Operating Instructions

Version: FA5-D1/D2 - english - as of: 02/06

FA5-D

Single-barrel and
Double-barrel version
With Motor-ON/OFF
Type: „*BEE*”

Sr.-Nr.:_____ .

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Content

1. Fandamentals

Range of application:

The remote-controlled system FA5-forest professional is suitable to remote-control a single- or double-barrel grab winch, featuring throttle adjustment and an Emergency-call device. It has been designed accoring to the safety-guidelines stipulated by the Geman employer's liabilaty insurance association.

Technology:

Transmitter and receiver each feature an individual device adress which are securd within the internal micro-controller. Ensuring thus there will be no unwanted interferences from external soures. (Incoming radio-signals from thirds will not be accepted by system.)

The diagnostic panel of the receiver serves as display of the operation mode. It shows incomming comamnds as well as their release.

Two LED's within the transmitter show the proper command transmission (green LED is blinking) and the charging level of the accumulator (red LED is blinking to show low charge).

The commands "Pull" (bring in cord) and "Release" (let out cord) are locked towards each others (by automatic off position).

In case the board nominal voltage (12V) droppes belown 70% the receiver aborts all existing commands (brakes actuated).

Supply range:

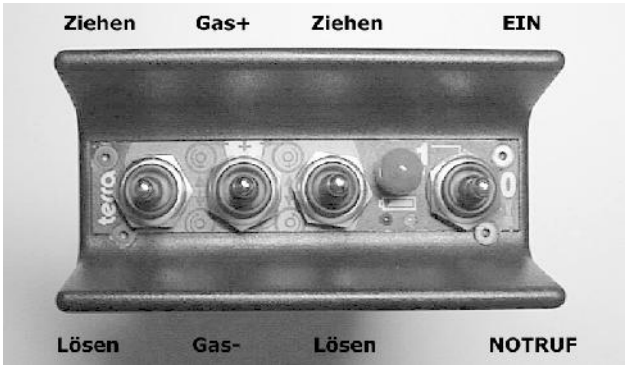
The remote-controlled system FA5-forest professional consists of a portable transmitter, the receiver (to be mounted on the tractor) including the proper connecting cables for tractor and winch, and receiving antenna with connecting cable and charging device.

2. The transmitter

Switching on the transmitter is only possible if all command switches are set to zero (obligatory zero setting). Upon operating a command switch the transmitting part then automatically switches on. The transmitter operation is indicated by the glowing of the green LED. In order to safe the energy of the transmitters accumulator the built-in electronics will send out an acoustic signal to the user, has there been a break of more then 7 minutes, to shut off the system. This is also to ensure that the transmitter does not stay switched on by mistake.

2.1 Operating the winch

In the double-barrel version the winch functions „Pull“ and „Release“ are combined on one command switch. In order to prevent accidental operation, the switches of the left and the right winch are seperated by the throttle adjustment switch.



(Pic 2.1-1: transmitter for double-barrel control)

Short release of the winch is achieved by tipping of the required switch towards the users body. Is the switch actuated for more then one second, the “Short Release” turns into “Permanent Release”. The longterm release function is erased by actuating the release function again.
The transmitter will accept the function „Pull“ (push switch away from body) only if the permanent release function is erased.

2.2 Throttle adjustment operation

The throttle adjuster is located between the winch functions. There are two different kinds of throttle adjustment:

The continuous throttle adjuster

With the continuous throttle adjuster the motor torque can be continuously adjusted via a servomotor. Is the control switch actuated toward „Throttle+“ (symbol hare) the torque increases. Is the control switch actuated toward „Throttle-“ (symbol turtoise) the torque decreases.

The basic throttle adjuster

The basic throttle adjuster generally features two different motor torques. The increase from idling speed to operatinal torque is carried out by actuating a lifting magnet or an air cylinder which is connected to the throttle linkage via Bowden wire.
A temporary torque increase is achieved by actuating the corresponding switch toward „Throttle+“ (symbol hare). At the release of the switch, the motor falls back into idling speed.
A permanent torque increase is achieved by tipping the torque adjuster toward „Throttle-“ (symbol turtoise). The operational speed is thus permanently set (the green LED of the transmitter blinks rapidly). To return to idling speed, just actuate the switch again in any direction („Throttle+“ or „Throttle-“).

2.3 Motor-function operation

Motor-Start:

Switch off transmitter, then actuate „Throttle+“ function and at the same time switch on the transmitter. The receiver is now in Motor – Start mode .

Motor-Stop:

Switch off transmitter, then actuate „Throttle-“ function and at the same time switch on the transmitter. The receiver is now in Motor – Stop mode .

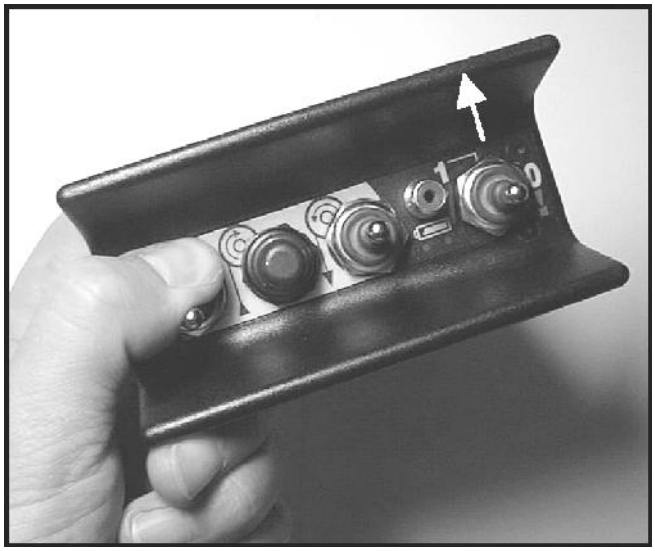
2.4 Transmitting an emergency signal

The ON – OFF switch also features the emergency call function. To actuate it, the switch has to be pushed in the opposite direction. To prevent accidental actuation of an Emergency-call, this function is delayed for half a second after switching on. Immediately after this delay all movement commands are switched off. The Emergency-call is self-locking (see also chapter 4).

(pic. 2.4-1: EMERGENCY-CALL)

2.5 Erasing an actuated Emergency-call

In order to erase an actuated Emergency-call the receiver has to be switched off or re-set. To re-set keep „Torque-“ pushed and actuate the Emergency-call switch (pic 2.5-2). Rythmical blinking of the transmitters LED indicates the transmitted reset clause. The Emergency-calls self-lock is erased and the receiver is ready again.



