

Operating Instructions Pistol grip system "GT4 EVO" 2,4 GHz Item No. 1410409

Version 10/16

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1. Introduction

Dear Customer,

We thank you for purchasing this product.

This product corresponds to legal, national and European requirements.

In order to ensure that this status is maintained along with the safe operation of the product, the user must observe these operating instructions!



These operating instructions belong to this product. They contain important notes regarding the initial start up and handling of the product. Pay attention to this information. It also applies when the product is passed on to a third party.

For this reason, keep these operating instructions safe for re-reading!

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If there are any technical questions, please contact:

International: www.conrad.com/contact

United Kingdom: www.conrad-electronic.co.uk/contact

2. Use in accordance with the intended purpose

The 4-channel remote is intended exclusively for private use in model construction and designed with the operating times associated with this use. This system is not designed for industrial use, for example, for controlling machines or systems.

Any use other than the one described above may lead to damage to the product with the associated risks, for example, short-circuiting, fire, electric shock etc. The remote control system may not be technically modified or converted! The safety notes must be observed!



Pay attention to all safety notes given in these operating instructions. These contain important information regarding the handling of the product.

You, and you alone, are responsible for the safe operation of your remote control and your model!

3. Product description

With the 4-channel remote control you have a radio remote control system ideally suited to model vehicles or model boats. The two proportional control channels enable driving and steering functions to be controlled independently of each other.

In addition, you have two further switching channel available. These can be used to operate special functions or gears.

The ergonomically shaped housing sits comfortably in the hand and enables convenient operation of the transmitter as well as safe control of the model.

Where no BEC speed controller is used, the receiver power supply requires 4 mignon batteries (e.g. item no.: 652507, pack of 4, order 1) and additionally a matching battery box with on/off switch. Alternatively, you can also insert a readyconfigured receiver battery (recommended). You need a matching on/off switch for this. For matching accessories, see our catalogues or <u>www.conrad.com</u>.

4. Scope of delivery

- · Remote Control Transmitter
- · Speed sensor with magnet
- · Remote control receiver
- · Voltage Sensor
- · Programming plug
- Temperature sensor
- USB cable
- · Grip shell
- · Adapter cable for sensors
- · LiPo rechargeable battery
- · Operating instructions

Up-to-date Operating Instructions:

- 1. Open <u>www.conrad.com/downloads</u> in a browser or scan the displayed QR code.
- Select document type and language and enter the item number into the search field. After submitting the query you can download displayed records.



5. Explanation of Symbols



The symbol with the exclamation mark draws your attention to particular risks with regard to handling, use or operation.



The arrow symbol represents special tips and operating notes.

6. Safety notes

The warranty/guarantee is voided In the event of damages caused by not observing these operating instructions. We accept no liability for subsequent damages!

We accept no liability for property damage or injuries caused by improper handling or by not observing the safety notes! In such instances, the warranty/guarantee is voided. Normal wear and tear caused by operation and accidental damaged are not covered by the warranty and guarantee (e.g. broken receiver antenna, broken receiver housing etc.).

Dear Customer, These safety instructions are not just designed to protect the product, they are also for your own safety and that of other people. For this reason, please read this chapter through very carefully before starting to operate the product!

6.1 General information



Caution, important note!

When operating a model, property damage and/or injuries may be caused.

Ensure that you are sufficiently covered by your insurance for the operation of the model, e.g. by means of liability insurance. If you already have a liability insurance, check with your insurer before starting to operate your model whether the operation of the model is covered or not.

- · For safety and authorisation reasons, own conversions and/or modifications to the product are not permitted.
- The product is not a toy and it is not suitable for children under 14 years of age.
- · The product may not become damp or wet.
- Always switch on the transmitter first, then the receiver system. Otherwise, the motor may start up uncontrolled with an electrically powered model. A motor that is already running may run uncontrolled to full throttle in a model with combustion engine. In both cases, unintended property damage and/or injury may occur.
- · Do not leave packaging material lying around carelessly. This may become a dangerous toy for children.

- Before each start up, check the functional safety of your model and the remote control system. Pay attention to
 visible damages, for example, defective plugged connections or damaged cables. All moving parts should move
 easily, but should not display play in their bearings.
- If there are any questions that cannot be clarified with the assistance of these operating instructions, please contact us (for contact information, see Chapter 1) or another specialist.



The operation and use of remote controlled models is something that must be learned! If you have never remotely controlled a model, start very carefully and familiarise yourself with the responses of the model to the remote control commands. Be patient!

6.2 Operation

- If you do not have sufficient knowledge of the handling of remotely controlled models, please consult an experienced model operator or model construction club.
- When starting up, always switch the transmitter on first. Then you may switch the receiver in the model on. Otherwise, the model may react in an unpredictable way! Avoid attempting to "point" the tip of the antenna at the model.
- Before operating, check with the model at a standstill to ensure whether it responds as expected to the remote control commands.
- When operating a model, pay attention to ensure that no body parts or objects are located in the danger zone of
 engines or other rotating drive parts.
- Improper operation may cause serious injury or property damage! Always ensure direct visual contact with the model and do not operate it at night.
- Only control your model when your responses are not influenced. If you are tired, or under the influence of alcohol
 or medication, you may react incorrectly.
- Only operate your model in an area in which you do not endanger other people, animals or objects. Operate only on
 private premises or areas specifically set aside for this purpose.
- In the event of a fault, immediately cease operating your model and eliminate the cause of the fault before using the model again.
- Do not operate your remote control system in a storm, under high-voltage power lines or in the vicinity of radio masts.
- Always keep the remote control (transmitter) switched on as long as the model is in operation. After ending your
 model use, always switch the engine off first, then switch off the receiving system. Then you may switch remote
 control transmitter off.
- · Protect the remote control system from damp and heavy soiling.
- · Do not expose the transmitter to direct sunlight or great heat over a longer period of time.
- If the battery in the remote control is weak, the range will be reduced. If the receiver battery is weak, the model will
 not respond correctly to the remote control. In this case, stop operating immediately! Recharge the battery pack!
- Do not take risks when operating the product! Your own safety and that of your surroundings depend upon your responsible handling of the model.

7. Safety notes regarding the LiPo battery pack

- · The LiPo battery pack (Lithium Polymer) is not for use by children.
- The LiPo battery may never be short-circuited, dismantled or thrown into fire. There is a risk of explosion!
- · Only charge the LiPo battery pack in the transmitter, never use another charger to charge.
- · Operate the transmitter using the supplied LiPo battery pack only.
- · If the LiPo battery pack distorts during charging, interrupt the charging process.
- The LiPo battery pack may not be overcharged. Interrupt the charging process immediately if it becomes too hot during charging. The temperature of the LiPo battery pack may not exceed 60 °C during charging.
- Defective or incorrectly loaded LiPo batteries may catch fire. In the event of a fire, only douse the flames with a chemical fire extinguisher, never with water as water would promote the flames.
- · Never charge the LiPo battery pack unattended.
- Never put the transmitter close to flammable or ignitable materials to charge the LiPo battery. Always put it on fireproof underground.

8. Charging the LiPo battery pack

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In subsequent sections of the instructions, the numbers in the text refer always to the neighbouring Figure or to the Figures within the section. Cross-references to other Figures will be specified along with the appropriate Figure number.

The LiPo battery pack required for the remote control is generally included in the scope of delivery and must be charged.



Caution, important note!

The supplied LiPo battery pack may only be charged in the transmitter. Never use another charger to charge the LiPo battery pack.

The charging current of the LiPo battery pack may exceed 500 mA, for this reason, charging connected to the USB port of a computer is not permitted.

Inserting and charging the LiPo battery pack

The lid of the battery compartment (14) is located on the underside of the transmitter. Press on the corrugated surface and slide the lid off. Then, insert the LiPo battery pack. Slide the battery compartment lid (14) back over the compartment. The lid must click audibly into place.

