HYDROSHOP

R820/R420

ICARUSblue®

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.

ENGLISH
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GENERAL INFORMATION

This manual contains important safety-related information for setting up and operating the ICARUS blue R820 and R420 receiver (called "the receiver" in the following). R820/R420 is a B2B product and is thus solely intended for professional / commercial / industrial applications.
When purchasing the receiver, 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 receiver. If, after reading the manual, you have any questions or uncertainties, please contact your supplier before setting up or operating the receiver!

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

SAFETY REGULATIONS

- The receiver may only be installed, maintained, repaired and started up by trained skilled personnel.
- To prevent misuse or danger, never leave the receiver unattended.
- Never open / modify / dismantle the receiver. This could lead to electrical shocks, malfunctions or fire.
- Do not subject the receiver to mechanical pressure. This could lead to electrical shocks, malfunctions or fire.
- Do not operate / use the receiver in environments where there are flammable gases, fumes or solvents. This increases the risk of fire or explosion.
- Do not use the receiver if it is damaged. This could lead to damage to objects or injuries.
- Do not use the receiver if a malfunction occurs or if it does not function. This could lead to damage to objects or injuries.
- Do not use the receiver if smoke develops, there is a smell of burning or the receiver becomes discoloured. This could lead to damage to objects or injuries.
- Do not cover the receiver 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 force open the receiver. This causes damage to the receiver and can result in injuries.
- Protect the receiver from direct sunlight and other heat sources.

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 subsequent damage.
- The receiver 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 receiver is not a toy and is not suitable for children.

- When installing / mounting the receiver, ensure that the connection cables are not crushed, kinked or otherwise damaged (e.g. by sharp edges).
- Contact an expert if you have any questions about the operation, safety or setting up of the receiver.
- Ensure that the receiver is not overloaded, neither mechanically nor electrically. This can damage the receiver and cause a fire or electric shock.
- Only use the receiver within the voltage range from 9 to 36 volt (DC). The load of the entire system may not exceed a maximum total current of 10 amps. Ensure additional fusing of the power supply!
- Follow the safety regulations, the relevant laws and warnings of the respective application / machine manufacturers (dealer, supplier), with which the receiver is used.
- Button 1 (signing on / pairing process) may only be used in ambient temperatures > -10°C. The receiver must also not be iced over!
- If the receiver is visibly iced over, never remove the ice forcibly!

R820 PACKAGE CONTENTS

- ICARUS blue R820 (receiver)
- 12-wire connection cable (length: 1.5m)
- Transparent cover with cable gland (preassembled)
- Manual

R420 PACKAGE CONTENTS

- ICARUS blue R420 (receiver)
- 8-wire connection cable (length: 1.5m)
- Transparent cover with cable gland (preassembled)
- 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.

TABLE OF CONTENTS

1. MANUFACTURER'S INFORMATION

ICARUS blue® is a product series of the ICP Group, which is 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, Manderscheidtstraße 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

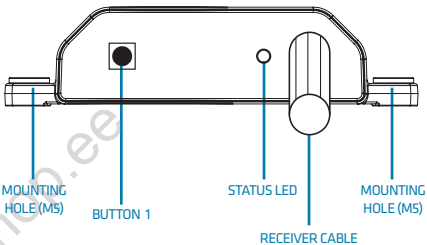
ICARUS blue R820 and R420 are Bluetooth radio remote control receivers with eight (R820), respectively four (R420) digital outputs and two digital inputs. The outputs can be used to switch on / off electrical loads and the inputs can be used to read in / process signals. It is controlled by a transmitter of the ICARUS blue series or alternatively by a smartphone app.

