

The Components of the GF 2000i - Family



GF 2000i V1 Receiver/Transceiver

GF-2000i offers all users a universal system for remote controlling and data transferring. Remote control commands can be transferred wirelessly from one place to another or to several other places. The system GF2000i also offers the necessary transmission technology to reach the desired range.

Through GF 2000i you will receive a versatility that enables you to assign the same modules to many operational areas.

Advantages:

- Universally applicable
- Simple usage
- Easy installation; snap in, wire, finished
- Simple wiring using screw-type terminals / plug clamps
- High flexibility
- Combinable with all transmitting- and operating devices from Gross-Funk
- Secure transmission of the emergency stop



GF 2000i V2 Receiver

Area of Use:

- Remote Control for Cranes
- Remote Control for Pumping Stations
- Remote Control for Machines of all Sorts
- Remote Control for Conveyor Belts
- Remote Control for Ventilating and Exhaust Systems
- Remote Control for Cable Winches
- Data Transmission for Water Companies
- Data Transmission for Sewage Plants
- Data Transmission for Various Bus Technologies
- Data Transmission for Data Acquisition
- Data Transmission for Digital Signals of all Sorts



GF 2000i S1 Transmitter

By request also available in the waterproof IP65-box

Installation GF 2000i

**Snap in,
wire,
finished.**



Reflektomat

Optionally, receiver's can be equipped with the **REFLEKTOMAT**. The Reflektomat was invented by Gross-Funk and has a patented, special receiving technique. The Reflektomat was designed to avoid radio jamming which are caused by reflection. Especially recommended when operated in halls, tunnels, in inner city and dense built up areas. You will recognize the Reflektomat by the second antenna.

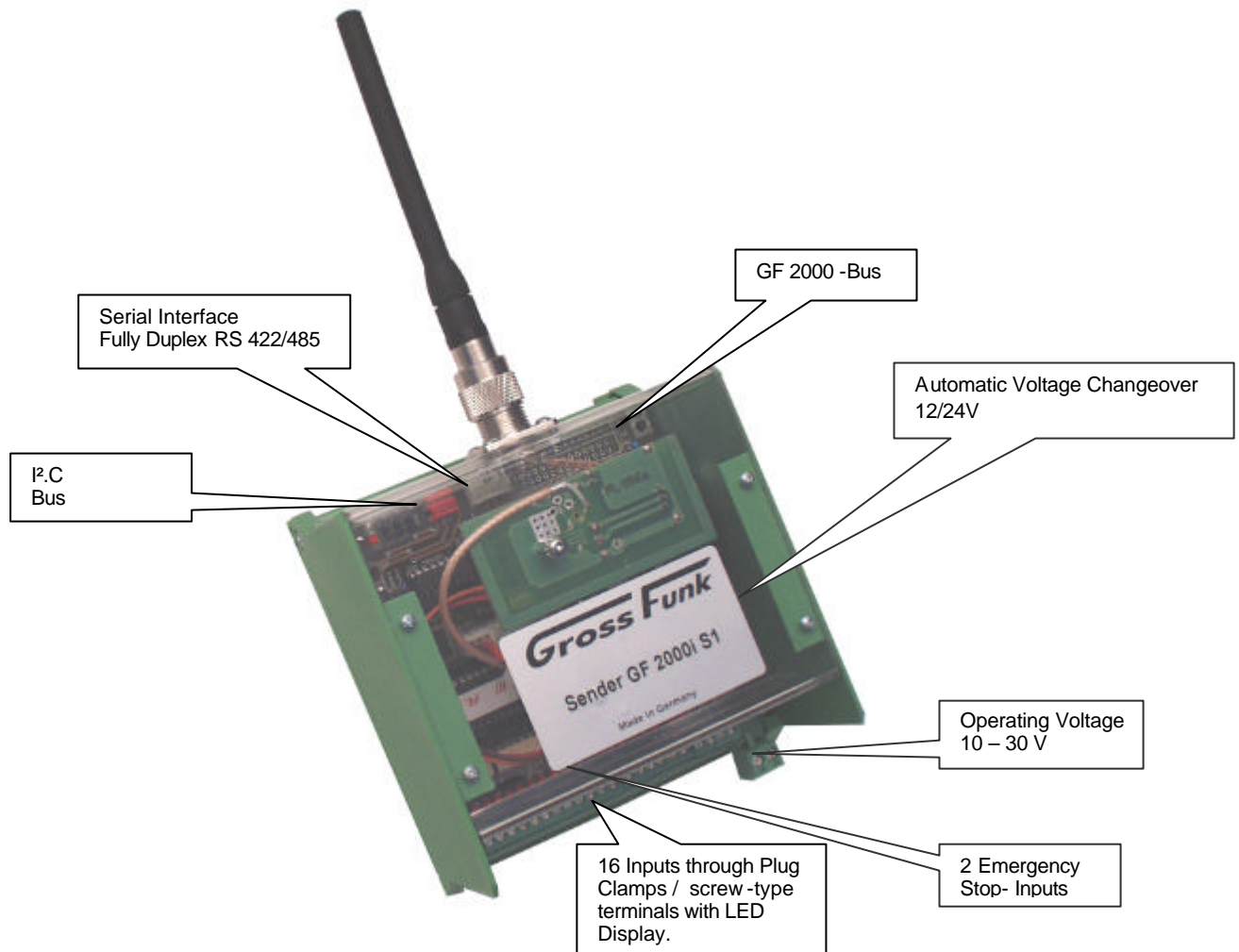
➔ ➔ Not every device with two antennas has a Reflektomat.
You can only purchase the Reflektomat at Gross-Funk

Functional Manner:

If the automatic recognizes interference's of the receiving signal, in spite of adequate receiving strength, it will automatically switch to the second antenna. This happens without any user intervention, and so fast, that the automatic addressing will not negatively interfere with the operation, therefore will not be noticed.

