TELENOT

B&B electronic
TELENOT ELECTRONIC GMBH
Forest Frequency In Green

Radio remote control for forestry cable winches
F9

Carefully read the operating instructions before connecting up the system!
Never take the system into operation before having thoroughly read the important issues for your application in the operating instructions. This will prevent faults during assembly and operation of the system and save time and prevent trouble.

Appendix: Connector pin assignment of the connection cable valid for your winch

The system can be operated free-of-charge and therefore must not be registered at the BNetzA.

Contents

1 SAFETY INSTRUCTIONS

- Read the operating instructions caefully before starting to use the radio remote control system and keep the instructions in a suitable protective cover near where the system is used.
- The receiver may only be connected up by suitably qualified persons in accordance with the attached connector pin assignment diagram.
- The operator agrees to use the radio remote control system only for the intended use.
- The radio remote control system may only be operated when in proper working order. In case of faults and defects which could affect safety, the system must be immediately switched off and repaired by a qualified person.
- Only authorized and properly trained persons may operate the transmitter.
- Persons whose reaction time is affected by medicine, alcohol or drugs are not allowed to operate, handle, maintain or repair the radio remote control system.
- Before switching on the radio remote control system make sure that nobody is endangered during operation of the system.
- Always ensure visual contact to the machine while working with it and take special care you are not yet fully familiar with it.
- Make sure not to mix up the different rope movement directions or the two sides of double drum winches after changing position.
- During breaks and after work switch off the transmitter and secure it against unauthorized use.
- Repairs must be carried out by qualified persons using original spare parts only.
- Carry out regular visual inspections to ensure that damaged cables, connecting pins or other safety relevant equipment are repaired or replaced before starting to work.
- Unauthorized modification or changes at the radio remote control system is not allowed for safety reasons.
- Always pull out the connecting cable of the receiver before carrying out service or welding work on the machine.
- The emergency off switch at the receiver only affects the winch and does not the same as the Emergency Off switch of the machine.
- Non-observance of the safety instructions may cause severe accidents and injuries.
- Besides the generally valid rules and regulations, the local accident prevention rules must also be observed.
- For your own safety always keep to the specified maintenance intervals.

2 SCOPE OF DELIVERY AND INTENDED USE OF THE SYSTEM

Scope of delivery

- Transmitter **F9 S** with belt/shoulder strap and safety cap for charger jack
- Transmitter holder **SH 1007**
- Receiver **F9 E** with connecting cable and plug
- Charger **LG 1007**
- Charger cable **LK 1007** with snap-on connectors
- Operating instructions F9
- Connector pin assignment at the connection cable valid for your winch

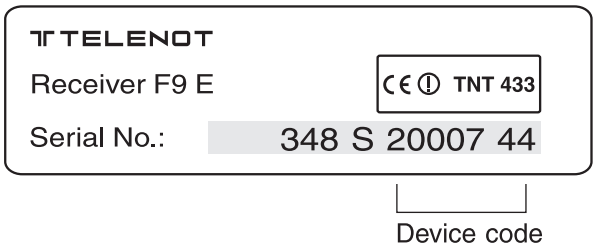
Intended use

The **F9** radio control is designed for easy and safe remote control of forestry cable winches and electrical accessories. It is suitable for all common winch brands and accessories such as motor speed adjustment, emergency call and alarm systems as well as special functions.
Provided certain conditions are fulfilled by the machine, the vehicle also can be controlled by remote control. In case of interest please contact the manufacturer at the address below.

3 TYPES, VARIANTS AND OPERATING MODES

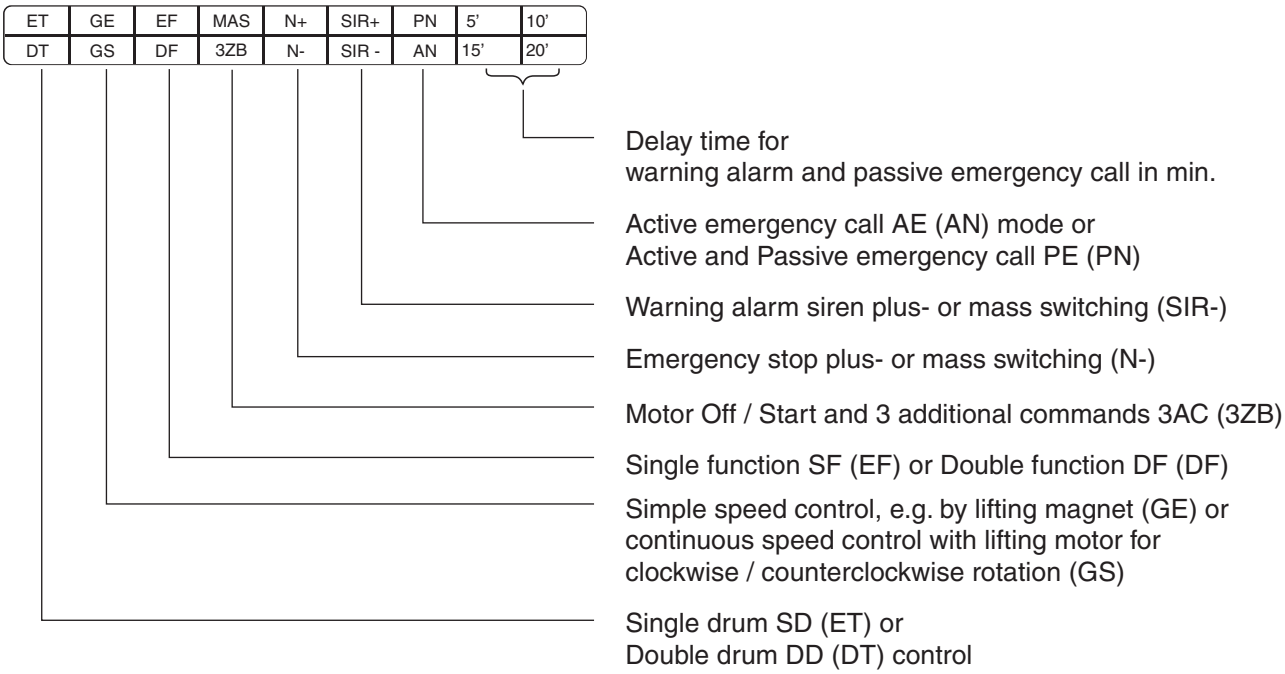
Before connecting the receiver, check that the specifications on the receiver's type plate (see table below) match those of your machine.

Likewise, check that the receiver's and transmitter's serial number device codes are identical.



CE ⓘ - These signs confirm the conformity of the device to the EMV Guideline 89/336/EC, the Low Voltage Guideline 73/23/EC and the R&TTE Guideline 1999/5/EC.

Meaning of the versions and operating modes on the receiver label:



The operation mode set is indicated by the point (●) in the corresponding field. The settings are already set in the factory to your requirements; the setting for SF/DF can be changed anytime by a qualifed technician (see Sec. 3.5).

Additional operating modes that can be factory-set:
- No emergency call
- Siren/Horn without emergency call
- Only emergency call active with or without siren/horn
- Emergency call active and passive with a delay time of 5, 10, 15 or 20 minutes
- Emergency call together with the mobile emergency system comtac 1204
- "Standard" version with 3 additional commands (3 AC) available for free allocation
- Release **with** permanent release (locking after 0.5 to 4 seconds, factory set)
- Release **without** permanent release
- Motor Off / Start
- Motor Start via Motor Off
- Gas On / Off or gas continuous

3.1 “Standard” version for all popular winch brands

This operating mode is **factory set**.

- Pull right and left drum side
- Short and permanent release right and left drum side
- Simple Speed control SS (GE) or Continuous Speed control CS (GS)

Optional special functions:
- 3 additional commands for free allocation (3 AC)
- Release without permanent release (see Sec. 5.6)
- Motor Off / Start

3.2 Version for "W / Oil motor" winches with hydraulic oil motor

The **W / Oil motor** version of the radio control system is specially adapted for operating this type of winch. Apart from the standard functions, you can control the rotation direction of the hydraulic motor for controlled pulling or load lowering by separate switching of both speed steps (see Sec. 5.11).

3.3 Goldberger process

Using this operating mode in conjunction with two F9 systems, you can control both sides of the winch of a double drum winch independently from one control (see Sec. 5.12).

3.4 Single drum / Double drum

If the box “SD” (ET) is marked on the receiver label, only single-drum winches can be operated. “DD” permits operation of double-drum winches. Changeover from single-drum to double-drum version on request.

