MU 9-XP4/..., MU 9-CXP4/..., MU 9-XGP4/...

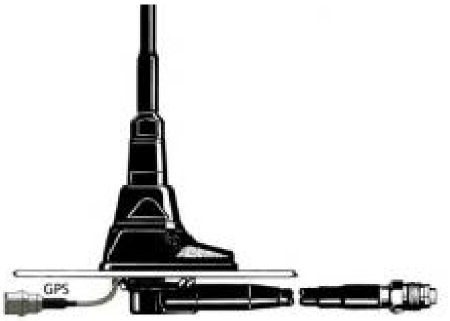
450 MHz 2 dB mobile antenna for glass fibre roof

- Ground plane independent antenna for installation on non-conducting surfaces.
- Ideal for glass fibre roofs as can be found on some trucks, busses, transport vans and trains.
- MU 9-XP4/s can be tuned by cutting within 380...410 MHz.
  MU 9-XP4/l can be tuned by cutting within 400...440 MHz.
  MU 9-XP4/h can be tuned by cutting within 430...470 MHz.

DESCRIPTION

- M6-thread whip-fastening system.
- Simple mounting exclusively with access from the outside.
- Models available with oblong or circular mount.
- Also oblong models with GPS are available.
- Delivered with permanently attached 4 m RG 58 cable terminated with FME-connector. (Other models on request)

MU 9-XGP4 MOUNT



Please note that the MU 9-XP4 and MU 9-XGP4 type "s"-, "l"- and "h" mounts contain matching transformers. Consequently, these special mounts cannot operate with other whip types.

ORDERING DESIGNATIONS

TYPE	PRODUCT NO.	FREQUENCY	MOUNT VERSION
FIELD TUNABLE MODELS			
MU 9-XP4/s	130001089	380... 410 MHz	Oblong mount with 4 m cable and FME-conn.
MU 9-XP4/l	130001097	400... 440 MHz	Same mount as above
MU 9-XP4/h	130001085	430... 470 MHz	Same mount as above
MU 9-CXP4/s	130001096	380... 410 MHz	Circular mount with 4 m cable and FME-conn.
MU 9-CXP4/l	130001098	400... 440 MHz	Same mount as above
MU 9-CXP4/h	130001086	430... 470 MHz	Same mount as above
MU 9-XGP4/s	132000190	380... 410 MHz	Oblong mount with 4 m and FME-conn., and GPS
MU 9-XGP4/l	132000189	400... 440 MHz	Same mount as above
MU 9-XGP4/h	132000188	430... 470 MHz	Same mount as above

ORDERING DESIGNATIONS

TYPE	PRODUCT NO.	CELLULAR SYSTEM	MOUNT VERSION
READY-TUNED MODELS (examples)			
MU 9-XP4/ 380-410 MHz		TETRA BOS, Germany	Oblong mount with 4 m cable and FME-conn.
MU 9-XP4/ 410-430 MHz		Industrial Systems Germany	Same mount as above
MU 9-XP0.1/ 380-410 MHz-MFME		TETRA BOS, Germany	Oblong mount with 0.1 m cable and FME-male conn.
MU 9-CXP4/ 380-410 MHz		TETRA BOS, Germany	Circular mount with 4 m cable and FME-conn.
MU 9-CXP4/ 410-430 MHz		Industrial Systems Germany	Same mount as above
MU 9-CXP0.1/ 380-410 MHz-MFME		TETRA BOS, Germany	Circular mount with 0.1 m cable and FME-male conn.
MU 9-XGP4/ 380-410 MHz		TETRA BOS, Germany	Oblong mount with 4 m cable and FME-conn., and GPS
MU 9-XGP0.1/ 380-410 MHz-MFME	130002159	TETRA BOS, Germany	Oblong mount with 0.1 m cable and FME-male conn., and GPS

When ordering a ready-tuned model, the name of the desired cellular system must be added to the antenna model number.

SPECIFICATIONS

ELECTRICAL	
MODEL	MU 9-XP4/..., MU 9-CXP4/..., MU 9-XGP4/...
ANTENNA TYPE	End-fed ½ λ mobile whip antenna
FREQUENCY	450 MHz–band covered by three models
IMPEDANCE	Nom. 50 Ω
POLARIZATION	Vertical
GAIN	2 dB (acc. to EIA RS-329-1)
BANDWIDTH	≥ 15 MHz @ SWR ≤ 1.5 ≥ 30 MHz @ SWR ≤ 2.0
SWR	≤ 1.3 @ f. res.
MAX. POWER	40 W