Bi-directional or unidirectional data transmission in real time or in the time-slot technique.

Universal – Transmitter GF 2000i S1

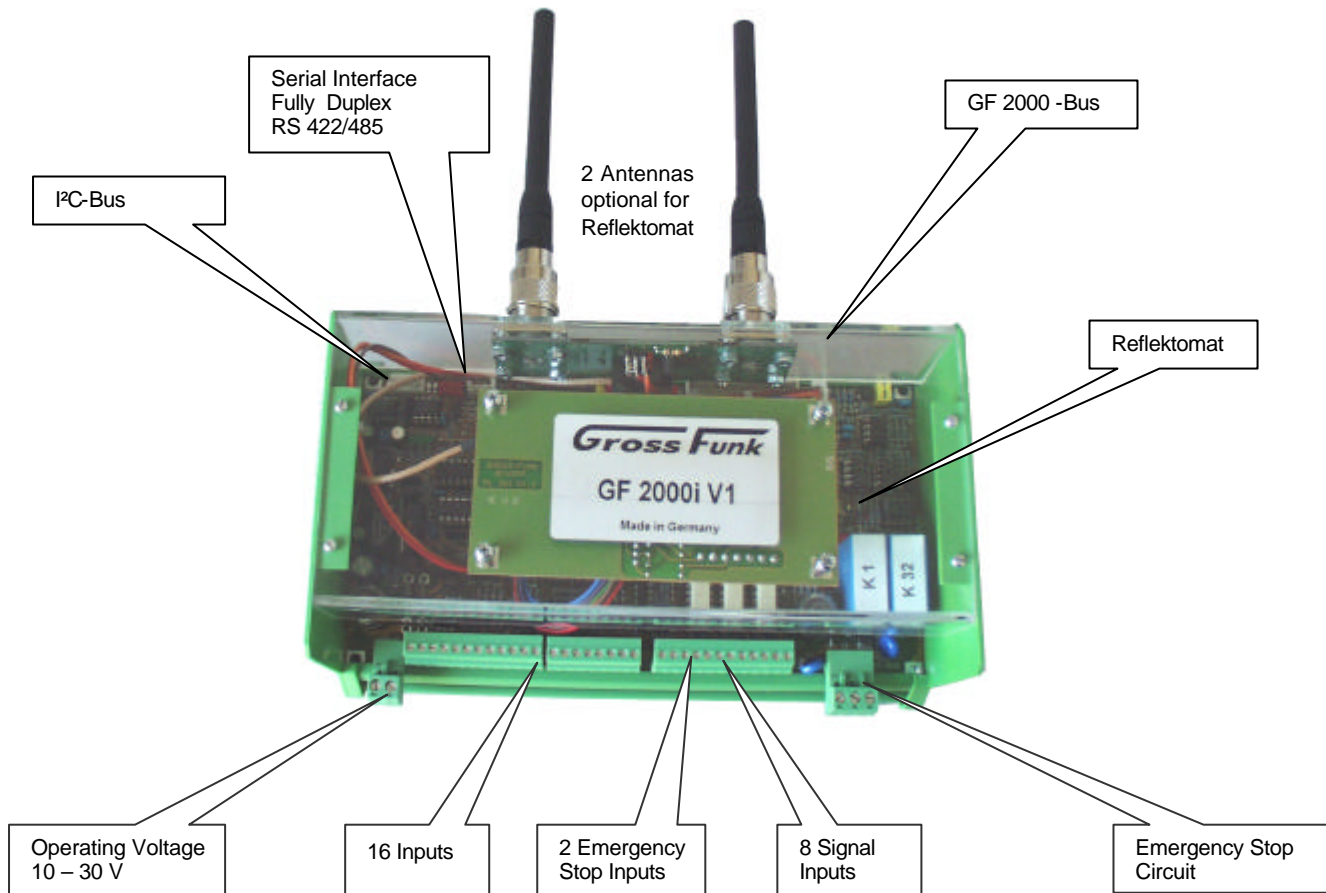


The transmitter GF 2000 i S1 is particularly suitable for the transmission of data and control instructions from switch cabinet to switch cabinet. 2 redundant emergency stop- and 16 inputs transfer control instructions to the GF 2000i receiver. Data can be transmitted through several interfaces.

Technical Data

Operating Voltage	12/24V = max: 30 V min: 10V
Current Measurement Idle State without HF-Component	typical 53 mA, max 130mA
Current Measurement Standard - HF-Component	20 mA
Control Channels K2-K17	10 – 30 V= Int. Potential (standard) non-power adjustable
Weight	380 g
Dimensions	W=120 mm H=127 mm D=95 mm

Universal – Receiver/Transceiver GF 2000i Version1



The Receiver and Transceiver GF 2000i V1

is particularly suitable to control a SPS, a data bus or external relays. The GF 2000 Bus operates a variety of peripheral devices.