Connect a Micro-USB cable (X) to the Micro-USB port (12) of the transmitter. Connect the other end of the Micro-USB cable (X) to a pluggable power supply with a USB port. Only charge the supplied LiPo battery pack in the transmitter, never use another battery pack.

The LiPo battery pack is fully charged when the symbol of the status display of the transmitter battery pack (see Figure 10, Number 3) is completely green when the transmitter is switched on.



Figure 1

Status display for transmitter battery pack/receiver battery pack

4

Battery pack is being charged



9. Operating elements of the transmitter

- 1 LC touchscreen display*
- 2 "TR1" button for dual rate function throttle/brake
- 3 "TR4" button for dual rate function steering
- 4 "TR5" button for channel 3
- 5 "SW1" button for channel 3
- 6 "SW2" button for channel 4
- 7 "POWER" to switch on and off
- 8 "SW3" button for the "A.B.S" function
- 9 "TR3" button for the trimming of accelerator/brake
- 10 Control wheel for steering function
- 11 "TR2" button for the trimming of steering
- * not illustrated; input pin inserted on the rear of the display



Figure 2

- 12 Micro-USB connection
- 13 Accelerator/brake lever



Figure 3

10. Starting up the transmitter

10.1 Switching on the transmitter

For testing purposes, switch the transmitter on using the On/Off switch (see Figure 2, Number 7). The display is made visible by the backlighting now. To save battery capacity, the backlighting is automatically dimmed after a while. The backlighting can be activated again by touching the display. Brightness settings and setting of the time until dimming of the backlighting are explained in chapter "Settings in the Main Menu / System".

Push the on/off switch again to deactivate the transmitter. It must be pushed for about three seconds.



If the setting "System sound" is activated in the "System" menu, signal sounds are output at menu change and input. Additionally, a sound is generated when switching on/off.

10.2 Checking and setting the digital trimming

Before you can carry out setting work on your model or start with the programming of your product, you must ensure that the digital trimming for the steering and drive function is set to the middle position (0).

Middle position of the steering function

Using the "TR2" trimming button for the steering function, set the middle position for the steering servo (ST). To do this, press the "TR2" trimming button either to the left or to the right in order to set the value to 0. If you hold down the trimming button, the value will be changed constantly. The value can be adjusted between left and right at up to 120 steps each.

		100120
		100120
		100120
9		100120
2	50	100120
	. 50 . 0 . 50 . 0 . 50 . 0	. 50 . 0 . 50 . 50 . 0 . 50 . 50 . 0 . 50



Every short operation of the programming and setting buttons is confirmed by an acoustic signal when the "System sound" setting is activated. If a button is pushed for a longer duration, the values will change continually and the transmitter will emit a fast sequence of sounds.

When you perform trimming, a sub-menu will open. The display will show trimming for steering and the throttle/brake lever in large format. When ending trimming, this display will automatically return to the basic menu. The set trim value is also displayed here.

Middle position of the drive function

Using the trimming button (TR3) for the drive function, set the middle position for the gas servo (TH). To do this, press the trimming button (TR3) either to the left or to the right in order to set the value to 0. If you hold down the trimming button, the value will be changed constantly. The value can be adjusted between left and right at up to 120 steps each.



Every short operation of the programming and setting buttons is confirmed by an acoustic signal when the "System sound" setting is activated. If a button is pushed for a longer duration, the values will change continually and the transmitter will emit a fast sequence of sounds.

When you perform trimming, a sub-menu will open. The display will show trimming for steering and the throttle/brake lever in large format. When ending trimming, this display will automatically return to the basic menu. The set trim value is also displayed here.

Also set the middle value precisely if you are using an electronic cruise control in place of a gas servo.

11. Starting up the receiver

11.1 Receiver connection

The receiver offers connection options for up to four servos (CH1, CH2, CH3, CH4) and a receiver battery pack (BIND/VCC).

Figure 5a shows a connection chart for a model with external receiver power supply (figure 5a, item 1), as it is common, e.g, for a combustion model.

Figure 5b shows a connection chart for an electrically powered model in which the speed controller has an integrated BEC (BEC is a receiver power supply integrated into the speed controller). The driving battery (figure 5b, item 1) is connected to the speed controller (figure 5b, item 2) here. The BEC integrated in the speed controller supplies the entire receiver system with power through the connection of the servo plug from the speed controller to CH2.

If the speed controller used does not have any integrated BEC, the receiver system must be produced with an external receiver power supply. Use figure 5a as reference. In this case, only the servo Servo 2 (CH2) needs to be replaced by the speed controller.



If an electronic speed controller with integrated BEC is used in a model, no external power supply must be connected to the receiver, since this may destroy the speed controller. The BEC may be disconnected from the receiver system for use of external receiver power supplies if you separate the middle, red wire at the servo plug of the speed controller and insulated it.

If necessary, you can connect an additional servo to receiver output CH3 and CH4 in addition to the steering servo on receiver output "CH1" and the throttle servo/speed controller on receiver output "CH2". These servos can be used for various additional functions.

With a electronic model with a mechanical drive regulator, a battery box or a separate receiver battery pack is required for the power supply of the receiver in all cases. The power supply connection mounted to the mechanical drive regulator may not be used since the voltage at the plug of 7.2 V (for a 6 cell drive battery) is too high for the receiver and the connected servos.

Pay attention when connecting servos to always ensure the correct poling of the plug connector. The plugged contact for the impulse cable (yellow, white or orange according to manufacturer) must be connected to the inner (left) pin contact. The plugged contact for the minus cable (black or brown according to manufacturer) must be connected to the outer (right) pin contact.

Switch the transmitter on and then switch the receiver on. If the Binding function is correct, the red control LED on the receiver will light up. Check the correct functionality of the receiver and then switch it back off.



If the LEDs in the receiver do not light up or the connected servos do not react to the remote control signals, the Binding function must be carried out. More information can be found in the later Chapter "Binding function".

Example of the connection of a combustion models



Figure 5 a

Example of the connection of an electric model with an electronic cruise control and BEC switching



Figure 5 b

11.2 Installing the receiver

The installation of the receiver differs according to the model. For this reason, observe the recommendations made by the model manufacturer with regard to installation.

Generally speaking, you should always try to install the receiver in such a way that it is optimally protected from dust, dirt, damp and vibrations. Double-sided adhesive foam or rubber rings are suitable for securing the foam wrapped receiver firmly in place.

The last 3 centimetres of the aerial wire are deemed the aerial. The remaining part only serves to extend the aerial, to place or position it in a model.

Install the aerial (i.e. the last 3 centimetres) with suitable aids (e.g. the aerial tube from the delivery) so that it points from the RC box or model as vertically as possible.

Generally, the following rule applies: The higher the aerial protrudes from a model, the safer the reception.



The antenna wire of the receiver has a precisely calculated length. For this reason, the antenna wire may not be coiled, looped or cut. The receiver range would be strongly limited and thus would be a considerable safety risk.

11.3 Installing the servo

The installation of a servo is always dependant on the model being used. Precise information can be obtained from the construction documents of the model.

In the event of stiff rudders and steering, servos are unable to operate in the required position. They consume unnecessary power as a result and the model cannot be controlled cleanly.

Always mount the servo lever at a 90° angel to the steering rods. With a servo lever diagonal to the steering rods, the steering or rudder movement in both steering directions are not of the same magnitude.



Pay attention before installing the servo lever for the drive and steering function to ensure that the trim function of the relevant channel is set to the middle position. For more information, consult the section "Checking and setting the digital trimming".

The servo levers at the servos that are connected to CH3 and CH4 must be installed so that they cannot run on block when switching from one end position to the other.

11.4 Binding function

In order for the transmitter and the receiver to communicate with each other, they must be bound using the same digital coding. When delivered, the transmitter and receiver are already coordinated and can be used immediately. The renewal of the Binding function is, primarily,

only necessary after switching a transmitter or receiver or when eliminating faults.