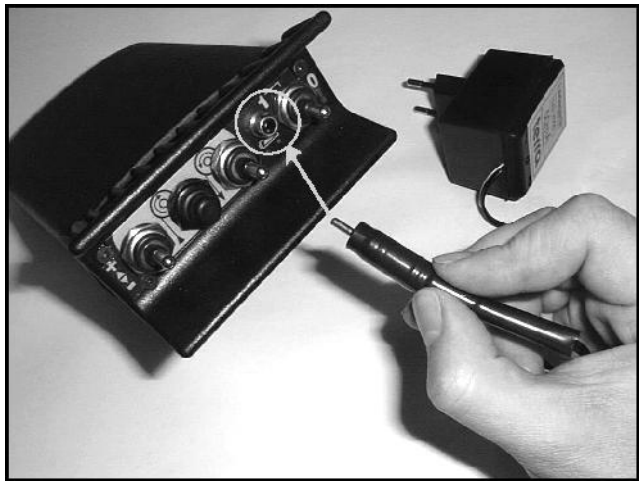
(pic 2.5-1 sog. “Resetting grip” of single-barrel transmitter)

2.6 The accumulator

The transmitters NC – accumulator features a nominal output of 600 mAh at 7,2 V and has a durabilaty of approx. 12-16 hours of continuous use. To prevent harmful total discharge of the accumulator, the device features a voltage control. In case the voltage (and thus the capacity) after a longer periode of use sinks below a certain value, the user is warned by an optical signal (red LED glows) as well as an acoustic signal. The remaining charge lasts from this moment on for another 15 minutes.
Under normal operational conditions the accumulators lifetime is approx. 3 – 5 years. Should the need arise to exchange the accumulator, have this carried out by your supplier respectively send it directly to us.

2.7 Operating the charging device LG-7/60

Charging may only be carried out with the included current generator LG-7/60. Before charging the transmitters accumulator, the power switch needs to be in the "OFF" (charging) mode. Connect the charger via included cable with the charging jack of the transmitter to commence charging. The red LED shows the proper charging operation.



(Pic 2.7-1: Charging operation)

There is a NiCd-battery inside the transmitter which needs to be charged with constant voltage (other then e.g. a car battery which is charged with constant current by a generator). To prevent damage to the accumulator, please use the included charging device only. Initial charging of the empty accumulator lasts approx. 12 to 14 hours, however extended charging (up to 24 hours) doesn't damage the accumulator. To quitt he charging operation disconnect the charging plug from the charging jack of the transmitter.

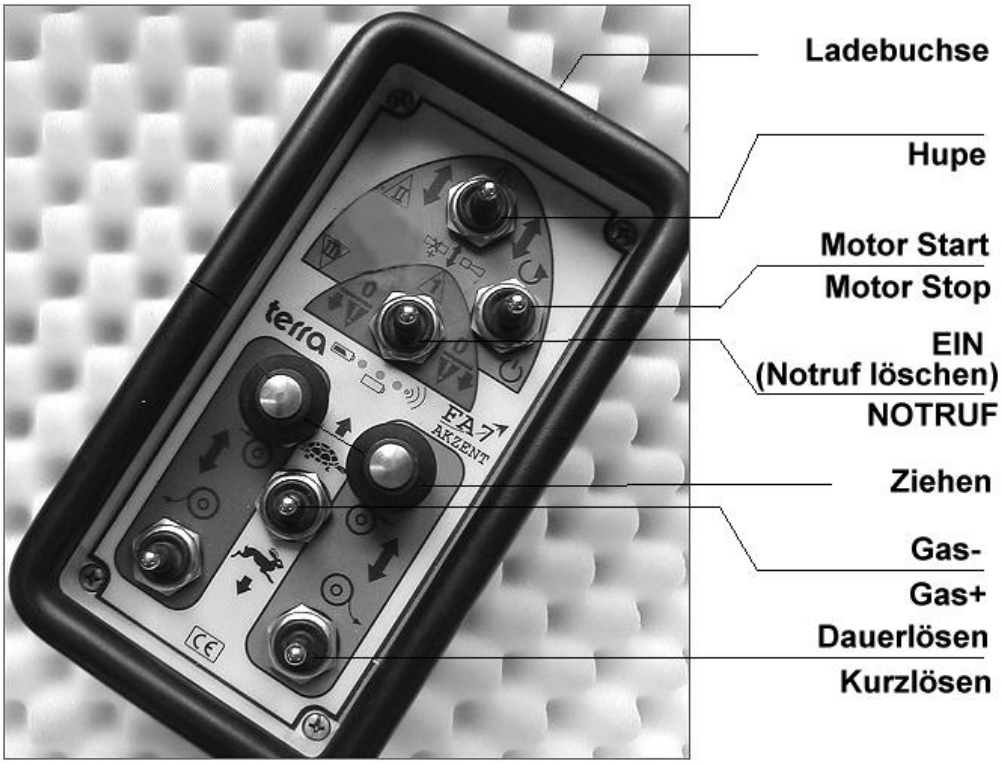
Advice:

To make sure the transmitter is charged when actually needed, get in the habit of charging it always before and after planned use. Is the remote control not used for a longer period of time, it is advisable to charge it approx. once a month to prevent total discharge.

2.8 Transmitter version FA-7

Winch commands:
The transmitter version FA-7 allows the operation of the functions „Pull“ and „Release“ via seperate order switches.
The release switch features a tipping mode for short release and a locking mode for permanent release. Pull and release are locked toward each other via automatic off position.

Motor functions, signal Horn:
The functions Motor-start, Motor-stopp and Horn can be directly set via the switch on the top part of the handheld transmitter.



(Pic 2.8-1: Transmitter version FA-7 and its functions)

Throttle:
The throttle switch is positioned so that the torque can be actuated together with the winch function.

Emgergency-call:
In order to prevent accidental actuation the Emergency-call function features a retarded function coupled with an acoustic signal (interval soand).

Erasing an Emergency-call:
An actuated Emergency-call can be reased by switching on the transmitter while keeping the Horn switch pressed.

3. The Receiver

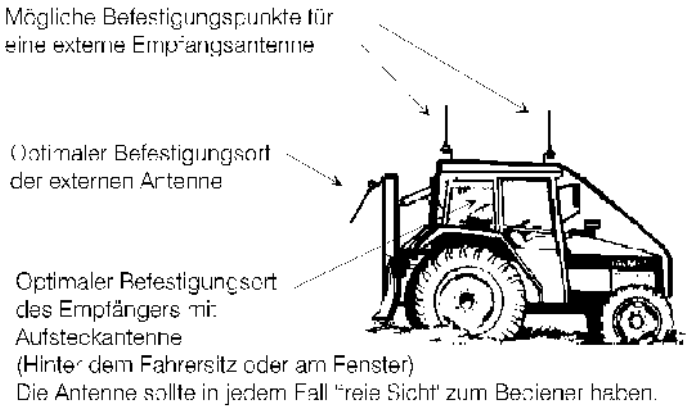
The receiver should be mounted within the tractors cabin if possible. It can be operated under any circumstance, stationary (in this case it is advisable to use rubber buffers with threaded connection M4).
Connection with the winch is established via the winch cable. It is connected to the designated jack in replacement of the handheld control to ensure further operation of the winch with the handheld control (simply change plugs again). The machine cable is responsible for the voltage supply of radio and winch. Furthermore this cable transmits the throttle adjusting commands and the potential-free relay outputs for the functions “Emergency-call“ and “Horn“. These functions have been prepared in such a way that the receiver can be connected to either the “wireless radiowave forrest” or the *terra* Emergency-call system ARGUS-1. Thus an Emergency-call can be placed via GSM-telephone. Also read chapter 4 on this topic.

