MANUAL

GPS Antenna

Antenna / Converter Unit

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Meinberg Radio Clocks GmbH & Co. KG

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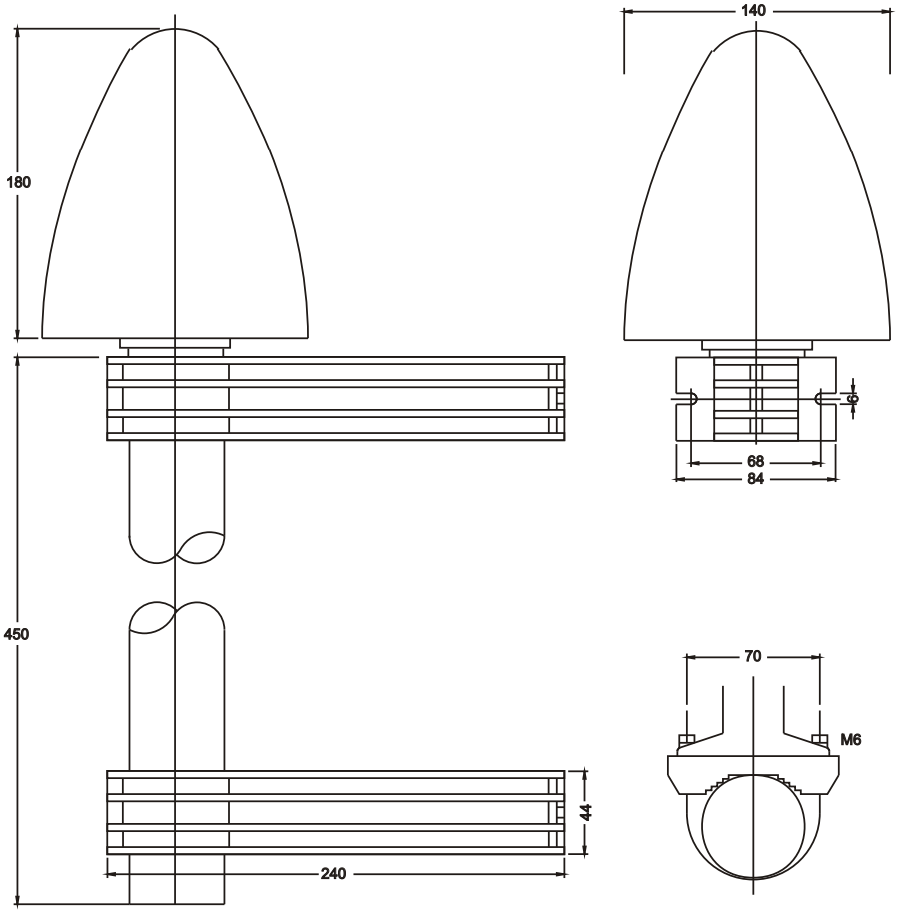
Antenna:	Antenna/converter unit with remote power supply
Length of cable:	Refer to chapter "Mounting the Antenna"
Antenna Input	GPS: Antenna circuit 1000 V DC insulated
Receiver Input Frequency:	1575.42 MHz (L1)
Local Oscillator to Converter Frequency:	10 MHz [1]
First IF Frequency:	35.4 MHz [1]
Connector:	female type-N
Protection Class:	IP66
Ambient Temperature:	-40°C ... +65°C
Weigth:	420g (without accessories)

(1) these frequencys are transfered via the antenna cable.
Power Requirements: 12V ... 18V, 100mA (via antenna cable)

Physical Dimensions:



1.1 Mounting the GPS Antenna

The GPS satellites are not stationary, but circle round the globe with a period of about 12 hours. They can only be received if no building is in the line-of-sight from the antenna to the satellite, so the antenna/downconverter unit must be installed in a location that has as clear a view of the sky as possible. The best reception is achieved when the antenna has a free view of 8° angular elevation above the horizon. If this is not possible, the antenna should be installed with the clearest free view to the equator, because the satellite orbits are located between latitudes 55° North and 55° South. If this is not possible, you may experience difficulty receiving the four satellites necessary to complete the receiver's position solution.

The antenna/converter unit can be mounted on a wall, or on a pole up to 60 mm in diameter. A 50 cm plastic tube, two wall-mount brackets, and clamps for pole mounting are included. A standard RG58 coaxial cable should be used to connect the antenna/downconverter unit to the receiver. The maximum length of cable between antenna and receiver depends on the attenuation factor of the coaxial cable.