The transmitter and receiver are not bound if the LED in the receiver only flashes in spite of the transmitter being on.

If the transmitter has lost the binding with the receiver due to an interference, or if you want to bind a new receiver to the transmitter, proceed as declared below.



Figure 6

Remove all servo plugs, as well as any present external power supply, from the receiver (1). Connect the binding plug (short-circuit plug) to the receiver on BIND/VCC (3). Connect a receiver battery (2) to a free channel (e.g. CH4).

Switch on the receiver power supply. The receiver LED flashes very fast. Switch on the transmitter now.

Select the menu "RX-Setup". Select the function "Bind with a receiver" in this menu. The transmitter asks in the English language if you really want to bind to a receiver. Confirm with "yes".

Binding was successful if the receiver LED is permanently lit.

Now switch off the receiver power supply and remove the binding plug. Only now can all servos and any external power supply be connected again and the receiver be used.

Check the correct function of the connected servos/speed controllers before operating the model and perform a range check.



The transmitter can also be operated with the receivers of the remote control systems GT2, GT3 and GT4. However, telemetry will not be available then.

For binding the receivers named, the submenu "RF std." must be selected in the menu "RX setup" and, depending on receiver used, either "AFHDS" or "AFHDS 2" must be selected.

12. Connecting a rotation sensor

12.1 Programming the Remote Control

Three sensors are included in the delivery of the remote control that can record a temperature, a voltage and a speed. Up to 15 sensors can be connected to the receiver in series and displayed in different constellations in the transmitter.

12.2 Temperature sensor

The temperature sensor "CTM01" can measure, e.g., the temperature of a speed battery in the range of -40 °C to +250 °C and transmit it to the transmitter by telemetrics. For this, attach the temperature sensor that is installed to the sensor housing in a suitable location, e.g. with a rubber band or adhesive tape.

12.3 Voltage Sensor

The voltage sensor "CVT01" can measure, e.g., the voltage of a speed battery in the range of 4.0 V to 100.0 V and transmit it to the transmitter by telemetrics. Plug the connection cable, which is installed to the voltage sensor, to the speed battery with the correct polarity (e.g. to the balancer connection). The red cable must be connected to the plus, the black to the minus pole of the rechargeable battery. Avoid short circuits and polarity reversal since this may cause damage.

12.4 Speed Sensor

The speed sensor "CPD01" can measure, e.g., the speed in the range of 0 to 60,000 U/min and transmit it to the transmitter by telemetrics. At the transmitter, you can display the speed of the drive wheel. Additionally, you can display the distance driven (menu item odometer) and/or the speed driven (menu item Speed) with the corresponding settings at the transmitter.

To install the speed sensor, you need to attach a magnet (figure 7a, item 3) to the rotating part (e.g. a wheel rim – figure 7a, item 1) so that the sensor of the speed sensor (fig. 7a, item 2) can slide past at a distance of less than or equal to 2 mm.

Assembly material required for this (suitable glue for the magnet or, e.g., cable ties for the sensor attachment) are not enclosed with the remote control and must be purchased separately.



Figure 7a

12.5 Sensor Connections

Plug the cable of the desired sensor (1) into the "SENS" socket at the receiver (2).

Install the sensor just connected in your model according to its purpose (e.g. measuring temperature of a rechargeable battery) so that no cables can get into rotating parts of the drive.

After taken the transmitter and then the receiver into operation, the LED in the sensors lights up in addition to the LED in the receiver.

Measurement and transmission to the transmitter is activated.



Figure 7b

If you want to use several sensors (1 + n) in your model for measuring purposes at the same time, connect the new sensor(s) simply to the first (or present) sensor.



All sensors can be displayed at the transmitter in the menu "RX setup", in the submenu "Display sensors". You can have up to four sensors displayed in the main menu of the display. For this, select the sequence and selection of the sensors in the submenu "choose sensor". Display or selection of the different sensors is only possible with the transmitter and receiver activated.

12.6 Configuration / Display of the Sensors

The sensors connected to the model and the receiver can be displayed in the main menu (i.e. the display that that shows the indication after activation of the transmitter). Up to four displays can be selected here. For information on this, see the chapter "RX setup" under item "Choose Sensors".

Alternatively, you can display all values submitted by the transmitter, including all the connected sensors in the menu "RX setup" in the function "Display sensors".

For this, observe the notes in these operating instructions, chapter "RX setup", "Display Sensors".

13. Checking the steering and drive function

In order to ensure that the model does not drive off when you are checking the steering and drive function, place the model chassis on a suitable base (block of wood or similar). The wheels should be able to turn freely.

13.1 Checking the steering function

Always carry out digital trimming before checking the steering function. For more information, consult the section "Starting up the transmitter" in the Chapter "Checking and setting the digital trimming".

Switch both the transmitter and the receiver on to carry out the check. If everything has been connected and installed correctly the steering should react to the rotation motions of the control wheel.

When the control wheel is in the middle position, the wheels should be pointing straight ahead.

If the wheels are at an angle although the control wheel is in the middle position, check to see whether the servo lever is at an angle to the steering rod.

In this case, undo the servo lever, and screw it back into place one "tooth" offset.

Further deviations in the wheel positions can be corrected if necessary by adjusting the steering rod.

If you steer to the left, the wheels should turn left. If you steer to the right, the wheels should turn right.



If the control direction should react in precisely the opposite way to the control direction on the transmitter, this can easily be reprogrammed. See the Chapters "Selecting the menu" and then "Reverse".



Figure 8

13.2 Checking the drive function



Always carry out digital trimming before checking the drive function. For more information, consult the section "Starting up the transmitter" in the Chapter "Checking and setting the digital trimming".

When you pull the accelerator/brake lever for the drive function as far as possible in the direction of the handle, the model should accelerate.

When you push the accelerator/brake lever for the drive function forwards, the model should be braked or switched to reverse.

If the control direction should react in precisely the opposite way to the control direction on the transmitter, this can easily be reprogrammed. See the Chapters "Selecting the menu" and then "Reverse".

After you have checked or set the correct drive and steering functions, first switch off the receiver, then the transmitter.



Figure 9

Important!

For a model with a combustion engine, set the rods for the exhaust and brake steering in such a way that the accelerator/brake servo is not limited mechanically. The trimming regulator for the drive function (see Figure 2, Number 11) must be in the middle position.

For a model with an electronic drive regulator, the various positions of the operating lever for the drive functions (forwards, stop, reverse) may need to be programmed into the drive regulator. Additional notes regarding this can be obtained from the documentation belonging to the drive regulator.

14. Programming the remote control

14.1 Programming the remote control

This product enables you to coordinate the drive, steering and switching functions of your model individually and to permanently store the set values. Only a model set to suit the given driver will offer the most fun.

Information is entered into the product via the touchscreen display. As soon as you switch on the product, the following information will be shown on the LC display.

- 1 Receiving strength of the receiver
- 2 Memory number and model name
- 3 Status display for the transmitter battery pack
- 4 Status display for the receiver batteries/battery pack
- 5 RX = display field of the sensors
- 6 Icon bar of the active mixer
- 7 TX = display of the servo paths and trims
- 8 Help menu (in the English language)
- 9 Main menu



Figure 10

Notes:

- Ad 1: The receiver strength of the receiver is permanently transferred to the transmitter by telemetrics and displayed.
- Ad 5: Up to four measured values of sensors can be displayed in the display fields "RX". The display values are selected in the menu "RX setup".
- Ad 6: Activated mixers or functions are displayed in the icon list.
- Ad 7: The display field "TX" permits tracking all servo paths by bar display. You can also see the current settings for trimming of the throttle (F / B) or steering (L / R).