Attention: Before using the device check and compare the contact designation of the winch on the winch jack (see receiver output contact designation) with the winch cable of the remote control. Should both plugs (remote control and winch jack) don’t show the identical designations, change the plug of the remote control, since otherwise the winch cannot be operated via handheld control.

The receivers output for winch functions can bear up to 5 Ampere constant current. Should your winch draw more power, the receiver needs to be topped with a shunt relay. For frequent throttle adjustment a shunt relay needs to be mounted in any case, since the break contact has to lay on chassis ground. Also read chapter 5 on this topic.
The plus feed to the winch should be secured seperately and feature a minimum wire cross section of 2,5q. For proper receiver function it is important that on the winch jack at the designated pole there is proper connection to the ground (handheld control works in most cases without connection to the ground!).

3.1 The receiving antenna

The receiver housing is to be mounted in such a way that the slip-on antenna has got as big as possible a space between metal parts. Especially the tip should not bee any closer than 10 cm to metal parts.
Should the slip-on antenna not perform satifactory use an external receiving antenna. We deliver these antennas complete with mounting console and antenna cable.
When mounting the antenna, proper connection to the ground is required. Best contact is achieved by removing the body paint, polishing this spot, mounting the antenna stand and sealing (either with grease or paint).

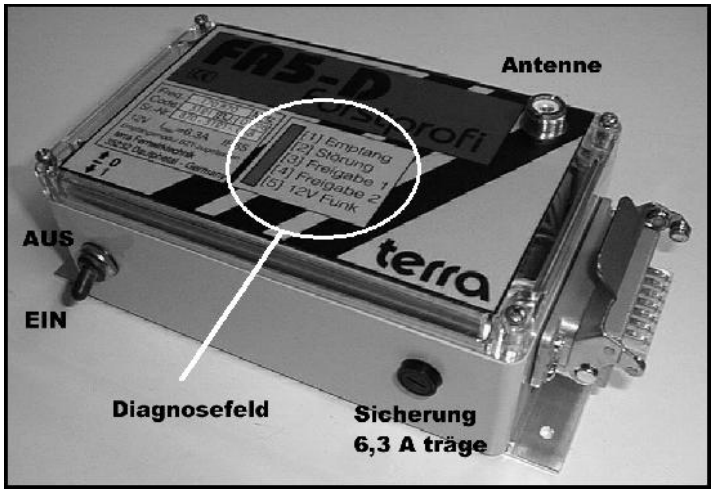


(Pic 3.1-1: Mounting the receiving antenna)

(Pic 3.1-2: Adjustable antenna stand)

3.2 The diagnostic panel

The receiver of the remote controlled device FA5-Forrest professional features a diagnostic panel with five LEDs.
Green LEDs serve as release signal, red LEDs display error resp. an actuated Emergency-call.
The LED panel serves as definite diagnose of possible interferences or malfunctions.



(Pic 3.2-1:Receiver with diagnostic panel)

Short description of the LEDs :

[1] Reception (green): Blinks upon data reception from transmitter of same model
Blinks intermittendly when reaching range restriction
Blinks not in case there is no more radio wave transmittance
Blinks with [2] upon active Emergency-call

[2] Interference (red) Glows if external transmitter of same model is within range of approx.100m
Glows upon low voltage
Blinks with [1] upon active Emergency-call

[3] Release 1 (grün): Glows upon proper command dispatch

[4] Release 1 (grün): Glows upon proper command dispatch

[5] 12V-Funk (grün): Voltage supply for receiver is active

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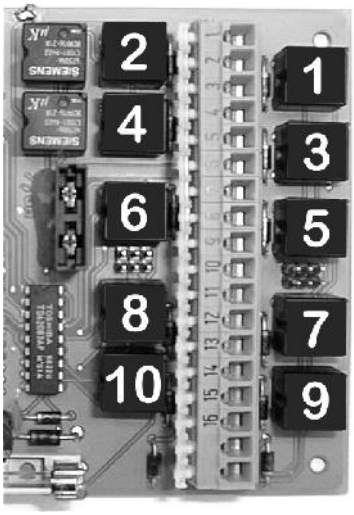
3.3 The contact designation „STAFF 14“

with single cable (14x0,75) or double cable



(pic 3.3-1 PCB „BEE“ with relay)

Relay No.	Terminal block	Housing plug	Port (internal)	Function Forrest version	**Winch** cabel / plug	**Auxilliary** cabel / plug
1	1	**1**		Pull left	/	
2	2	**2**		Release left	/	
-	3	**3**		Ground	/	
3	4	**4**		Pull right	/	
4	5	**5**		Release right	/	
-	6	**6**		+12V load circuit	/	
5	7	**7**		Throttle +	/	/
6	8	**8**		Throttle -	/	/
8	9	**9**		1. Contact Em-call	/	/
8	10	**10**		2. Contact Em-call	/	/
10	16	**11**		Motor Stop	/	/
7	12	**12**		Reset signal / Horn	/	/
9	15	**13**		Motor Start	/	/
-	14	**14**		+12V Electronic	/	/

The relay for “Emergency-call” is a potential-free normally open contact.
Should problems with voltage supply arise, the connection 14 (+12V control circuit) should have an independent wire to the 12V electical supply. Do not connect directly to load circuit!

