



FIVE BAND GSM/DCS/L1 GPS/UMTS/WLAN ANTENNA

870 ÷ 960 MHz, 1710 ÷ 1880 MHz, 1575.42 MHz, 1920 ÷ 2170 MHz, 2400 ÷ 2485 MHz

PDBLUWD/P

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

RAILWAYS AND
TRANSPORT

Electrical Specifications

GSM/DCS/UMTS BANDS

Frequency range (MHz):	GSM	870 ÷ 960
	DCS	1710 ÷ 1880
	UMTS	1920 ÷ 2170
Impedance (Ω):		50
VSWR:		$\leq 2.0:1$
Polarization:		vertical
Gain (dB) over $\lambda/4$ monopole:		0
Maximum rated RF power (W):		30

WLAN BAND

Frequency range (MHz)	2400 ÷ 2485
Impedance (Ω):	50
VSWR:	$\leq 2.0:1$
Polarization:	vertical
Gain (dB) over $\lambda/4$ monopole:	0
Maximum rated RF power (W):	30

SATELLITE NAVIGATION AND GEOLOCALIZATION BAND

Frequency range (MHz):	1574.42 ÷ 1576.42
Output impedance (Ω):	50
Polarization:	RHCP
Gain (dBic):	≥ 26 (typical 29), @ $T_0=25^\circ\text{C}$, $V_{DC}=5\text{V}$
Noise Figure (dB):	≤ 2.0 , @ $T_0=25^\circ\text{C}$, $V_{DC}=5\text{V}$
Operating supply voltage (V_{DC}):	3.0 ÷ 5.0
Current consumption (mA):	≤ 30 , @ $T_0=25^\circ\text{C}$, $V_{DC}=5\text{V}$

Mechanical Specifications

Dimensions (Height x Width x Depth, mm):	140x80x145
Weight (kg):	0.5
Mounting:	at the center of a metallic conductive with minimum dimensions of 600x600mm
Body material:	Aluminium with SURTEC 650 treatment
Radome material:	High impact polycarbonate
Connectors:	Silver plated brass
Type of connection:	N female for GSM, DCS, UMTS bands; TNC female for L1 GPS band; 200mm of low loss RF coaxial cable with SMA female connector for WLAN band
Operating temperature range ($^\circ\text{C}$):	-40° ÷ +70°



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.



BY



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1 / 3

PDBLUWD_P-DS REV. 03 - 03/03/2016



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Environmental Specifications

ATMOSPHERIC and CLIMATIC CONDITIONS according to NF EN 60068

Temperature conditions	-40°C, +70°C
Atmospheric pressure	-40°C, +70°C, 95% HR at 2000 m
Rain, hail, snow, frost	1000 mm/h, 1 J impact, 0.5 m, 3 cm
Combined wind and train speed	530 km/h

MECHANICAL CONDITIONS according to NF EN 60068, 61373 and 15-818

Free falls	1 m
Hits (vertical, cross-sectional, longitudinal)	30 m/s ² , 30 m/s ² , 50 m/s ² , 30ms
Impacts	50 J

EMC according to EN 50121-3-2:2006

GROUNDING and HIGH VOLTAGE PROTECTION according to NF EN 50388 and NF EN 50123

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

MOUNTING FLANGE

Mounting: at the center of a metallic conductive surface with a minimum size of 600 x 600 mm; it's advisable to keep the mounting surface clean and free from paint for an optimal electrical contact.

PDBLUWD/P 4 holes flange; see the relevant mounting flange on 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. **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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2 / 3