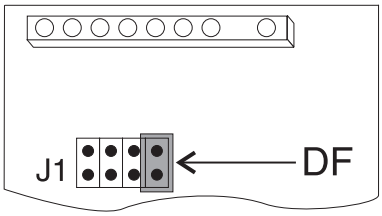
3.5 Single Function “SF” (EF) / Dual Function “DF” (DF)

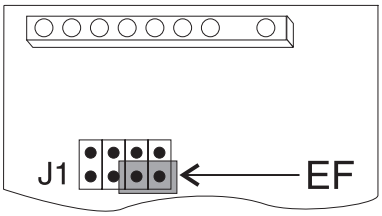
Single function **SF** stands for the operating mode in which, when the **Pull**command is given, the brake is automatically released simultaneously by a special mechanisms in the winch.

Dual function **DF** stands for the operating mode in which, when the **Pull** command is given by the receiver, the **Release** command is sent at the same time to the winch, because the winch doesn’t have an automatic release.

Changing the operating mode in the receiver (**only to be carried out by qualified persons**):

- Remove the circuit board from the receiver housing. See figure in Sec. 11.2
- Change the position of jumper J1 on the board if required





Never plug the bridge in to a position other than the one specified!

Winches differ from manufacturer to manufacturer and the type must be established by a **qualified person** based on the following procedure:

Connect the contact for the **Pull** solenoid valve briefly to the positive board voltage.
If the winch pulls in, then the operating mode **SF** (EF) on the receiver is correct; if there is just a loud clicking sound and no winch movement, then the brake is not released automatically with the Pull command. In this case, the operating mode **DF** (DF) on the receiver is correct with the brake released simultaneously.

When setting up the receiver for the first time, make sure that the proper operating mode is selected. If the solenoids of the winch have no additional circuit elements or there is only one diode between the connections for clutch and brake, then the **DF** (DF) field must be marked on the receiver type plate.

With pneumatic winches, because of the response delay, additional electronics are often provided, which are inserted in the feed line for the valve brake and the clutch.
In this case, the **EF** field must be marked on the receiver type plate. If you are in any doubt, please contact us and we will be glad to help solve any problems.

3.6 Simple Speed control “SS” (GE) / Continuous Speed control “CS” (GS)

Operating mode is used for switching on or off a higher speed, or for continuous speed control.
- in SS mode in conjuction with a solenoid, or a pneumatic or hydraulic cylinder at the Bowden control
- with CS (GS) control, an electric motor is used for clockwise/counterclockwise rotation to continuously increase or decrease the motor speed

3.7 Short / Permanent release of the brake

The operating mode can be preset in the factory only to “Short release” or to “Short and permanent release” with selectable delay times for permanent release (see Sec. 5.6).

3.8 Motor Start / Off

Operating mode can also be factory-set to “Motor Start via Motor Off”. Operation see Sec. 5.8.

“Motor Start via Motor Off” option
To start the motor, first release the command “Motor Off” and then
activate the command „Motor Start“ within 2 seconds. This prevents inadvertently starting the already running motor.

3.9 Additional commands A, B and C

These commands activate three more load outputs for free use. Operation see “Connection of load outputs” Sec. 4.1 and 5.9.

3.10 Emergency call configuration

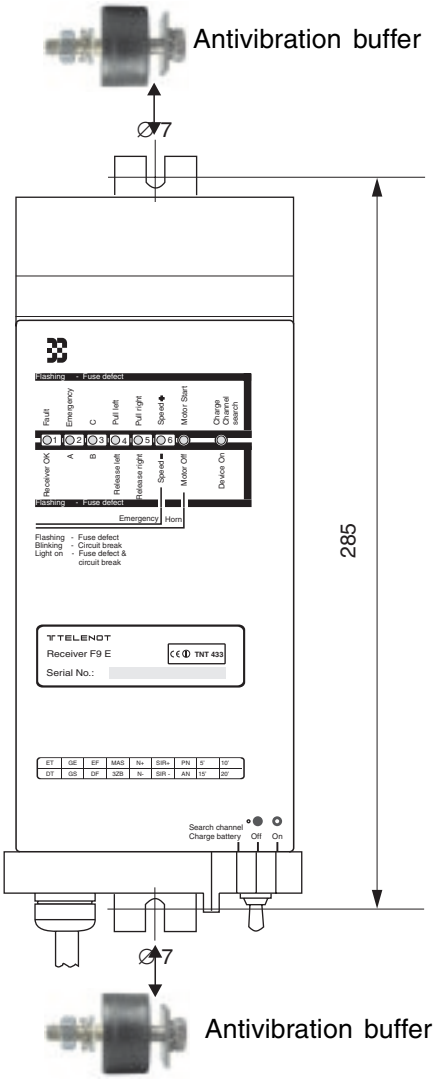
Different operating modes can be set for the emergency call and circuits for the load output at the receiver (see Sec. 4.1 and Sec. 9).

3.11 Special function for remote control of vehicle (on request)

For the remote control of a vehicle, the radio control system must be adapted to the special conditions of the particular vehicle. For some of these individual cases customized solutions already exist. If you have any questions regarding this issue, contact your supplier or the manufacturer.

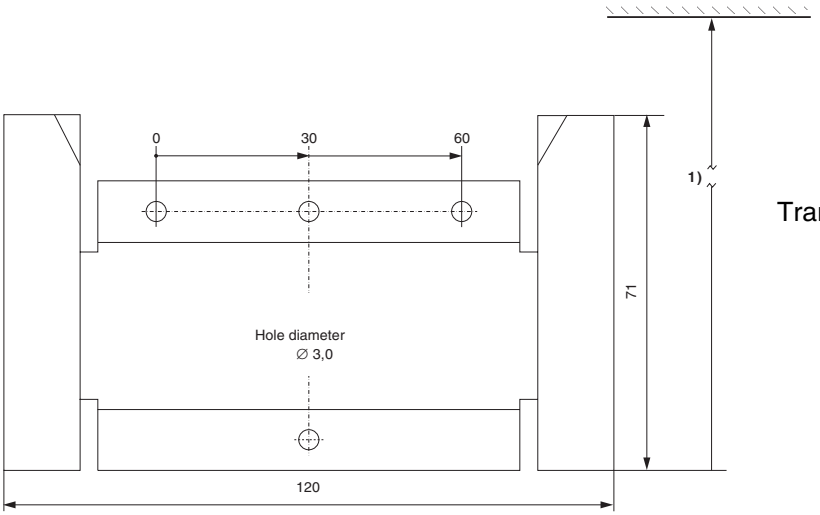
4 INSTALLING THE F9 E RECEIVER

In order to achieve as wide a range as possible, mount the **receiver vertical with the cable outlet pointing to the bottom** with the aid of the two anti-vibration dampers. The **angled plastic top** under which the aerial is located **should be near a window**.
Assembly inside closed metal surfaces may have a negative affect on the range (see Sec. 4.2).



Since the transmitter can be recharged on the receiver in the skidding vehicle, the transmitter holder **SH 1007** should be mounted within easy reach of the receiver so that the charger cable **LK 1007** can be connected easily between the transmitter and receiver.

Mount the transmitter holder **SH 1007** vertically in the driver's cabin according to the digram below.

