuses	Color of housing	Couleur du boîtier	Lichtgrau/ Light grey/ Gris clair - RAL 7035 Option: Rot/ Red/ Rouge - RAL 3000		
Platine	PCB	Platine	In Schutzlack getaucht/ Immersed in protective lacquer / Plongée dans un vernis protecteur		
Klimatische Daten / Climatic Data / Caractéristiques climatiques					
Betriebstemperatur	Operating temperature	Température de service	- 20 °C .... + 45 °C		
Lagertemperatur	Storage temperature	Température de stockage	- 40 °C .... + 70°C		

3. Allgemeine Zulassungen / General Approvals / Admissions générales

Zulassungen gelten für gekennzeichnete Geräte/ valid only for marked devices/ valables pour les appareils signalés

<table>
<tr><td>Bauproduktverordnung (305/2011/EU)

Construction Product Regulation (CPR) (305/2011/EU)

Règlement sur les Produits de construction (305/2011/UE)

CE 24
1438</td><td>DoP-No.: 01CPR2024-05-14
<table>
<tr><td>Bemessungsspannung</td><td>Rated Voltage</td><td>Tension assignée</td><td>24 V DC</td></tr>
<tr><td>Spannungsbereich gemäß EN54-23</td><td>Voltage range in accordance with EN54-23</td><td>Plage de tension de service selon EN54-23</td><td>18 – 30 V DC</td></tr>
<tr><td>Haubenfarbe</td><td>Lens color</td><td>Couleur du capot</td><td>rot, klar
0,83 Hz = 50 Blitze/ min.
Red/ clear
0,83 Hz = 50 flashes/ min.
Rouge/ transparent
0,83 Hz = 50 eclairs/ min.</td></tr>
<tr><td>Signalisierungsbereich</td><td>Coverage range</td><td>Plage de signalisation</td><td>EN 54-23 Kategorie/ Category/ Catégorie O/
30084-200</td></tr>
<tr><td>Umweltschutzklasse</td><td>Environmental protection class</td><td>Classe de protection environnementale</td><td>Typ B
Type B</td></tr>
<tr><td>Einbaulage</td><td>Installation position</td><td>Position de montage</td><td>s. 30084-200
beliebig</td></tr>
</table></td></tr>
<tr><td>CNBOP</td><td>5341/2024</td></tr>
</table>

4. General safety information

<table>
<tr><td> </td><td>DANGER - Danger to life due to electric shock
Voltage-carrying devices and exposed connection cables may cause electric shocks and serious accidents.
➢ Only trained and authorized electricians may work on electrical connections.
➢ Disconnect all supply lines from mains before installation and secure them against reconnection. Always ensure absence of voltage.
➢ The operating voltage must only be applied when the housing is firmly closed.</td></tr>
<tr><td> </td><td>WARNING - Danger due to unauthorized use of the devices
Improper use may lead to serious accidents.
➢ Ensure that the connection cable is protected against pulling and twisting during installation.
The devices are only intended for fixed installation.</td></tr>
<tr><td> </td><td>DANGER - Danger due to damage to the devices
Non-compliance with the information on the type plate can lead to serious accidents.
➢ Always observe the information on the type plate when installing and maintaining the devices.</td></tr>
<tr><td> </td><td>CAUTION - Risk of injury due to sharp edges or heated components
➢ Wear suitable personal protective equipment (PPE) for installation, assembly or service/maintenance work.
➢ Lay wires well away from sharp edges, corners and internal components; avoid collisions with parts.</td></tr>
<tr><td> </td><td>CAUTION - Impairment of vision
When using the sounder/flashing light combination:
➢ Avoid constant, direct glances into the activated lights to prevent impairment of vision.
➢ Unexpected triggering of the flash can lead to startled reactions.</td></tr>
</table>

5. Mounting and Installing

Installation requirements:

The beacons are to be installed in conformity with the current edition of the EN 60079 or in accordance with equivalent IEC specification.

EN 60079-10-1	Explosive atmospheres - Part 10-1: Classification of areas - Explosive gas atmospheres
EN 60079-10-2	Explosive atmospheres - Part 10-2: Classification of areas - Combustible dust atmospheres
EN 60079-14	Explosive atmospheres - Part 14: Electrical installations design, selection and erection

Applicable national constructor provisions are to be observed in the case of all work on the beacon.