14.2 Symbol explanation

	Main menu	This symbol is used to access the main menu. Here you can programme your product individually according to model.
	Back	This symbol takes you back to the previous menu.
	Activate/Deactivate	This symbols are used to activate or deactivate your individual settings.
ଚ	Reset	This symbol is used to reset the individual adapted menu option back to the factory settings.
?	Help	This symbol is used to call the Help function (Help function in English!).
	Regulator	This symbol is used to individually set the selected parameters.

14.3 Operating the LC touchscreen display

Using your hand or a stylus suitable for operating an LC touchscreen display, you can select the individual menu options and adapt the values. The selected parameters are always highlighted in yellow.



To ensure that the LC display is not scratched, we recommend the use of a stylus designed for operating an LC display (e.g. from the delivery scope - see at the upper right on the rear of the display).

15. Main menu settings

15.1 Main menu settings

Switch the transmitter on and select the main menu. The following setting options are available to you (scroll the different menu pages sideways as on a smartphone):

1: Flys	ky 01 TX	RX 📑	1: Flysk	(y 01 T	X 🔲 RX 📑	1: Flysky 01	TX RX
		80 100 1 101 1		R ST TT			
Reverse	End	Subtrim	Throttle	Engine	Boat	System	
1925	punts						
Steering	Steering	Steering	Brake	Mixes	Display		
	apeeu						
Throttle	Throttle	Throttle	Race timer	Keys	Models		
\bigcirc		2		RX			
A.B.S.	Throttle speed	Throttle middle	S.V.C.	RX setup	Spectrum analyzer		
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"Reverse":	Reverse switching
"End points":	End point setting for the servo path
"Subtrim":	Middle position setting for the drive and steering servos
"Steering exponential":	Exponential setting for the steering servo
"Steering speed":	Speed setting for the steering servo
"Steering mix":	Setting for steering types
"Throttle neutral":	Calibrate the neutral setting for the accelerator/brake servo
"Throttle exponential":	Exponential setting for the accelerator/brake servo
"Throttle curve":	Setting for accelerator/brake curve
"A.B.S.":	ABS brake
"Throttle speed":	Speed setting for the accelerator/brake servo
"Throttle middle":	Middle position setting for the accelerator/brake servo
"Throttle idle up":	Adjustment of the neutral position for the accelerator/brake servo
•	

"Boat mode":	Boat mode
"Brake mixing":	Brake mixer
"Mixes":	Channel mixer
"Display servos":	Display for position of all servo levers
"Race timer":	Timer
"Keys function":	Assignment of functions for trim buttons
"Models"	Model management
"S.V.C.":	"Smart vehicle control" (special receiver with integrated gyro system is needed; available as an accessory) $% \left(\left(x,y\right) \right) =\left(x,y\right) \right) =\left(x,y\right) +\left(x,y\right) \right) =\left(x,y\right) +\left(x,y\right) +\left(x,y\right) +\left(x,y\right) \right) +\left(x,y\right) $
"RX setup":	Settings for the receiver
"Spectrum analyzer":	Radio channel monitoring
"System":	Settings for the transmitter

15.2 "Reverse" function

This function can be used to change the servo rotation direction of all four channels (CH1 to CH4) as required. Depending on the installation position and the steering in the model, it may be necessary to change the direction of rotation of a servo.

For this, tap the switch to change the servo rotation direction of the required channel from Normal (NOR) to Reverse (REV).





15.3 "End points" function



Figure 13

This function can be used to specify how big the maximum permitted end point to each side for the steering, accelerator or additional servo may be. This function is generally used to protect the servos from mechanical stops when applying end points in full. You can set a value between 0 - 120 %. The smaller the value, the smaller the servo path on the relevant side. After calling the function "End Points", you need to select a control element of the transmitter (e.g. the steering wheel) that you want to change. Now tap the selected function. The display switches to a submenu in which you can set a value between 0 and 120 for the selected page (marked in red) with the "controller" (symbolically displayed as a setting wheel).

Setting the value for the steering servo ("Steering")

Use Channel 1 (CH1) to set the maximum possible steering end point. To do this, select the parameter to be changed on the appropriate end point side (left or right). Slide the regulator to the right or left to change the value to suit your requirements. Tap the "Back" button to save the new values and return to the previous menu.

Setting the value for the accelerator servo ("Throttle")

Use Channel 2 (CH2) to set the maximum possible motor revolutions. To do this, select the parameter to be changed on the appropriate end point side (left or right). Slide the regulator to the right or left to change the value to suit your requirements. Tap the "Back" button to save the new values and return to the previous menu.

Setting the value for the additional servos (CH3 and CH4)

Use Channel 3 (CH3) and Channel 4 (CH4) to set the values for the additional servos. To do this, select the parameter to be changed on the appropriate end point side (left or right). Slide the regulator to the right or left to change the value to suit your requirements. Tap the "Back" button to save the new values and return to the previous menu.

15.4 "Subtrims" function



Figure 14

This function enables you to make an individual setting for the middle position of the drive and steering servos. A slight pull of the model to the left can be equalised/corrected with the help of trimming. This ensures correct straight forwards steering when the control wheel on the transmitter is in the middle position.

Select the parameter to be changed to do this. Slide the regulator to the right or left to change the value to suit your requirements. Tap the "Back" button to save the new values and return to the previous menu.



The additional channels CH3 and CH4 do not have any centre position like CH1 and CH2. The function "Subtrim" influences the limit position of the servos CH3 and CH4 nevertheless. Together with the function "End Points", you can individually set the end values for CH3 and CH4.

15.5 "Steering exponential" function

This function enables you to influence the sensitivity of the steering. In doing so, the linear path between the controller and the servo is modified to a non-linear (exponential) path. A more sensitive control about the neutral position is thus possible. The maximum control path is not modified when doing this.

"Exp.":

The value that can be set is -100% to 100%, whereby the value 0% corresponds to linear control. A modification of the set value always affects both sides of the servo end point equally.



Negative values lead to stronger servo deflections in the centre positions.

"Rate":

Here, the angle of the curve is set. The value that can be set for the angle of the curved is 0% to 100%. The smaller the increase, the smaller the steering end point.

Select the "Activate" button. Then, select the parameter to be changed. Slide the regulator to the right or left to change the value to suit your requirements. Select the "Activate" button to save the current value. Tap the "Back" button to return to the previous menu.

15.6 "Steering speed" function

This function allows you to coordinate the speed of the steering servo to suit your model.

"Turn speed":

The value that can be set for the turn speed is 0% to 100%.

"Return speed":

The value that can be set for the return speed is 0% to 100%. The values in the LC display are displayed in real time. The red bar symbolises the position of the steering wheel, the green bar in the position of the steering servo.

The values in the LC display are shown in real-time. The green bar symbolises the position of the steering wheel, the red bar, the position of the steering servo.

Select the parameter to be changed. Slide the regulator to the right or left to change the value to suit your requirements. Tap the "Back" button to save the new values and return to the previous menu.



Figure 15



Figure 16

15.7 "Steering mix" function

The steering type "Standard" is chosen in the basic setting; no further settings are possible.

Select the steering mode "Crawler mode" to be able to make the following settings as also shown in figure 17.

"Front side":

Only the steering servo for front wheel steering, connected to CH1 at the receiver, will be activated.

"Rear side":

Only the steering servo for rear wheel steering, connected to CH3 at the receiver, will be activated.

"Same Phase":

Front and rear wheels are controlled in the same way.

"Rev. Phase":

Front and rear wheels are controlled in the opposite way.

Select the parameter to be changed in order to set the required steering type. Tap the "Back" button to save the new values and return to the previous menu.





Use the function "Same phase" or "Rev.phase" to trigger two steering servos at once with the steering movement at the transmitter. Steering servo 1 is connected to CH1, steering servo 2 to CH3. In this case, the control button has no function at the transmitter for CH3.