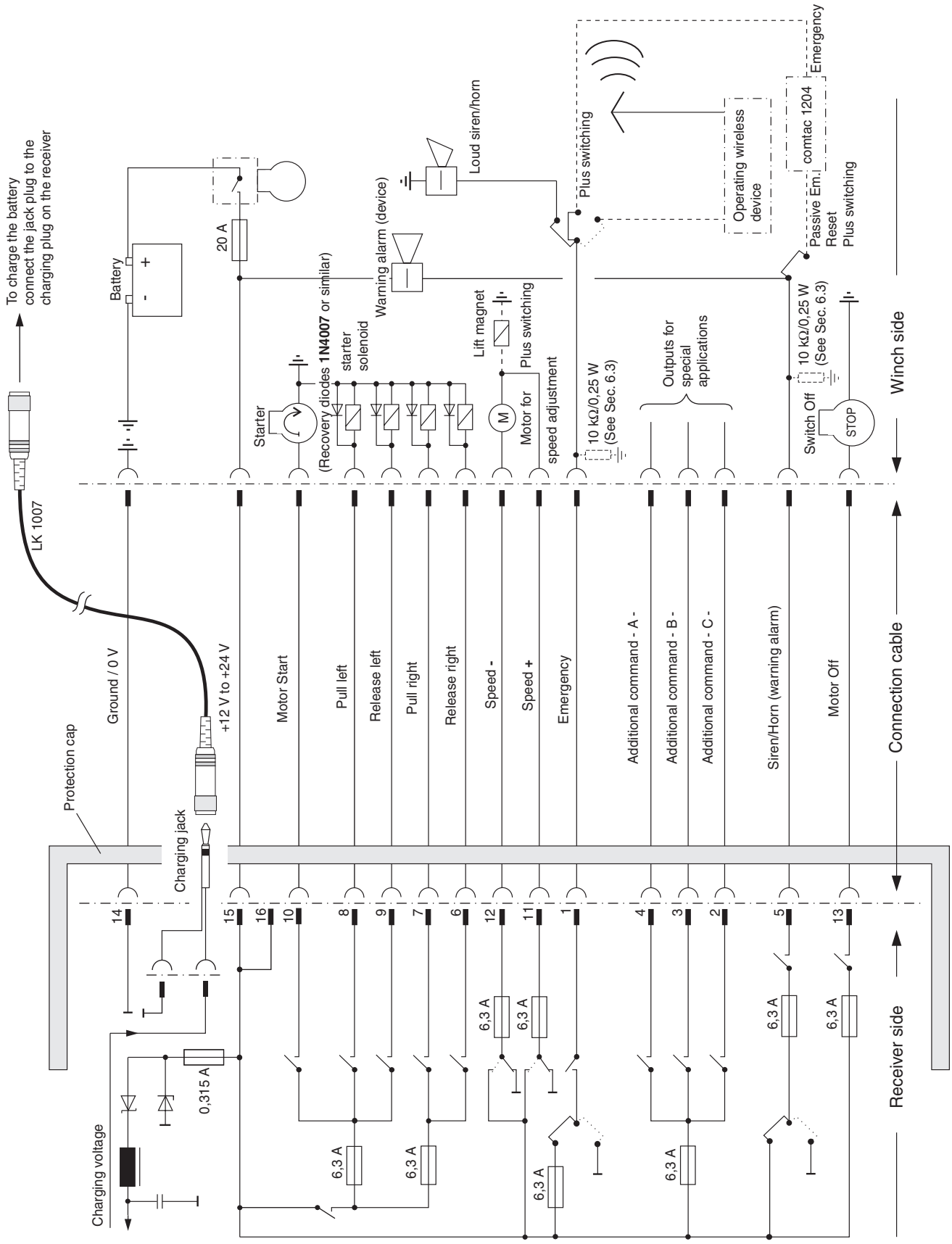


Transmitter holder **SH 1007**

1 For easy access to the transmitter, the transmitter holder **SH 1007** should be at least 220 mm away from any neighbouring equipment.

4.1 Connecting up the F9 E receiver with connection of load outputs

If there is already a winch socket wired according to the wiring diagram which matches with the connector of the connecting cable, you just have to plug in the connector. Wiring of the socket outlet must be carried out by a qualified electrician according to the applicable pin assignment plan for the winch.



4.2 "Separate aerial AA-F9" option

In the event that the confined space in the vehicle cabin is unfavourable for reliable radio communication, the receiver F9 E can be factory-set with the option “Separate aerial AA-F9”. At a certain production level also older remote control receivers of type F9 E can be retrofitted with this option; ask your manufacturer.

Equipment of the vehicle

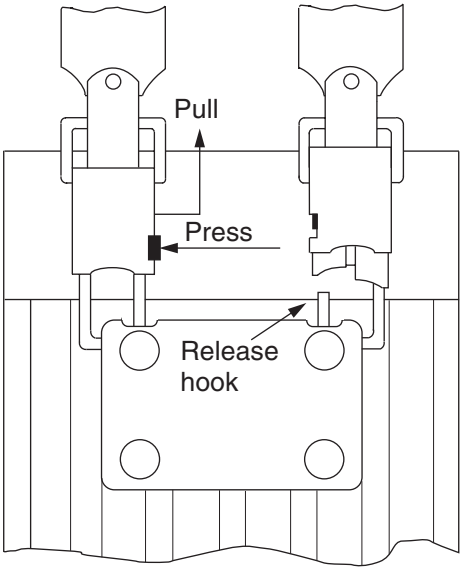
The fixing of aerial should be carried out by a specialised garage at a suitable location on the rear shield. For this, a solid fitting panel of about 30 cm edge length is required with a hole of 12 mm in the centre to receive the aerial foot. The fitting panel must have a good electrical contact with the surrounding metal parts and therefore should preferrably be welded. For fault-free operation, a good electrical contact between the tread of the aerial base and the panel fixture is required. Near the hole, the surface must be blank to enable the four washer claws of the aerial base to be in good contact with the fitting panel during screwing; this is vital to ensure good reception of the system.
The mounting position of the aerial base is covered by suitable protective paint for corrosion protection. For good reception the aerial reflector may be at 90° to the fitting panel or be tilted by max. 45°.

Lay the 3 m aerial cable in the vehicle without any kinks. Screw the coaxial connector mounted at the end with the heaxagonal union nut to the threaded connector end of the mounted vehicle aerial base and tighten.
If required, the aerial cable can be pulled apart at the coupling bush near the receiver.

5 TRANSMITTER F9 S

5.1 Carrying the transmitter

- The transmitter is best worn **on the hip** using the belt.
- If the transmitter is to be worn **on the chest**, then you need the shoulder strap, too.



Fixing the shoulder strap
For this the fastening hooks of the belt are inserted and locked into the small holes in the belt buckle on the back of the transmitter.
To release the hooks, press and hold the button on the narrow side of the plastic part and push this up until the hook can be disengaged.

5.2 Switch On/Off

Attention! Make sure that no commands are released involuntarily while operating the transmitter according to Secs. 5.4 - 5.12 - as a precaution first switch off the receiver!

- **Switching on**
  - Switch on the transmitter by holding the On switch in the **"On"** position for longer than one second.
  - If you do not activate any command switch for longer than 30 minutes, the transmitter switches off automatically.

- **Switching off**
  - **Briefly** flip the On switch into the **"Off"** position - the control lamp goes out, the transmitter is switched off.
  - If you do not activate any command switch for longer than 30 minutes, the transmitter switches off - automatically.

i To extend the operating time and to avoid accidental or incorrect operation, always switch off the transmitter during breaks and after completion of work and secure it against unauthorized use!

5.3 Control lamp at transmitter

Control lamp		Meaning
blinks slowly	-	Transmitter in „Change channel" mode
Blinks quickly	-	Transmitter switched on, ready for operation
Off	-	Transmitter switched off or
	-	Operation not possible because battery charge low
Lights continuously	-	Battery being recharged [1]
blinks with short interval Blinks 3 times briefly	-	Battery needs recharging [1]
Flashes every second	-	Battery is fully charged and is trickle charging. [1]

1 Notes on how to charge the batteries are given in Sec. 6

5.4 ⚠ EMERGENCY STOP

- Hold the On switch for a minimum of 1 second in the **"Emergency"** position.

Activated commands are immediately switched off (EMERGENCY STOP), other commands are blocked. Simultaneously with the release of the output "Siren/horn" the acoustic pre-warning phase starts; after another 20 seconds the "Emergency" output is also activated (see Sec. 9).

CAUTION! The winch emergency stop has nothing to do with the "Emergency stop" of the machine.

5.5 Speed control

- **Simple Speed control SS (GE)**
  In the simple speed control option the output "Gas+" is switched on using the "Gas+" switch and switched off again with the "Gas-" switch.

- **Continuous Speed control CS (GS)**
  In the continuous speed control option an electric motor connected to the outputs "G+" and "G-" is used to increase the engine torque as long as the G+ switch is activated and decreases it as long as the "Gas-" switch is activated.

5.6 Short / Permanent release of the brake

Activating the switch "Release brake" for max.1.5 s opens the brake only for as long as the switch is held down and closes immediately when it is released. Activating the switch for longer than 1.5 s, permanently releases the brake until it is activated by releasing for pulling. If the transmitter is not operated for 30 minutes, it automatically switches off and the brake closes.
The holding time of the switch for permanent release of the brake can be factory-set in steps of 0.5 s within a range of 0.5 to 4 s. The Permanent release function can also be completely switched off as a factory setting. The brake then remains open only for as long as the switch is activated (Release brake without Permanent release).

5.7 Operating levels BE1 and BE2

To upgrade the switching functions, besides the operating level BE1 for standard commands the transmitter is also equipped with a second operating level BE2. After switching on he transmitter, all standard commands for winch control can be operated directly in the operating level BE1. The remaining commands are activated via the operating level BE2. For this purpose, hold the On switch in the On position and simultaneously activate one the other 3 switches. An activated command of the operating level BE 2 still remains active after the On switch has been released. After releasing all switches, the transmitter automatically returns to operating level BE1.

5.8 Motor Start / Off

To start the motor hold the On switch in the right position and activate the motor start switch.
To switch off the motor hold the On switch in the right position and activate the Motor Off switch.

"Motor Start via Motor Off" option (factory setting)
The motor can only be started, if the „Motor Off" switch is first activated and then within the next 2 seconds the "Motor Start" switch pressed. This prevents inadvertently starting the already running motor.