Up to four receivers can be run with one antenna/downconverter unit by using an optional antenna splitter. The total length of an antenna line from antenna to receiver must not be longer than the max. length shown in the table below. The position of the splitter in the antenna line does not matter.

High voltage protectors must be installed directly after reaching the indoors. The optional delivered protection kit is not for outdoor usage.

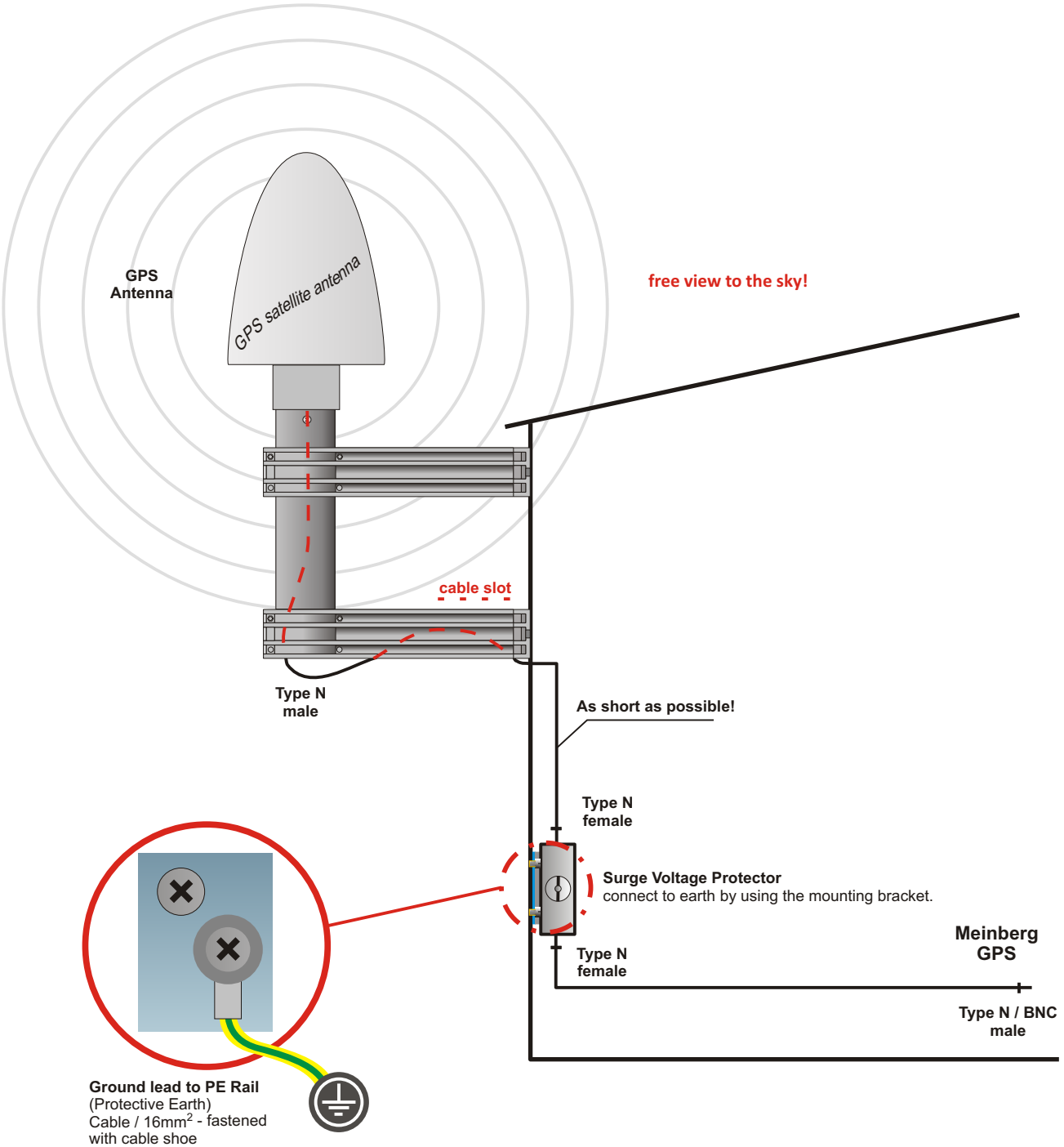
1.1.1 Example:

Type of cable	diameter Ø [mm]	Attenuation at 100MHz [dB]/100m	max lenght. [m]
RG58/CU	5mm	17	300 (1)
RG213	10.5mm	7	700 (1)

(1)This specifications are made for antenna/converter units produced after January, 2005
The values are typically ones; the exact ones are to find out from the data sheet of the used cable

1.1.2 Antenna Short-Circuit Assembly with surge voltage protection

Optional a surge voltage protector for coaxial lines is available. The shield has to be connected to earth as short as possible by using the included mounting bracket. Standard you connect the antenna converter directly with the antenna cable to the system.