2 redundant emergency stop in- and outputs with non-powered contacts as well as 16 outputs and 8 inputs are available directly through the service friendly screw-type terminals / plug clamps.

The system key, through which every Gross-Funk system is protected, can be adapted to any operating device through a learning procedure. Therefore many receivers can be adapted to one operating device.

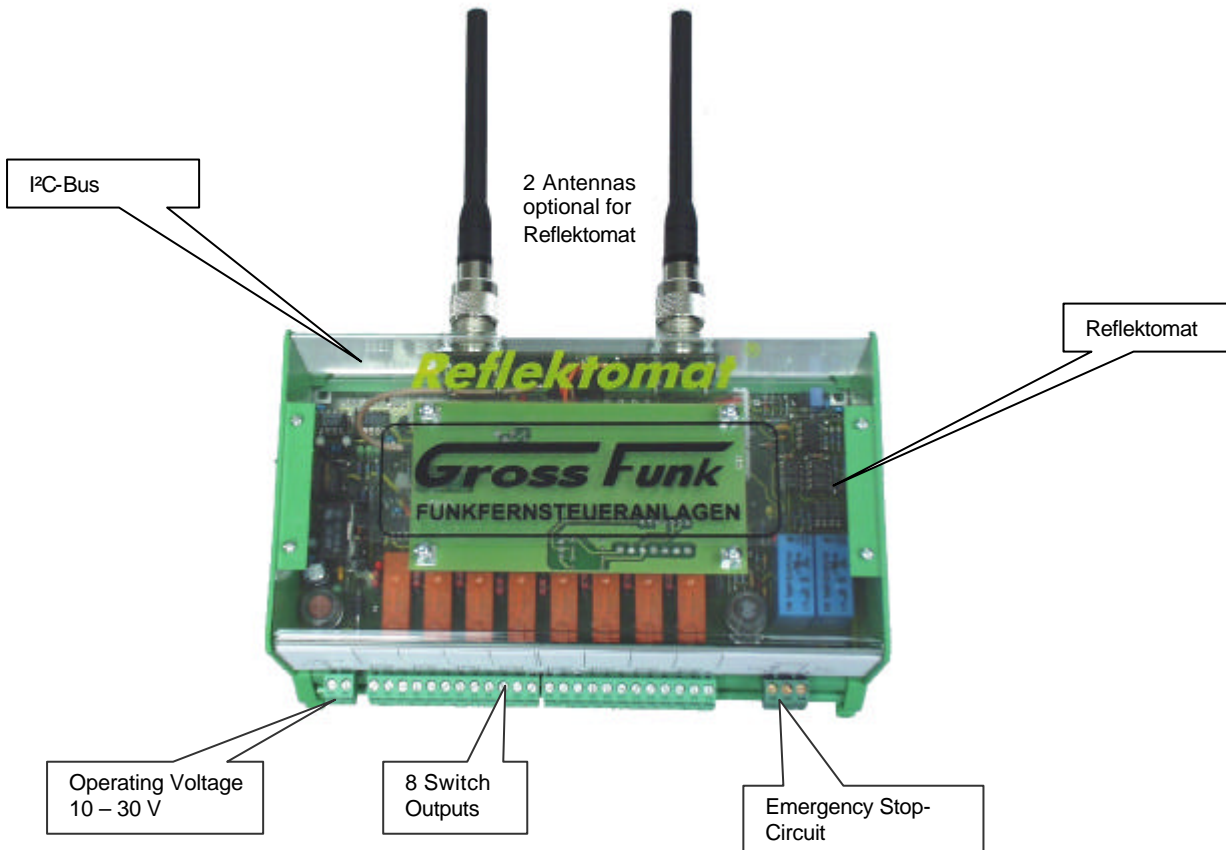
GF 2000i V1 is especially suitable for the bi-directional data traffic, both with short distances over a few hundred meters and in addition to larger distances up to 30 kilometers. Data transmission for larger distances is also via modem and GSM possible.

Technical Data

Operating Voltage	12/24V = max: 30 V min: 10V
Current Measurement Idle State without HF-Component	typical 80 mA, max 120mA
Current Measurement Standard - HF- Component	20 mA
Current Loading Output Driver	Plug 9 Clamp 5-12 Total Current 500mA Plug 6 Clamp 1- 8 Total Current 500mA
Main Channel Outputs K2-K17	Plug 9 Clamp 2 Counter Connects Ground if Main Channel is on Plug 9 Clamp 1 Counter Connects + if Main Channel is on
8 Switch Inputs	Plug 8 Clamp 2-9 10-30V=
2 Switch Inputs Emergency Stop	Plug 8 Clamp 1 u.10 10-30V=
Maximum Current Emergency Stop	4 A (6A fuse protected)
Weight	780 g
Dimensions	W=205mm H=100 mm D=125 mm

Different potentials between transmitter and control outputs can be connected separately. The setting occurs through the Jumper.