The control characteristics for both steering servos can be set individually (CH1 and CH3) in the menu items "Reverse, End points and Subtrim". For the functions "Steering exponential and Steering speed", the settings of CH1 serve as master and control the CH3 (slave) automatically for the set value 1:1.

15.8 "Throttle neutral" function

This function allows you to specify the behaviour of the accelerator/ brake lever close to the neutral position.

"Forward":

This defines the point at which the model starts to accelerate when the accelerate/brake lever is operated.

"Dead zone":

This is used to define the magnitude of the neutral position in which the accelerator/brake lever does not cause a reaction.

"Backward":

This defines the point at which the model starts to brake when the accelerate/brake lever is operated.

Select the parameter to be changed. Slide the regulator to the right or left to change the value to suit your requirements. Tap the "Back" button to save the new values and return to the previous menu.



Figure 18

Example:

Set a value of 20% for "Forward" and a value of 10% for "Backward". Change the value of 100% for "Dead zone". With this setting, you will find that there is no reaction of the throttle servo in the area of the centre position of the throttle lever.

If you exceed the area selected in the display, e.g., by pushing on the throttle (pull the throttle lever towards the grip) towards the "Dead Zone", the throttle servo adjusts to the set value. Release the throttle lever again (throttle lever is in the neutral position), the throttle servo remains on the value set for "Forward" (e.g. 20%) until you have exceeded the point of the "Dead zone" by pushing the throttle lever at the transmitter towards the brake. If you return the throttle lever to the neutral position, the throttle lever remains on the value set for "Backward" (in the example: 10%).

15.9 "Throttle exponential" function

This function enables you to influence the sensitivity of the accelerator/brake servo. In doing so, the linear path between the controller and the servo is modified to a non-linear (exponential) path. A more sensitive control about the neutral position is thus possible. The maximum control path is not modified when doing this.

"Exp.":

The value that can be set for this function is -100 % to 100 %, whereby the value 0 % corresponds to linear control. A modification of the set value always affects both sides of the servo end point equally.



Negative values increase the servo deflection around the centre position.

"Rate":

Here, the angle of the curve is set. The value that can be set for the angle of the curved is 0 % to 100 %. The lower the value set, the lower the servo deflection.

Select the "Activate" button. Then, select the parameter to be changed. Slide the regulator to the right or left to change the value to suit your requirements. Select the "Activate" button to save the current value. Tap the "Back" button to return to the previous menu.

15.10 "Throttle curve" function

This function enables you to adapt the acceleration acceptance behaviour of the accelerator/brake servo in a 5-point curve.

Each individual point can be adapted individually. Values from -100% to 100% may be set.

Select the "Activate" button. Then, select the parameter to be changed. Slide the regulator to the right or left to change the value to suit your requirements. Select the "Activate" button to save the current value. Tap the "Back" button to return to the previous menu.



Figure 19





15.11 "A.B.S." function



Figure 21

This function enables you to prevent blocking of the wheels when braking by means of automatic pulsing (opening and closing of brakes). This enables you to maintain control of the model even when braking heavily.

"Brake return":

Here you specify to what extent the brake is opened for each impulse. At 100%, the brake opens fully and the brake servo returns to the neutral position after each impulse. A value of 0%, on the other hand, deactivates the "A.B.S. function".

"Delay":

Here, you can set a time delay between the triggering of the "A.B.S." and the application of the braking force. A value of 0 % signifies no delay, a value of 100% represents a delay of around 2 seconds.

"Cycle length":

Here, the duration of an A.B.S. braking interval (brake closed, brake opened) can be determined. A value of 20% signifies roughly 100 ms, a value of 100% represents around 500 ms.

"Trigger point":

Here, you can set a trigger point for the "A.B.S. function". The higher the value that is set, the later the "A.B.S." is activated. A value of 100% means that the "A.B.S. function" is only activated under full braking.

"Duty cycle":

Here, you can set the relationship between a closed and open brake during an "A.B.S. braking interval". If you choose the setting "0", the control pulses for "closed" and "open" brakes are the same. If you set positive values, the control pulses for "closed brake" are shortened at the ratio to "opened brake".



A well-working A.B.S.-brake always requires a sufficiently strong and also fast throttle servo for a combustion engine model.

If you programme the A.B.S. brake in an electronic speed controller, the higher dynamics of the electronics generally require that lower brake values are set. The A.B.S. brake loads the speed controller and motor thermally as well. The power consumption rises as well and additionally discharges the drive battery.

"Steering mix":

Here, you can couple the activation of the "A.B.S." to the steering. A positive value (N) activates the "A.B.S." only when the steering is located within the range about the neutral position. A negative value (E) activates the "A.B.S." only when the steering is located outside the range about the neutral position.

Select the "Activate" button. Slide the regulator to the right or left to change the value to suit your requirements. Select the "Activate" button to save the current value. Tap the "Back" button to return to the previous menu.



You need to scroll up the display content in the function "A.B.S." for the function "Steering mix".

15.12 "Throttle speed" function

This function allows you to coordinate the speed of the accelerator/ brake servo to suit your model.

"Go":

The value that can be set for the turn speed is 0% to 100%. The values in the LC display are displayed in real time. The red bar symbolises the position of the throttle lever, the green bar in the position of the throttle servo.

"Return":

The value that can be set for the return speed is 0 % to 100 %. The values in the LC display are shown in real-time. The green bar symbolises the position of the accelerator lever, the red bar, the position of the accelerator/brake servo.

Select the parameter to be changed. Slide the regulator to the right or left to change the value to suit your requirements. Tap the "Back" button to save the new values and return to the previous menu.





15.13 "Throttle middle position" function

This function permits changing the servo adjustment path starting in the neutral position of the throttle lever.

The example shown in figure 23 would move the throttle servo (or the electronic speed controller) by 60% of the servo control path if the throttle lever at the transmitter is moved from the neutral position towards full throttle. If you move the throttle lever at the transmitter from the neutral position towards the brake, the throttle lever would only move by 40% of the servo control path.

Slide the regulator to the right or left to adjust the value. Tap the "Back" button to save the new values and return to the previous menu.



Figure 23

15.14 "Throttle idle up" function

This function enables you to adjust the neutral position of the accelerator/brake servo. This can be particularly useful when you are operating a petrol-powered model.

This enables you to raise the idle revolutions when the engine has not yet warmed up.

A chosen switch (e.g. SW1 to SW3) must be assigned to the "Idle up" function. This is done in the "Keys Function".

Push the switch programmed for "Idle up". Push the controller to the right or left to adjust the value to your wishes. By pushing the switch intended for "Idle up", you can now activate/deactivate the function "Idle up".



Any switchable function can be assigned in any submenu of the switches "Keys function" (e.g. SW1 to SW3). You need to scroll the display content for overview. The display shows the corresponding icon with the function activated.



Figure 24

15.15 "Engine cut" function

This function is used to ignore the position of the accelerator/brake lever of the remote control and set the accelerator/brake servo to a predefined position.

A chosen switch (e.g. SW1 to SW3) must be assigned to the "Engine cut" function. This is done in the "Keys Function".

Push the switch programmed for "Engine cut". Push the controller to the right or left to adjust the value to your wishes. By pushing the switch intended for "Engine cut", you can now activate/deactivate the function "Engine cut".



Any switchable function can be assigned in any submenu of the switches (e.g. SW1 to SW3). You need to scroll the display content for overview. The display shows the corresponding icon with the function activated.



Figure 25

15.16 "Boat mode" function

This function permits moving the throttle lever along the entire servo path from the neutral position. A brake function therefore is not intended for.

With the function activated, the throttle servo (or the electronic speed controller) is set to the end stop with the throttle lever of the transmitter in the neutral position (motor off). Now move the throttle lever of the transmitter towards full throttle (the lever is pulled towards the grip), the servo (or the electronic speed controller) will move towards full throttle. If the throttle lever is pulled completely towards the grip, the other end stop is reached.



