

TM600

ICARUS[®]blue

MANUAL

THIS MANUAL CONTAINS IMPORTANT AND SAFETY-RELATED INFORMATION FOR SETTING UP AND OPERATING THE PRODUCT.

READ THROUGH THE MANUAL CAREFULLY AND ENSURE THAT YOU HAVE FULLY UNDERSTOOD THE CONTENTS, BEFORE YOU INSTALL, SET UP AND / OR OPERATE THE PRODUCT FOR THE FIRST TIME.

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GENERAL INFORMATION

This user manual contains important / safety-related information for setting up and operating the ICARUS blue TM600 transmitter (called "the transmitter" in the following). TM600 is a B2B product and is thus solely intended for professional / commercial / industrial applications. When purchasing the transmitter, the customer, owner and / or user also agrees to request the latest documentation from the manufacturer or to download it from their website.

To ensure safety at all times, you must have read and completely understood these instructions before setting up or operating the transmitter. If, after reading the manual, you have any questions or uncertainties, please contact your supplier before setting up or operating the transmitter!

This user manual must always be enclosed - including if the transmitter is used by third parties.

SAFETY REGULATIONS

- The transmitter may only be installed, maintained, repaired and started up by trained skilled personnel.
- To prevent misuse or danger, never leave the transmitter unattended.
- Never open / modify / dismantle the transmitter. This could lead to electric shocks, malfunctions or fire.

- Do not subject the transmitter to mechanical pressure. This could lead to electric shocks, malfunctions or fire.
- Do not operate / use the transmitter in environments where there are flammable gases, fumes or solvents. This increases the risk of fire or explosion.
- Do not use the transmitter if it is damaged. This could lead to damage to objects or injuries.
- Do not use the transmitter if a malfunction occurs or if it does not function. This could lead to damage to objects or injuries.
- Do not use the transmitter if smoke develops, if there is a smell of burning or if the transmitter discolours. This could lead to damage to objects or injuries.
- Do not cover the transmitter with a cloth (or similar). This could lead to fire or injuries caused by overheating.
- Do not leave the packaging materials lying around. This can be dangerous material for children.
- Do not try to open the transmitter forcibly or work on it with pointed objects! This causes damage to the transmitter and can result in injuries (risk of explosion)!
- Protect the transmitter from direct sunlight and other heat sources (risk of explosion)!

SAFETY INSTRUCTIONS FOR USE

- Loss and damage incurred due to non-observance of the safety requirements are not covered by the warranty. The manufacturer is not liable for consequential damage.
- The transmitter may not be used to operate systems / applications in which the user is not protected by inherent safety functions.
- The manufacturer is not liable for damage or injuries caused by improper operation or noncompliance with safety provisions. In such cases, the warranty also expires.
- The transmitter is not a toy and is not suitable for children.
- Contact an expert if you have any questions about the operation, safety or setting up of the transmitter.
- Follow the safety regulations, the relevant laws and warnings of the respective application / machine manufacturers (dealer, supplier), with which the transmitter is used.

PACKAGE CONTENTS

- ICARUS blue TM600 (transmitter)
- USB-C to USB-A charging cable (1.0 m)
- Cover plate including screws for back of transmitter (see "Replacing belt clip with a cover plate" section)
- Manual



Caution,
danger!



Do not dispose of the unit in the household waste after the end of its service life.



The product was produced in compliance with the EU guidelines.



Read the manual before using.

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1. MANUFACTURER'S INFORMATION

ICARUS blue® is a product series of the ICP Group, produced and licensed by **ICP Systems b.v.**, Handelsweg 48, 7451PJ Holten, The Netherlands. The ICARUS blue® word mark is a registered brand of the company ICP Intelligent Creative Products GmbH, Mander-scheidtstraße 8b, 45141 Essen, Germany. The Bluetooth® word mark and logos are registered brands of the company Bluetooth SIG, Inc. and any such use of these brands by ICP Systems b.v. is under licence.