Universal - Receiver GF 2000i Version 2

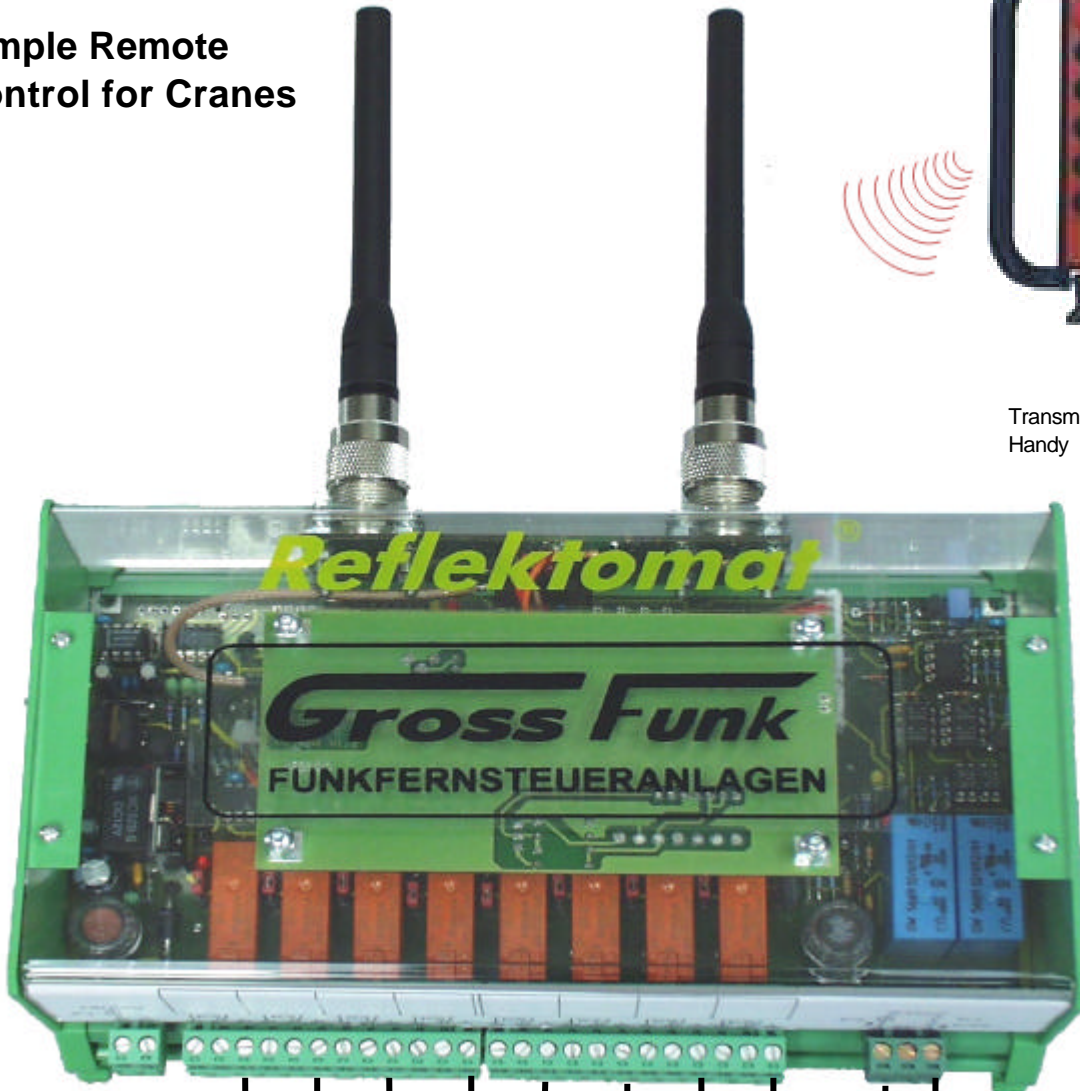


The receiver GF 2000i V2 is the little brother of the GF 2000i V1. It has 8 control relays with up to 8A switching current already on board and can be directly wired with the service friendly screw-type terminal / plug clamps. The system key, through which every Gross-Funk system is protected, can be adapted to any operating device through a learning procedure. Therefore many receivers can be adapted to one operating device.

