RIEGL DUAL CHARGER
and
RIEGL CHARGING STATION
for RBLI 8S1P

Technical Data and User Instructions

RIEGL®
LASER MEASUREMENT SYSTEMS

RIEGL DUAL CHARGER and *RIEGL* CHARGING STATION for RBLI 8S1P

Technical Data and User Instructions

RIEGL LASER MEASUREMENT SYSTEMS GmbH
3580 Horn, Riedenburgstrasse 48, AUSTRIA
Tel.: +43-2982-4211, Fax.: +43-2982-4210
e-mail: office@riegl.co.at
www.riegl.com

Rev. 2023-09-05 (BA 01)

Revision History:

Contents

1 Warnings, Signs, and Symbols

DANGER	
	The “DANGER” information indicates an immediate danger. If the danger is not avoided it will result in death or serious injuries.

WARNING	
	The “WARNING” information indicates a hazardous situation. If the danger is not avoided it may result in serious injuries or serious physical damage.

CAUTION	
	The “CAUTION” information indicates a hazardous situation. If the danger is not avoided it may result in slight injuries or minor physical damage.

NOTE	
	The “NOTE” information alerts to a situation that may cause equipment damage but no personal injury.

	GENERAL WARNING		OPTICAL RADIATION
	ELECTRICITY		TEMPERATURE RELATED HAZARDS
	LASER RADIATION		EXPLOSION

This manual provides detailed technical data including safety directions, installation instructions, operational directions including maintenance, as well as information about the electromagnetic compatibility.

Improper use or use in contradiction to the instructions given may cause danger and/or injury. It is imperative to read these operating instructions as well as the complete Scanner's Manual and the General Warnings & Instructions for *RIEGL* Laser Measurement Instruments carefully before using the device.

WARNING	
	Improper handling or usage of the **Dual Charger** or the **Charging Station** may lead to severe injury!

2 Dual Charger RBLI-DC100 for RBLI 8S1P

The Dual Charger for *RIEGL* RBI 8S1P can charge two RBLI 8S1P at the same time and is part of the scope of delivery.

Part-No. HW-VZXX-04-010-00	Dual Charger for *RIEGL* RBLI 8S1P

2.1 Mechanical Specifications

Fig. 1 Dimensional Drawing of the Dual Charger for *RIEGL* RBLI8S1P, all dimensions in mm

Dimensions (L x W x H)	170 x 94 x 44 mm
Weight	approx. 0.25 kg

2.2 Electrical and Environmental Specifications

Power Input Voltage	11 – 34 V DC
Max. Output Current	7 A DC
Typical Charging Time (1 or 2 pieces)	approx. 2 h 40 min (depending on the ambient temperature, e.g. 2h 40 @ +30°C)
Temperature Range Operation Storage	 0°C up to +40°C 0°C up to +40°C

NOTE	
	The temperature limits of the RBLI 8S1P differ from the temperature limits of the VZ-i scanner!

2.3 LED and Power Connector

Fig. 2 LED and Power Connector positioned on the front side

Power LED color and status	**Meaning**
green, permanent	the power connection is active and ok; charging was finished
green, blinking	one or two RBLI 8S1Ps are charged
orange, permanent	the power connection is active and in warning range [1)]
red, permanent	charging process has been stopped CAUTION: an error has occurred!
red, blinking	charging process has been stopped CAUTION: voltage or temperature are out of specification [1)] (try again later or use another power supply source)

[1)] See chapter 2.2 “Electrical and Environmental Specifications”

Pin	**Signal**	**Note**
1	+UB	Power Supply +
2	GND	Power Supply Ground

2.4 Cables

Part-No. HW-VZXX-04-000-00	AC Power Supply Unit for VZ-xx

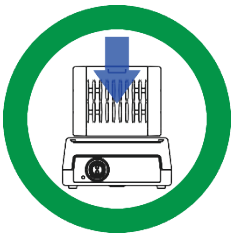
NOTE	
	The power supply network connector of the power supply unit may differ from country to country. For details, please contact support@riegl.com

2.5 Safety and Warning Instructions

Note the safety instructions given in the user manual and read them all carefully!