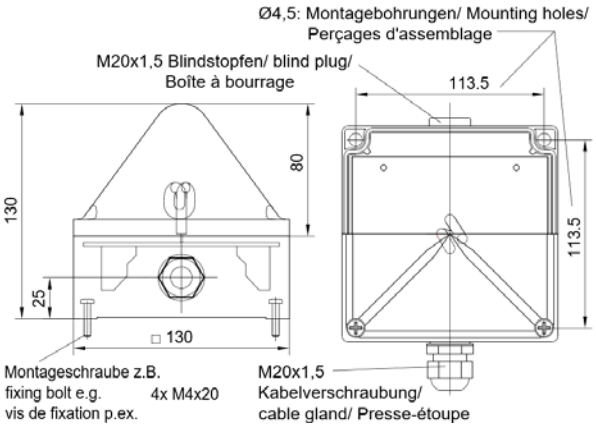
Do not open when there is an explosive atmosphere possible!

DC voltage: The device is provided with a reverse polarity protection. No function when polarity is reversed!

By loosening of the four recessed head screws in the hood it can be lifted off upwards. The fastening drill holes of the housing are then accessible. Mounting can be achieved by means of these fastening drill holes or with the enclosed brackets. The mounting position is arbitrary.

Suitable fastening material must be used.

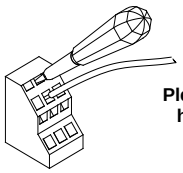
The devices are designed for indoor and outdoor use.
The chemical resistance of the polycarbonate should be taken into account.



The following instructions and the instructions according to the special conditions should be taken into account:

- The light must not be operated even for a short time at ambient temperatures or operating voltages outside the ranges indicated in the specifications.
- During closing of the housing care is to be taken to ensure a clean and undamaged gasket. Only in that way can the protection from vapour and thus the explosion-proofing of the housing be ensured.
- The housing locking screws are to be tightened with a torque of approx. 1.5 Nm in at least two passages crosswise.

Wire connection



Please use the enclosed isolation hoses for the protection of the connecting strand.

To ensure the protection of the housing from vapour during continuous use,
cable screw-connections of the following types are to be used.
Hummel HSK-K-Ex-Active, M20x1,5, certificate of conformity BVS 14 ATEX E 025 X:

- Sealing range 7 – 12 mm, Hummel Art.-No.: 1.292.2016.31 (mounted and tested in the works)
- Sealing range 10 – 14 mm, Hummel Art.-No.: 1.292.2016.30

Minimum requirements:
Explosion protected cable screw-connection for an admissible temperature range from -20°C … +85°C, equipped with an O-ring and a degree of protection of IP66.

A long connecting screw thread is necessary > 12 mm.

The blind plug can be replaced by the above-mentioned cable screw-connection.

During installation it is to be ensured that the connection lines are protected from tension and torsion. The cables and lines are to be selected with regard to the surface temperatures occurring and to their protected installation. The temperature at the cable entry point does not exceed 70°C.

6. Taking into operation

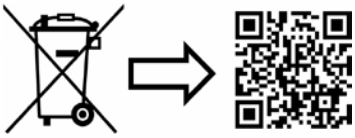
Warning: The flashing light must not be operated at ambient temperatures higher than +45°C even for a short time. After connecting it to the power supply and fixing/closing the housing in place, the beacon is ready for operation. A subsequent test is made to ensure satisfactory functional integrity.

7. Maintenance, Service and Ordering Spare Parts

The beacon is maintenance-free. Opening the housing and replacing the seal is not intended. As a principle, repairs are to be carried out at the manufacturer's factory.
Original spare parts can be replaced by a qualified electrician. If it should nevertheless become necessary to open the device later, the special application conditions "X" must be observed.
Do not open the device if a potentially explosive atmosphere may be present!
Wait for at least ten minutes after switching off the power before opening up the housing.
Do not use abrasive, solvent-containing or chemically aggressive cleaners for cleaning the outside. (Material of housing and lens: Polycarbonate)
Do not use sharp tools for cleaning and especially avoid scratching the lens.
Do not clean with high pressure.
Replacement of the device after 10 years or 8,000,000 flashes (whichever comes first) is recommended.

8. Decommissioning, dismantling and disposal

Observe the Safety information during all work on the device.



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