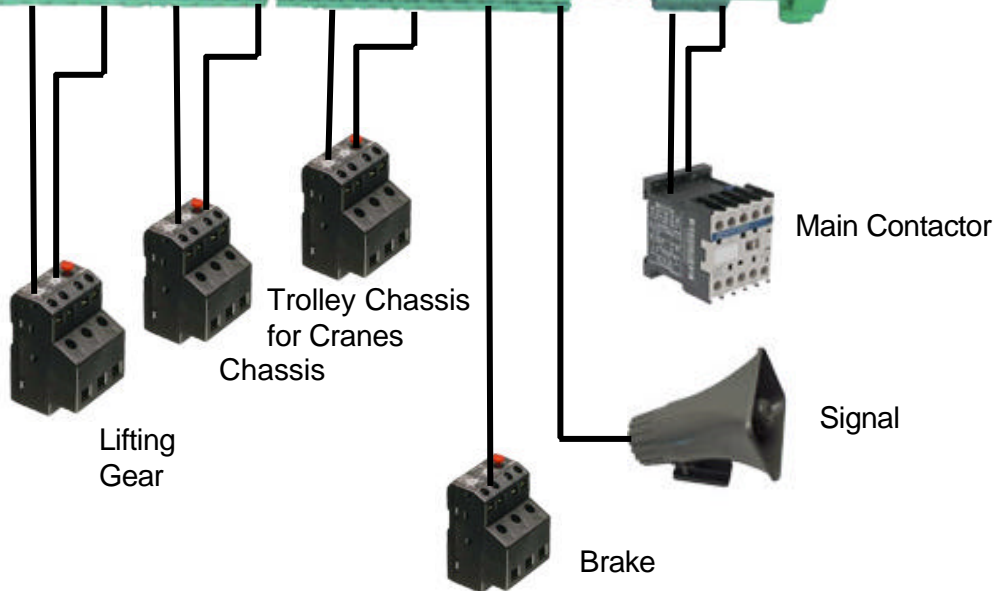
Technical Data

Operating Voltage	12/24V = max: 30 V min: 10V
Current Measurement Idle State without HF-Component	typical 80 mA, max 120mA
Current Measurement Standard - HF- Component	20 mA
Contact Rating Control Relay	8A at 250V~/ AC1 10A at 250V~/ AC
Maximum Current Emergency Stop Circuit	4 A (6A fuse protected)
Weight	780 g
Dimensions	W=205mm H=100 mm D=125 mm