Contact designation with wire 14x0,75mm

Winch type: _____

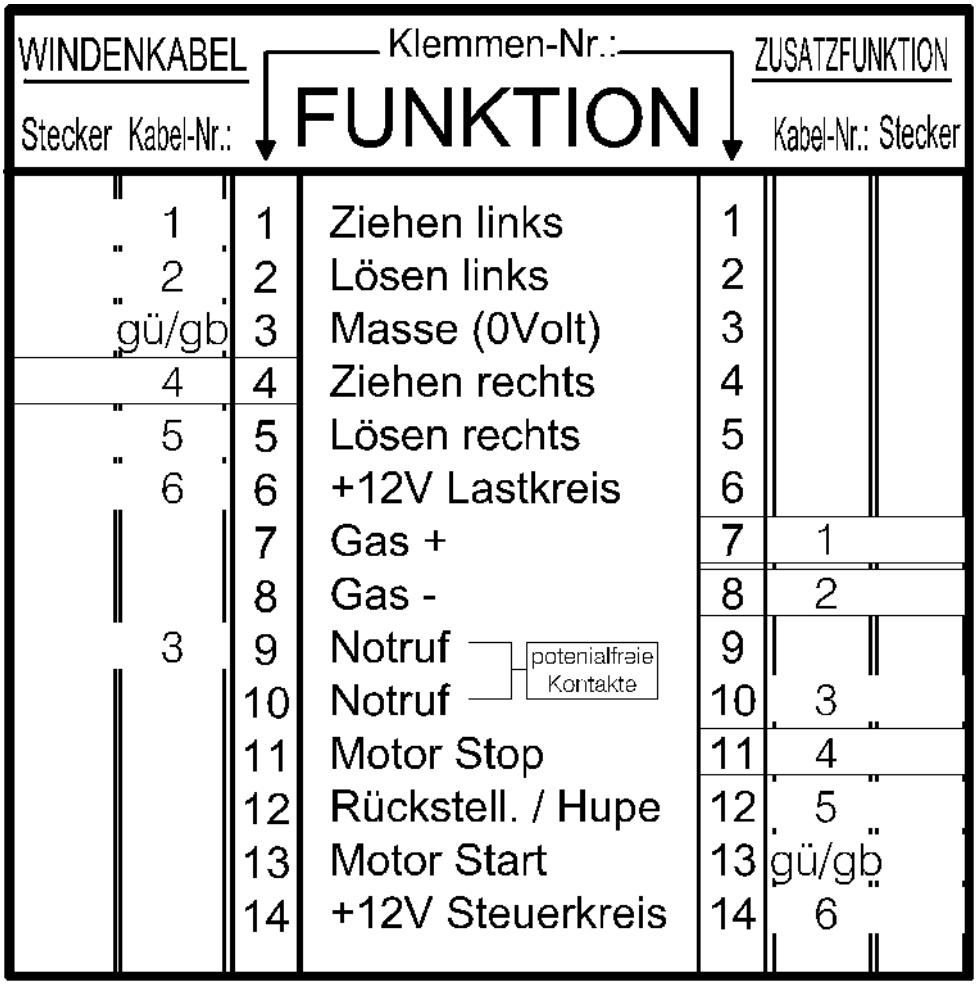
WINDENKABEL Stecker Kabel-Nr.:	Klemmen-Nr.:	FUNKTION
1	1	Ziehen links
2	2	Lösen links
3	3	Masse (0Volt)
4	4	Ziehen rechts
5	5	Lösen rechts
6	6	+12V Lastkreis
7	7	Gas +
8	8	Gas -
9	9	Notruf (potenialfreie Kontakte)
10	10	Notruf (potenialfreie Kontakte)
11	11	Motor Stop
gü/gb	12	Rückstell. / Hupe
13	13	Motor Start
14	14	+12V Steuerkreis

(pic 3.3-2: Contact designation STAFF 14 with single cable 14x0,75)

(pic 3.3-3: 13-polo and 7-polo winch plug)

Contact designation with double cable 7x0,75mm
for continuous throttle adjustemnt

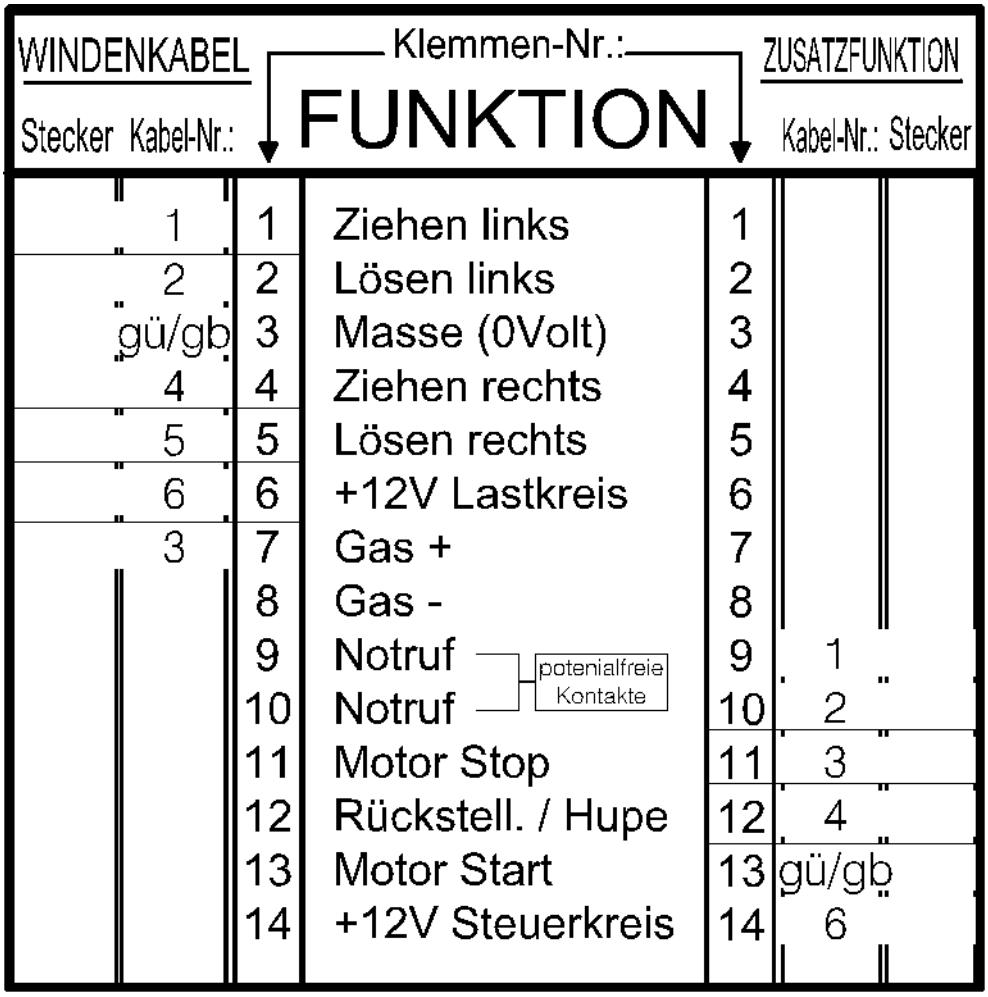
Winch type: _____



(pic 3.3-4: contact designation STAFF 14 with 2 cable 7x0,75 for cont. throttle adj.)

