

**User Manual**

# **Line Protection System**

**RHO**  
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**Note**

The manufacturer reserves the right to make modifications at any time and without previous information of the here described product.

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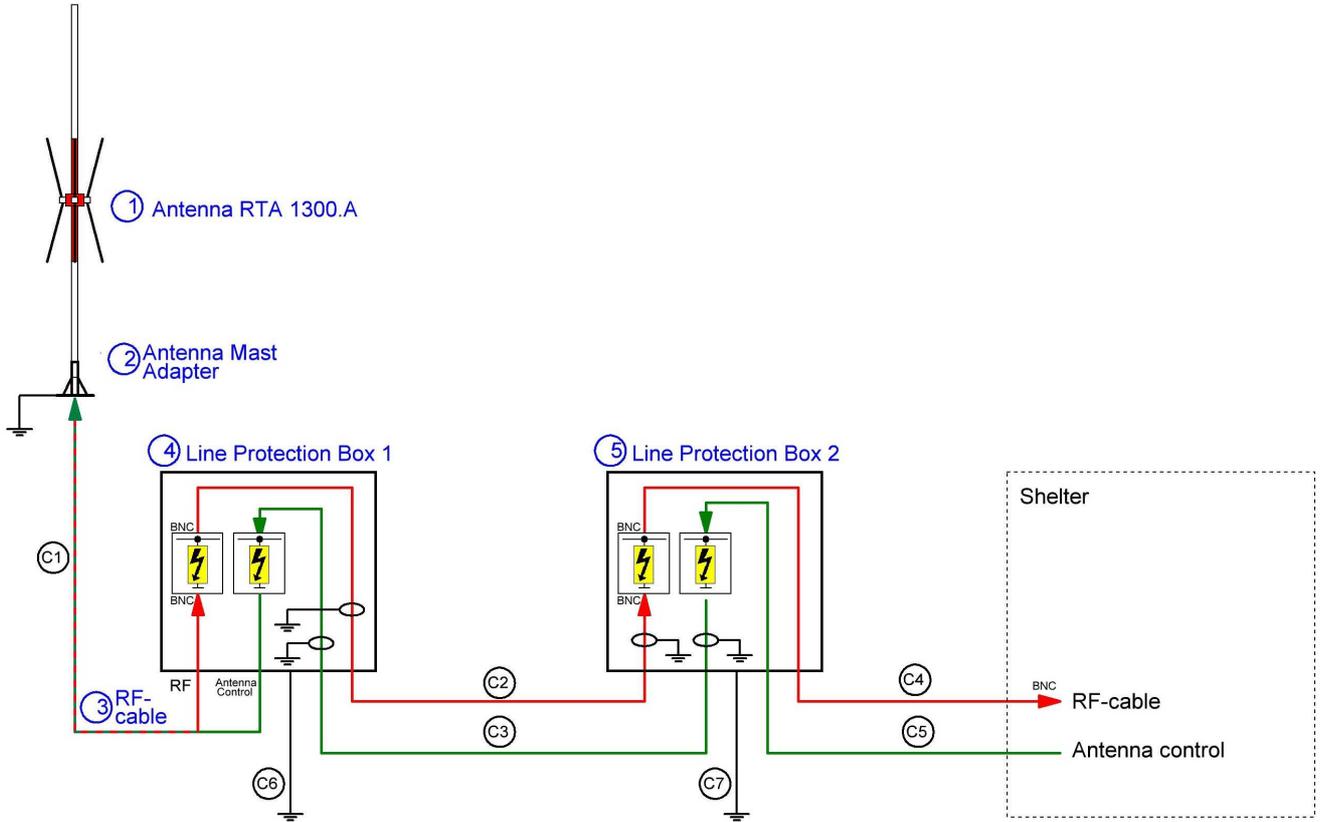
## 1 Short Description

The line protection system includes all necessary components for overvoltage protection of antenna control lines and the RF-Signal line (see connection diagram).

The line protection system is necessary if the DF antenna installed on a high mast (over 10 meters) or if the distance between the DF antenna and DF main unit is exceeding 15 meters. This system consists of two boxes: Line Protection Box 1 and Line Protection Box 2. The maximum distance between the boxes is 30 meters.