2.2 TECHNICAL DATA AND REQUIREMENTS

Frequency	2.4 GHz (Bluetooth 5.0)
Antenna	internal
Transmission power	+8dBm
Working range (control by TM600)	approx. 100m, depending on the environment
Working range (control by app)	approx. 30m, depending on the environment and device
Supply voltage	9 – 36 Vdc
Power consumption	< 8mA (standby)
Outputs	8 digital outputs (R820) 4 digital outputs (R420)
Current load per output	nominal 2.5A; max. 3.5A[1]
Maximum total current	10A
Inputs	2 digital inputs (9 – 36 Vdc)
Dimensions / weight	80mm x 102mm x 24mm (L x W x H) / 380g including cable
Enclosure	potted ABS enclosure (IP69k if the receiver protective cover is used properly; otherwise IP67)
Temperature range	-40°C to +60°C
Working altitude	2000m asl
Optical feedback	two-coloured LED (red / green)

1 dependent on the temperature and load duration; switching off at software end at internal temperature ≥ 85°C and / or loads ≥ 3.6A for a period of ≥ 1 second.

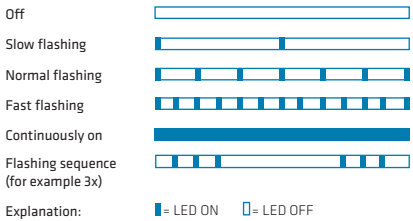
2.3 RECEIVER VIEW (WITHOUT PROTECTIVE COVER)



2.4 RECEIVER CABLE WIRE ASSIGNMENT

Wire colour	Function
Black	0 Vdc
Red	9 – 36 Vdc
Grey 1	Output 1
Grey 2	Output 2
Grey 3	Output 3
Grey 4	Output 4
Grey 5	Output 5 (R820 only)
Grey 6	Output 6 (R820 only)
Grey 7	Output 7 (R820 only)
Grey 8	Output 8 (R820 only)
Yellow 1	Input 1 (not active in default configuration)
Yellow 2	Input 2 (not active in default configuration)

2.5 STATUS LED



Off	No power supply / receiver switched off
Slow flashing (green)	Receiver switched on and ready for connection to an already paired transmitter / smartphone
Continuously on (green)	Receiver switched on and connected to the transmitter / smartphone
Normal flashing (alternating red/green)	Receiver switched on and ready for pairing a new transmitter / smartphone (pairing mode)
Flashing sequence (red)	Error (see "Error codes and remedy" section)

3. INSTALLATION REQUIREMENTS

⚠ WARNING

Installation, mounting, setting up and operation of the receiver when tired or under the influence of drugs or medicines is strictly prohibited. Follow the safety instructions!

- The receiver may only be installed, mounted, set up and operated by qualified skilled personnel.
- Improper installation, mounting, 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 receiver itself.
- When installing and mounting the receiver, ensure that the work / mounting environment is clean, tidy and dry.
- The receiver must be disconnected from the power supply before it is installed and mounted.
- If possible, install the receiver within sight of the user.
- Do not install the receiver in the immediate vicinity of motors, relays or mains cables.
- Do not install the receiver on the inside of a metal housing and always ensure sufficient distance from objects, which could impair the transmission / reception strength.
- Always observe the supplied wiring diagrams.
- Always use adequately thick, correctly insulated cables that are suitable for the application area.
- Always connect wires with appropriate and suitable cable connectors.

- The receiver must be fixed with two screws (M5).
- Always observe the relevant safety instructions.

4. CONNECTING THE CABLE

⚠ CAUTION

Before connecting the cable, switch off the power supply to avoid an electric shock, a malfunction or a fire.

NOTE

Read the manual of the devices you connect to the receiver and follow the safety instructions in them.

The following tasks may only be carried out by electrically skilled personnel independently, or by other persons only under the management and supervision of electrically skilled personnel.

⚠ WARNING

Ensure that the power supply is connected to the receiver correctly. Mixing up the wires (red / black) inevitably leads to all outputs of the receiver being live as soon as the power supply is switched on! This can lead to uncontrolled and dangerous states! Only use the receiver within the voltage range from 9 to 36 volt (DC). The load of the entire system may not exceed a maximum total current of 10 amps.
Ensure additional fusing of the power supply!

1. Connect the loose end of the black wire of the receiver cable to ground (0 Vdc).
2. Connect the loose end of the grey wires (1 – 8; outputs 1 – 8) of the receiver cable to the respective device / component, which you want to control.
   IMPORTANT:
   Ensure that the respective connected device / component is connected to the same ground as the receiver.
3. Connect the loose end of the red wire of the receiver cable to the power supply (9 – 36 Vdc).
4. Check that all cables are connected correctly.
5. Switch the power supply back on.

