



OWNERS & USERS MANUAL

PSS - Power Supply System Product Series





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LEGAL DISCLAIMER

DRINO products are non-certified aircraft components, and should therefore not be used on aircraft operating under a standard airworthiness certificate.

The systems are intended for use on aircraft in the “experimental” category according to European Regulation 2018/1139 Annex I, point (c), or equivalent. The proper installation and operation of DRINO products is solely the responsibility of the owner and/or user of the aircraft to which the products are fitted. DRINO will not be liable for damage to property or personal harm, loss of income or anything else, due to incorrect use of DRINO products. Misuse of DRINO products can result in situations that may be hazardous and in the worst case, fatal.

For the latest information on DRINO products, please consult the latest edition of this document found on the homepage: www.drino.dk or call +45 25137373

Thank you for choosing DRINO aircraft products.
We hope that you will be satisfied with your purchase and wish you many joyful hours of fun and safe flying!

Claus Vad
Founder



PREFACE

1. Purpose

This manual describes the physical- and electrical characteristics and the installation requirements of the DRINO Power Supply System (PSS) product family, and provides guidelines for installation, timing and operation of the system.

2. Scope

The document applies to all the Power Supply System product series variants.

3. Introduction

The PSS product series consists of several variants of permanent-magnet single-phase brushless power generation units in and a common-for-all, solid state 12 V DC battery charging unit. The power generation units have an integrated and adjustable timing wheel, suitable for triggering the sensor of the CVI-4-V3 Electronic Ignition System. The PSS products are also supplied with an adjustable bracket assembly for holding the sensor of the CVI-4-V3 system in place.

The applicable aircraft must be non-certified, e.g. their operation must be according to European Regulation 2018/1139 Annex I or equivalent.

The PSS power generation units are meant to be installed in the magneto slot/interface of eligible aero engines (non dual-mag engines), and be driven either by a steel gear transferred from the removed magneto, or by a supplied and highly durable POM (polyoxymethylene) gear adaptor.

The PSS products have no restrictions or preferences in rotational direction, and have no sensitivity to orientation.

The PSS power generation units should interface to a 12 V battery (not supplied with the PSS), through the supplied combined voltage rectifier and charging regulator. The battery should have a charge monitoring (e.g. voltage meter, amp-meter or charging indicator), if it is supplying any critical systems, such as the CVI-4-V3 Electronic Ignition System.

The PSS can provide in the vicinity of 6 amps, at 14 VDC when running above 2200 RPM.

This should be enough to operate the CVI-4-V3 Electronic Ignition System in addition to other low-power electronics, such as radios, transponders and navigation aids.

It is essential for the safe operation of the system, that power generation levels are higher than power consumption levels for all use-cases, to keep all consuming systems operating properly.



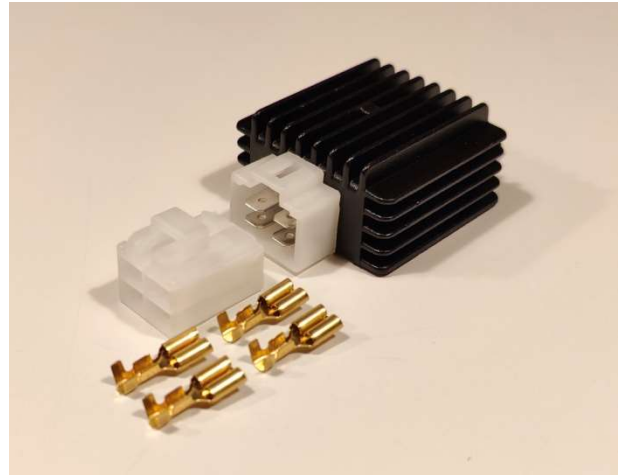
DOCUMENT HISTORY

Revision	Revision Date	Remarks
01	21. October 2020	Initial Release
02	19. January 2025	General update of Illustrations and diagrams
03	01. February 2026	Included UK Declaration of Conformity