The line protection system is housed in an IP66 water-tight stainless steel cabinet suitable for outdoor installation close to the antenna (Line Protection Box 1) and to the shelter (Line Protection Box 2). Electrical interconnections are made by cables which enter the cabinet through sealed connectors located on the bottom of the boxes.

## 2 Connection Diagram



## 2.1 Component Description

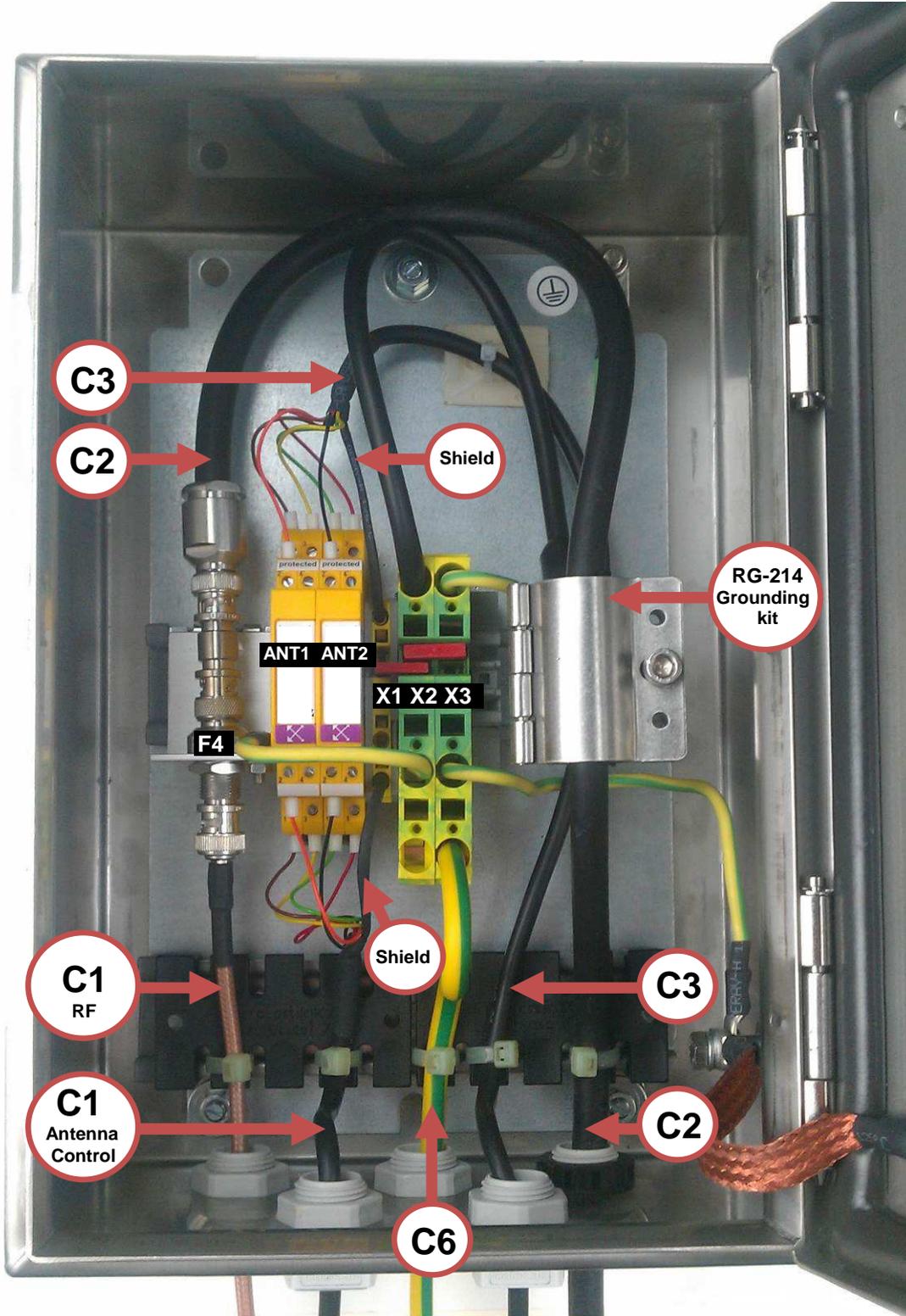
System Components		
Nr.	Component	Description
1	Antenna RTA 1300.A	Antenna RTA 1300.A
2	Antenna Mast Adapter (Flange)	Flange used for the installation of the antenna on a shelter or on a mast.
3	RF-cable	RF-cable between Antenna Unit - Line protection box
4	Line Protection Box 1	The line protection box includes all necessary components for overvoltage protection of antenna control lines and RF-Signal.
5	Line Protection Box 2	The line protection box includes all necessary components for overvoltage protection of antenna control lines and RF-Signal.