Contact designation with one cable 7x0,75mm for simple adjustemnt

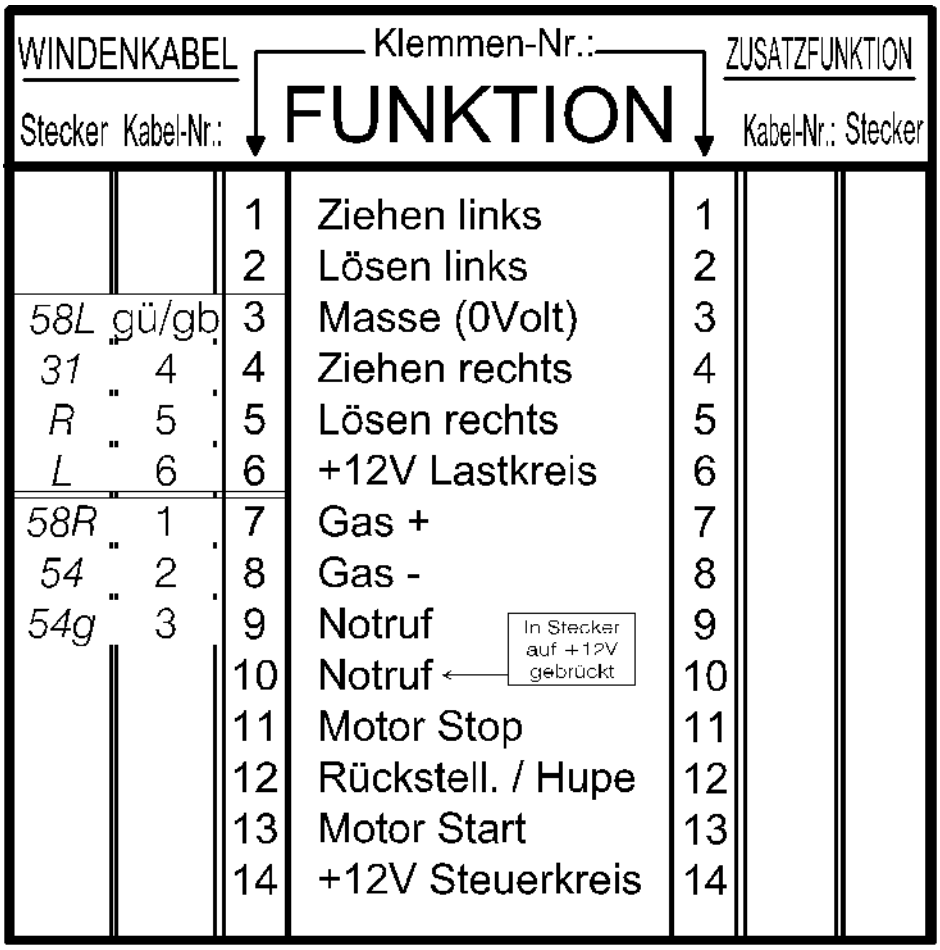
Winch type: _____



(pic. 3.3-5: contact designation STAFF 14 with one cable 14x0,75mm for simple throttle adj.

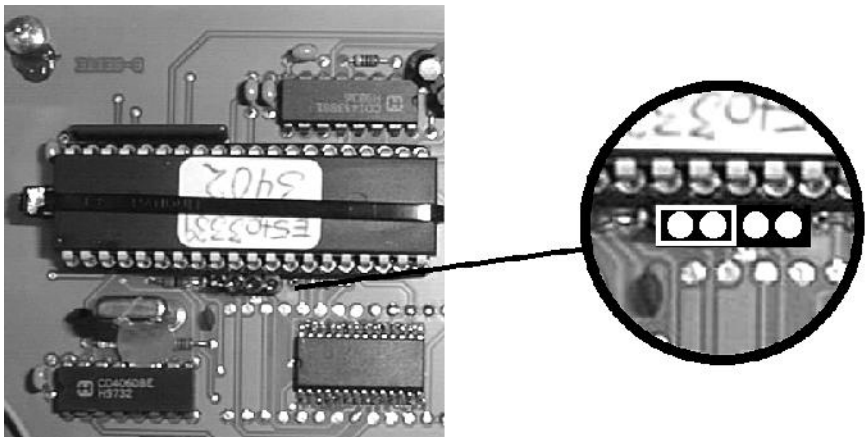
Contact designation with one cable 7x0,75mm
for continuous throttle adjustemnt

Winch type: *EWO-Single-barrel-winch*



(pic. 3.3-6: contact designation STAFF 14 with one cable 7x0,75 for cont. throttle adj.)

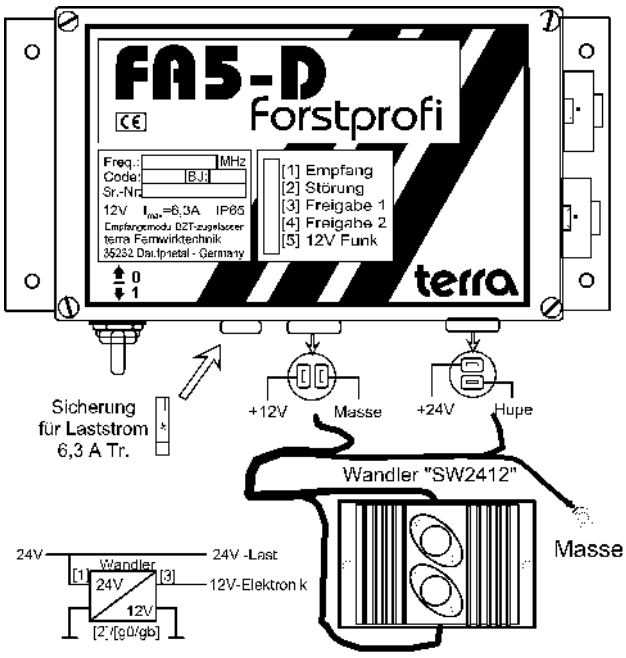
3.4 The Receiver-jumper for dual function/ time re-setting



(pic. 3.4-1: Receiver PCB with jumper for dual function)

Some winch types (e.g. Ritter 13-polo, Schlang and Reichert, Igland) require a dual function, i.e. at the function „Pull“ the winch has got bo be released as well. This is achieved by closing the left jumper (pic: 3.4-1). The right jumper activates the time re-setting for the Emergency-call systems connection. Both functions become active upon re-start of the receiver.

3.5 The 24 Volt - Version (LKT - Version)



(pic 3.5-1: connection of transformer)

For the 24 Volt version of the remote controlled device the voltage for electronics (12V) and load (winch) need to be seperated. The load voltage (24V) is supplied via winch cable. The 12 Volts for the electronics are supplied via transformer SW2412“ (see sketch above).