Contact options: By phone on +31 (0) 548 636 200 or by email to info@icpgroup.nl

2. PRODUCT INFORMATION

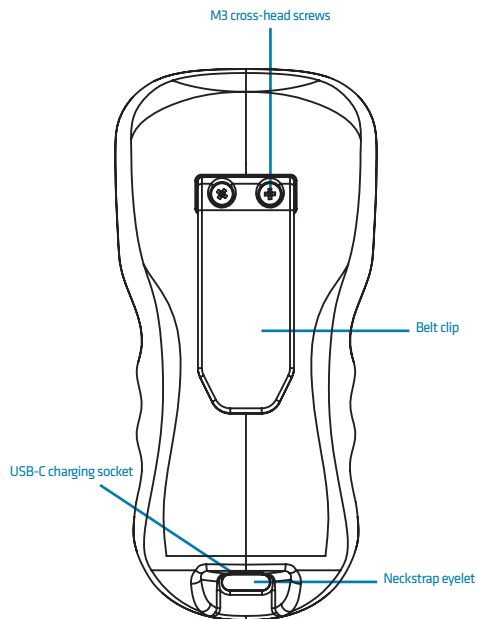
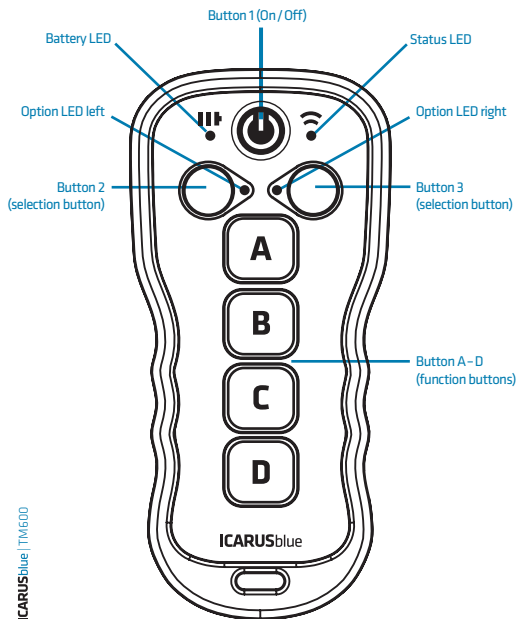
2.1 SHORT DESCRIPTION

ICARUS blue TM600 is a Bluetooth radio remote control transmitter with two selection buttons and four control buttons. This transmitter can be used to control the corresponding Bluetooth 5.0 receiver of the ICARUS blue series and thus to switch on and / or off electric loads and to read in / process digital signals.

2.2 TECHNICAL DATA AND REQUIREMENTS

Operation	Membrane keypad with 1 On / Off button, 2 x selection buttons and 4 x function buttons
Optical feedback	4 x RGB LEDs
Frequency	2.4 GHz (Bluetooth 5.0)
Reaction time	approx. 50ms
Antenna	internal
Transmission power	+8dBm
Working range	approx. 100m (depending on environment)
Power consumption	approx. 60mA when switched on
Voltage supply	nominal 3.7 Vdc (internal rechargeable battery)
Battery type	Lithium ion polymer rechargeable battery
Battery capacity	1350 mAh (>= 80% after 300 charge cycles; >= 60% after 500 charge cycles)
Charger connection	USB-C
Dimensions / weight (incl. belt clip)	137mm x 65mm x 35mm (L x W x H) / 113g
Enclosure material	ABS
Degree of protection	IP67
Temperature range	-20°C to +50°C
Working altitude	2000m asl
Min. system requirements	second generation ICARUS blue receiver (from 2020; Bluetooth 5.0)

2.3 TRANSMITTER VIEW



2.4 LED STATUS

2.4.1 GENERAL

Off	
Slow flashing	
Normal flashing	
Fast flashing	
Continuously on	
Flashing sequence (for example 3x)	
Explanation:	■ = LED ON □ = LED OFF

In addition, the colour in which the LED lights up is also given / listed.

2.4.2 BATTERY LED

Off	Transmitter is switched off / system not active
Continuously on (green)	Transmitter switched on, battery charge between 40% and 100%
Continuously on (orange)	Transmitter switched on, battery charge between 20% and 40%
Continuously on (red)	Transmitter switched on, battery charge between 10% and 20%
Normal flashing (red)	Transmitter switched on, battery charge between 1% and 10%

CHARGING-PROCESS

Normal flashing (purple)	Transmitter switched off, battery being charged
Continuously on (purple)	Transmitter switched off, charging finished (100%)

Operation of the transmitter is **not** possible during charging!