## 2.2 Description of External Cables

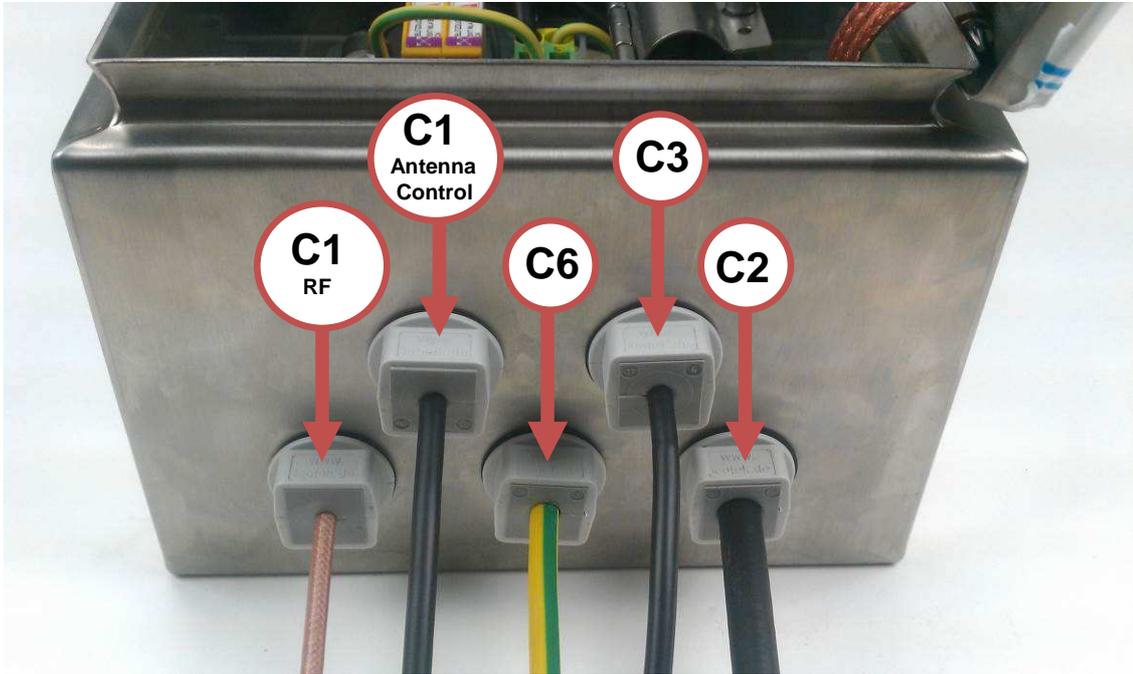
Cables			
Nr.	Description	Cable type	Length
C1	RF-cable between Antenna Unit – Line Protection Box 1	RHOTHETA Assemblies RTA-1307 A	4,5 m
C2	RF-cable between Line Protection Box 1 – Line Protection Box 2	RG-214	32 m (max)
C3	Signal cable between Line Protection Box 1 – Line Protection Box 2	6 x AWG 24 C UL, shielded	32 m
C4	RF-cable between Line Protection Box 2 – Direction Finder	RG-400/U (RG-223)	10 m (max)
C5	Signal cable between Line Protection Box 2 – Direction Finder	6 x AWG 24 C UL, shielded	10 m
C6	Grounding cable	16mm <sup>2</sup> (green yellow)	-
C7	Grounding cable	16mm <sup>2</sup> (green yellow)	-

