

PROFI mc 4000

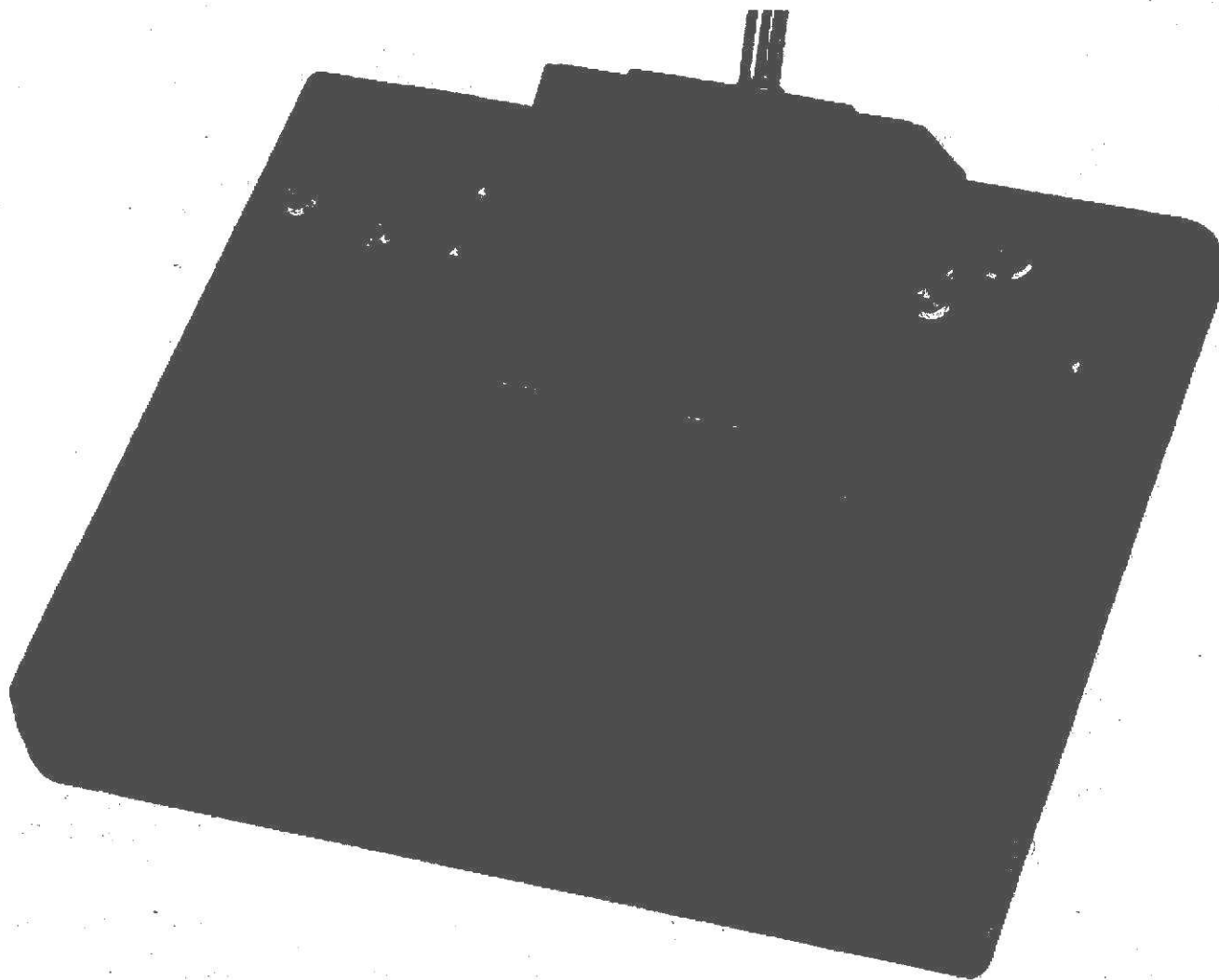
*the first with integral
power-on check and
channel monitor*

More performance ...

is built into the **PROFI mc 4000** with the new 12-channel transmission system, new hardware and completely new software.

But we've kept what was good ...

and - wherever possible and necessary - improved it. That was our constant aim during the development of the **PROFI mc4000**. You will find many features which have already proved their worth in the **PROFI mc 3000**. These features include the basic method of operating the transmitter, so you will find "changing horses" very easy.



Our "thanks" to you ...

for selecting the **PROFI mc 4000**. You are now the owner of a radio control system which represents the latest state of the art in radio control technology, and includes a number of features which raise safety and performance to a new "high" in model sport.

More safety ...

is built into the **PROFI mc 4000** with **Channel-Check**, the integral monitor receiver. Every time you switch on your transmitter, **Channel-Check** checks whether "your" channel is actually vacant and usable, i.e. not suffering interference.

Options for the future ...

are guaranteed by the 16-bit microprocessor system, because it has plenty of reserve power for even more sophisticated software, and the easily expanded hardware.

100% MADE IN GERMANY ...

- that's the **PROFI mc 4000**, because it is a product of the MULTIPLEX development department at Niefern, it is manufactured in Germany, and it is distributed by MULTIPLEX and serviced "in-house".

***We in the MULTIPLEX Team hope you have
many happy hours with your new RC set!***

About this manual

Manuals are necessary!

For getting started, for reference, and simply for information.

For **getting started** because a written guide eases the first stage of the testing process substantially (in other words: the trial and error period), and helps you avoid mistakes.