Never expose the Dual Charger RBLI-DC100 to direct sunlight during charging.

Please be careful when inserting the RBLI 8S1P into the Dual Charger RBLI-DC 100.
Do not insert the RBLI 8S1P at an angle!
Never use force when inserting the RBLI 8S1P into the Dual Charger RBLI-DC 100!



Please insert the RBLI 8S1P straight and without increased force!

3 Charging Station RBLI-CS150 for RBLI 8S1P (optional)

The Charging Station for *RIEGL* RBI 8S1P can charge up to six RBLI 8S1P at the same time.

Part-No. HW-VZXX-04-011-00	Charging Station for *RIEGL* RBLI 8S1P

3.1 Mechanical Specifications

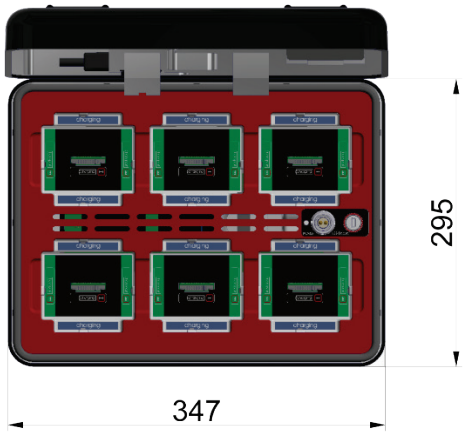


Fig. 3 Dimensional Drawing of the Charging Station for *RIEGL* RBLI8S1P, all dimensions in mm

Dimensions (L x W x H)	347 x 295 x 146 mm
Weight	approx. 3.84 kg

3.2 Electrical and Environmental Specifications

Power Input Voltage	11 – 34 V DC
Max. Output Current	7 A DC
Typical Charging Time for **1 – 3 pieces** **4 – 6 pieces**	2 h 40 min (depending on the ambient temperature, e.g. 2h 40 @ +30°C) after 4h all 6 batteries are fully charged
Temperature Range Operation Storage	 0°C up to +40°C 0°C up to +40°C

3.3 LED and Power Connector

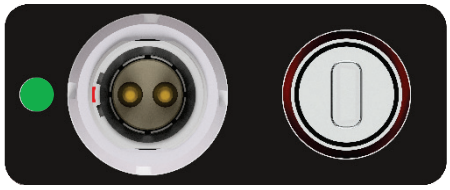


Fig. 4 LED and Power Connector positioned on the front side

Power LED color and status	**Meaning**
green, permanent	the power connection is active and ok; charging was finished
green, blinking	one or two RBLI 8S1Ps are charged
orange, permanent	the power connection is active and in warning range [1)]
red, permanent	charging process has been stopped CAUTION: an error has occurred!
red, blinking	charging process has been stopped CAUTION: voltage or temperature are out of specification [1)] (try again later or use another power supply source)

1) See chapter 2.2 “Electrical and Environmental Specifications”

Pin	Signal	Note
1	+UB	Power Supply +
2	GND	Power Supply Ground

3.4 Cables

Part-No. HW-VZXX-04-000-00	AC Power Supply Unit for VZ-xx

3.5 Transport Position and Charge Position

In RBLI-CS150 for RBLI 8S1P there are two positions for each RBLI 8S1P:
The **charging position** on the one hand, and the **transport position** on the other hand.
In the charging position, the RBLI 8S1Ps are supplied with power and charged. The sticker “charging” in blue color can be seen. In the charging position the cover of the RBLI-CS150 charging station can’t be closed.
The cover can only be closed in transport position!
In the transport position, the RBLI 8S1Ps are electrically isolated from the RBLI-CS150 Charging Station and it is ensured that the RBLI 8S1Ps are not charged or supplied with power! They are also protected against short circuits in this position. The sticker “safe for transport” in green color can be seen.
The transport position can also be used to store the RBLI 8S1Ps over longer periods.