### 3 Line Protection Box 1

#### 3.1 Front View



### 3.2 Cable Entry

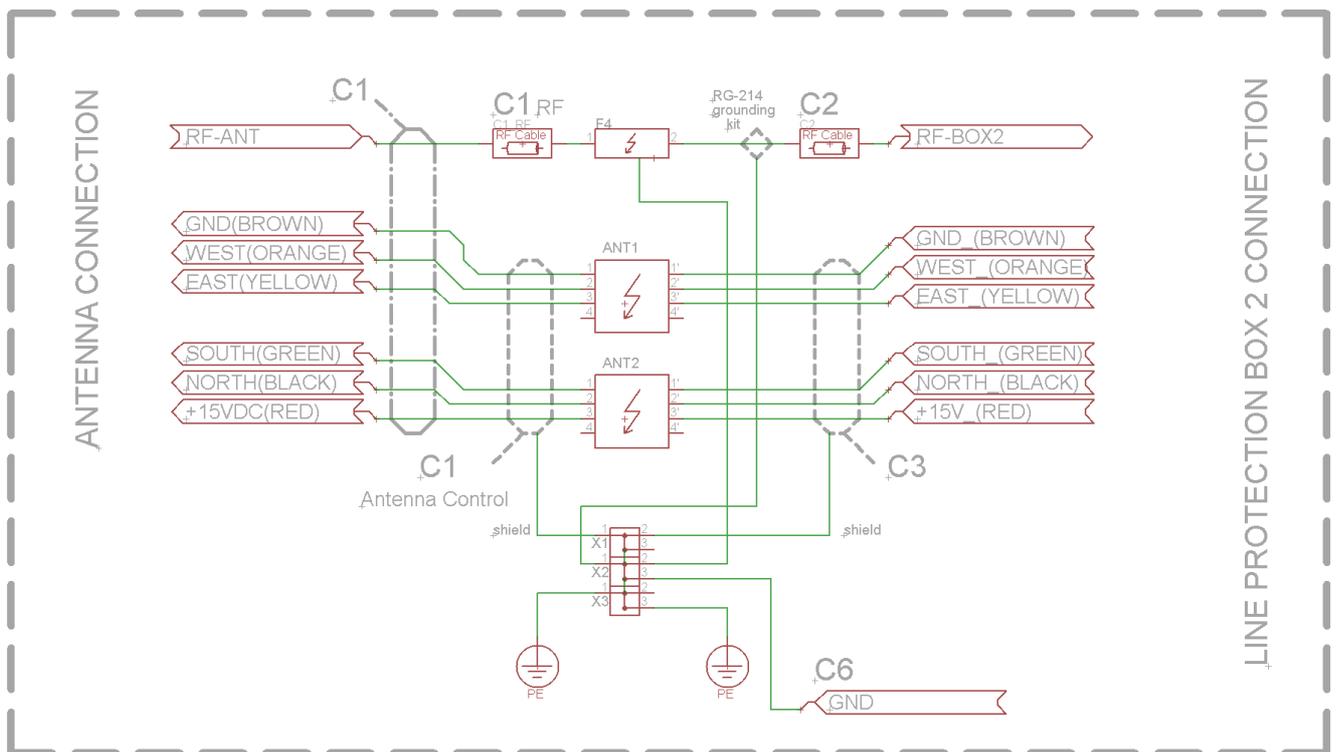


### 3.3 Mechanical Characteristics

Mechanical Characteristics						
Subsystem	Category IP	Material	Width	Height	Depth	Weight
Line Protection Box	IP 66	Stainless steel	200 mm	300 mm	155 mm	5 kg