5. STARTING UP AND OPERATION

5.1 REMOVING AND ATTACHING THE RECEIVER PROTECTIVE COVER

1. Turn the cable gland of the receiver cable a half-turn counterclockwise to loosen it slightly. Ensure that you do not completely detach the cable gland from the internal thread.
2. Carefully pull the cable gland slightly in the direction of the loose cable end.
3. As soon as the protective cover has detached from its housing detent, it can be pushed further along the cable, and if necessary, it can also be completely detached / removed from the cable.
4. To re-attach the protective cover, firstly guide the side lug of the protective cover into the recess provided for it in the receiver housing.

5. Push the protective cover until the front side of the receiver is completely closed above the cable.
6. Turn the cable gland clockwise until it is finger-tight (max. 2 Nm).

Note that loosening and / or removing the protective cover results in loss of the IP69k protection.

5.2 COUPLING A TRANSMITTER / SMARTPHONE (PAIRING)

NOTE

Button 1 may only be used in ambient temperatures > -10°C. Also, the receiver must not be iced over (see also "Safety instructions for use").

1. Ensure that the receiver is connected to the power supply and is switched on. The status LED flashes green slowly.
2. Press button 1 on the receiver 3 x quickly.
3. The status LED starts to flash alternately red and green.
4. Now activate the pairing mode of the ICARUS blue transmitter that is to be coupled. Please read the corresponding manual.
5. To couple a smartphone, please download the corresponding (free) app from the respective app store and then follow the step-by-step instructions in the app.

NOTE

Note that only one device (transmitter or smartphone) can be connected to the receiver at the same time.

5.3 DELETING / REMOVING A COUPLED TRANSMITTER

To delete all coupled transmitters (including smartphones) from the memory of the receiver, the following button combination must be pressed within a period of max. 4 seconds:

1. Ensure that the receiver is connected to the power supply and is switched on.
2. Press button 1 on the receiver 7 x quickly.
3. The status LED flashes 7 x quickly and thus confirms that all coupled transmitters have been deleted from the receiver's memory.

6. ERROR CODES AND REMEDY

In the event of system malfunctions, the error that has occurred is given by a flashing sequence (see "LED status" section) of the respective LEDs. 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	Receiver 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 **(R820 only)**	Receiver output 5 (> 3.5A for > 1000ms)	Check and reduce the current consumption of the connected component.
1 x long, 6 x short **(R820 only)**	Receiver output 6 (> 3.5A for > 1000ms)	Check and reduce the current consumption of the connected component.
1 x long, 7 x short **(R820 only)**	Receiver output 7 (> 3.5A for > 1000ms)	Check and reduce the current consumption of the connected component.
1 x long, 8 x short **(R820 only)**	Receiver output 8 (> 3.5A for > 1000ms)	Check and reduce the current consumption of the connected component.
3 x long	Permissible total current 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.
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.

7. MAINTENANCE AND CLEANING

The receiver is maintenance-free for the user. Maintenance and repairs must be carried out by a competent person. The receiver may only be cleaned with a damp cloth and without chemicals. Otherwise the receiver can become damaged.

8. DISPOSAL

Electronic equipment is recyclable waste and does not belong in household waste. If the receiver 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 to protect the environment.

9. WARRANTY

The receiver has been tested in a controlled environment and, under certain conditions, proved to be resistant to moisture and dust, and meets the requirements of the IP69k classification (if the corresponding receiver protective cover is used properly; otherwise IP67) 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 receiver 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 receiver 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 receiver maintains guaranteed safety and operation during its entire life.

10. SIMPLIFIED DECLARATION OF CONFORMITY

ICP Systems B.V. (Handelsweg 48, 7451 PJ Holten, The Netherlands) herewith declares that the radio system types ICARUS blue R820 and R420 comply 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

GET IT ON Google Play

http://rseries.icarus-blue.com

ICP Systems B.V.

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www.icarus-blue.com