Simple Remote Control for Cranes



Transmitter Example Handy

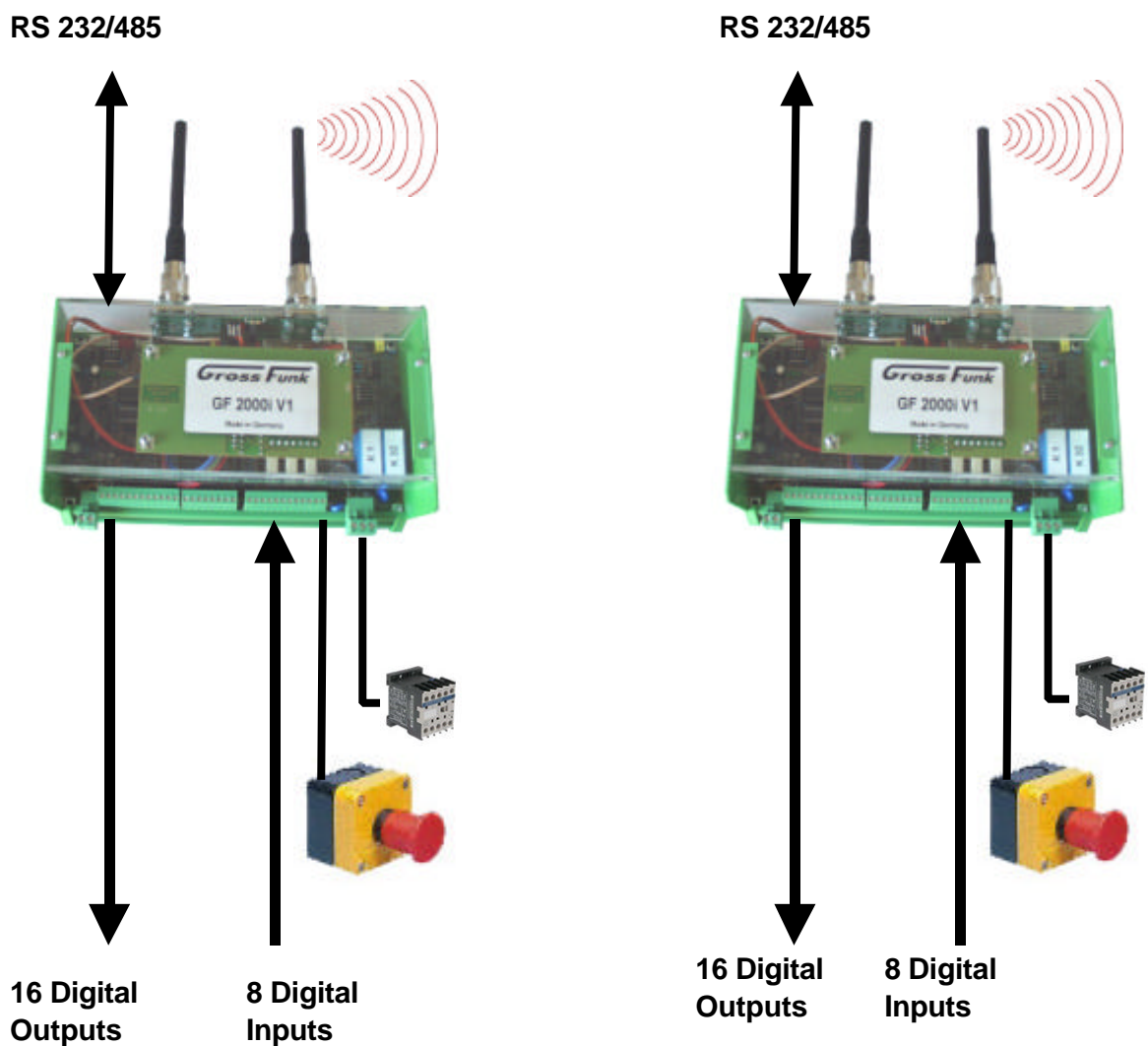


Remote Control for Hauling Plants



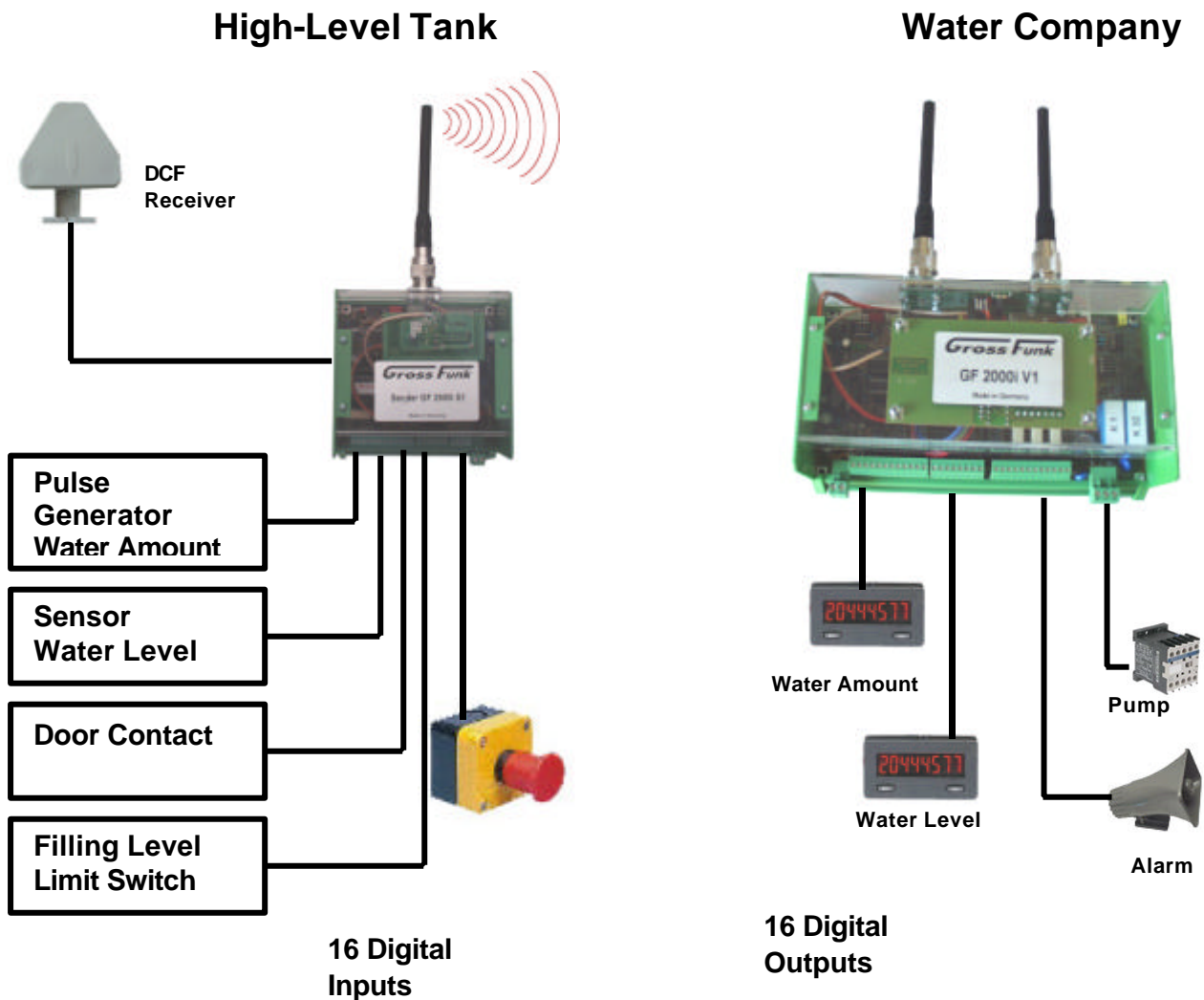
GF 2000i V1 as a Cable Substitute with an active Emergency Stop

To put a wire from A to B is often a lengthy and costly matter. Often built-up areas or inaccessible obstacles lie between the end points.
With the GF 2000i the data can be transferred serial or parallel.



Additional in-/ outputs can be linked logically.
Additional modules can be connected through the GF 2000 as an extension.

**Data Transmission from the High-Level Tank to the Water Company
 Across a Large Distance Via Time-Slot Technique**



The time-slot technique makes a unique frequency allocation possible. The time of transmission is limited to 6 seconds per minute. All values are temporarily stored in the transmitter.

Directional antennas can be used to reach maximum range and a larger freedom of interference. In boarder areas, directional antennas are usually prescribed by the Regulatory Authorities.