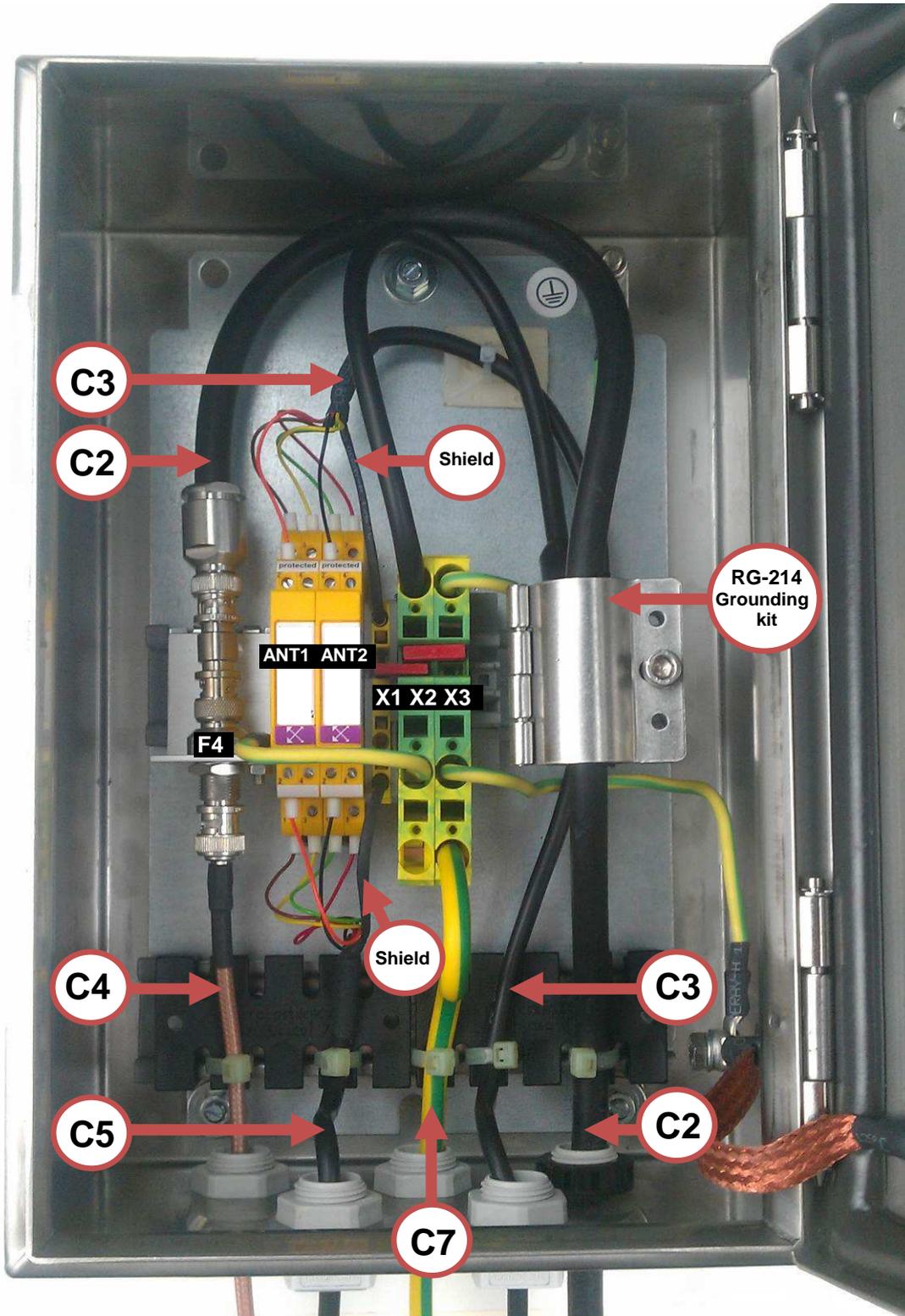
### 3.4 Wiring Diagram

LINE PROTECTION BOX 1

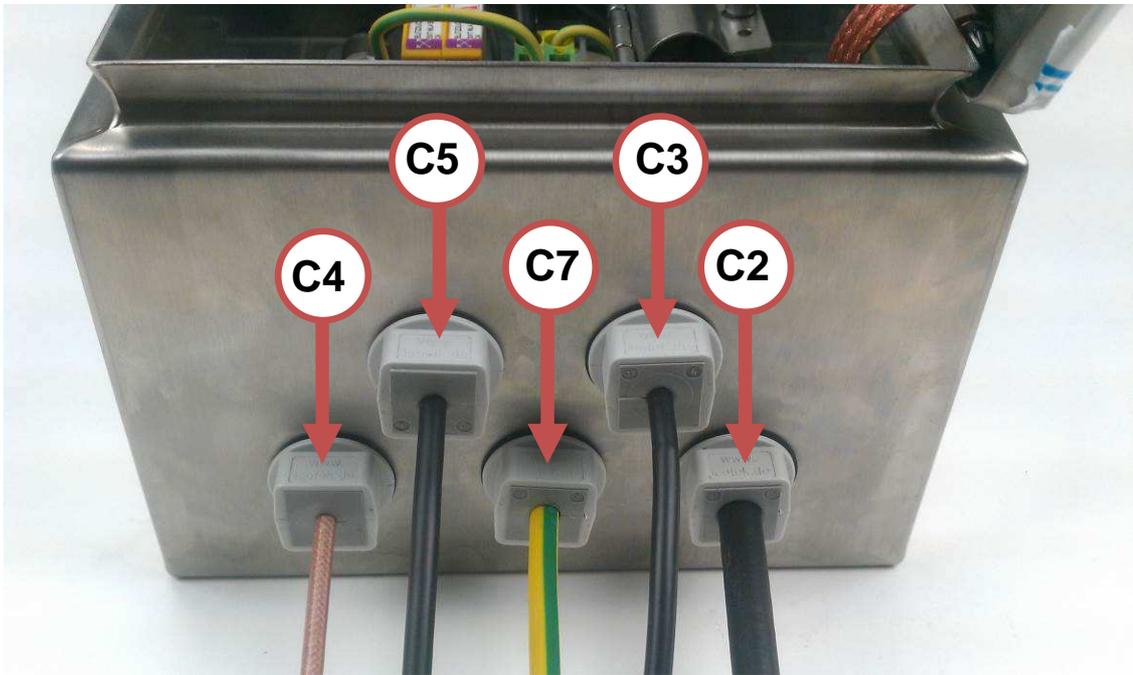


## 4 Line Protection Box 2

### 4.1 Front View



## 4.2 Cable Entry

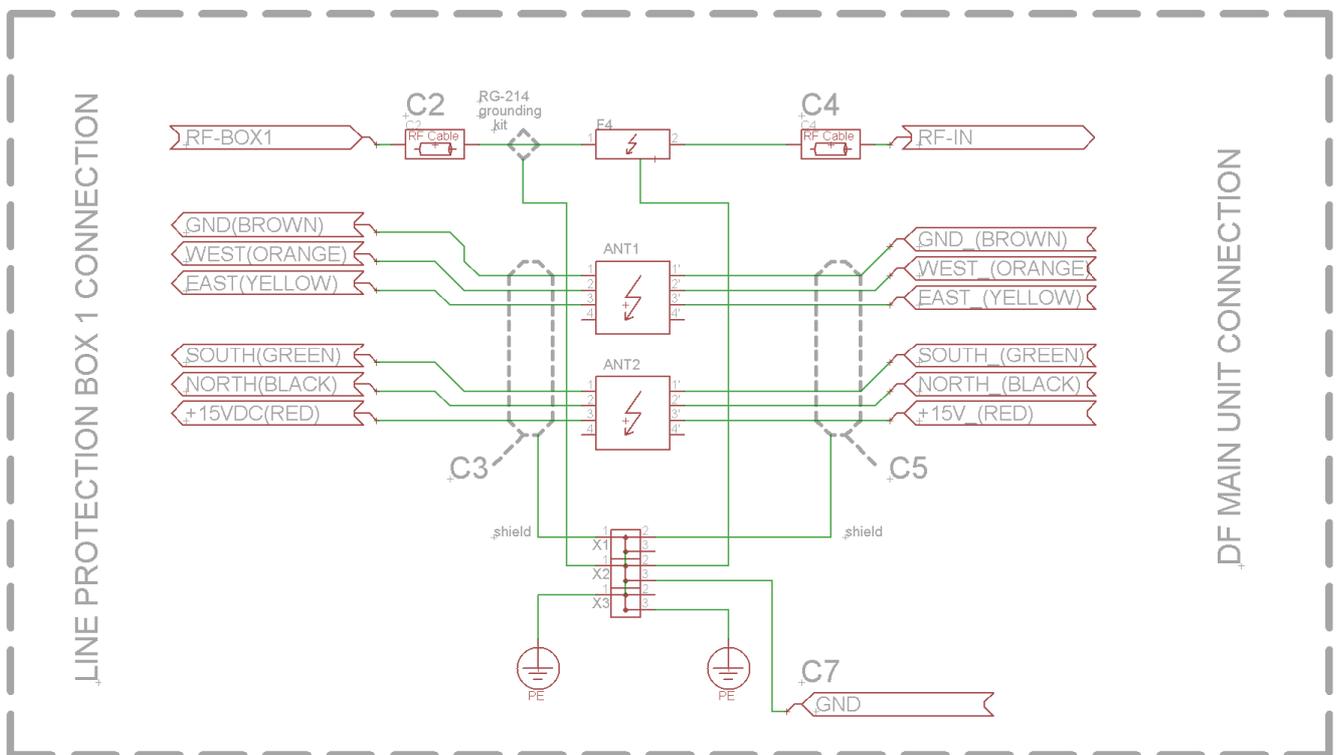