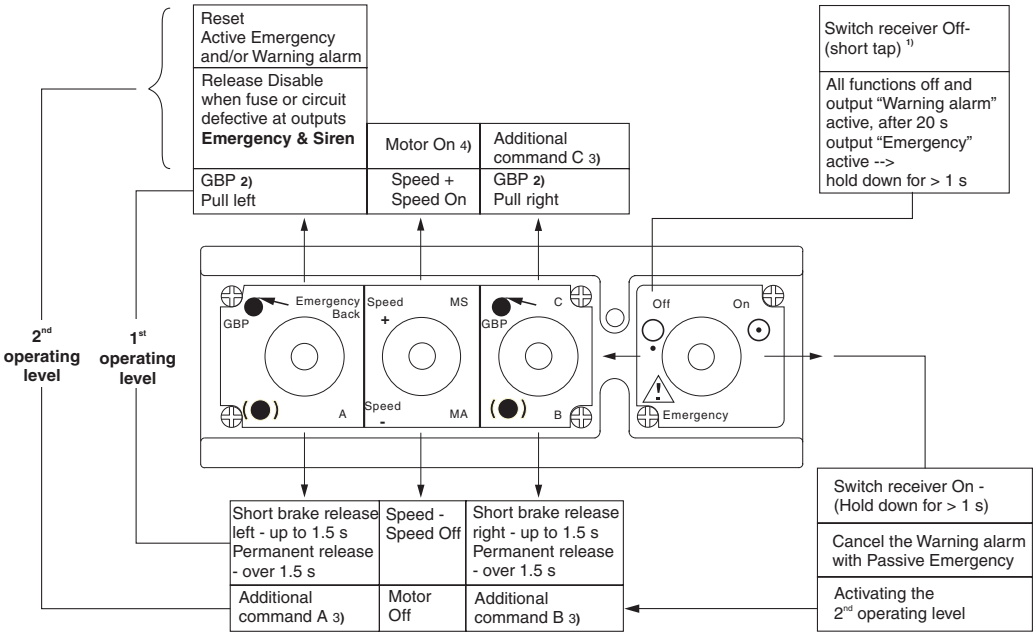
5.9 Operating in the STANDARD version of the transmitter

Operation according to the following figure.

Symbol	Command	
●←	**Pull**	
(●)	**Release brake**	
	EMERGENCY STOP	
Gas+/Gas-	Operating mode **CS** of receiver:	Continuous Speed Control
⚠	Operating mode **SS** of receiver:	**Gas+** → Switch on gas
		Gas- → Speed Off
SM	Start **Motor**	
MO	Motor **Off**	

Switch on transmitter:
Hold On switch to the right (On) until the lamp blinks.

For activation of commands from the 2nd operating level (see Sec. 5.7), hold the On switch in the On position and additionally activate the switch for the required command as shown in the figure. To hold the command, the On switch may also be released again.
All other commands assigned to the operating level BE1 can be operated directly and do not require additional activation of the On switch. The “Emergency stop” command is activated when the On switch is held to the left until the lamp blinks.



1 30 minutes after the last command the transmitter switches automatically off.
2 **GBP** (Goldberger Process, for explanations regarding the equipment required and the function see Sec. 5.12)
Release of the left side with Gas +/-, if, when switching on the receiver, the switch **Pull left** at the transmitter is held.
Release of the left side with Gas +/-, if, when switching on the receiver, the switch **Pull right** at the transmitter is held.
3 The A, B, C commands are only effective with the “3 additional commands” **(3AC)**option.
4 For notes on the SM mode, see Sec. 5.8

5.10 Additional commands A, B and C for the STANDARD version

Hold the On switch to the right and then activate the **A** or **B** or **C** switch. For further activation of a command, the On switch may be released again.

5.11 Operating the W / OIL MOTOR version of the transmitter

Operation according to the following figure.

Symbol	Command	
●←	**Pull**	
●→	**Release rope**	
(●)	**Release brake**	
⚠	**EMERGENCY STOP**	
Gas+/Gas-	Operating mode **CS** of receiver:	Continuous Speed Control
	Operating mode **SS** of receiver:	**Gas+** → Switch on gas
		Gas- → Speed Off
SM	Start **Motor**	
MO	Motor **Off**	

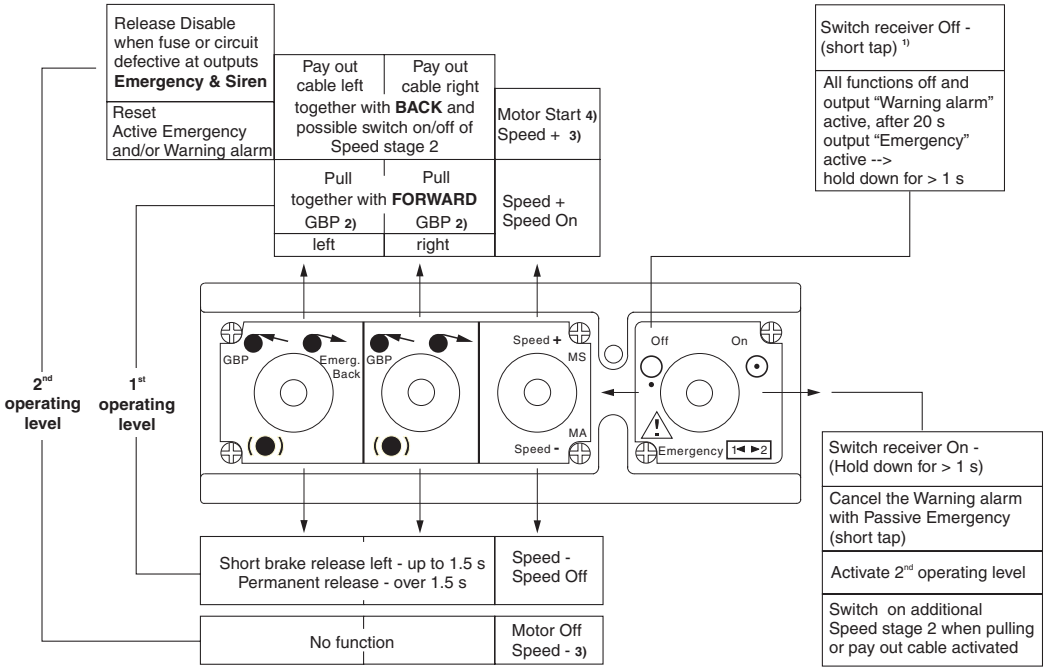
Switch on transmitter:
Hold On switch to the right (On) until the lamp blinks.

For **Pulling** of the right and the left winch side, the receiver simultaneously releases the **FORWARD** command for the corresponding direction of rotation of the oil motor. This applies equally to the **Release rope** command for both winch sides, at the same time releasing the **BACK** command for the opposite direction of rotation of the oil motor at the receiver. Independent of the direction of rotation, whenever the oil motor is activated, the speed level 2 can be switched on by flipping the On switch to the right and switched off again by flipping it to the right again. Additionally the **Gas+** and **Gas-** switch can be activated.

To activate commands of the 2nd operating level (see Sec. 5.7), hold the On switch in the On position and additionally activate the switch for the required command as shown in the figure. To hold the command, the On switch may also be released again.
All other commands assigned to the operating level BE1, can be operated directly and do not require an additional activation of the On switch. The “Emergency stop” command is activated when the On switch is held to the left until the lamp blinks.

Release rope has been activated in the 2nd operating level, the gas switch can also be activated.

While **Start Motor**, **Motor Off** are activated, the activated Permanent Release commands are switched off and all other commands except the Emergency-Off command are blocked.



1 30 minutes after the last command the transmitter switches automatically off.
2 **GBP** (Goldberger Process, for explanations regarding the equipment required and the function, see Sec. 5.12)
Release of the left side with Gas +/-, if when switching on the receiver the switch **Pull left** at the transmitter is held. Release of the left side with Gas +/-, if when switching on the receiver the switch **Pull right** at the transmitter is held.
3 The **Gas+** and **Gas-** commands are only effective, if **Release rope** has been activated before, otherwise the command **Start Motor** or **Motor Off** is effective.
4 **SM mode** via **MO**: An operating mode can be preset in the factory only releasing the **SM** command, if **Motor Off** (MO) has been activated before. This prevents an unintentional start while the motor is running (see Sec 5.8).

5.12 Operating using the GEOLDBERGER PROCESS

Using the **Goldberger Process** in conjunction with two F9 systems you have the option of controlling the two winch sides separately by two operators.

If the left winch side and the **Speed** command are to remain activated and only the right winch is to be blocked, then you must switch off the receiver. Switch on the transmitter and hold the switch for **Pull left** at the transmitter. Then switch on the receiver and only release the **Pull left** switch again when the lamp for **Pull, Release right** blinks red/green after the lamp test on the receiver and the current radio channel is displayed. The right winch side that is supposed to be operated by the 2nd system is blocked.