2.4.3 STATUS LED

Off	Transmitter is switched off / system not active
Normal flashing (green / red)	Pairing mode is active / transmitter ready for coupling with the receiver
Slow flashing (orange)	Not connected to the receiver
Continuously on (Orange)	Connected to the receiver, connection active, no operation possible
Continuously on (green)	Connected to receiver, connection active, operation possible
Fast flashing (green)	If button pressed / active control
Flashing sequence (red)	Error (see "Error codes and remedy" section)

2.4.4 OPTION LED LEFT (STANDARD CONFIGURATION)

Off	Function block 1 inactive
Continuously on (blue)	Function block 1 active

2.4.5 OPTION LED RIGHT (STANDARD CONFIGURATION)

Off	Function block 2 inactive
Continuously on (blue)	Function block 2 active

3. GENERAL NOTES ON SETTING UP AND OPERATION

WARNING

Setting up and operation of the transmitter when tired or under the influence of medicines is strictly prohibited.
Follow the safety instructions!

- The transmitter may only be set up and operated by qualified skilled personnel.
- Improper setting up or operation can endanger the user, bystanders or others (depending on the application) and can cause injuries or damage to personal property and the transmitter itself.
- When setting up and operating the transmitter, ensure that the work environment is as clean, tidy and dry as possible.
- When setting up and operating the transmitter, always ensure sufficient distance from objects that could impair the transmission / reception strength.
- Always observe the relevant safety instructions.
- Ensure that the battery is sufficiently charged before setting up and operating the transmitter (see "LED status" section).

4. STARTUP / SETTING UP AND OPERATION

4.1 CHARGING THE TRANSMITTER BATTERY

WARNING

Only charge the transmitter battery in ambient temperatures $> 5^{\circ}\text{C}$ and $< 35^{\circ}\text{C}$. Charging outside the named temperature range leads to damage to the transmitter and can cause injuries.

NOTES:

- Incorrect connection of the charging cable / power supply can cause serious damage to the transmitter. Damage due to improper use is not covered by the warranty.
- Only use the USB cable supplied with the transmitter.
- Ensure that the charging cable is not kinked or otherwise damaged / has other defects.
- Do not charge the transmitter battery for longer than necessary, as overcharging can have a negative effect on the life of the battery.
- To protect against corrosion and damage, carefully clean and dry the contacts of the charging socket and the surrounding area before connecting the charging cable.
- **The rechargeable battery is permanently installed and cannot be replaced!**



Fig. 1

1. Connect the USB-A connector (see Fig. 1) of the charging cable supplied to a suitable USB mains adapter (with charging connection to USB specification).
2. Connect the USB-C connector (see Fig. 1) of the charging cable supplied to the charging socket provided on the underside of the transmitter (see "Product view" section).
3. Plug the USB mains adapter into a suitable mains socket.
4. Disconnect the charging cable from the transmitter as soon as the battery is fully charged (see also "LED status" section). Then remove the USB mains adapter from the mains socket.

Proceed as follows if the transmitter overheats during charging:

- Disconnect the charging cable from the transmitter. Wait until the transmitter has cooled down, and then continue charging.

- If the bottom part of the transmitter overheats, this could be because the connected USB cable is damaged. Replace the damaged USB cable with a new USB cable approved by the ICP Group.

4.2 COUPLING THE TRANSMITTER WITH A RECEIVER (PAIRING)

Activate pairing mode at the ICARUS blue receiver. Please read the corresponding manual.

To activate the transmitter's pairing mode, the following button sequence must be pressed within a period of max. 5 seconds:

1. With the transmitter switched off, press button 1 (On / Off) and keep it pressed (< 3 seconds) until the status LED lights up. Immediately after this, release button 1 (On / Off) and press it again twice, quickly in succession.
2. The status LED now starts to flash alternately red and green.
3. If a receiver in pairing mode is found, the transmitter connects to it automatically.
4. As soon as the pairing process was successful and the transmitter has connected to the receiver, the status LED lights up continuously in blue.
5. Press button 1 to switch off the transmitter and to exit pairing mode.