Charging Position

Transport Position

4 Operating Notes and Requirements

CAUTION	
	**For charging the battery you must only use the original *RIEGL* Dual Charger or the original *RIEGL* Charging Station!** For detailed information please see the manuals of the "*RIEGL* Dual Charger for RBLI 8S1P" and the "*RIEGL* Charging Station for RBLI 8S1P" which are part of the manual package, or contact support@riegl.com. **Do not leave the battery unattended during the charging process**.

NOTE	
	Recharge the battery RBLI 8S1P immediately after discharging it. An empty RBLI 8S1P battery should not be stored for more than one month before recharging. If this is not observed, the battery may be damaged or become unusable!!

NOTE	
	*RIEGL* does not recommend using other battery packs provided by the customer for charging the RBLI 8S1P. Such external, customer-provided batteries are not protected against deep discharging by the RBLI 8S1P. The electronics inside the RBLI 8S1P are able to work down to voltages as low as 10V, which can damage your battery pack. Also, the power supply range of the RBLI 8S1P is independent of the scanner's power supply setting. The usage of an external battery for charging lays only in the customer's responsibility.

4.1 Delivery Status

NOTE	
	After receiving the RBLI 8S1P, please immediately charge the battery fully!

Due to transport conditions and self-discharge, the battery may not be fully charged on receipt of delivery. E.g., for transport by air flight the battery may only be charged to 24%.

4.2 Refresh Charge Cycles

This type of battery does not experience memory effect.

However, it is recommended to **fully charge stored RBLI 8S1Ps once every 3 months**.

5 Safety Instructions

5.1 General Safety

The RBLI 8S1P meets or exceeds the requirements of the following European Standard: **EN 61010-1:2010** Safety requirements for electrical equipment for measurement, control, and laboratory use Part 1: General Requirements
Note the following explanations and important instructions:

Temperature	The Dual Charger, as well as the Charging Station, are specified for a temperature range as to be seen in chapter 2.2 / 3.2 “Electrical and Environmental Specifications”.
Relative Humidity	The Dual Charger, as well as the Charging Station are specified for a maximum relative humidity of 80% at or below +30°C.
Enclosure	The Dual Charger, as well as the Charging Station must not be subjected to rain or dripping water or submerged under water or any other fluid. Moreover, it has to be protected against chemical influences.

NOTE	
	Never apply mechanical force of shock to the RBLI 8S1P, the Dual Charger or the Charging Station! Furthermore, they should be protected from being shocked or knocked.

DANGER	
	The battery itself **must never** be connected to 110, 230, or 400 V AC! Opening the battery is unacceptable due to the danger presented by the chemical substances, and must therefore be avoided at all costs.

WARNING	
	ANY USE OF THE RBLI 8S1P, THE DUAL CHARGER OR THE CHARGING STATION IN CONTRADICTION TO THE INSTRUCTIONS AS GIVEN IN THE MANUAL CAN BE DANGEROUS AND IS, THEREFORE, STRICTLY FORBIDDEN!

5.2 Electromagnetic Compatibility

The Dual Charger and the Charging Station meet or exceed the requirements of the following European Standard:

EN 61326-1:2013

Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements (IEC 61326-1:2012)

The Dual Charger and the Charging Station have passed the tests for class A equipment (industrial environment) as well as for class B equipment (residential and commercial environment).

Definition of the performance criteria and acceptable degradations:

Performance Criterion A: During testing, normal performance within the specified limits / nominal values.
Nominal values to be found in chapter 1.2 "Short-Form Description and Specifications".

Performance Criterion B: During testing, temporary degradation or loss of function or performance which is self-recovering

- loss or heavy degradation of functionalities during testing with self- recovery after finishing the test;

Performance Criterion C: During testing, temporary degradation, or loss of function or performance which requires operator intervention or system reset occurs

- loss or heavy degradation of functionalities during testing with self- recovery after finishing the test; a system reset may occur;
- loss or heavy degradation of functionalities, which require simple user intervention, e.g. replacement of a fuse, switching the device Off and On, restoration of settings;

For details, please refer to the corresponding CE declaration document of the Dual Charger and the Charging Station, which is included in the printed version of manual package in the chapter “Certificates & Licenses”.