You proceed in the same way with the appropriate transmitter and receiver for the 2nd system. To block the left side and activate the right side of the winch on the 2nd transmitter you hold the **Pull right** switch until the lamp for **Pull, Release left** blinks red/green after the 2nd receiver is switched on after the lamp test.

When you switch off the receiver, this operating mode is automatically cancelled and must be reactivated for each new start up.

6 RECHARGINGTHETRANSMITTER BATTERY

If the control lamp on the transmitter blinks 3 times briefly with a short interval, then the battery is low and must be recharged. If you don't happen to notice the control lamp in this case, there is no danger of the battery being damaged due to the low charge, because shortly afterwards the transmitter will switch off automatically to prevent this.

The battery may not be charged if the temperature is below 0 °C or above 40 °C!

Loading the battery from the power supply of the skidding vehicle

- To do this, snap the cable socket connectors of the charger cable LK 1007 into place on the charger jack of the receiver and transmitter.
- Switch the toggle switch on the receiver to **"Search channel / Charge battery"**.
- Check that the lamp "Device On" at the receiver lights orange and the control lamp at the transmitter lights red.

Charge battery from the 230 V mains supply

- Connect the LG 1007 mains charger to the 230 V mains supply.
- Snap the cable socket connector firmly onto the charger jack of the transmitter.
- Check that the control lamp at the transmitter lights red.

During the charging period of about 4.5 hours the control lamp on the transmitter lights continuously.
Flashing of the control lamp indicates that the trickle charge phase has been reached.
You can leave the battery like this for longer periods of time without any risk of damage.

Make sure that you plug the protective cover of the charger jack back on after charging!

6.1 Notes on how to prolong battery life

- The older batteries are, the more they lose capacity and the operating period shortens.
- Recharge the battery only when it is empty. If the battery is recharged after only a short period of operation the battery life is shortened.
- Do not attempt to recharge the battery at temperatures below 0 °C or above +40 °C.
- If the battery is used properly, the battery life will be about 500 charging and discharging cycles. After more recharging cycles and at temperatures below 0 °C the capacity can drop considerably.
- Overdischarging, which could damage the battery, is prevented by the transmitter switching off automatically if it isn't used for longer than 30 minutes, or if the battery is low.
- If the transmitter is not to be used for a longer period of time, it should be stored at a temperature between +10° C to +20° C and only be charged before working with it the first time. You can leave the battery in the trickle charge condition for some days without any risk of damage.

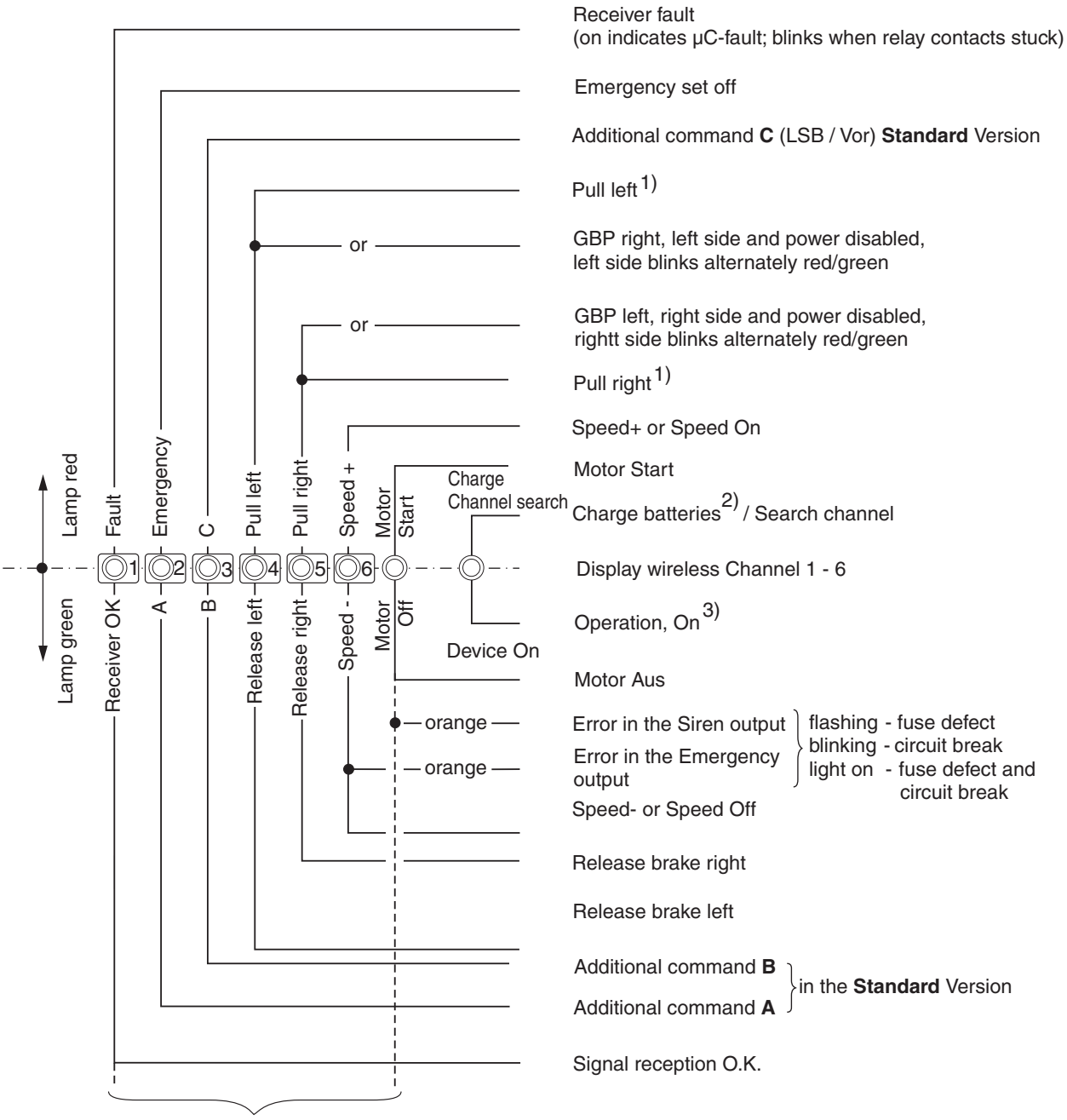
Never make any change at the transmitter, e.g. changing a battery yourself.
This must be carried out by a qualified electrician.

Caution: Do not forget to insert the gasket rings before closing the transmitter!

Cd

According to the directive on batteries and accumulators, it is not allowed to dispose of NiCd batteries with normal household waste!
TELENOT takes back batteries purchased from Telenot free-of-charge for proper disposal.

7 DIAGNOSTIC CONTROL LAMPS ON THE TRANSMITTER



After switching on the receiver, first an automatic lamp test is performed, where the 7 lamps go **red** for one second and then turn **green**. The red lamp displaying the wireless number then lights up for several seconds after which the receiver is ready to operate.

1 For Dual Function (DF) the lamp lights up “orange”.
2 During battery charging, the lamp lights up orange.
3 With the green “Device On” lamp you can check the power supply of the receiver. If it gets darker during operation or starts to flicker, there is a contact problem in the wiring. In this case the electrical system must be checked by a qualified electrician.

7.1 Start-up and function check

Danger of accident!
If there are two separate connectors on your skidder for the manual control and the radio remote control, then **only one control system may be connected at any one time**. Therefore, before starting to operate the radio remote control system, make sure that **the cable of the manual control is disconnected**.

Prerequisite for the function check:
- the receiver connection cable and the winch connector at the machine side must be properly installed
- the transmitter battery must be charged

First switch on the **receiver** and **then** operate the **transmitter**.

To ensure safety, the receiver blocks all operating commands just in case commands are already being transmitted by the transmitter when you switch on the receiver. In this case switch the transmitter briefly off and then on again. Now the system is ready for operation.

Check points a) to e) must ore starting to work with the ystem!

Instruction	Reaction	Control lamps on receiver
a) Receiver Switching on	—None—	**Device On** lamp lights green, the remaining 7 control lamps light red for one second, then green for one second. For one second the current radio channel is displayed, then the red lamp goes out.
b) Transmitter on **EMERGENCY OFF** for longer than 1 second [1]	Horn sounds half a second rhythm	**Reception OK** lamp lights green for 30 seconds; after 20 seconds **EMERGENCY OFF** lights red, after another 10 seconds **Reception OK lamp goes out.**
c) Activate any command at the transmitter	Horn continues to sound, **no working commands** are output	**Reception OK** lights during **activation at the transmitter; Emergency lamp** remains on.
d) Hold On switch at transmitter and activate **Pull left**	Horn stops; **Emergency** output switches off	**Reception OK** lamp goes out; no further reaction
e) Activate any command at the transmitter	Corresponding command is send	**Reception OK** and corresponding lamps light

With a ***defective system*** your are **not** allowed to **continue to work**. Send the complete system in a suitable packaging with transmitter and receiver and connecting cable, a detailed fault description and a completely filled in delivery note to the address given (at the end of the operating instructions) for repair. You can download the delivery note for repairs under **www.funk-im-forst.de**.