Figure 26

15.17 "Brake mixing" function

This function enables you to control the brakes using two or three independent servos. The Channels 3 (CH3) or 4 (CH4) are used as slave channels for the accelerator/brake servo, whereby only the braking function has an influence on the slave channels. After activating one of the two channels, you can set the A.B.S. as well as the exponential function of the accelerator/brake servo for this channel individually.



Since up to three servos can be activated for a brake function, you have many options for programming, e.g., a kind of "Brake force distributor". Due to the many options, we cannot provide any more specific indication for programming in these operating instructions.

Select the parameter to be changed. Slide the regulator to the right or left to change the value to suit your requirements. Tap the "Back" button to save the new values and return to the previous menu.



Figure 27

15.18 "Mixes" function

This function allows you to control two servos at the same time. The electronic proportion of the main channel (Master) is mixed to a further channel (Slave) to do this. You can set the direction individually. You can mix between all four channels.

Select a parameter to be mixed. Select the "Activate/Deactivate" button. Slide the regulator to the right or left to change the value to suit your requirements. Tap the "Back" button to save the new values and return to the previous menu. Tap the "Activate/Deactivate" button to deactivate the set value.



Figure 28



Figure 22

"Master channel":

Here, you select the Master channel.

"Slave channel":

Here, you select the Slave channel.

"Low side mix":

The influence of the "Left servo control device" of the master channel on the slave channel is determined.

If you set 0% or a positive percentage, the slave channel is not triggered when the "High side mix" is deactivated. The settings for "Low side mix" and "High side mix" influence each other with the "High side mix" activated. The slave servo would not be triggered with a setting Low side mix = 100 and High side mix = -100, since the two set values will balance each other out.

"High side mix":

The influence of the "Right servo control device" of the master channel on the slave channel is determined.

If you set 0% or a negative percentage, the slave channel is not triggered when the "Low side mix" is deactivated. The settings for "Low side mix" and "High side mix" influence each other with the "High side mix" activated. The slave servo would not be triggered with a setting Low side mix = 100 and High side mix = -100, since the two set values will balance each other out.

"Offset":

Here, you introduce an Offset value to the Slave channel. A negative value pushes the Slave channel to its smallest point.

15.19 "Display servos" function

This function shows you real-time information regarding the position of all four servo levers. For this, move the control elements of the transmitter (e.g. the steering wheel).

Click the icon "Servo lever" next to the green "Return arrow" to activate a "Servo tester". All the connected servos for the set values (end points, rotating directions, etc.) are moved automatically. The display for this is according to the movement of the servos at the display.



Figure 30

15.20 "Race timer" function

This function allows you to set the timer function in four different modes. Tap "Mode" to switch between the four different modes. The following modes are available for use:

"Up timer":

The mode starts the timer and ends only when the "Stop" button is tapped.

Tap the "Start" button to start timing. Then, tap the "Stop" button to stop timing. To reset the counter back to "0", tap the "Reset" button.

"Down timer":

This mode allows you to count down from a individually set time.

Slide the regulator to the left or right to set a particular time. The set time intervals are adjusted by a minute each. Tap the "Start" button to start timing. Then, tap the "Stop" button to stop timing. To reset the counter back to "0", tap the "Reset" button.



Figure 31



The timer continues to operate even when the set time has been counted down. In this case, the product automatically switches into "Up timer" mode.

In this case, a short signal sounds after the end of the set time if the sound is activated (see menu item "Systems").

Times between 1 minute and 99 minutes can be set.

"Lap timer":

This mode allows you save a specific lap time.

Tap the "Start" button to start timing. Then, tap the "Lap" button to save a lap time. To stop timing, tap the "Reset" button.



After each activation of the "Lap" button, the current lap time is displayed in the LC display for about 3 seconds and then saved. During this time, the timer continues to operate normally.

"Lap memory":

This mode shows all saved lap times. You can save a maximum of 100 lap times.

Tapping "Lap memory" will open a sub-menu and the saved lap times will be displayed. These values are retained after deactivation of the transmitter as well.

If the symbol for "Restoration" is selected in the display, these lap times can be deleted (confirm with "yes"). The "Lap Timer" must be actively ended by selecting "Up timer" or "Down timer".

15.21 "Keys function" function

This function enables you to assign functions for the individual trim buttons.

Tap the trim button to assign a given function to it. This will open a menu. From the menu, select from the available functions. Tap the "Back" button to save the new values and return to the previous menu.

Switchable functions can be assigned in any submenu of the switches (e.g. "SW1 to SW3") or trimmer (TR1 to TR5). You need to scroll the display content for overview. The main display shows the corresponding icon with the function activated.



Figure 32

15.22 "Models" function

This function permits naming up to 20 different models and saving them with all the programmed inputs. You can, e.g., programme and save one and the same model several times with different setups (e.g. "Setup dry" or "Setup wet"). Up to 13 characters can be used for the model name. Spaces count as characters for this as well.

"Select model":

Select the required model from the list. Tap the "Back" button to activate the selected model and return to the previous menu.

"Reset model":

Select a model to be deleted. Confirm that you really do want to delete the model. Tap the "Back" button to save the new values and return to the previous menu.



Only the individual settings are deleted from the selected model, the memory for the model remains the same.

"Name":

Enter a name for the model. Tap the "Back" button to save the new values and return to the previous menu.

"Copy model":

Select a model to be copied. Then, select a model to be overwritten with the new data. Tap the "Back" button to save the new values and return to the previous menu.

The selected model is replaced by the copied model. All previous settings are thus deleted irrevocably.





15.23 "S.V.C." function

The function "S.V.C." (= "Smart vehicle control") can be activated when using a receiver with integrated gyro system (not enclosed, can be delivered as an accessory) and set individually.

Depending on setting, the movement of the model in driving operation is dampened (vehicle will skid less) or increased (vehicle will skid more). The function "S.V.C." and its reverse function can be programmed for individual switches in the menu "Keys function" and thus activated or deactivated in driving operation.

Proceed as follows to activate and individually set the "S.V.C.-function":

First switch on the transmitter, then the receiver system. Check all functions (steering, etc.) for proper function.

Place the model on a level surface. Now call the menu "S.V.C." and activate the function "S.V.C", by selecting the green check mark in the lower left of the display.

Select "Neutral Calibration". Keep this function pushed for approx. 2.5 seconds. The gyros system now calibrates the neutral position of the model.

Use the function "Reverse" to set the effective direction of the steering servo. The effective direction is correct when you move the model to the left and the steering deflects to the right with "Steering Gain" activated.

The basic settings ex works are "Reverse = NOR", "Steering Gain", "Throttle Gain" and "Priority" 50%. Activate the desired setting option (e.g. "Steering Gain"), by selecting it and then selecting the green check mark in the lower left in the display.

For driving tests, you need to set the individual effect of the gyro system according to your personal wishes now. If you increase the percentages, e.g. for "Steering Gain", a skidding model will cause a strong steering impulse to be put on the steering servo by the gyro system. Reduce the value to reduce the influence of the gyro system on the steering servo.

The function "Throttle Gain" controls the throttle servo (or the speed controller in the electrically operated model) and acts similarly to a traction control. When accelerating from a curve, the throttle servo (or the speed controller) is adjusted to achieve the most efficient, skid-free acceleration. Together with the function "Steering Gain", driving tests can thus optimise the driving properties and adjust them according to your personal preferences.

In the function "Priority", you can set the general effect of the gyro system for "Steering Gain". The higher the selected percentage, the lower the influence of the gyro system on the actual control commands (e.g. steering) of the transmitter.

Important!

The function "S.V.C." works only with a suitable receiver with integrated gyro system (not enclosed; available as an accessory).