6 Additional Safety Hints and Requirements

6.1 Environment and Conditions

DANGER	
	Do not put the RBLI 8S1P into airtight containers or bags. The battery cells tend to generate flammable gas upon excess charge which may cause an explosion if enclosed in an airtight container.

WARNING	
	Do not place the RBLI 8S1P near a device that may generate sparks (such as a switch or fuse) and do not place the RBLI 8S1P close to open fire. The RBLI 8S1P may generate a flammable gas when charged excessively. The gas may ignite and burn or explode upon contact with a spark or flame.

CAUTION	
	• The RBLI 8S1P, the Dual Charger and the Charging Station must not be subjected to rain or dripping water or submerged under water or any other fluid. • Avoid placing the RBLI 8S1P near a heat-generating device (such as a transformer) which may cause the RBLI 8S1P to generate excessive heat, leak or explode. • Do not allow the RBLI 8S1P, the Dual Charger and the Charging Station to be exposed to rain or sea water. If the battery terminals should get wet, they may corrode. • Do not use or store the RBLI 8S1P in a car under the blazing sun or in direct sunlight. To do so may cause the RBLI 8S1P to leak, generate excessive heat, or explode. • Do not use or store the RBLI 8S1P, the Dual Charger and the Charging Station in a dusty place as dust may cause a short circuit between the terminals. When using RBLI 8S1P, the Dual Charger and the Charging Station in a dusty place, check the terminals periodically.

6.2 Handling and Operation

WARNING	
	Never disassemble, modify, puncture, mechanically shock, crash and/or short circuit the RBLI 8S1P, the Dual Charger and the Charging Station, otherwise leakage, smoke emission, ignition, explosion, or fire, may occur which may result in personal injury and/or property damage.

CAUTION	
	Keep the RBLI 8S1P, the Dual Charger and the Charging Station out of the reach of small children at all times!

NOTE	
	Fully charge the RBLI 8S1P after receiving. Recharge discharged RBLI 8S1P immediately. For more details please see the corresponding manual of the RBLI 8S1P!

6.3 Storage

NOTE	
	Before storing the RBLI 8S1P, charge the RBLI 8S1P to 40 %. Store the RBLI 8S1P in a dry place to prevent rust from forming on the terminals. Recharge the RBLI 8S1P every 3 months!

CAUTION	
	Keep the RBLI 8S1P away from rainwater that could cause corrosion on the terminals of the RBLI 8S1P. Store the RBLI 8S1P at room temperature or lower temperature. Do not store the RBLI 8S1P in direct sunlight, higher temperature or high humidity. To do so causes the RBLI 8S1P to shorten its life-span, performance deterioration or corrosion on terminals.

NOTE	
	Depending on the storage temperature, refresh the RBLI 8S1P in intervals as described in chapter 4.2 “Refresh Charge Cycles”.

6.4 Warranty

Batteries that have been mishandled, abused, or damaged by the user are not covered under warranty. *RIEGL* LMS GmbH shall not be liable for any loss or damage, whether direct or indirect, special, incidental or consequential, arising from the use, misuse, or abuse of the Li-Ion batteries.

6.5 Disposal

When your *RIEGL* instrument finally reaches the end of its life-cycle, please take care for proper disposal according to Directive 2006/66/EC on batteries and accumulators and waste batteries and accumulators as well as Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

RIEGL is prepared to take back waste *RIEGL* instruments and their accessories free of charge in the production plant at Horn for proper treatment in compliance with the objectives of the above listed directives.
You may also dispose damaged Li-Ion batteries at your local Hazardous Waste Facility.

NOTE	
	**For detailed information, consult the responsible local authority!**