Contact designation of winch functions

FUNKTION	Kabel-Nr.:	Stecker-Nr.:
+24V	4	
Lösen links	1	
Ziehen links	2	
Lösen rechts	5	
Ziehen rechts	6	
Masse	grün/gelb	

(pic: 3.5-2: contact designation of winch functions)

(pic: 3.5-3: receiver in 24Volt version)

Contact designation of auxilliary functions

FUNKTION	Kabel-Nr.:	Stecker-Nr.:
GAS +	2	
GAS -	3	
Totmann-	5	
Rückstellung	6	
Notruf	grün/gelb	

(pic: 3.5-4: contact designation of aux. functions)

4. The Emergency-call system „ARGUS-1“ on the job

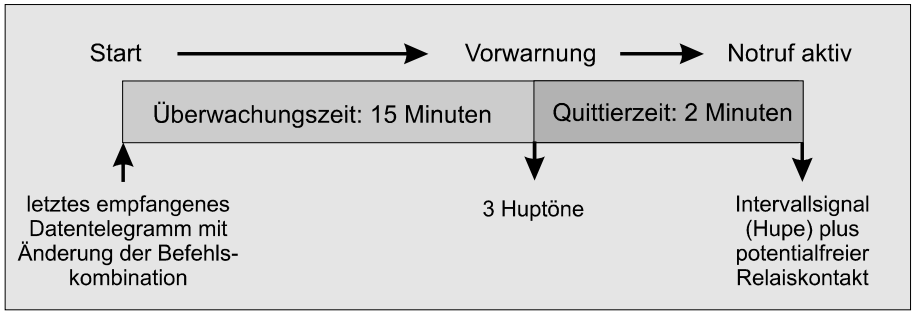
Working in the forrest bears not to be underestimated hazards. Therefore the woodworker, especially when operating a winch, in case of an accident needs to be able at all times to actuate an Emergency-call.

The active emergency.call

Via operating switch the operator on the transmitter sends out the the active Emergency-call to the receiver. The receiver mounted on the towing tractor processes the Emergency-call at once.

The passive emeregency-call in connection with „ARGUS-1“

This function is possible in connection with the GPS-Emergency-call system „ARGUS-1“ (see appendix). It „monitores“ the woodworker during work. **This function needs to be activated within the radio wave receiver!** For activation the right jumper needs to be mounted (next to the one for the dual function, pic. 3.4-1). In case ARGUS-1 does not receive a changed command combination after a monitoring period of 10 minutes, there will be send out three short warning signals via Horn. Now the operator has got 2 more minutes to acknowledge this pre-warning. After each received change of command the monitoring time (10 minutes) starts over again. Is the pre-warning not acknowledged (due to possible accident) ARGUS-1 automatically switches on the Emergency-call function and alarms via C-Net or D-Netz telephonee up to four receipients.



pic 4-1 monitoring automatics

Acknowledging the pre-warning signal

Has the remote control not been used for a short period of time or the transmitter sends contiuously out the same command combination, the user is advised after 10 minutes by a horn signal to let the receiver know that all is well by changing the control commands (e.g. by changing the torque via remote control). Upon each change of command the pre-warning time is re-set to zero again.

Interrupting the passive Emergency-call monitoring

Should work breaks arise which exceed 15 minutes the monitoring by passive Emergency-call should be interrupted. This is achieved by actuating the pause switch of ARGUS-1. The monitoring is re-started upon receiving the first incomming command again.

Processing an Emergency-call

All work commands (winch functions) will switch off upon received active Emergency-call. Furthermore the receiver supplies a relay with potential free contacts to further process the Emergency-call. Any Emergency-call system can be connected to this relay.
The Emergency-call system „ARGUS-1“ allows the transmittance of the exact accident coordinates via voice output either by C-Net or D-Net telephone (see appendix).

Contact designation FA-5 with ARGUS-1 for Pfanzelt double-barrel grab winch

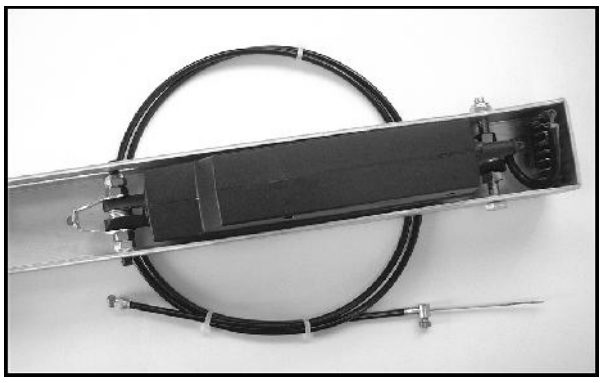
pic. 4-2 receiver plug, ARGUS-plug, winch plug

FA-5 Receiver plug	Function	Winch cable / plug	ARGUS-1 cable / plug
1	Pull left	1 / 8	
2	Release left	2 / 10	
3	Ground	3 / 6+Hous.	gg / 7
4	Pull right	4 / 3	
5	Release right	5 / 5	
6	+12V Load circuit	6 / 1	1 / 1
7	Throttle +	7 / 2	
8	Throttle -	8 / 7	
9	2. contact EMER relay intern. +12V		
10	Emergency-call		4 / 4
11	nc		
12	Re-set signal for ARGUS-1		3 / 3
13	-		
14	+12V Electronics		

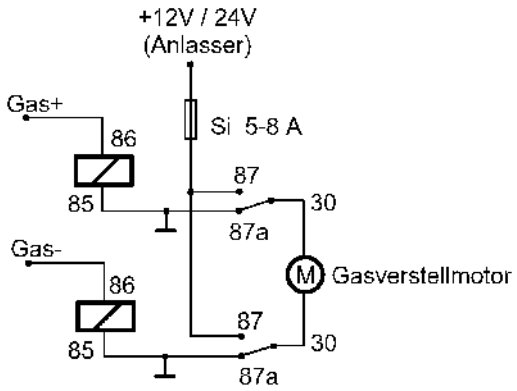
The relay for “Emergency-call” is a potential-free normally open contact.

5. The throttle adjustment

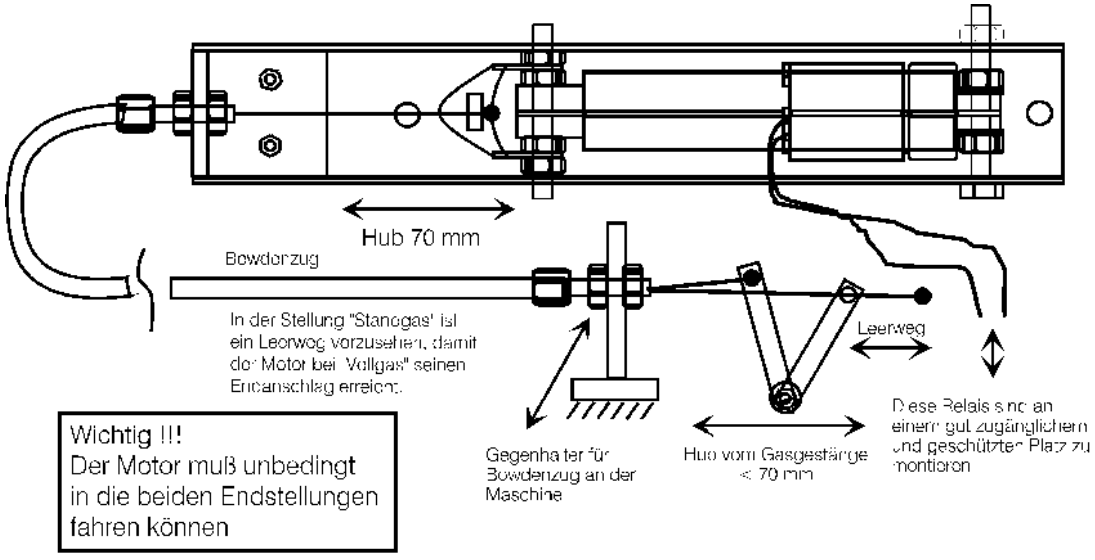
The throttle adjusted motor can be connected directly via both connecting points „Throttle+ / Throttle-“. However we do recommend the use of an additional external throttle relay.