The receiver must be installed horizontally for proper function of the gyro system; it also must be attached firmly in the vehicle, e.g. with double-sided adhesive tape (e.g. in an RC-box).

If the individual set values are chosen too high, oversteering may result. This will be evident, e.g., in a trembling of the steering movement when steering. In this case, reduce the corresponding setting.

15.24 "RX setup" function

This function enables you to programme the receiver. The following setting options are available for use:

"Bind with a receiver":

Select this function if the transmitter is to be bound to a receiver again.

"RF std.":

The communication protocol between the transmitter and receiver is specified here. Use "AFHDS 2A 1-way" (without telemetry) or "AFHDS 2A 2-way" (with telemetry) for the receiver type from the remote control set.

Use "AFHDS" or "AFHDS 2" for receivers from the remote control sets GT2, GT3 and GT4.

"Receiver PPM Output":

When checking the check box, CH1 at the receiver would only provide a sum signal (consisting of all four servo channels) anymore. Regular operation is no longer possible and shall require additional components.



Figure 34



This function cannot be used yet at the moment. If available, the corresponding information or new operating instructions can be found in the download area of the product.

"RX battery monitor":

This function shows the following information of the rechargeable receiver battery/the receiver battery:

"External sensor": Activate this function if using an external sensor. This is particularly useful when the receiver is supplied with power via an electronic speed controller.

For this, connect the sensor directly to the main battery.

"Low voltage": Set the minimum voltage for the charge status display of the receiver voltage (see figure 10, item 4) for an almost discharged rechargeable battery here.

"Alarm voltage": Set the time from which onward the transmitter is to issue an alarm when a specific voltage is undercut.

"High voltage": Set the maximum voltage for the charge status display of the receiver voltage (see figure 10, item 4) for a completely charged rechargeable battery here.

Select the parameter to be changed. Push the controller to the right or left to adjust the value to your wishes. Tap the button "Back" to save the new values and return to the prior menu.

"Low signal alarm":

When checking the check box, a warning signal will sound if the "Error rate" (transmission error between transmitter/ receiver) exceeds 60%. If the warning sounds, stop operating the model at once and find the cause of the error (model too far away? Interfering transmitter? Aerial placed inappropriately? etc.).

"Failsafe":

This function permits programming of the servo items that are automatically set when the receiver signal is lost. When the settings are set to "Off", the servos remain in their last position when the signal is lost.

This is how you change the values of the individual servo positions:

Activate "Steering": Tap the "Activate/Deactivate" button. Turn the control wheel for the steering function to the left or right and hold the desired position. Tap the "Back" button to save the new values and return to the previous menu.

Deactivate "Steering": Select the "Steering" function. Tap the "Activate/Deactivate" button to deactivate the set value. The values set with the transmitter encoders (e.g. steering wheel) for the failsafe function are displayed in the display of the function "Failsafe" when the function is activated. If a programmed failsafe value is deactivated, the set value is permanently deleted and needs to be re-set when the failsafe function is activated.

Activate "Throttle": Tap the "Activate/Deactivate" button. Pull the accelerator/brake lever forwards or backwards and hold the desired position. Tap the "Back" button to save the new values and return to the previous menu.

Deactivate "Throttle": Select the "Throttle" function. Tap the "Activate/Deactivate" button to deactivate the set value.

"Display sensors":

This function shows you all the information regarding all connected sensors.

"Choose sensors":

This function shows the information of up to four sensors on the main screen. Tap the parameter and select the desired sensor. In addition to the display of the transmitter and receiver voltage, you can select the "Signal strength" (values from 1 - 10), "RSSI" (receiving field strength in dBm), "Noise" of the received

"Speed and distance":

This function enables you to programme a rotation counter or an odometer connected to the receiver.

Tap the "Speed sensor" function to select a rotation counter. "None" means that none has been selected.

Tap the "Set rotation length" function to set the circumference of the tyre that the rotation counter is connected to.

Tap "Reset odometer 1" or "Reset odometer 2", to reset the virtual odometer back to "0".

"I-BUS setup":

This function permits control of all servos with a bus system in connection with the menu item "i-Setup utility".



This function cannot be used yet at the moment. If available, the corresponding information or new operating instructions can be found in the download area of the product.

"Servos frequency":

Servos are triggered in a certain rhythm (frame rate) with control signals. The standard frequency is 50 Hz. Special, usually digital servos, require a higher control rate. Select the matching frequency according to the notes of the servomanufacturer.



A change of the control frequency affects all control elements connected to the receiver (e.g. speed controller, servos, etc.).

If control elements that are only designed for a trigger frequency of 50 Hz are triggered at a higher frequency, they may be destroyed.

"Range test":

If you select this function, the lower part of the display will show the current signal strength with a value of 1 to 10 and the receiving field strength ("RSSI") at regular transmission output. If you were to move away from the model now, these displays would remain stable for a long time in the near distance due to the full transmission output.

To perform a range test in the near distance, you can reduce the transmission output with a button.

For a range test, push the button "SW2" (button at the bottom of the grip). This reduces the transmission output; the display values of the signal strength and reception field strength change. If you have now moved approx. 30 metres away from the model with the button "SW2" pushed, the function of the remote control should still be without error and correct. If this is not the case, you need to check and, if applicable, correct, the installation site of the receiver aerial.

Record or remember the values for "Signal strength" and "RSSI" that are displayed at a distance of 40 - 50 m in a range test. During later operation at full transmission output, you can use these values as references for the reception strength when driving. This way, you will be warned of a too-weak reception signal and can steer the model towards the transmitter again in time.

In the menu "RX setup", submenu "Choose sensors", you can configure the permanent display of these values. The range of the remote control can be estimated better this way.

It is also possible to use the values received in the range test as threshold values for an acoustical warning. For this, activate this function, e.g. in the submenu "Signal Strength" at the lower left, and programme the corresponding threshold values. This measure will warn you in time before losing reception if the distance between transmitter and receiver grows too large (or if there is any problem with reception), and you can steer the model back towards the transmitter again with suitable driving manoeuvres.

"Update receiver":

The receiver's firmware can be updated here. When this function is activated, the transmitter will compare its internal firmware version to the firmware version of the receiver.

If the firmware deviates (e.g. after you have updated the firmware in the transmitter), you need to update the receiver firmware as well.

When a new firmware version is available, you can find it in the download area for the product on www.conrad.com. Observe the notes in the next chapter "System" in the submenu item "USB function".

Proceed as follows to update the receiver firmware:

Switch off the transmitter and the receiver.

Plug the programming plug into the "BIND" socket of the receiver.

First switch on the receiver system and then the transmitter.

At the transmitter, call the "RX setup" menu, and there the submenu "Bind with a receiver". Then leave the submenu again.

The display will show "Update Receiver". Confirm this with "YES". The display will change to a percentage display and thus show the progress of the update process.

If the update has been successful, the display will show "Successful".

Now switch off the receiver system, disconnect the programming plug from the receiver.



After a firmware update, you may need to bind the receiver to the transmitter anew (pairing/binding procedure).

15.25 "Spectrum analyzer" function



The transmitter will emit no transmission signals when the "Spectrum analyzer" is activated, and will be inactive. If you select this function, the receiver system must be switched off first.

This function is used to monitor the radio signal. Select the menu "Spectrum analyzer" and then the submenu "Period".

Under "Period", select the recording period of the radio signal monitoring (e.g. "10 seconds").

Then leave the submenu. The display will now show any present transmitters in the range of 2.4 GHz and their signal strengths in the period of 10 seconds (endless loop). This function can be used to localise other transmitters or interferences.

The left scale shows the signal strength of a signal received. The higher the display deflects towards -60 dBm, the higher the transmission output of the received transmitter. You can read the transmitter frequency in the lower scale. If you move the transmitter into different directions now, you can generally find the direction from which the (interference) transmitter is radiating.

15.26 "System" function

This menu allows you to make various settings for your product.