4.3 SWITCHING ON AND OFF

1. Ensure that the battery is sufficiently charged before setting up and operating the transmitter.
2. Press button 1 for 2 seconds to switch on the transmitter.
3. After switching on the transmitter successfully, the battery LED indicates the charge status of the battery (see "LED status" section).
4. If the transmitter has already been coupled with a receiver, the transmitter connects to it automatically and the status LED of the transmitter lights up continuously in green.
5. Press button 1 again to switch off the transmitter. If the battery LED goes out, this signals that the transmitter is now switched off.

	<p style="text-align: center;">NOTE</p> <p>Note that this does not switch off the receiver and that it remains ready to receive, as it has its own power supply. Any active outputs of the receiver are deactivated by switching off the transmitter (safety function).</p>
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	<p style="text-align: center;">NOTE</p> <p>If no button on the transmitter is pressed for a longer period of time (> 15 minutes), the transmitter switches off automatically to save power. To turn the transmitter back on, keep button 1 pressed for a period of 2 seconds.</p>
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4.4 CONTROL / OPERATION (DEFAULT CONFIGURATION)

The default functions of the transmitter are described in the following. The functions of the buttons can differ from this, depending on the delivered configuration (note any supplementary sheets)!

Button 2 and 3

You can use buttons 2 and 3 to switch between function blocks 1 and 2.

- Press button 2 to actuate function block 1. Buttons A – D are now used to activate outputs 1–4 of the connected receiver (see below).
- Press button 3 to actuate function block 2. Buttons A – D are now used to activate outputs 5 – 8 of the connected receiver (see below).

Buttons A - D

Buttons A – D are used to activate / deactivate the respective outputs of the receiver. The corresponding output only remains active as long as the respective button is pressed. **As soon as you let go of a button, the corresponding output is deactivated.**

- Press button A to activate the following output of the connected receiver:
 - Function block 1 active -> Output 1
 - Function block 2 active -> Output 5

- Press button B to activate the following output of the connected receiver:
 - Function block 1 active -> Output 2
 - Function block 2 active -> Output 6
- Press button C to activate the following output of the connected receiver:
 - Function block 1 active -> Output 3
 - Function block 2 active -> Output 7
- Press button D to activate the following output of the connected receiver:
 - Function block 1 active -> Output 4
 - Function block 2 active -> Output 8



NOTE

If the connection is interrupted, the status LED starts to flash orange. Any active outputs are deactivated.

4.5 DELETING / REMOVING COUPLED RECEIVERS

To delete all coupled receivers from the memory of the transmitter, the following button combination must be pressed within a period of max. 9 seconds:

1. With the transmitter switched off, press button 1 (On / Off) and keep it pressed (< 3 seconds) until the status LED lights up. Immediately after this, release button 1 (On / Off) and press it again six times, quickly in succession.
2. The status LED now starts to flash alternately red and blue and

thus signals that all coupled receivers have been deleted from the memory of the transmitter.

3. Press button 1 to switch off the transmitter.

4.6 REPLACING THE BELT CLIP WITH A COVER PLATE

The transmitter is delivered with a preassembled belt clip. If necessary, you can replace the belt clip with the cover plate (also supplied with the transmitter), in order to create a flat back of the transmitter. Proceed as follows:

1. Use a suitable cross-head screwdriver to carefully undo the two screws, with which the belt clip is fixed on the back of the transmitter.
2. Remove the belt clip.
3. Place the cover plate in the recess provided on the back of the transmitter. Ensure that the countersunk holes in the cover plate are facing you.
4. Use the countersunk screws supplied to fix the cover plate. Ensure that you do not overtighten or overtwist the screws (maximum 0.6Nm), as this can lead to internal damage of the enclosure and thus to loss of the IP67 protection.

5. ERROR CODES AND REMEDY

In the event of system malfunctions, the error that has occurred is indicated by a flashing sequence (see "LED status" section) of the status LED in red. The corresponding error can be diagnosed using the following list and (where possible) remedied.