### 4.3 Mechanical Characteristics

Mechanical Characteristics						
Subsystem	Category IP	Material	Width	Height	Depth	Weight
Line Protection Box	IP 66	Stainless steel	200 mm	300 mm	155 mm	5 kg

### 4.4 Wiring Diagram

LINE PROTECTION BOX 2



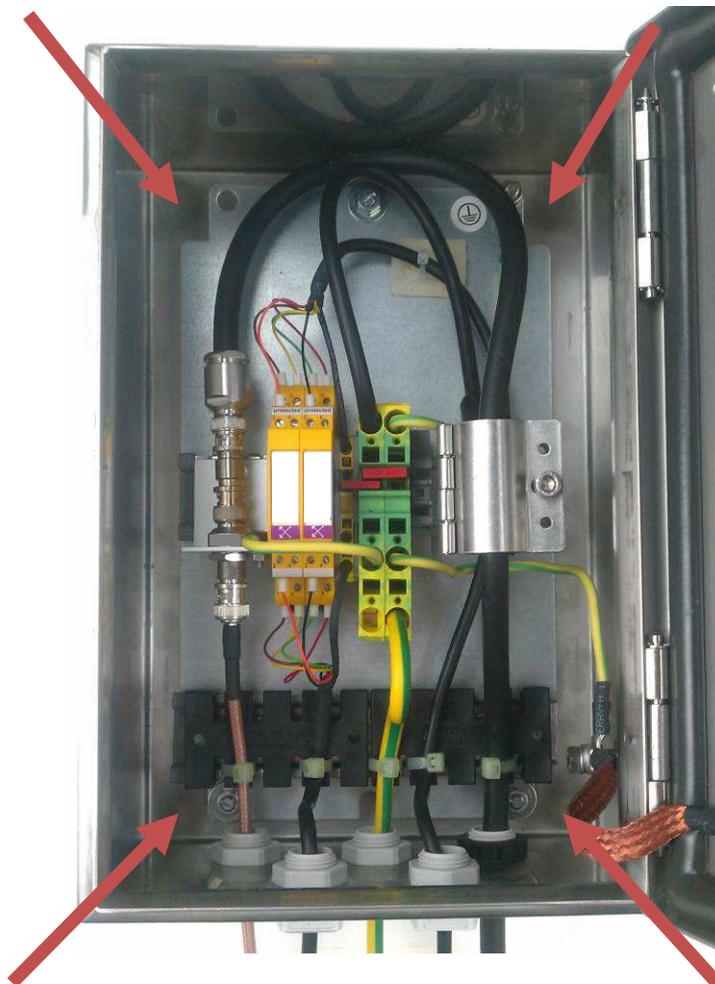
## 5 Installation

The **Line Protection Box 1** should be installed close to the antenna.  
The **Line Protection Box 2** should be installed close to the shelter.