"Backlight timeout":

Here you set the length of time for the backlighting of the LC display when it is no longer being touched.

"Backlight":

Here, you can set the brightness of the backlight for the LC display. A higher value ensures better recognition of the LC display but also causes faster discharge of the battery pack.

"System sound":

Checking this check box will activate all sound effects (e.g. when switching the transmitter on and off) that are no alarm messages.

"Alarm sound":

Checking this check box will activate all sound effects (e.g. at transmitter undervoltage) that are alarm messages.



Deactivating the "Alarm sound" function means that the product will not emit any warning signals, e.g. if the rechargeable battery voltage is too low.





"Auto power off":

When you do not use the product for about five minutes, an acoustic signal is sounded. After a further five minutes, the product switches itself off automatically. Check this box to activate this function.

"Screen calibrate":

Here you can re-calibrate the screen display on the LC display. Click every displayed "X" at the display for this.

"Units":

Use this menu item to select the dimensional units for the length "metric = mm" or "imperial = inch". For "Temperature", you can choose between degrees Celsius or degrees Fahrenheit.

"USB function":

The basic setting in this menu is "none". This means that the transmitter can be charged at a computer or USB plug-in mains adapter via the USB connection cable. If you select the USB function "GT4 EVO emulator", the transmitter can be used for common drive simulators. Proceed in the following sequence

- Connect the USB cable from the delivery to the socket at the transmitter first and then to a free USB port of your computer.
- Now switch on the transmitter.
- · Select the submenu "USB function" in the menu "System" and select the function "GT4 EVO emulator".
- Your computer will display the message "New USB device" and "Device drivers installed successfully" after a brief time.
- Find the folder "Devices and printers" on your computer. Now you can view the icon "GT4 EVO emulator" here. Activate the device driver by double-clicking the icon.

"Language":

Here you can set the menu language of the product. English, French and Chinese may be set. At the moment, only English can be set.

"Themes":

Under "Themes", you can choose between three different display versions. Here, the background design of the display as well as the graphics of the tiles of the individual functions is changed.

"Firmware Update":

Here, you can perform a firmware update. Save the firmware update on your computer, connect the transmitter to the computer via a microUSB-cable and activate the function "Firmware update". Now follow the instructions in the display.

Never remove the battery pack or Micro-USB cable during a firmware update. The product would otherwise lose its functionality and would thus be useless.

New firmware can be found in www.conrad.com in the download area of the product.

"Factory reset":

Here you can reset the product back to the factory settings. All previous settings are deleted irrevocably if you do so.

"About GT4 EVO":

Here, the product shows the current firmware version.

15.27 "Warning Signals" function

Acoustic Warning Signals

A number of acoustic warnings are installed in the remote control. The acoustic warning can, however, only be performed when "Sound" is activated in the submenu of the same name in the menu "System". The following warning signals are present:

- · If the battery voltage at the transmitter drops below 3.75 Volt, a howling sound occurs.
- If the battery voltage of the receiver power supply drops below an individually programmable value, a double warning sound "Ba Ba" is output.
- If the voltage of the receiver power supply drops below 3.7 Volt, a quick sound sequence occurs.
- If the error rate of the receiver signals of the receiver is above 60%, a double warning sound "Du Du" occurs.
- · If a set time is reached in the transmitter's timer, the sound sequence "Bi Bi Bi Bi" sounds

Visual Warning Signals

The LED in the transmitter aerial signals different warning conditions. If "Sound" is activated, they are issued at the same time as the acoustic signals.

- The LED in the transmitter is off when the transmitter is off and permanently lit when the transmitter is on and the communication with the receiver is correct.
- If the LED flashes slowly, the battery capacity of the transmitter battery is running flat. Quickly interrupt the driving
 operation to avoid failure of the remote control system due to too-low battery capacity.
- If the LED flashes quickly, the battery capacity of the transmitter battery is running flat. Immediately interrupt the driving operation to avoid failure of the remote control system due to too-low battery capacity.
- If the LED flashes quickly and the battery voltage of the transmitter battery is still in excess of 3.75 Volt, the error rate of the receiver signal may exceed 60%. Immediately interrupt the driving operation to avoid failure of the remote control system due to bad reception.
- If the LED flashes quickly and the battery voltage of the transmitter battery is still in excess of 3.75 Volt, the voltage
 of the receiver battery may be too low. Immediately interrupt the driving operation to avoid failure of the remote
 control system due to an empty receiver battery.

15.28 "Change Grip Shell" function

There are two different rubber grip handles for selection for best handling of the transmitter. For small hands, use the "grip shell S", for larger hands, use the "grip shell L". The mark "S" or "L" is imprinted at the bottom of the grip shell. Carefully lift them starting at the side to replace the grip shells. Use the loose grip shells and the hook shown there as a reference.

16. Maintenance and care

The product is maintenance free. Do not disassemble.

From the outside, the remote control should only be cleaned with a soft, dry cloth or brush. Never use aggressive cleaning agents or chemical solutions otherwise the surfaces of the housing may be damaged. When cleaning, do not put too much pressure on the LC touchscreen display.

17. Disposal

17.1 General information



Electrical and electronic devices may not be disposed of in the household waste!

Dispose of the product at the end of its useful life in accordance with the applicable legal regulations.

Remove any battery packs and dispose these separately from the product.

17.2 Batteries and battery packs

You, as the end user, are legally (battery regulations) obliged to return all used batteries and battery packs. Disposal by means of the household waste is not permitted!



Batteries/battery packs with hazardous content are identified with the symbol shown here which indicates a ban on disposal via the household waste. The names of the crucial heavy metals are: Cd=Cadmium, Hg=Mercury, Pb=Lead (names are on the battery/battery pack e.g. under the waste bin symbol shown on the left).

Used batteries/battery packs can be returned free of charge to the collection points in your community, to our branches or anywhere where batteries/battery packs are sold.

In doing so, you fulfil your legal obligation and make your contribution towards protecting the environment.

18. Eliminating faults

Even though this remote control system has been constructed according to the current state of the art, there may still be faults or problems. For this reason, we would like to show you how to eliminate any faults that may occur.

Problem	Remedy		
The transmitter does not res-	Check the LiPo battery pack of the transmitter.		
pond	Check the function switch.		
The servos don't respond	Check the batteries or battery pack of the receiver.		
	Test the switching cable.		
	Check the BEC function of the drive regulator.		
	Check the poling of the servo plug.		
	Carry out the binding function.		
The servos are trembling	Check the LiPo battery pack of the transmitter and the batteries/battery pack of the receiver.		
	 Dry any damp in the receiver carefully with a hot air blower. 		
A servo is buzzing	Check the batteries or battery pack of the receiver.		
	Check the easy of movement of the steering rods.		
	Operate the servo without the servo lever for test purposes.		
The system only has a low ran- ge	Check the LiPo battery pack of the transmitter and the batteries/battery pack of the receiver.		
	Check the receiver antenna for damages.		
	Position the receiving antenna in the model differently for test purposes.		
The transmitter switches itself off immediately or after a short time	Check the LiPo battery pack of the transmitter and replace if necessary.		

19. Technical data

19.1 Transmitter

Frequency range	.2.4 GHz
Number of channels	.4
Power supply	LiPo battery pack, 3.7 V, 1700 mAh.
Dimensions (W x H x D)	.253 x 242 x 75 mm
Weight	Approximately 442 g

19.2 Receiver

Frequency range	2.4 GHz
Number of channels	4
Power supply	4.0 - 6.5 V/DC
Antenna length	26 mm
Dimensions (W x H x D)	35.4 x 29.6 x 13 mm
Weight	Approximately 15 g

20. Declaration of conformity (DOC)

The manufacturer declares that this product is in accordance with the basic requirements and other relevant regulations of the 1999/5/EU directive.



The conformity declaration for this product can be found under www.conrad.com.

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