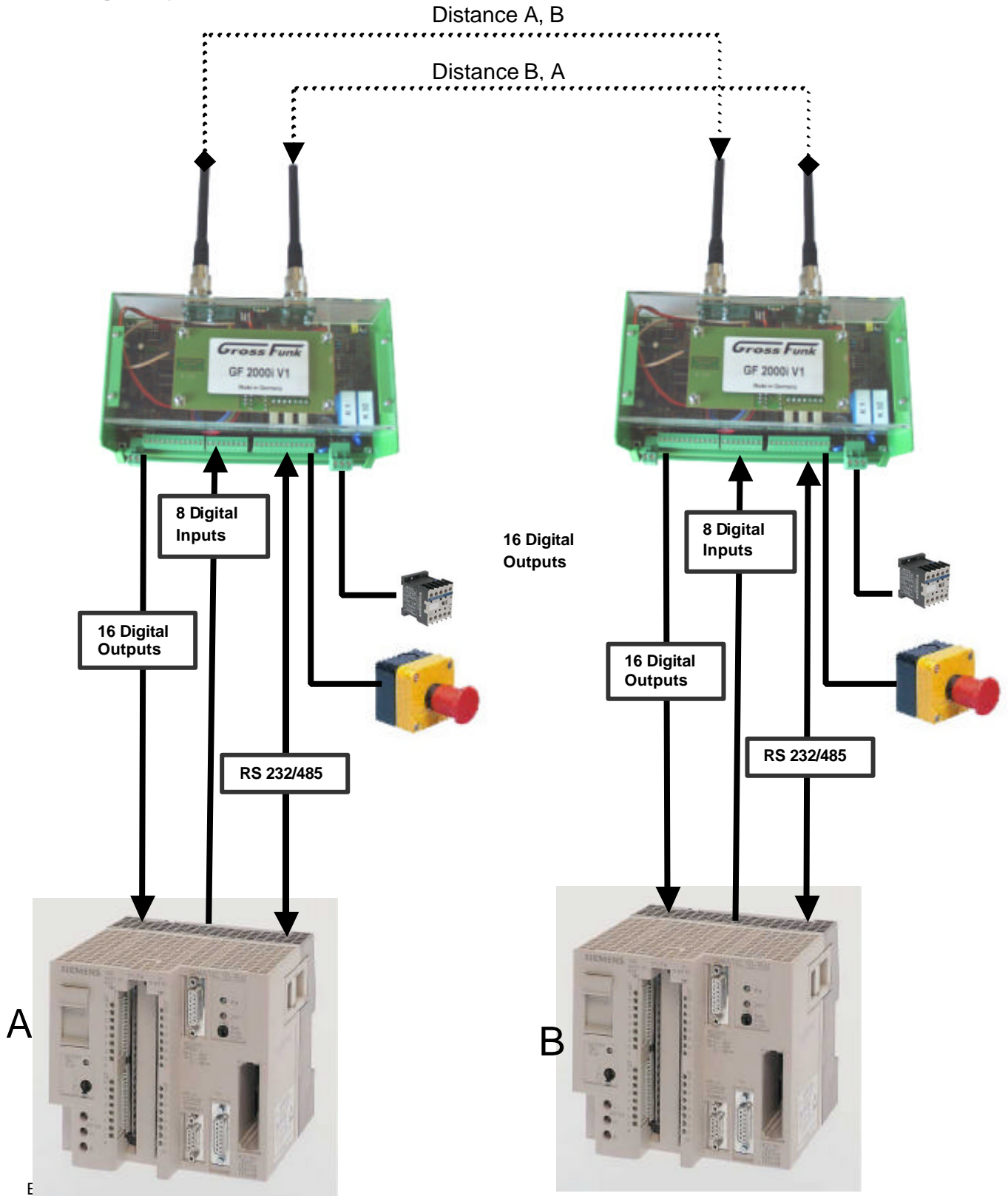


Professional Directional
 Antenna with Weather
 Protection,
 Heavy Design
 9,5 dB Gain
 Item Nr. 100-002-338