(pic 5-1: Adjustable motor in fixture with Bowden wire)



(Pic 5-3: Flow chart for external relays)



(pic 5-4: mounting sketch)

6. Troubleshooting

In case any disturbances arise check the following first:

- Is there an active Emergency-call present ? („re-set“ resp. switch receiver off and then on again)

- Was any of the command switches not set to Off while switching on the transmittern ? (Observe automatic Off position on transmitter !)

- Does the transmitter send out commands before the receiver has been switched on ? (Observe automatic Off position on receiver !)

- Does winch work with handheld control ?

- Do winch plug and machine plug have proper contact (a loose connection may cause “intermittent contact”.)

- Are the fuses blown ? (find error first, then replace fuse)

- Is the antenna stand mounted tightly ? (tighten screws and clean connection to ground)

- Is the winch housing connected to the tractor body ? (connect winch housing and body with grounding tape)

IN CASE OF ANY MALFUNCTION IMMIDEATELY SWITCH <u>OFF</u> THE RADIO WAVE TRANSMITTING SYSTEM !

Is there a defect within the system contact your service team and the defect will be fixed right away. In case your system needs to be shipped to the factory for repair, always send transmitter <u>and</u> receiver along with a short description of the malfunction!

7. Technical data

System data:

Transmission safety: HD4 (Hamming distance)
Frequency: 433,875 MHz ..... 434,650 MHz
Control commands for single barrel version: (Pull, Release, Throttle+, Throttle-, Start, Stop opt.)
Control commands for single barrel version: (2 x Pull, 2 x Release, Throttle+, Throttle-)
Emergency-call function
Use of contemporary micro electronics

Transmitter:

Measurements: 155 x 110 x 30 (60) mm
Weight: ca. 460g
Housing: sturdy aluminium housing
Accumulator capacity: 600 mAh equals 12-16 working hours
Protective system: IP54

Receiver:

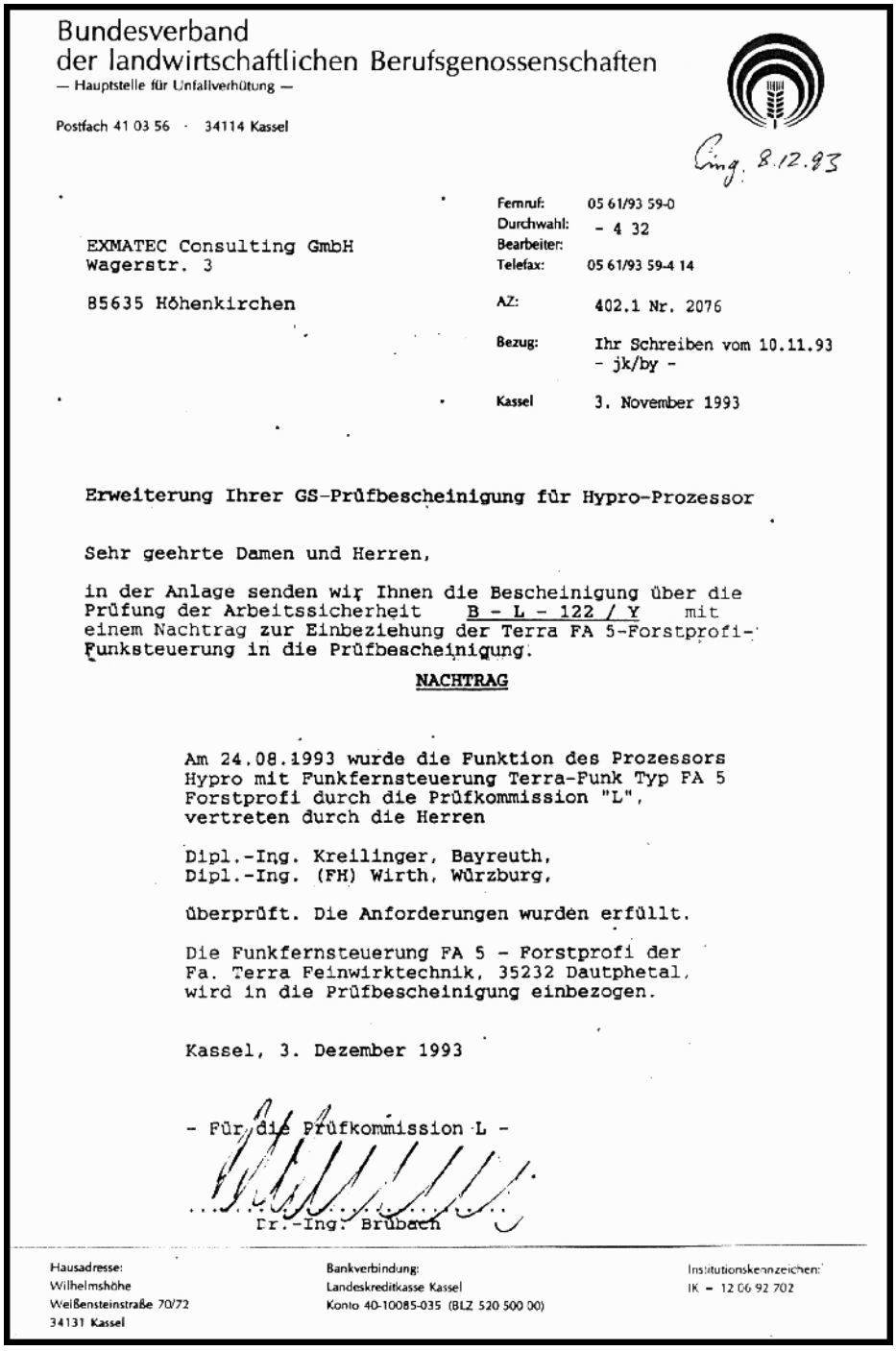
Measurements: 200 x 120 x 75 mm
Operating voltage: 12V (10V - 15V, max.15,5)
Switching current: maximal 5A (Fuse load: 6,3 time-lagged)
Protective system: IP65