MECHANICAL	
MATERIALS	Whip: Polyethylene-covered spring steel wire Mount: Black-chromed brass Weather- and shockproof plastics Surface treated steel
RECOMMENDED INSTALLATION TORQUE	Max. 3 Nm
CABLE	4 m cable terminated with FME-connector. (Other cable lengths on request)
COLOUR	Black
HEIGHT	Approx. 41 cm
WEIGHT	Approx. 210 g
MOUNTING	From outside: 21 mm dia. hole From inside: 14 mm dia. hole
MOUNTING FOR GPS-MODELS	19 mm dia. hole
ROOF THICKNESS	0.6 → 5.0 mm

ELECTRICAL FOR GPS-PART	
OPERATING FREQUENCY	1575.42 ±1.023 MHz
LNA GAIN	22 dB ±2 dB
NOISE FIGURE	Max.1.5 dB (typical 1.1 dB)
VOLTAGE	DC 2.85 V ~ 5 V (typical 3 V)
CURRENT	≤ 20 mA
IMPEDANCE	Nom. 50 Ω
MECANICAL	
CONNECTOR	Cable RG 178, length 150 mm Connector: FME-male

INSTALLATION

This antenna is especially designed for installation on non-conducting surfaces as e.g. glass fibre roofs, as can be found on some trucks, busses, transport vans and trains.

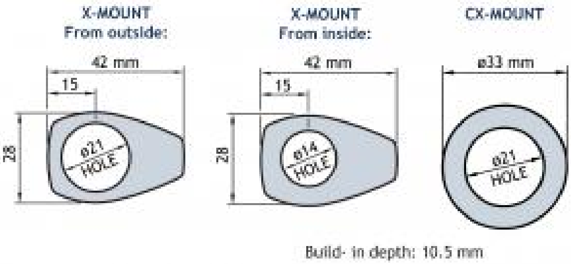
The antenna is an end-fed, ½ λ-dipole concept which can be fed in such a way that the antenna does not require a “ground plane” as required by the standard ¼ λ, ⅝ λ or collinear mobile whips.

It is useful to note that this antenna type can be used anywhere where the ground plane is poor or completely missing, as e.g.: side-mounted on a clamp as a pager antenna on a wall or mounted at the very edge of a ground-plane without the loss induced by a tilted radiation pattern.

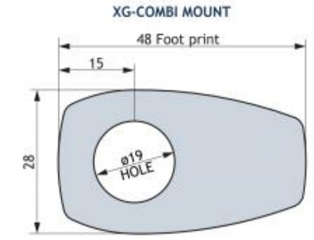
The antenna must be mounted on a horizontal surface. When cleaning the vehicle in car-washing machines, the whip is easily dismounted using a spanner, size 9 mm. The whip is refitted again by screwing it onto the M6 thread stud on the mount and tightening it lightly with the spanner.

A polyethylene-covered, closely spirally wound flat steel-band material causes the whip always to stand erect while at the same time being very flexible.

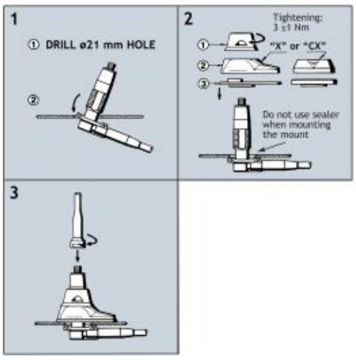
1A. INSTALLATION DIMENSIONS



1B. INSTALLATION DIMENSION FOR GPS-MODELS

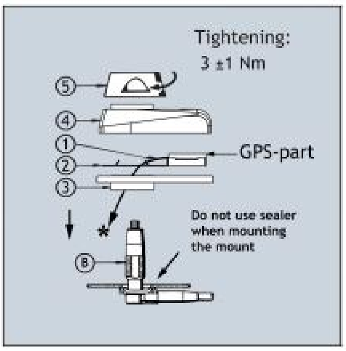


2A. INSTALLATION STEPS (FROM OUTSIDE)



Do not use sealer on rubber gasket or other places.

2B. INSTALLATION STEPS FOR GPS-MODELS (FROM OUTSIDE)



Do not use sealer on rubber gasket or other places.

2B. ASSEMBLY INSTRUCTIONS (FOR GPS-MODELS)

- Put GPS-FME-connector-cable through the gasket (2).
- Put the gasket (3) + GPS-part (1) over the body (B).
- Put the body (B) + gasket (3) + GPS-part (1) through the ø19 mm hole.
- Put the housing (4) over the body (B) and be sure that the GPS-part (1) fits into the square hole in the body (B).
- Put the threaded part over the body (5) and tighten max. 3 ±1 Nm!
- Mount the antenna whip.

3. TUNING

The antenna should always be tuned using an SWR-indicating device. The cutting diagrams below serve as a guide for this procedure.