1 When a remote emergency call system (e.g. comtac 1204) is connected to the system, an emergency call message will be transmitted after a pre-warning time. If this message should not be transmitted, the emergency call must be cancelled immediately (see Sec. 9.4).

8 FAULT-FREE OPERATION

For fault-free operation, electrically perfect connections are required everywhere in the system. See also Sec. 12 on maintenance.

In contrast to a manual control system, the remote radio receiver, besides the positive supply voltage, also requires an electrically faultless mass or 0 V connection. In our experience, a common cause of failure is often corroded contacts or an electrically faulty mass connection, especially if the machine is not completely new.

- The ground connection must be carried out via a separate and electrically perfect ground connection, separate from other users!
- Protect the ground connection at a suitable place on the vehicle body using corrosion protection paint.

Malfunctions will inevitably result from the following defects in the system circuitry of the remote receiver on the machine side:

- Dirty, oxidized or rusty contact points
- Loose cable, clamp, plug-and-socket connections or fuse holders
- Loose connections at switches in the machine
- Rusty screw connections for grounding on the vehicle body
- Missing diode protective circuit at solenoid valves or at the continuous speed control of the motor[1]

Observe the green “O” lamp in this connection of the diagnostics lamp field of the receiver. If the lamp starts to flicker during operation or becomes dim, there is insufficient contact in the power supply to the receiver. In this case the electrical system must be checked by a qualified electrician!

1 Free-wheeling diodes are required for inductive consumers such as solenoid valves or motors to reduce the released field energy directly at the point of origin, when the system is switched off, without overloading the power supply or other system components with dangerous energy pulses.

With this procedure the qualified electrician checks if there are any free-wheeling diodes; for this, the ignition of the machine must be switched on and the motor off:

Disconnect the receiver power supply cable. All contacts of the winch connector to which inductive consumers are connected are touched one after the other with the stripped blank end of an insulated piece of cable connected on one side to the positive power supply to release the corresponding function. When the cable end is disconnected no visible fizzling spark may result. On the other hand, suitable **free-wheeling diodes must be mounted directly above each remote controlled inductive consumer using short connecting cables**!
Suitable diodes are diodes for continuous currents of 1 A and reverse voltages of 500 V.

9 EMERGENCY CALL

The radio remote control F9 offers the possibility of calling for help in case of emergencies via the F9 S transmitter. For this, the F9 E receiver provides the two monitored outputs **"Emergency**" and "**Horn**", which can be connected as follows as a factory setting (see Sec. 4.1):

Output of the positive on-board voltage or of 0 V with the identfication **SIR+** or **SIR-** and **N+** or **N-**.

In principle there is a distinction between the release modes "**Active EMERGENCY**" and "**Passive EMERGENCY**", for the emergency call the following three operating modes are possible as a factory setting (see Sec. 3 „Receiver type plate"):

a	**Emergency stop without emergency call function**	only emergency stop, no emergency call function, no activation of the "Emergency" and "Horn" outputs [1]
b	**Active Emergency (AE)**	released by intent manually at the transmitter
c	**Active** & **Passive Emergency AE / PE**	active emergency call released manually at the transmitter and emergency call released automatically and time dependent at the receiver

The active emergency call is released by activation of the emergency switch on the transmitter. The passive "Emergency call" is released automatically and by intent, when the transmitter has not been operated for a certain period of time and the receiver has not received any commands. The time can be factory set to 5, 10, 15 or 20 minutes according to customer specification (see Sec. 3 "Receiver type plate").

9.1 The controlled "Emergency Call" and "Horn" outputs

In case of emergency the proper functioning of the emergency call system is of vital importance. Continuous monitoring of the two outputs "Emergency" and "Horn" ensures that defective fuses or a cable break in the line to the connected emergency call systems cannot suppress release of an emergency call without being noticed. There are relevant notes on the receiver housing, the type of fault is displayed in the diagnostics lamp field of the receiver (see Sec. 7):

defective fuse	The lamp of the output concerned flashes orange every second.
Cable break	The lamp of the output concerned blinks orange every second.
Cable break and defective fuse	The lamp of the output concerned lights continuously.

If a fault occurs, output of further commands is blocked to remind the operator to eliminate the fault as quickly as possible.
Faults like this may not be permanent; therefore send the system back to the factory with a detailed fault description (fault display at the receiver) as soon as possible!

If required, the blockage can be released to be able to complete ongoing work despite the fault:
Hold On switch on transmitter in the right On position and briefly press the "Pull left" switch.

1 On request the "Horn" output can also be only released as an acoustic warning; in this case the "Emergency" output is not used (horn without emergency call).

If the fault remains, the blockage will act as a reminder whenever the receiver is restarted!

In the “Emergency stop without emergency call function” version (see Sec. 9 a), the “Horn” and “Emergency” outputs are not required and therefore not monitored.

9.2 Active Emergency

Hold the On switch on the transmitter for at least 1 second in the left “Emergency” position.

Reaction:
- At the receiver the “Horn” output for the acoustic pre-warning (e.g. horn) is switched on and off alternately for 20 seconds.
- Activated commands are immediately switched off, other commands are blocked.
- After the 20 seconds of pre-warning the On/Off rhythm of the acoustic warning slows down, indicating the additional activation of the “Emergency” output.

9.3 Passive Emergency

Whenever the F9 S transmitter sends a command, a clock is reset to zero in the F9 E receiver. If the user does not release any further commands at the transmitter or if, in case of an emergency, he is no longer able to release the active emergency on the transmitter himself, the clock continues until the emergency call is automatically released. The time limit of the clock for the emergency call release can be factory set to 5, 10, 15 or 20 minutes, as required (see Sec. 3).

The reaction is identical to the reaction described in Sec. 9.2, however the passive emergency call on the transmitter can only be reset within the pre-warning time; after that the receiver has to be switched off (see Sec. 9.4).

9.4 Emergency call reset

Hold the On switch on the transmitter to the right in “On” position and briefly
activate the “Pull left” switch.
After a manually activated emergency call both outputs “Emergency” and “Horn” can be switched off anytime on the transmitter, even if the “Emergency” output has already been activated.

After a passive emergency call, the emergency call must be reset manually on the transmitter within the first 20 seconds of pre-warning to prevent activation of the “Emergency” output. If the emergency call is not switched off in time at the transmitter, the receiver must be switched off to be able to switch off the two “Horn” and “Emergency” outputs.

9.5 Mobile emergency call system comtac 1204

This option represents the most effective type of emergency call currently available. In case of an emergency it offers the possibility of transmitting the active and passive emergency calls together with the GPS[1]-position data of the current site via the GSM[2]-D1- and D2-radio network to a 24/7 emergency service. Once there, the position data of the place of accident are automatically and very exactly displayed on a high-resolution map. This enables the rescue team to arrive at the place of accident in time to be able to provide first aid without dangerous delays, for example due to errors finding the location of the accident.

Optional upgrading of the F9 S transmitter with a position and motion sensor enables constant monitoring of the user during work. If there are no typical movements going on or if the body is not in an upright position for a certain period of time, the system releases an acoustic pre-warning after a preset time. If the user then does not react within another preset time by the upright position of his body or by operating the F9 S transmitter, an automatic emergency call is sent to the emergency service. Besides this automatic monitoring, the emergency call can be released manually anytime, directly at the F9 S transmitter. In addition it is also possible to use the device as a telephone.

The F9 S transmitter and F9 E receiver can be adapted to allow the F9 remote radio control system to operate together with the mobile emergency call system comtac 1204 (upgrading on request).

For more information, ask for the brochure “comtac1204 - Mobile Emergency Call System” If you have any questions, please contact us at the address shown on page 31.

