



GNSS Ex-d active antenna with pole mounting Jam-Resistant Zone 1/21 – 2/22



ATEX 95
Directive 94/9/EC



ATEX 137
Directive 1999/92/EC



Key Features

- Explosion-proof, flameproof and waterproof, corrosion-resistant housing filtering for harsh RF jamming environments
- Proven extra rugged, reliable
- Cable connector TNC, provided with any cable length
- GPS or GPS L1/L2/L5 + GLONASS G1/G2 /BEIDOU/GALILEO versions
- Wide power supply voltage range
- ATEX certificate : ISSeP14ATEX047

Labeling

Certificate number : **ISSeP14ATEX047**

Ex II 2 G Ex db IIC T6 Gb

Ex II 2 D EX tb IIIC T65°C Db IP66

-20°C ≤ Ta ≤ +50°C

Product brief

Heol Design has designed a performing Ex-d GNSS antenna, for systems requiring high performance in Ex zones 1/21 and 2/22 offshore environments. Whatever the environment, this GNSS antenna will provide, year after year a perfect solution for fixed-site, rooftop, GNSS Timing/positioning systems.

The antenna is housed in a flameproof box designed to withstand exposure to corrosion (use of aluminium marine resistant and anti-corrosive polyester coating), stainless steel fixations (as well as the pole), shock, excessive vibration, extreme temperatures, rain, snow and sunlight. The globe is highly resistant to impacts.

The low loss cable is provided with on-request length (tested with cables length from 2m to 200m, connected to GNSS receiver), and will easily pass through Roxtec modules to enter the non-Atex zone.

Finally you will find a TNC antenna connector, to connect directly to GNSS receiver. A lightning arrestor can be also mounted between the TNC connector and the GPS receiver.

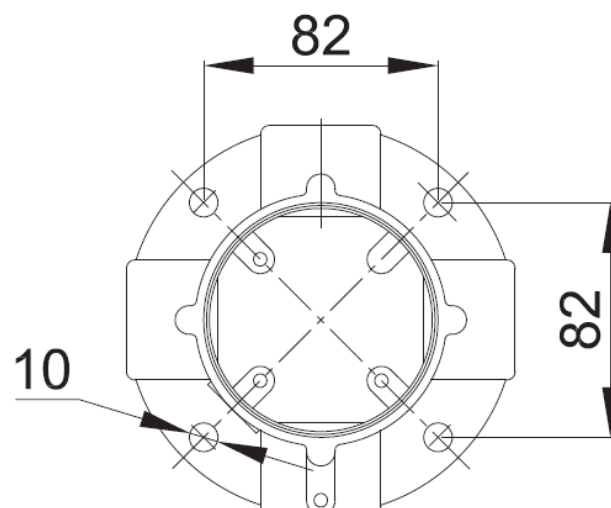
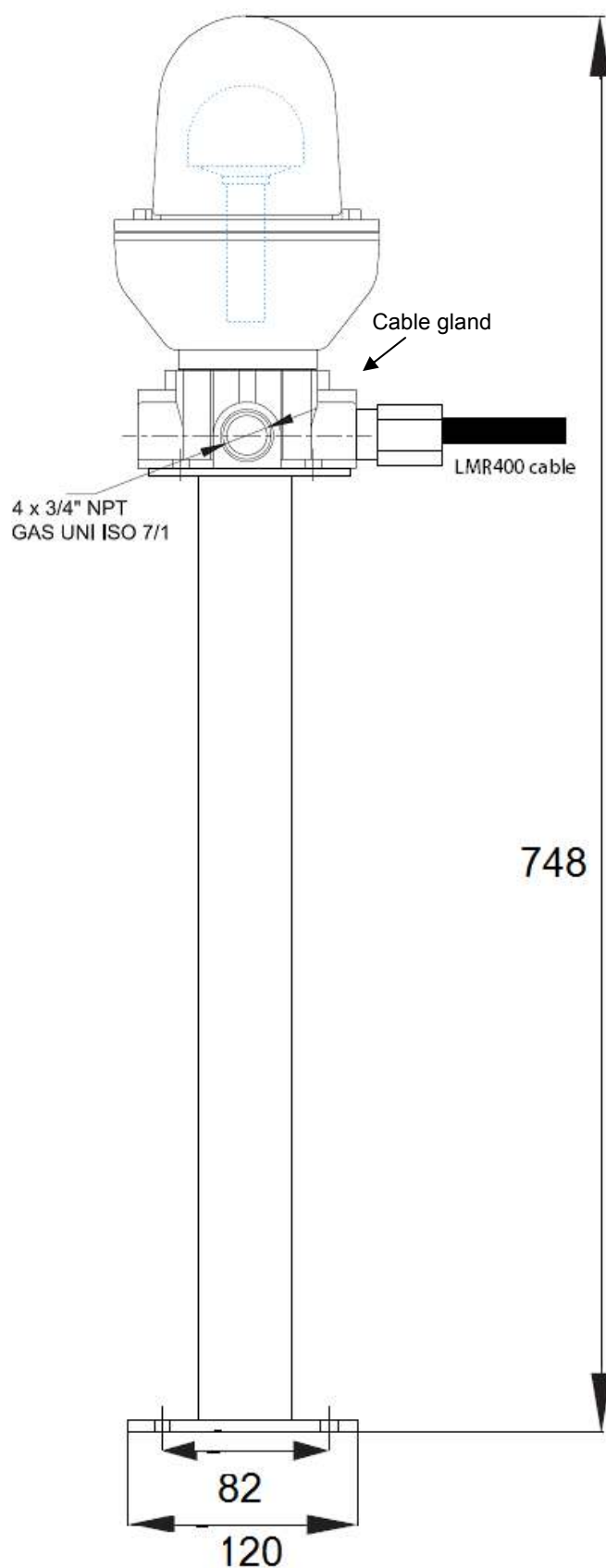
Heol Design can provide antenna with GPS, GLONASS, GALILEO, BEIDOU satellites constellations frequency ranges.

