



# FOUR BAND GSM - DCS - L1 GPS - UMTS ANTENNA

870 ÷ 960 MHz, 1710 ÷ 1880 MHz,  
1575.42 MHz, 1920 ÷ 2170 MHz

QDBLUD1

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POLOMARCONI offers a very wide range of wireless products.  
Our products can be tailored according to the customer's need.

TRANSPORT

## Electrical Specifications

### 3G BANDS

|                                     |                    |   |
|-------------------------------------|--------------------|---|
| Frequency range (MHz)               | GSM<br>DCS<br>UMTS | 870 ÷ 960<br>1710 ÷ 1880<br>1920 ÷ 2170 |
| Impedance ( $\Omega$ )              |                    | 50                                      |
| VSWR                                |                    | < 2.0:1                                 |
| Max. rated composite RF power (W)   |                    | 30                                      |
| Polarization                        |                    | vertical                                |
| Gain (dB) over $\lambda/4$ monopole |                    | 0                                       |

### SATELLITE NAVIGATION AND GEOLOCALIZATION BAND

|  |   |
|--|---|
| Frequency band (MHz)                                       | 1574.42 ÷ 1576.42   |
| Impedance ( $\Omega$ )                                     | 50  |
| Polarization   | Right Hand Circular Polarization (RHCP)                               |
| Gain (dBic)  | $\geq 25$ (typical 27), @ $T_0=25^\circ\text{C}$ , $V_{DC}=5\text{V}$ |
| Noise Figure (dB)  | $\leq 2.5$ , @ $T_0=25^\circ\text{C}$ , $V_{DC}=5\text{V}$            |
| Operating supply voltage ( $V_{DC}$ )                      | 3.0 ÷ 7.0   |
| Current consumption (mA)                                   | $\leq 35$ , @ $T_0=25^\circ\text{C}$ , $V_{DC}=5\text{V}$             |
| Satellite navigation and geolocalization supported systems | GPS   |



Patent n° 1548873

Antenna for train with protective means against high voltages.

Patent has been used by SNCF and by the most important producers of trains.



## Mechanical Specifications

|  |   |
|--|---|
| Connectors                                 | N female for GSM, DCS and UMTS bands;<br>TNC female for GPS (SMA female with cable in 3V model)                   |
| Dimensions<br>(Height x Width x Depth, mm) | 70x80x145   |
| Weight (kg)                                | abt. 0.5  |
| Materials                                  | body: Aluminium with SURTEC 650 treatment<br>radome: High impact polycarbonate<br>connectors: Silver plated brass |
| Mounting                                   | at the center of a metallic conductive surface with minimum dimension 350x350mm                                   |
| Storage Temp. Range ( $^\circ\text{C}$ )   | -40 ÷ +70   |
| Operating Temp. Range ( $^\circ\text{C}$ ) | -40 ÷ +70   |

## Environmental Specifications

ATMOSPHERIC and CLIMATIC CONDITIONS according to EN 50155 and EN 60068

MECHANICAL CONDITIONS according to EN 50155

EMC according to EN 50121-3-2

HIGH VOLTAGE PROTECTION according to EN 50153 and EN 50124-1

DC GROUNDING, HIGH CURRENT PROTECTION according to EN 50153, IEC 758, IEC 533, EN 50388 and EN 50123

|  |   |
|--|---|
| Short-circuit currents flow / time before breaking | 70 kA / 5 ms – 40 kA / 100 ms (DC)<br>31.5 kA / 10 ms – 15 kA / 100 ms (AC) |
|--|---|

RoHS 2011/65/EU compliant

FLAMMABILITY RATING according to EN 45545-2

|           |      |
|-----------|------|
| IP rating | IP67 |
|-----------|------|

## MOUNTING FLANGE

**Mounting:** at the center of a metallic conductive surface with a minimum size of 350x350 mm; it's advisable to keep the mounting surface clean and free from paint for a better electrical contact.

For drilling mask please have a look to the Mounting Instructions in the next page.

**Grounding and high voltage protection:** Our antennas have passed the strict SNCF's tests that approved our products as protected against lightning and high-tension voltage thanks to our patented DC and AC grounded system.

**Multiband:** our multiband antennas can operate in several frequency bands simultaneously.

**Advantage:** amplifier included; there is no need of an external low noise GPS amplifier as the internal GPS antenna is already amplified.