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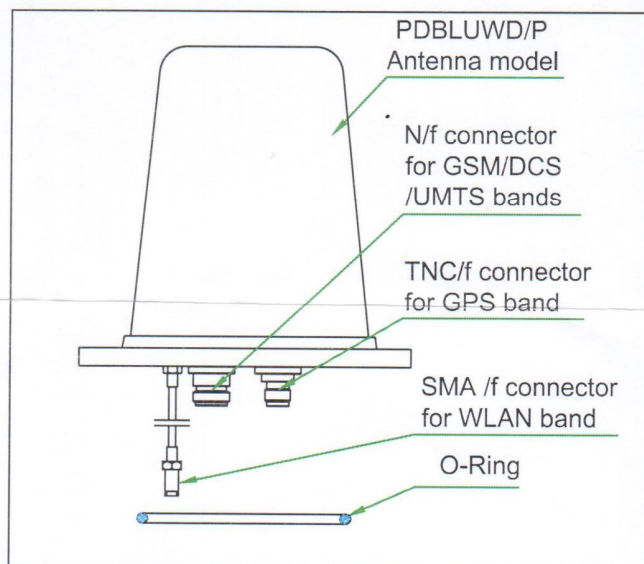
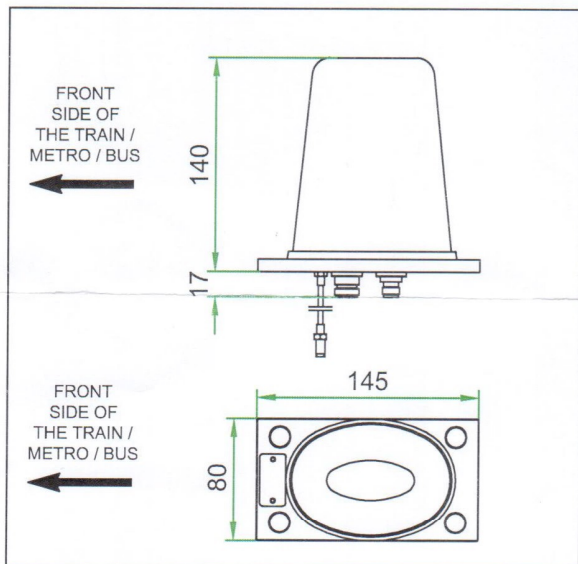
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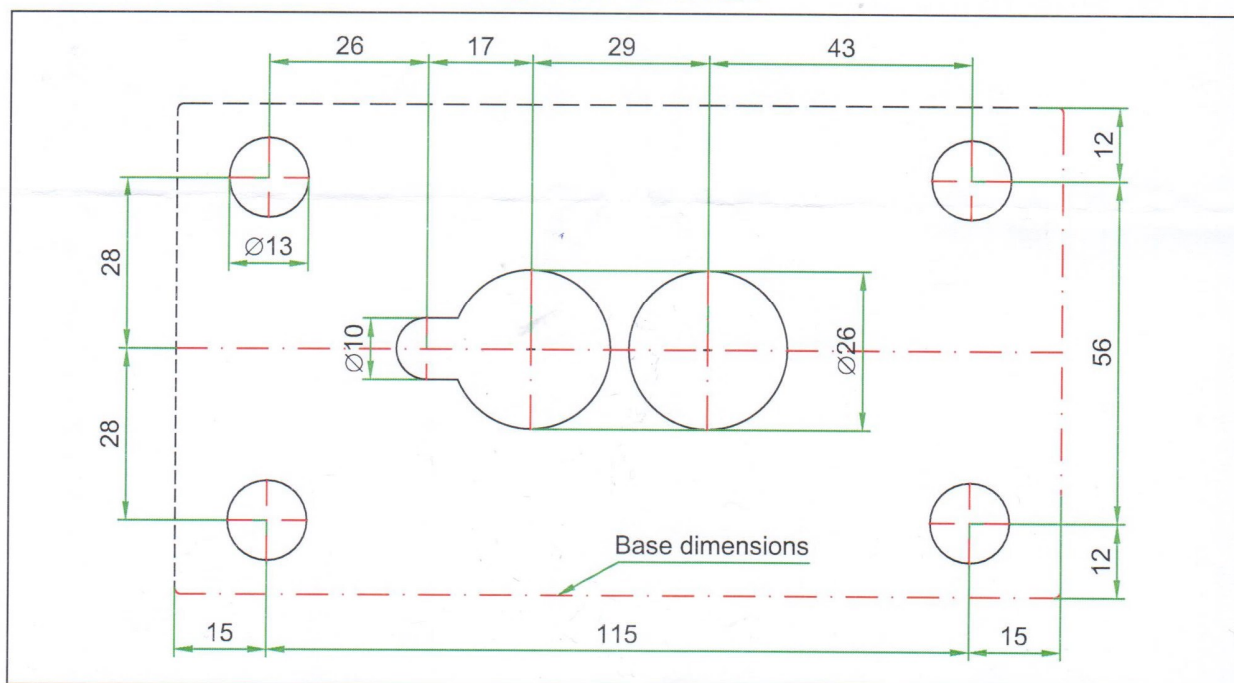
MOUNTING INSTRUCTIONS:



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 (ground reference).
- 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 minimum dimensions 600x600 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 base with the installation conductive surface (metallic), before the assembly, strip the zones of contact between the surface of antenna's installation and nuts and bolts of implantation.
- 4) Recommended M10 screw torque 15 Nm - 20 Nm.

PERFORATION MASK



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3 / 3

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