1 GPS = **G**lobal **P**ositioning **S**ystem
Satellite navigation system suitable for exact positioning worldwide

2 GSM = **G**lobal **S**ystem for **M**obile Communications
Radio network infrastructure for wireless communication between radio telephone partners

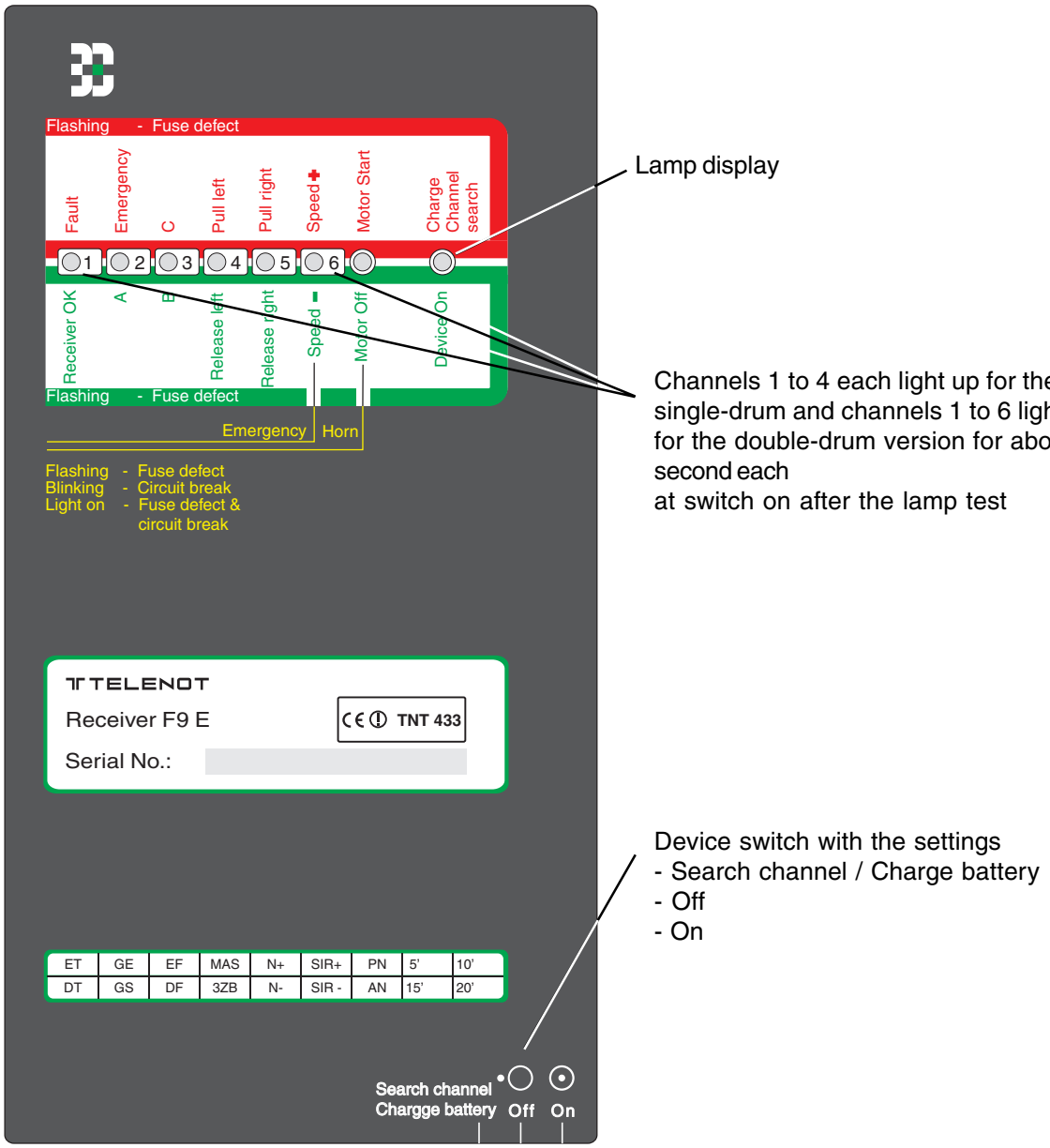
10 DISPLAYING AND CHANGING THE RADIO CHANNEL

If you are experiencing disturbance on the channel you are currently using, you can set the transmitter to one of the five other radio channels (3 in the single-drum version). After the transmitter has identified the new channel in the “Search channel” mode, work can continue using the new channel.

10.1 Displaying the radio channel

When the receiver **F9 E** is switched on, first a lamp test is performed on the control panel, during which the seven lamps on the left side must first light up green and then red for about 1 second. Next the red lamp from the row of six lamps on the left side showing the channel number of the current radio channel lights up for about 1 second.

Identification at the receiver



10.2 Changing the radio channel

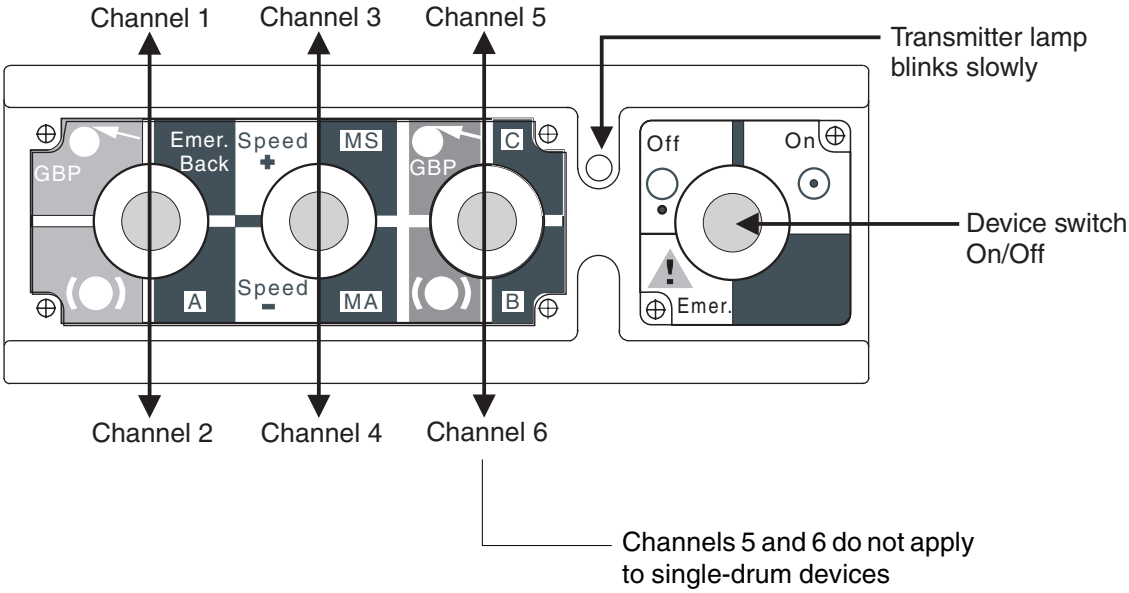
If you wish to set your system to one of the other radio channels, proceed as follows:

1 Switch the **Transmitter** on and switch to the “Change channel” mode by holding the two switches on the left to the front and at the same time pressing the “On” switch.
Slow blinking of the transmitter control lamp indicates the “Change channel” mode is active and that you can select the new channel.

No working commands can be issued while the “Change channel” mode is active!

2 Any one of the 6 (or 4) channels can be selected using the three switches on the left of the transmitter (see diagram). The operating frequency of the new channel is stored in the transmitter and the control lamp changes from slow to fast blinking.

Transmitter



3 Switch the **Receiver** to the “Search channel” mode by setting the switch to the “Search channel / Charge battery” position. The six red channel assignment lamps 1 to 6 light up in turn for about 20 s, indicating that the search is in progress.

4 Hold the device switch on the transmitter in the “On” position until the receiver has found the newly set radio channel and activated the appropriate red lamp on the control panel.

The system is set to the new radio channel.
When the 20 s in the search mode have elapsed without having set the new channel at the receiver, Point 3 must be repeated.

If you want to change the selected channel again, switch the transmitter and the receiver off and repeat Points 1 to 4.

10.3 Operating with the new channel

Switch the transmitter and the receiver off and on again and wait for the lamp test at the receiver. The red lamp with the number of the newly set channel lights up for 1 s. Now you can work using the new channel until the next change of channel.

11 TROUBLESHOOTING

The diagnostics lamp field displays the operating status and errors in the load outputs and electronics.

“SIR + Emergency” When the two orange lamps for gas and motor flash, blink or light up, there is an error in the “Siren” or “Emergency” outputs. Cause and troubleshooting —> see Sec. 9.1

Defective fuse A defective fuse is indicated by flashing of the currently activated command lamp.

The Fault lamp

- lights red if the microprocessor is defective
- blinks red if the contacts of the output relays **MS**, **KL**, **BL** and **KR**, **BR** become stuck or blinks green and orange alternately, if the transmitter is still transmitting commands.

Relay failure The 5 output relays **MS**, **KL**, **BL** and **KR**, **BR** are constantly monitored because of their importance for safety at work. If a relay is blocked, the “Fault” lamp blinks red. If you try to activate one of the 5 relays at the transmitter, the output remains blocked and the “Fault” lamp blinks orange and green alternately.

i In this case, the system should be sent back to the factory for repair as soon as possible, accompanied by a brief description of the fault. If you are registered at TELENOT, you may download the delivery note for repair transport free-of-charge at **www.funk-im-forst.de**.

11.1 Changing fuses in the receiver

i Open work on the receiver, as described below, should only be carried out **by qualified staff**! Before removing the board, make sure there is a **clean, dry and dust-free base surface**.