SYSTEM OVERVIEW



PSS Power Generation Unit (example variant) with integrated timing wheel



Voltage Rectifier and Charging Regulator



Bracket assembly for CVI-4-V3 sensor



10A mini-fuse & holder



TECHNICAL SPECIFICATIONS

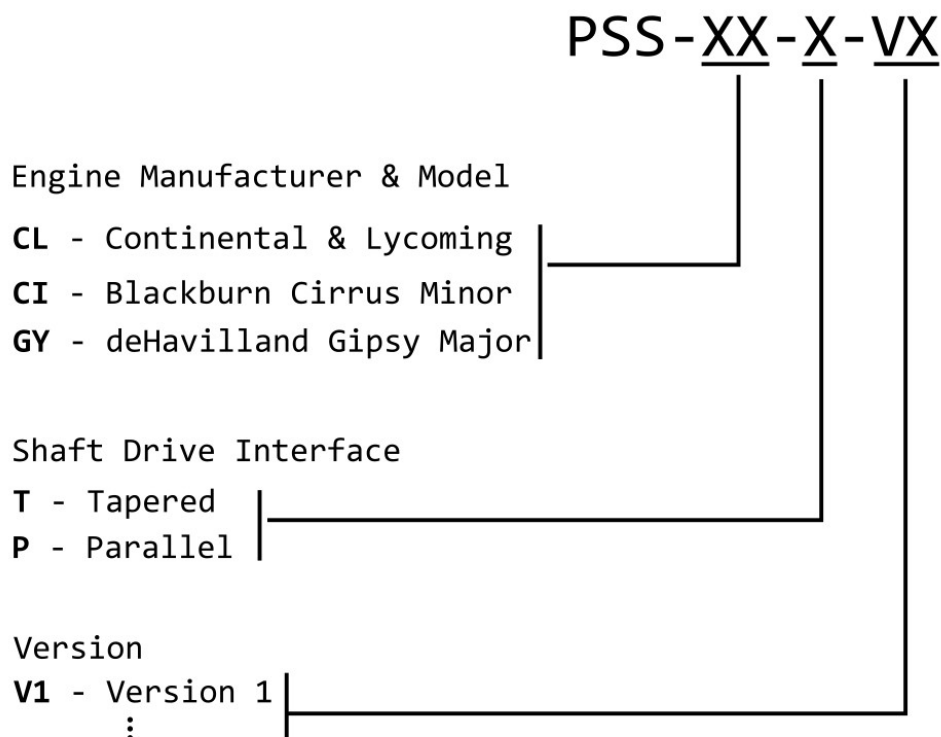
Specification	Characteristic	
Max. Temperature		150 °C
Min. Temperature		-15 °C
Weights	Power Generation Unit	1200 g
	Regulator	80 g
Operational Speed	Nominal	0 – 3000 RPM
	Maximum	5500 RPM
Current Generation, Max.	@1400 RPM	1 A (@14.5V)
	@2200 RPM	6 A (@14.5V)



IDENTIFICATION

1. Variant Key

Several power generation unit variants exist, to accommodate the technical differences between the aero engine manufacturers. The variant identification key is shown below.



For the Continental- and Lycoming engines of the “CL” variants, integration on the following engine models have been verified.

Continental: A65, C-90

Lycoming: O-320, O-360

The PSS products are not eligible for engine variants with dual-magnetos (single magneto slot in engine rear-section).

2. Variant Overview



PSS-CL-T-V1

Variant for Continental & Lycoming engines with tapered shaft



PSS-CL-P-V1

Variant for Continental & Lycoming engines with parallel shaft



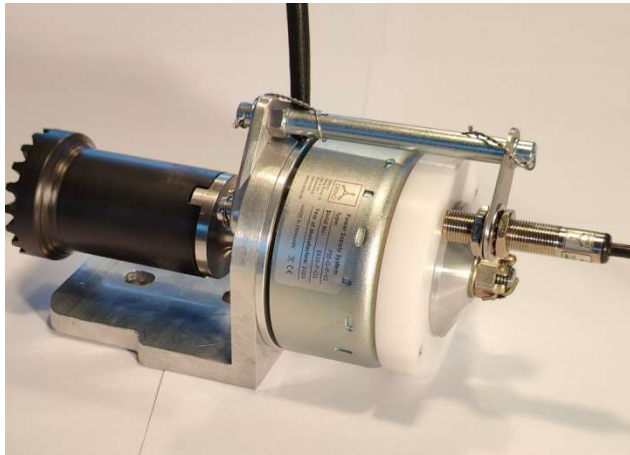
PSS-CI-T-V1

Variant for Cirrus Minor engines with tapered shaft



PSS-CI-P-V1

Variant for Cirrus Minor Engines with parallel shaft and Vernier gear adaptor



PSS-GY-P-V1

Variant for Gipsy Major engines with
parallel shaft and Vernier gear adaptor
(sensor not included)