Environmental characteristics

Ambient Operating Temperature	-20/+50 °C
Humidity	EN60068-2-30 (hot/humid cycles)
Corrosion	EN60068-2-11 (salt mist tests)
Waterproof	IP66
Mounting	4 screws M10, 82 mm spacing
Weight	4.9 kilograms (without cable)
Cable Weight	0.05 kilogram/m (RFC 240) 0.1 kilogram/m (RFC 400)
Cable diameter	6.1mm (RFC 240) 10.3mm (RFC 400)

Electrical/Performance characteristics

Version	GPS L1	GPS L1/GLONASS G1/ GALILEO E1/BEIDOU B1	GPS L1/L2 + GLONASS G1/G2 + GALILEO E1/E2/E5b/E6 + BEIDOU B1/B2/B3	GPS/QZSS L1/L2/L5 + GLONASS G1/G2/G3 + GALILEO E1/E5 + BEIDOU B1/B2 + NavIC-L5 +L-band correction
Part number	HDA-6643-Ex	HDA-6645-Ex HDA-6652-Ex	HDA-6644-Ex	HDA-6646-Ex
Prime power	2.5 to 10 VDC	2.5 to 10 VDC	3.3 to 12 VDC	2.5 to 16 VDC
Power consumption	25mA	25mA	50mA	25mA
Gain	40dB (±1dB)	HDA-6645-Ex : 40dB HDA-6652-Ex : 50dB (±1dB)	40 to 42 dB (±2dB)	37 dB (±1dB)
Frequency	1575.42MHz (±1.023MHz)	GPS L1 1575.42 ±3MHz BDS B1 1561 ±3MHz GLO G1 1602 ±3MHz	1164MHz to 1254MHz + 1557 MHz to 1606MHz	1164MHz to 1254MHz + 1557 MHz to 1606MHz
Noise	2.5dB typical (25° ±5°C)	2.5dB typical (25°C ±5°)	2dB max (25°C ±5°C)	2.5dB max (25°C ±5°C)
Impedance	50 Ohm			
Az. coverage	360°			
El. coverage	0° to 90° elevation			

Mechanical:

The specifications in this document are subject to change without notice. Heol Design is not responsible for the operation or failure of operation of GPS satellites or the availability of GPS satellite signals.

Safety and Maintenance Instruction

This Safety Instruction is meant for skilled electricians and instructed personnel in accordance with national legislation, including the relevant standards and, where applicable, in accordance with IEC 60079-17 on electrical apparatus for explosive atmosphere. Read carefully this instruction before installation or maintenance.

1. Ex d Antenna must be installed and maintained in accordance with all standards regarding electrical installations in hazardous areas classified for explosive gas and/or dust atmospheres.
2. Avoid any dust accumulation.
3. The Ex d antenna must **not** be operated in zone 0 hazardous areas.
4. Ambient temperature, maximum voltage and maximum current must **not** exceed mentioned values on the tag plate .
5. Changes of the design and modifications to the equipment are **not** permitted.
6. The boxes shall be operated as intended and only in undamaged and perfect condition.
7. If box or part of box is damaged, the power has to be disconnected immediately. Contact Heol Design for further instructions. It is not allowed to repair the box without the written permission of Heol Design.
8. Repairs may only be carried out by qualified electrician and will be subsequently have to be checked by an "expert" in explosion proof technology.
9. All operations of installation, replacement or control must **not** be performed when electrical circuit is alive.
10. All technical data indicated on the tag plate of the box have to be observed. Also all other information on tag plate or extra text plate have to be respected.
11. Handle carefully all joints parts so to avoid damaging coupling surface.
12. After each opening of the globe (at least once a year for inspection) the plain joints and bolts have to be cleaned and spread with silicone grease to guarantee explosion safety and mentioned IP protection. To open the globe, just remove locking screw and rotate the globe counter-clockwise. To mount the globe, rotate it clockwise and replace the locking screw. Do not use excessive force or tools to unmount/mount the globe, the rotation has to be easy and smoothly, only by hand force. Be sure that the globe is mounted completely to the surface of the Ex d antenna.
13. Tightness of the cable gland must be also yearly checked, to ensure perfect flameproof protection.
14. Be sure when mounting Ex d antenna, a minimum distance from all flameproof joints to any is obstacle is observed, in order to assure proper function of flameproof joint. Distance for IIA situations 10 mm, for IIB situations 30mm and IIC situations 40mm.
15. All Ex d antenna with external earth bolt must be connected to earth with an external earth conductor with adequate cross section (at least 4 mm²).