The manual is necessary as a **reference book** for those times when you want to study and absorb the information thoroughly, or when you have not used a particular function for a while. However, the clear menu system, in your own language, with its unambiguous text information, makes us confident that you will hardly ever need the manual once you have got started (unfortunately - in the view of the author).

An excellent source of **information** is the appendix, in which we pass on notes and tips which come from our own experience as well as many picked up through direct contact with our customers - i.e. with you. But our development section, our service department and the many active modellers in our company have all made important contributions.

The structure of this manual is based largely on these considerations.

Getting started

Introduction and "quick start".

Reference

This applies to everyone.

Specific information

Fixed-wing

Helicopters

Multi-function models

Universal

Supplementary information

Test programs

Teacher-pupil operation

Combi-switch

Discharging (battery maintenance)

Information

Servicing

Receiving system

A little model technology

Key to symbols:

⇒ = see (page or section or illustration)

Important points are printed in frames!

Legal matters

Even though we now pay no licence fee in the U.K. for operating radio-controlled models, that does not mean that we don't have legal responsibilities.

The frequency bands available in the United Kingdom for radio-controlled models are shown below:

Frequency in MHz	Use
26.96 to 27.28	General
34.995 to 35.255	Air
40.665 to 40.955	Surface
458.5 to 459.5	General

Please note that the 40 MHz band is dedicated solely to surface models, and 34/35 MHz is dedicated solely to model aircraft. Model car and boat operators must not use the 35 MHz band, and model aircraft must not be flown on the 40 MHz band.

Systems on the 35 MHz band may only be used to control model aircraft!

If you make any modifications to the RC system your licence is invalidated!

Please note that you must not modify your radio control system, as this would make its use illegal. At the same time **your third party insurance would cease to provide cover**. The type approval certificate applies only to the type-approved version of the system together with all approved accessories and expansion units.

Special regulations apply to **large models**. CAA approval is required if your model's take-off weight exceeds a certain figure, although discussions on these limits are currently in progress.

We strongly recommend that you join a model club, many of which are affiliated to the national governing body of your branch of model sport. Club membership generally includes insurance. However, we also recommend that you take out your own **third party** insurance policy to cover your particular circumstances.

As a club member you will also find assistance and answers to all your modelling problems within its membership, as many of your fellow members will already have tackled those problems and overcome them.

RF modules for the PROFI mc 4000:

Frequency band	Approval number	Order number
27 MHz	For export only!	4 5668
35 MHz Band A	FE - 78/83	4 5671
Band B	FE - 78/83	4 5677
40 MHz	MF - 142/83	4 5672
72 MHz	For export only!	4 5674

The **PROFI mc 4000** must be used with one of these RF modules. Other (older) RF modules may not be used.

Safety notes**The First Commandment:****Safety**

As manufacturers we do everything technically possible in order to keep the risks involved in operating our radio control systems as small as possible. This starts right at the development stage, when the **SAFETY** aspect plays a crucially important role in the design of new components.

However, the most important contribution to "safe model sport" is made by each model pilot himself.

Radio-controlled models are not playthings!

Even quite small models are capable of causing injury to persons or damage to property. The following notes are provided as well-intentioned suggestions, and are not intended to spoil your fun in our mutual hobby. Please read (and above all observe) these points. By this simple means you can save yourself and others much money and frustration.

Insurance

Even if you take the greatest possible care, operating models (especially model aircraft) necessarily involves risks which you have to cover with your own insurance. Your own individual public liability insurance is one possibility. A second option is to join a model club which will usually be affiliated to the national governing body of your branch of modelling. Club membership usually includes a minimum level of insurance. Your club colleagues will also be able to offer sensible guidance on the matter of insurance.

Before every flight ask yourself the questions in the following check list.

Check list:

1. Are my batteries sufficiently charged?
2. Is my channel free?

The power-on check carried out by your **PROFI mc 4000** is a valuable aid here, but it does not relieve you of the responsibility of checking the frequencies in use with your flying colleagues.

3. Have I checked the range of the system and the model's control functions?

Carry out a range check with the combination of transmitter, receiving system, model and channel which you are actually going to use!

4. Is it possible to fly safely at the moment?

No other models on the landing approach?

Is the take-off strip clear?

Is the weather safe for a flight?

Only prepare your model for a flight if you can honestly answer "YES" to all these questions.

Preventative measures**1. Receiving system installation**

For model gliders we recommend the following basic arrangement, starting from the fuselage nose: first the receiver battery, then the servos, then the receiver.

These are the most important general rules:

- a. Route the receiver aerial directly away from the receiver, straight out of the model, and deploy it in a straight line. Do not install the aerial parallel to large metal parts (undercarriage, silencer). Keep the aerial away from parts which could screen it (metal parts, carbon fibre reinforced components).
- b. Do not position the receiver directly on top of the drive battery or receiver battery. 2 cm clearance is plenty to avoid interference due to magnetic fields.
- c. Keep the receiver at least 2 cm away from the servos.

2. Electric power system installation

The most important rule:

Keep the power system and the receiving system as far away from each other as possible inside the model.

3. Suppressing electrical ignition systems

Electronic and magnetic ignition systems can also cause radio interference which can affect your model's control system. The measures listed below will usually eliminate any problems.

- a. Screen the ignition lead with a woven metal hose (outer tubular screen from television aerial cable), connected (earthed) to the engine's crankcase close to the ignition coil.
- b. Use a screened spark plug cap.
- c. **Never** use the receiver battery as power source for the spark ignition system.