WHAT IS IN THE BOX

QTY	DESCRIPTION
1	PSS Power Generation Unit with integrated timing wheel for CVI-4-V3 Ignition system
1	SOLID STATE Voltage rectifier and 12 V battery charging regulator
1	BRACKET FOR CVI-4-V3 SENSOR (variant specific internal thread)
1	FUSE HOLDER & 10A FUSE
1	OWNERS AND USER MANUAL (this document)



INSTALLATION & TIMING

Reference the Owners and User manual of the CVI-4-V3 Electronic Ignition System.

Steps up until section 9 must be performed to enable timing of the ignition system using the PSS timing wheel.

1. Preparation for installation

Make sure the electrical system of the plane is de-energized and that the magnetos of the plane are in the off-position.

Remove the magneto to be replaced, along with its harness and spark plugs. The P-lead for the magneto is not needed for the installation of the power supply system and can also be removed, if practical.

2. Prepare the power generation unit

If applicable, remove the gear from the uninstalled magneto and transfer it to the shaft of the PSS power generation unit. The gear should be fixed in place by means of suitable washers and use of the 3/8-24 UNF castellated nut secured in place by a cotter pin. Ensure that the key is present in the slot of the shaft when transferring a gear with tapered interface. Be mindful not to over-torque the connections as this could damage the gear. It should be seated tightly in place with no detectable rocking motion when subjected to loads in any direction by hand.



3. Install the power generation unit

Make sure the flange-seal from the magneto is undamaged and suitable for re-use. If not the seal must be replaced.

The prepared power generation unit should be put into the magneto slot using the existing studs (if applicable). Holding the unit firmly against the flange by hand, the main magnet of the PSS can be rocked a bit back and forth to check for gear clearance. A tiny amount of play is acceptable, but in general the gear fit must be rather tight.

If above check is satisfactory, and the magneto switches of the plane are still confirmed OFF, the engine can be hand-turned while holding the power generation unit in place by hand (an assistant can be useful for this step). Confirm that the power generation unit follows the engine without any unusual noises and make sure that the flange of the PSS remains steady against the seal. This step confirms that the gear and shaft of the power generation unit are properly axially aligned.

Finally, the unit can be secured in place by use of washers, lock washers and nuts in good condition, and tightening with hand tools.

The provided sensor holder assembly can be used instead of the nut on the one stud, providing easy positioning of the ignition system sensor afterwards.

Make sure the unit is secure in place and cannot come loose in the operational environment of the engine.

Ensure no electrical cables, engine controls or other object in the engine room can come close to the magnet and timing wheel of the power generation unit, as these parts will be rotating during operation.



4. Install the charging regulator

The charging regulator is meant for plate mounting using the in-built bracket in the regulator housing.

Ensure the selected location for mounting the regulator can provide the support for any loads (e.g. vibration & G's) the regulator will be subjected to during operation.