Flashing sequence	Error	Solution
2 x short	Receiver undervoltage (< 6.5V for > 1500ms)	Check and if necessary, increase the power supply of the receiver.
3 x short	Receiver overvoltage (> 36V for > 60ms)	Check and if necessary, reduce the power supply of the receiver.
4 x short	Receive temperature exceeded (> 85°C)	Disconnect the receiver's power supply and leave the receiver to cool.
1 x long, 1 x short	Receiver output 1 (> 3.5A for > 1000ms)	Check and reduce the current consumption of the connected component.
1 x long, 2 x short	Receiver output 2 (> 3.5A for > 1000ms)	Check and reduce the current consumption of the connected component.
1 x long, 3 x short	Receiver output 3 (> 3.5A for > 1000ms)	Check and reduce the current consumption of the connected component.
1 x long, 4 x short	Receiver output 4 (> 3.5A for > 1000ms)	Check and reduce the current consumption of the connected component.
1 x long, 5 x short	Receiver output 5 (> 3.5A for > 1000ms)	Check and reduce the current consumption of the connected component.

Flashing sequence	Error	Solution
1 x long, 6 x short	Receiver output 6 (> 3.5A for > 1000ms)	Check and reduce the current consumption of the connected component.
1 x long, 7 x short	Receiver output 7 (> 3.5A for > 1000ms)	Check and reduce the current consumption of the connected component.
1 x long, 8 x short	Receiver output 8 (> 3.5A for > 1000ms)	Check and reduce the current consumption of the connected component.
3 x long	Permissible total current of receiver exceeded (> 10A for > 1000ms)	Check and reduce the total current consumption.
4 x long	Critical receiver error	Disconnect and reconnect the receiver's power supply. If the error persists, contact the service department.
Continuously short	Critical transmitter error	Switch off transmitter and switch back on. If the error persists, contact the service department.
2 x long, 1 - 6 x short	Internal receiver error	Disconnect and reconnect the receiver's power supply. If the error persists, contact the service department.

6. MAINTENANCE AND CLEANING

The transmitter is maintenance-free for the user. Maintenance and repairs must be carried out by a qualified technician. The transmitter may only be cleaned with a damp cloth and without chemicals,

as otherwise it can become damaged. It is advisable to clean the transmitter weekly. If the transmitter is used in a very dirty, e.g. dusty environment, daily cleaning is recommended to prevent possible consequential damage.

7. DISPOSAL

Electronic equipment is recyclable waste and does not belong in household waste. If the transmitter no longer works, dispose of it in accordance with the relevant, country-specific legal provisions. If you follow the above recommendation, you fulfil your statutory duties and help protect the environment.

8. WARRANTY

The transmitter has been tested in a controlled environment and has proven resistant to moisture and dust under certain conditions (corresponds to the requirements of IP67 classification in accordance with the international standard IEC 60529).

The supplier / manufacturer is not able to ensure that the content of this manual and the use of the transmitter are understood and observed by the user. Improper and / or faulty mounting and / or assembly as well as improper / faulty operation can lead to injuries and damage to the materials.

The manufacturer does not accept any liability for injuries and damage to the material and / or personal property or any other costs incurred due to improper and / or faulty assembly, improper use and / or faulty application, for which the transmitter was not designed and produced, or failure to carry out maintenance or incorrect maintenance and / or anything else associated with this. The manufacturer is relieved of any responsibility in case of unauthorized dismantling and / or modification. All necessary parts must be approved by the manufacturer, so that the transmitter maintains guaranteed safety and operation during its entire life.

9. SIMPLIFIED DECLARATION OF CONFORMITY

ICP Systems B.V. (Handelsweg 48, 7451 PJ Holten, The Netherlands) herewith declares that the radio system type ICARUS blue TM600 complies with Directive 2014/53/EU.

The complete text of the EU Declaration of Conformity is available at the following address:

<https://www.icarus-blue.com>

APP DOWNLOAD



<http://rseries.icarus-blue.com>

ICP Systems B.V.

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www.icarus-blue.com