Installation Instructions

Synergy Series

GNSS, 5G/4G and Wi-Fi Permanent Mount Combination Antenna

A Introduction

The Taoglas Synergy is an external permanent mount combination antenna. The Synergy can be provided with up to 11 combinations of 5G/4G, Wi-Fi, and Active GNSS. The Synergy is supplied with 3M adhesive, along with an M22 threaded boss for surface attachment. The Synergy is ideal for vehicle panels of up to 6mm(0.23”) thick with a threaded boss length of 20.5mm(0.81”). The base, but and screw are all plastic providing a lightweight design.

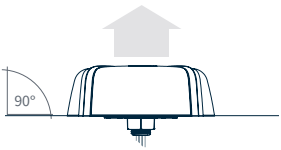
The Synergy is IP67 rated and includes an O-Ring to seal from any water ingress.

Electrical Safety
The Synergy series each contain an active GPS/GNSS antenna.
Rated voltage: 3-5VDC Rated current: 20mA maximum
The supply to this device must be provided with over-current protection of 1A maximum.

Power consumption@1.8V (mA) 8.7 mA
Power consumption@3.0V (mA) 9.0 mA
Power consumption@5.5V (mA) 11 mA

B Mounting & Location

For prime performance, the Synergy is recommended to be fitted on a conductive metal panel. When fitting on a non-metallic panel, a conductive metal ground plane of suitable size should be fitted underneath the mounting panel to achieve a better level of performance. Optimum ground plane size is 300mm x 300mm(11.8” x 11.8”). When mounting on a vehicle roof panel ensure to mount on a flat surface, and measure for central position. Care should be taken to mount the Synergy antenna as far as possible from other roof-mounted features such as the aircon unit, light bar etc.



Mount on a flat surface

Sealing
In order to ensure that the installation is properly sealed against the mounting surface care must be taken regarding curvature of the mounting panel. It is highly recommended to install the antenna on a clean, flat and level surface. After installation the compression of the rubber boot against the mounting panel should be checked and a small bead of neutral cure silicone sealant can be applied around the periphery of the mounting boot if required.

C Mounting Hole

When preparing to drill the hole, mask the area around the hole position to protect the surface Drill a pilot hole through the panel(up to 6mm thickness can be used) and increase the hole size to 24mm(0.94”) diameter. Ensure the drill bit does not contact the headliner. Deburr and clean the area around the hole carefully removing all waste.Remove paint and primer from under panel surface to ensure adequate earth contact by washer and nut. Apply petroleum jelly or paint around cut edge of the hole to prevent corrosion

D Installation of the Antenna

Peel away the 3M adhesive protective and feed the cables through the hole. Position the antenna over the hole and press down onto the panel with pressure. A plastic split nut is used to easily fit onto the thread through the cables. The nut is attached from the underside of the panel, it should easily twist onto the thread and only a final tighten by spanner is required.

Maximum Mounting Torque: 10N-m

E Routing and Connection of the Cables

The Cables supplied are RG-174 for the GNSS feed and TGC-200 for the other feeds through a braided cable assembly system. The heatshrink will denote which cable is which for ease of installation. Connect each individual connector to the correct port of the router, if any cable is unused please fit a 50Ω terminator to the individual connection.

G Notices

Caution
To comply with FCC RF Exposure requirements in section 1.1310 of the FCC Rules, antennas used with this device must be installed to provide a separation distance of at least 20 cm from all persons to satisfy RF exposure compliance.

Warning
Do not Operate the transmitter when someone is within 20 cm of the antenna.
Do not operate the equipment in an explosive atmosphere.

European Waste Electronic Equipment Directive 2002/96/EC
Please ensure that your old Waste Electricals and Electronics are recycled do not throw them away into standard waste.

Directive 2014/53/EU Radio Equipment Directive (RED)

Harmonised Standards and References:
EN 301 489-1 (V2.2.1): ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements. Referencing CENELEC EN 55032 Class B.