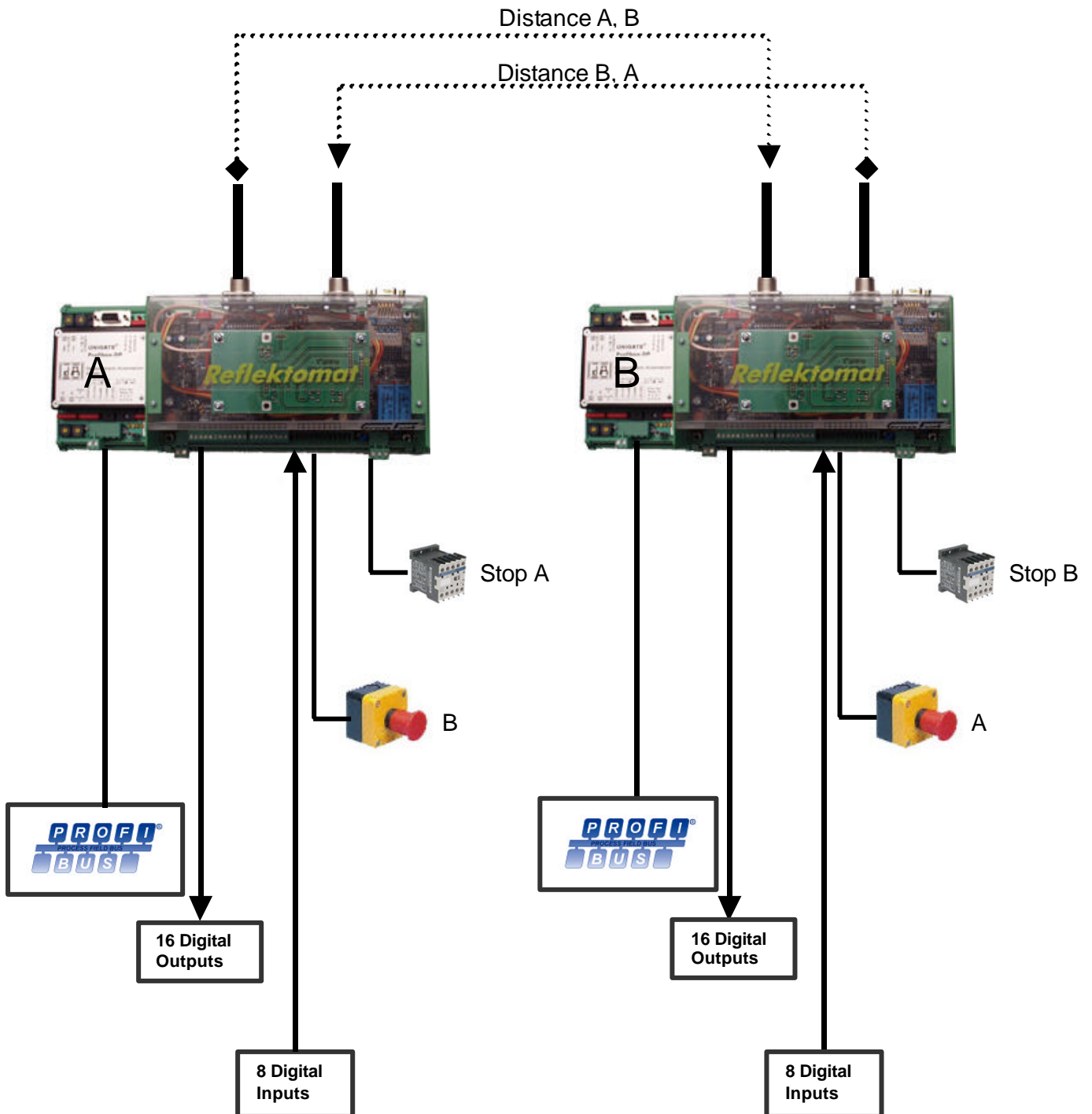


Low – cost
 Directional Antenna
 Light Design
 9,5 dB Gain
 Item Nr. 100-001-808

GF 2000i V1 as a Connection from SPS to SPS with an Active Emergency Stop



The serial connection via the 3964R Protocol has been tried and tested as the most cost-effective data transmission from SPS to SPS.



Other fieldbus gateways like **INTER BUS**, **CAN open**, **LonWorks**, or **Ethernet** are also possible. Please ask the Gross-Funk team.

All remote control transmitters from Gross-Funk can operate the GF 2000i receiver. Here is also a bi-directional connection possible. There are several standard models, depending on requirement, available.

<p>K2 The most popular Transmitter at Gross-Funk</p> <p>Areas of Use: Construction Cranes Industrial - Indoor Cranes Vehicle Control Mobile Cranes Concrete Pump</p>	 
<p>K2 + The bigger brother of the K2</p> <p>Areas of Use: Construction Cranes Industrial - Indoor Cranes Vehicle Control Mobile Cranes Concrete Pump</p>	 
<p>Vario Robust and yet very handy</p> <p>Areas of Use: Construction Cranes Industrial - Indoor Cranes Vehicle Control Mobile Cranes Concrete Pump</p>	 
<p>Ergo Very small and ergonomic with chest strap and bag</p> <p>Areas of Use: Industrial - Indoor Cranes Vehicle Control</p>	 

<p>Pumps Cable Winches</p>	
<p>Handy ergonomic handles make the single hand operation possible</p> <p>Areas of Use: Construction Cranes Industrial - Indoor Cranes Vehicle Control</p>	 
<p>Midicon Small and light</p> <p>Areas of Use: Pumps Gate Control Small Indoor Cranes</p>	 
<p>Mobile Operating Device with Display</p> <p>Areas of Use: Automated Warehousing Gate Control Positional Systems</p>	 

The contents of this booklet are for demonstration purposes only. The shown examples are applications as they are often used. GF 2000i can do a LOT more. There is no limit on you imagination. We will gladly advise you. Technical alterations are subject to change.

Gross-Funk develops and manufactures since 1980 remote control systems for the professional and safety relevant use. Our new product line GF2000 with the tried and tested Gross-Funk safety and robustness aims especially to the electrical installations and mechanical engineering.

Whether in storage-, logistic- and railway areas, manufacturing of cranes, vehicles, or with municipalities, energy- and water suppliers and in many other areas Gross-Funk supplies you

with the right remote control and data transmission systems, everywhere where a high transmission- and functional safety is required. Also the transmission of a secure emergency stop is guaranteed. Various examinations and licensing at institutions like TÜV, Cetekom, Germanischer Lloyd, for EMV, Ex-Schutz, VDV, R&TTE, BG, nuclear engineering systems and many more emphasize the high safety standard.

The radio transmission can either take place in the free of charge ISM-Band or also within coordinated frequencies in the time-slot technique. Certification to the regulatory requirements are, for entire Europe according to R&TTE as well as for the USA, Canada, Switzerland and many more, on hand.



Gross-Funk is ISO 9001 certified since 1994.
Gross-Funk works reliable, cost-effective and customer oriented.

Our scope of supply is so diverse and customer specific, that everything cannot be included in the supplied information. Soon our product catalog will come out, which you can already order from us. Don't hesitate to call us, the Gross-Funk team will gladly and completely advise you.

Your Gross-Funk team will gladly and completely advise you.



Telephone 06307 92120

www.grossfunk.de