8. List of spare parts FA5-D1/D2

Part ID no.	Part name
Transmitter:	
# 327 #	Switch: „tip-0-tip“ (e.g.: cont. throttle adj.) *
# 170 #	Switch: „tip-0-rest“ (release with single barrel vers.) *
# 180 #	Cover for switch Ø12mm
# 168 #	Callipers (pull with single barrel version) *
# 539 #	Cover for callipers Ø12mm
# 1084 #	Cover charging socket
# 156 #	Leather bag
# 157 #	Leather belt
# 1046 #	Charging device für FA5-D1 and FA5-D2
# 1047 #	Accumulator set (7,2V/600mAh) for FA5-D1 and FA5-D
# 1123 #	Protective collar complete with switch für FA5-D1
# 1124 #	Protective collar complete with switch für FA5-D2
Receiver:	
# 086 #	Fine wire fuse 5x20mm 1A quick
# 1171 #	Vehicle jumper fuse 7,5A
# 1125 #	Winch cord mit 7-polo plug (state winch type)
# 1126 #	Winch cord mit 13-polo plug (state winch type)
# 440 #	Transformer SW2412V (e.g. for LKT-81)
# 133 #	ON / OFF switch
# 806 #	Cover for ON / OFF switch Ø12mm
# 720 #	Winch plug 7-polo
# 719 #	Winch plug 13-polo
Throttle adjustm.:	
# 1127 #	Servomotor with fixture and accessories, version 12V
# 1128 #	Servomotor with fixture and accessories, version 24V
# 1129 #	Servomotor 12V
# 1130 #	Servomotor 24V
# 376 #	Vehicle relay 12V
# 377 #	Vehicle relay 24V
Aux. parts:	
# 822 #	Antenna set complete with 2,5m antenna cable
# 823 #	Antenna set complete with 4,0m antenna cable
# 745 #	Rubber antenna with antenna stand without cable
# 158 #	Operating instructions FA5-D1/D2 up-to-date
	Further accessories can be aquired upon request.

* We recommend to obtain those parts marked with (*) only through your sales person resp. our service department in Dautphetal.

9. Appendix



Bundesverband
der landwirtschaftlichen Berufsgenossenschaften
— Hauptstelle für Unfallverhütung —

Postfach 41 03 56 · 34114 Kassel

Eing. 8.12.93

EXMATEC Consulting GmbH
Wagerstr. 3

85635 Höhenkirchen

Fernruf: 05 61/93 59-0
Durchwahl: - 4 32
Bearbeiter:
Telefax: 05 61/93 59-4 14

AZ: 402.1 Nr. 2076

Bezug: Ihr Schreiben vom 10.11.93
- jk/by -

Kassel 3. November 1993

Erweiterung Ihrer GS-Prüfbescheinigung für Hypro-Prozessor

Sehr geehrte Damen und Herren,

in der Anlage senden wir Ihnen die Bescheinigung über die Prüfung der Arbeitssicherheit B - L - 122 / Y mit einem Nachtrag zur Einbeziehung der Terra FA 5-Forstprofi-Funksteuerung in die Prüfbescheinigung.

NACHTRAG

Am 24.08.1993 wurde die Funktion des Prozessors Hypro mit Funkfernsteuerung Terra-Funk Typ FA 5 Forstprofi durch die Prüfkommission "L", vertreten durch die Herren

Dipl.-Ing. Kreilinger, Bayreuth,
Dipl.-Ing. (FH) Wirth, Würzburg,

überprüft. Die Anforderungen wurden erfüllt.

Die Funkfernsteuerung FA 5 - Forstprofi der Fa. Terra Feinwirktechnik, 35232 Dautphetal, wird in die Prüfbescheinigung einbezogen.

Kassel, 3. Dezember 1993

- Für die Prüfkommission L -

Dr.-Ing. Brübach

Hausadresse:
Wilhelmshöhe
Weißensteinstraße 70/72
34131 Kassel

Bankverbindung:
Landeskreditkasse Kassel
Konto 40-10085-035 (BLZ 520 500 00)

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IK - 12 06 92 702

CETECOM ICT Services GmbH

I D800
C
T 482K

LPD-D

ZULASSUNGSBESTÄTIGUNG
Confirmation of Administrative Approval

Deutsche Zulassungsnummer:	**D800482K**
Baumusterprüfbescheinigung:	Registriernummer: **D800482K** Datum. 21.08.98
Produktkontrolle:	Vertrag über die Produktkontrolle
- mit dem Testlabor	CETECOM ICT Services GmbH, D-66117 Saarbrücken
- und dem Vertrags-Datum:	07.07.98
Konformitätserklärung(en):	Mit Datum vom 12.06.98
Produktbezeichnung(en):	**Funkmodul für Ferwikanwendungen**
Produkthersteller:	terra Fernwirktechnik GmbH Kirchstr 1 D-35232 Dautphetal

Bestätigung: Die administrative Zulassung gemäß § 12 der Verordnung über die Konformitätsbewertung, die Kennzeichnung, die Zulassung, das Inverkehrbringen und das Betreiben von Funkanlagen, die nicht zur Anschaltung an ein öffentliches Telekommunikationsnetz bestimmt sind, und von Telekommunikationseinrichtungen (Telekommunikationszulassungsverordnung) vom 20. August 1997 wird hiermit bestätigt.

Hinweis: Das gemäß § 14 und Anlage 4 der Telekommunikationszulassungsverordnung zu verwendende nationale Zulassungszeichen ist im Kopf der vorliegenden Bestätigung dargestellt.

Saarbrücken, den 21. August 1998

CETECOM ICT Services GmbH
Benannte Stelle

Lothar Schmidt

Notes:

Ladebuchse	Charging jack
Hupe	Horn
Motor-Start	Motor-start
Motor-Stopp	Motor-stop
Ein	On
Aus	Off
Notruf (löschen)	Emergency-call (erase)
Ziehen	Pull
Lösen	Release
Gas	Throttle
Dauerlösen	Permanent release
Kurzlösen	Temporary release
Masse	Grounding
Lastkreis	Load circuit
Steuerkreis	Control circuit
Rückstellen	Re-set
Windenfunktion	Winch function
Zusatzfunktion	Auxilliary function
Diagnosefeld	Diagnostic panel
Sicherung (träge)	Fuse (time-lagged)
Störung	Interference/ Malfunction
Wandler	Transformer
Elektronik	Electronics
Totmann-Rückstellung	Dead man's button

Bildbeschreibung Seite 10:

Possible mounting spots for external receiving antenna

Perfect mounting spot for external antenna

Perfect mounting spot for receiver with slip-on antenna (behind driverseat or on window) Antenna should be in plain sight toward operater

Bildbeschreibung Seite 19:

Start (Pfeil) Pre-warning (Pfeil) Emergency-call active

Monitoring time: 15 minutes ; Re-setting time: 2 minutes

Last received data telegram with change of command combination	3 horn signals	Intermittend signal (Horn) plus potential-free relay contact

Bildbeschreibung Seite 22:

Von oben n. unten:
(Anlasser – starter)
Gasverstellmotor – Throttle adjustable motor

In the pos. "idling speed" the empty run is to be taken into account, in order for the motor to reach its “limit stop” with full throttle.

Von links nach rechts:
Hold-up for Bowden wire on the machine

Stroke of throttle linkage

Emty run
This relay needs to be mounted in a safe and easy to reache spot