- Locate the cause of the fault and remove it, e.g. short circuit in the wiring.
- Disconnect the power supply cable.

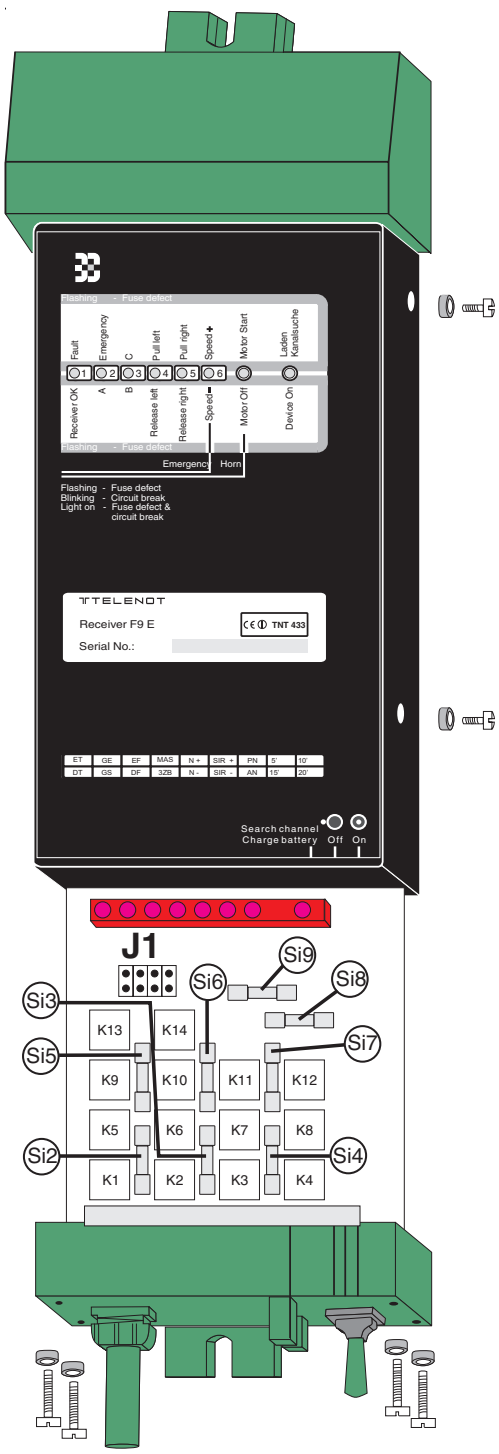
Proceed as described in Sec. 11.2:

- Remove the four fastening screws on the lower housing cover with the cable inlet and the two screws on the narrow side of the housing.
- Pull the board out of the housing.
- Replace the defective fuse with a new fuse of exactly the same type.
- **Never make any other changes to the device; otherwise the warranty will expire!**

- If the existing seals have deep impressions, you must replace the seals in the cable plastic cover. During reassembly, pay attention to ensure that the seal is correctly positioned and that each of the 4 screws is placed into the correct hole in the 4 corners of the seal using the original plastic washers. Do no tighten the screws too much as otherwise the function of the seal may be impaired! Finally also tighten the two screws with the original plastic washers on the narrow side of the housing.

- Fire hazard - Never jumper fuses!

11.2 Layout of the load relay and fuses



The transmitter may only be opened by qualified staff!
Before opening the receiver, pull out the connecting cable and ensure that there is a clean, dust-free and dry environment where the receiver board can be placed. To open the housing proceed as described in Sec. 11.1.

Load relays

Relay	Purpose
K1	Additional command C
K2	Release Right RR (BR)
K3	Motor Start
K4	Motor Off
K5	Emergency
K6	Siren/Horn
K7	Release Left RL (BL)
K8	Speed -
K9	Additional command B
K10	Ziehen rechts (KR)
K11	Release +UB
K12	Speed +
K13	Additional command A
K14	Pull Left PL (KL)

Fuses in the output components

Fuse	Purpose	Type
Si2	Emergency	T 6,3 A
Si3	Siren/Horn	T 6,3 A
Si4	Speed -	T 6,3 A
Si5	Additional commands A, B, C	T 6,3 A
Si6	Pull and release Right	T 6,3 A
Si7	Motor Off	T 6,3 A
Si8	Speed +	T 6,3 A
Si9	Pull and release Left and Motor Start	T 6,3 A

12 MAINTENANCE

The **F9** system is maintenance free. However, you can further prolong the active life of the radio remote control system by observing the following rules:

- **Be sure that the protection cover of the charging jack on the transmitter is always in place when working with the transmitter.**
- If the charging jack is dirty, clean it with a lint-free cloth soaked in ethanol.
- Replace defective switch protection caps immediately.
  Cracked, chafed or protection caps not fitting tightly to the switch lever rapidly damage the unprotected switch and cause malfunction of the system.
- If the system is frequently used, we recommend sending it to the manufacturer for a general overhaul before starting a new season of operation.
- The complete electrical wiring with the connected remote controlled electrical consumers at your vehicle must be regularly checked by a qualified person according to the criteria specified in Ch. 8.
- Check the connecting cable and where appropriate the aerial cable for blank or chafed spots.
- Follow the transmitter battery charging instructions shown in Sec. 6.1.

Clean the parts of the system with a moist cloth or a cloth soaked in ethanol but never use a steam cleaning device, oil or lubricants.

Remove the **connector** of the winch connection cable from the winch socket **before doing any arc welding** on the skidder vehicle to prevent damage to the electronic parts of the receiver!

The transmitter may only be opened by qualified staff!

When reassembling the transmitter note the following:
There are plastic washers under the Allen screws of the switch carrier and a rubber seal between the switch carrier and the housing.
If they do not fit tightly or the washers are missing, water may get into the housing, causing the device to malfunction or even leading to irreparable damage to the electronic parts.

Only use original parts for assembly!

13 TECHNICAL DATA

Frequency range	70 cm ISM band, 6 different radio channels can be set on the transmitter
Channel 1:	434.100 MHz
Channel 2:	434.250 MHz
Channel 3:	434.400 MHz
Channel 4:	434.475 MHz
Channel 5:	434.550 MHz } Only for double-drum version
Channel 6:	434.700 MHz } Only for double-drum version
Addresses	100,000 (unrepeated)
Control functions	11, plus 1 emergency and 1 siren (horn)
Modulation	F1D
Hamming distance	D = 8
Operating mode	Simplex
Temperature range	-20 to +60°C
Plastic parts / paint	Polyamide / RAL 6020 (chromium oxide green)

Transmitter

Transmitter power	10 mW ERP
Power supply	NiCd battery 7.2 V / 270 mAh
Operating time	Approx. 13 hours per battery charge
Aerial	Built-in
Housing	Section aluminium, rubber-protected
Protection	IP 65
Dimensions in mm (W x H x D)	(112 x 145 x 37) mm
Weight	approx. 650 g
Position sensor	approx. 2.2 g Hg

Receiver

Operating voltage	continuous from 12 to 24 V DC
Outputs	Output relays with 6.3 A fuses Connection to mobile emergency call system “comtac 1204”
Diagnostics lamp field	Display of all working functions and operating modes, radio channel and faults and errors of all kinds
Aerial	Built-in
Housing	Section aluminium
Protection	IP 65
Dimensions in mm (W x H x D)	(111 x 303 x 36) mm
Weight	approx. 1650 g
KWF tested	Inspection number: 4336

These signs confirm conformity of the system with the EMV Guideline 89/336/EC, the Low Voltage Guideline 73/23/EC and the R&TTE Guideline 1999/5/EC.

Cd

According to the directive on batteries and accumulators, it is not allowed to dispose of NiCd batteries with household waste!
TELENOT is willing to take back all batteries purchased from Telenot free-of-charge for proper disposal.

This device is subject to the EC Directive 2002/96/EC (WEEE) and the „ElektroG“ law (Governing the Sale, Return and Environmentally Sound Disposal of Electrical and Electronic Equipment). It must not be disposed of with unsorted household waste. As owner of the device, you are required by law to dispose of the device separately from the household waste disposal of the local community (public waste management authority). Taking back the device is free-of-charge.

14 EC DECLARATION OF CONFORMITY AND DELIVERY NOTE

The F9 radio remote control system may be operated at the specified operating frequencies in more than 20 EU countries without any restrictions. In case of interest please contact the manufacturer at the address shown below.

You can download a Declaration of Conformity and a Delivery Note for repairs free-of-charge at www.funk-im-forst.de, provided you are registered with TELENOT.

Changes to Edition 2

- New structuring of text and sections
- Inclusion of safety notes
- Transmitter Vision "S/LSB" does not apply anymore
- New option "Separate aerial AA-F9"
- Proctection class modified to IP 65
- Additions to the section on Maintenance

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We reserve the right to make technical changes if required

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