1.1.3 Antenna Short-Circuit

(optional for displayed systems)
In case of an antenna line short-circuit the following message appears in the display:

If this message appears the clock has to be disconnected from the mains and the defect eliminated. After that the clock can be powered-up again. The antenna supply voltage must be 15V_{DC} .

1.2 P-TRON: Surge Voltage Protector

Attachment plug with replaceable gas discharge tube for coaxial signal interfaces.

Connection: N connector female/female.

The surge voltage protector for coaxial lines has to be installed in the antenna line. The shield has to be connected to earth as short as possible by using the included mounting bracket. It is equipped with two type-N female connectors.

Key Features
- Surge Voltage Protector for coaxial Lines
- Easy mounting

Nominal discharge surgecurrent	50kA / Isn(8/20)μs Multiple strike capability: 20kA 10 times
Response Time	100ns max.
Features	Replacable gas discharge tube Waterproof Protection voltage: 90V
Scope of supply	Surge voltage protector and mounting bracket (This product is fully RoHS compliant)

1.3 Features of GOAL

GOAL is a GPS Optical Antenna Link set for connecting a Meinberg GPS antenna to each Meinberg GPS receiver via one optical multimode fiber. The module GOAL/R is to connect to the receivers antenna input either directly on the connector, using an adaptor, or, e.g. for space reasons, via a patch cable.

The module GOAL/A is to mount indoor, connected to the Meinberg antenna via a coaxial cable. Both modules are linked to each other via a single GI50/125μm or GI62,5/125μm multimode gradient fiber.

This kind of connection provides several advantages:
- large antenna cable distances (up to 2,000m)
- no destructive overvoltage via the antenna cable
- no unintentional monitoring via optical fiber

The receiver-side module GOAL/R is supplied with power via the antenna input connector of the GPS receiver, therefore no external power supply is necessary. The module GOAL/A needs an external supply for operating and feeding the GPS antenna. Whenever the antenna is not connected, or a short circuit occurs on the antenna cable, this is shown by a status LED in the front panel. A second status LED shows that the 10MHz reference clock, coming from the GOAL/R, is received within a sufficient signal strength and therefore the FO link is working.

The GOAL system is suitable for all Meinberg GPS receivers (except GPS166!), also for the later extension of existing systems.

Physical Dimensions:
GOAL/A: 44mm x 105mm x 165mm (height x width x depth)
GOAL/R: 25mm x 25mm x 95mm (height x width x depth)

Konformitätserklärung

Declaration of Conformity

Hersteller Manufacturer	**Meinberg Funkuhren GmbH & Co. KG** **Lange Wand 9** **D-31812 Bad Pyrmont**

erklärt in alleiniger Verantwortung, daß das Produkt
declares under its sole responsibility, that the product

Produktbezeichnung Product Name	**GPS Antenne**
Modell / Typ Model Designation	**GPSANT**

auf das sich diese Erklärung bezieht, mit den folgenden Normen übereinstimmt
to which this declaration relates is in conformity with the following standards

EN55022:1998, Class B (+A1:2000 +A2:2003)	Grenzwerte und Meßverfahren für Funkstörungen von informationstechnischen Einrichtungen Limits and methods of measurement of radio interference characteristics of information technology equipment
EN55024:1998 (+A1:2001 +A2:2003)	Grenzwerte und Meßverfahren für Störfestigkeit von informationstechnischen Einrichtungen Limits and methods of measurement of Immunity characteristics of information technology equipment

gemäß den Richtlinien 2004/108/EG (Elektromagnetische Verträglichkeit), 2006/95/EG (Niederspannungsrichtlinie) und 93/68/EWG (CE Kennzeichnung) sowie deren Ergänzungen.
following the provisions of the directives 2004/108/EC (electromagnetic compatibility), 2006/95/EC (low voltage directive) and 93/68/EEC (CE marking) and its amendments.

Bad Pyrmont, den 28.03.2008

Günter Meinberg
Managing Director