Approved by: SNCF, SNCB, TRENITALIA



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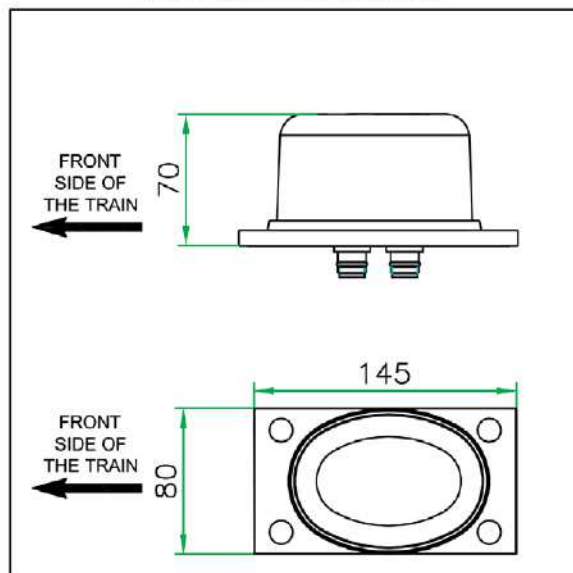
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TRANSPORT

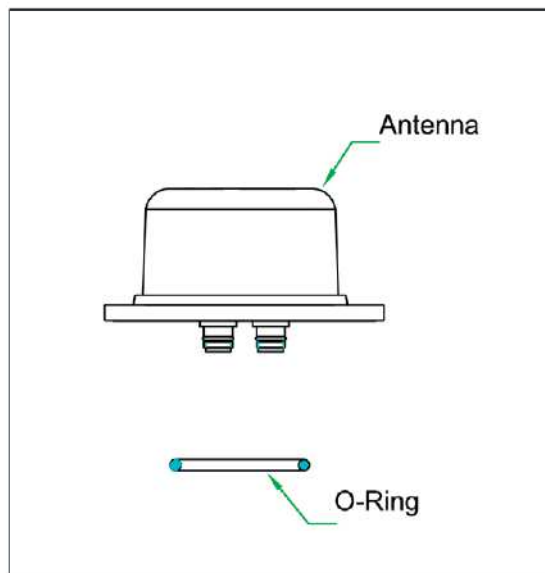
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## MOUNTING INSTRUCTIONS

## GENERAL DIMENSIONS



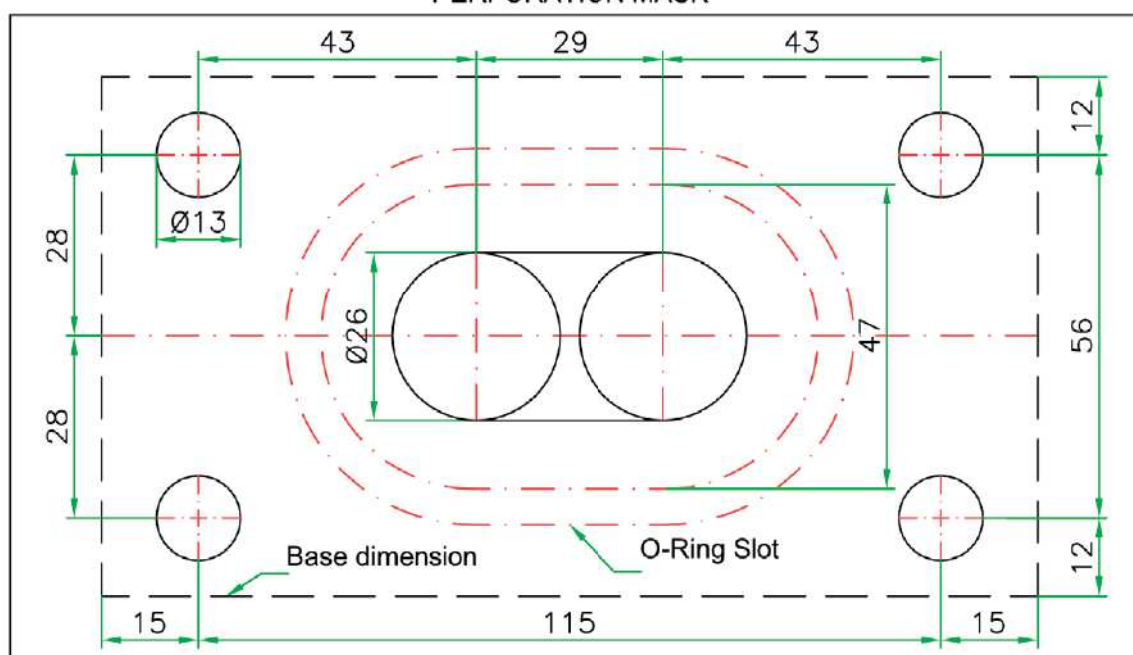
EXPLODED VIEW



## MANUAL OF USE

- 1) In order to guarantee the SECURITY OF THE STAFF, in case of fall of the catenary and consequent contact of the same one with the antenna it's necessary that the antenna is mounted on conductive surface (metallic) connected to earth.
- 2) For the use of the antenna on glass-reinforced plastic surfaces or however on non metallic surfaces making sure that the antenna is mounted on a conductive surface (metallic) of minimal dimensions 350x350 mm; IN THIS CASE IS NOT GUARANTEED HOW MUCH BROUGHT BACK TO POINT 1 also maintaining the radioelectric characteristics unchanged.
- 3) For an optimal connection of the antenna with the conductive surface (metallic) , before the assembly, strip the zones of contact between surface of antenna's installation and nuts and bolts of implantation.

## PERFORATION MASK



All dimensions are in mm