### 5.1 Line Protection Box 1/2 Mounting

The line protection box is housed in an IP66 water-tight stainless steel cabinet suitable for outdoor installation. For box mounting, the mounting holes must be drilled. The drill holes must be sealed after mounting.

Example: Place for holes for mounting on a wall



**Attention! All drill holes must be sealed to avoid ingress of humidity.**

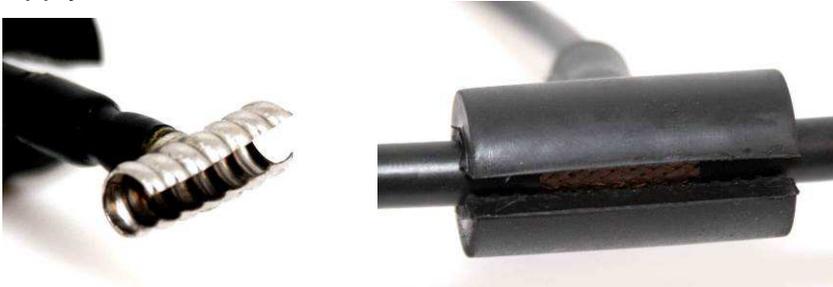
## 5.2 Mounting Instruction

### 5.2.1 RG-214 Grounding Kit

1. Strip off the cable isolation.

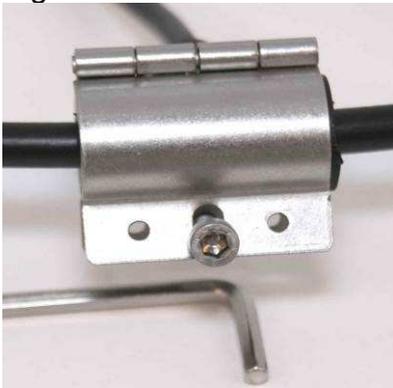


2. Apply the contact.



Note: The outer sheath of the cable should be carefully coated with special silicone grease.

3. Tighten the screw

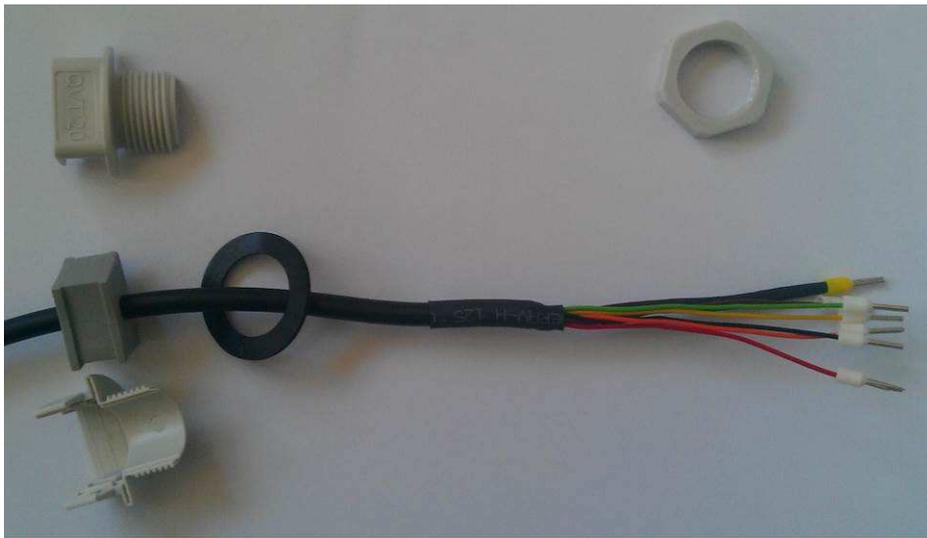


4. Finished!



### 5.2.2 Cable Glands

The Cable gland is a circular split cable gland for quick and easy installation of preassembled cables or complete cable harnesses.



### 5.2.3 Split Locknut

Use this locknut for BNC connector RG-214.



## 6 Notes