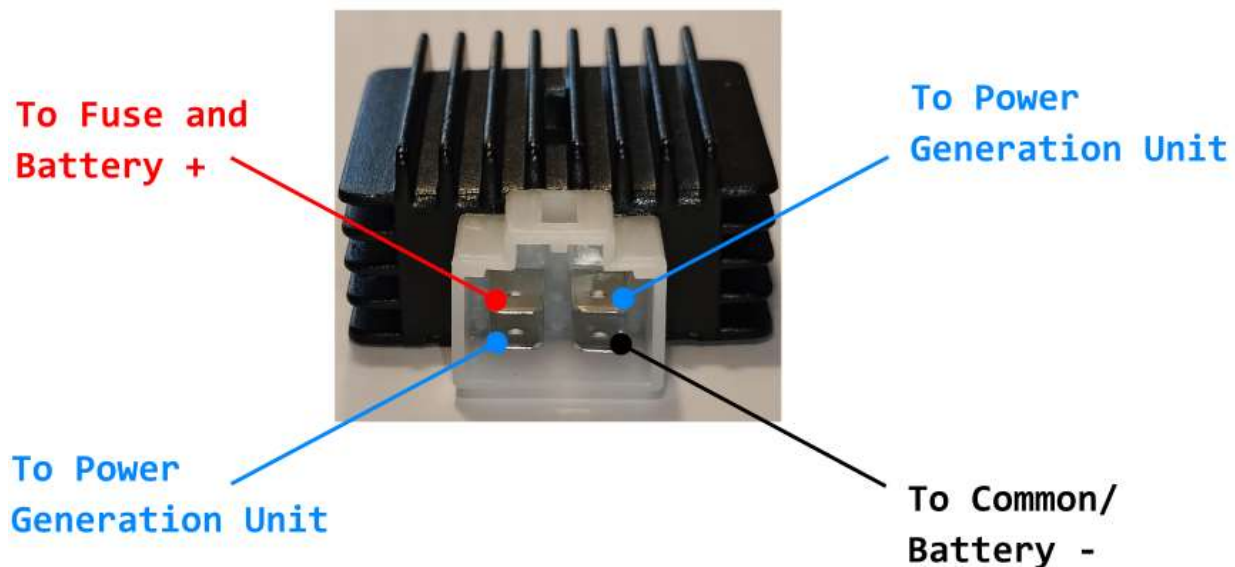
Secure the regulator firmly in place by use of a drilled bolt with castellated nut and cotter pin or similar.

5. Connect the power generating unit, the fuse and the battery to the regulator

See Appendix A for an electrical diagram of the connections.

The cables of the power generating unit and the cables to the location of the 12V battery may have to be extended to suit the location of the devices.

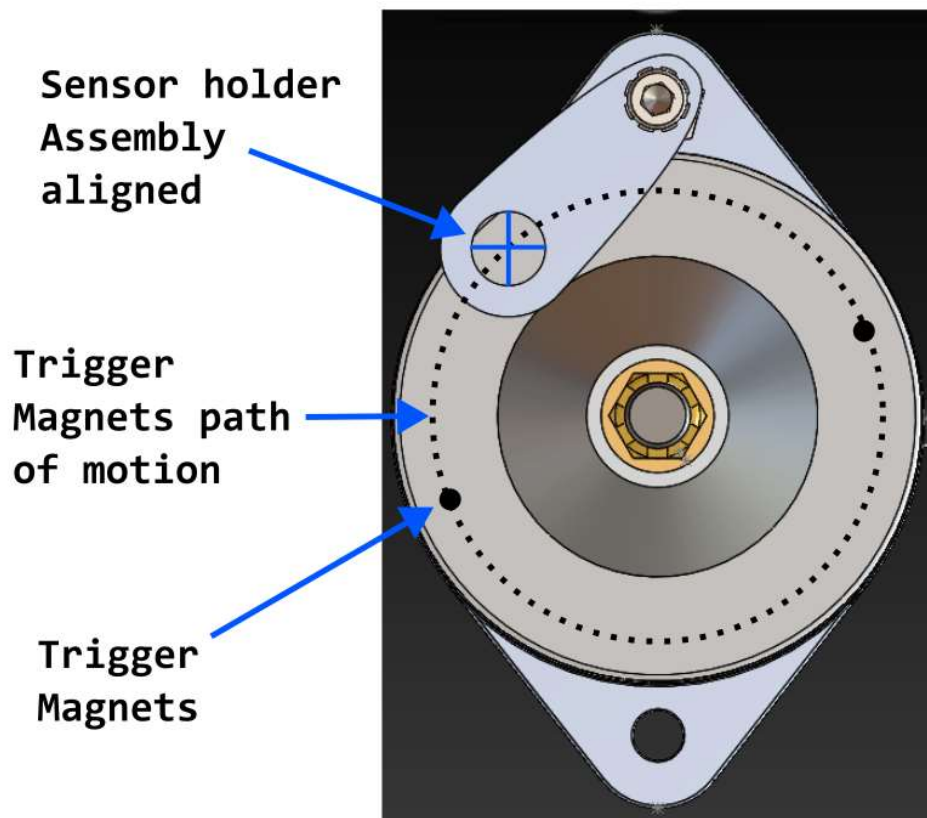
The wires of the power generating unit and the wires towards the battery have to be arranged in the regulator connector like shown in below figure.



Once connected, the wires must be secured firmly in place without causing excessive bends or grinding on sharp edges.

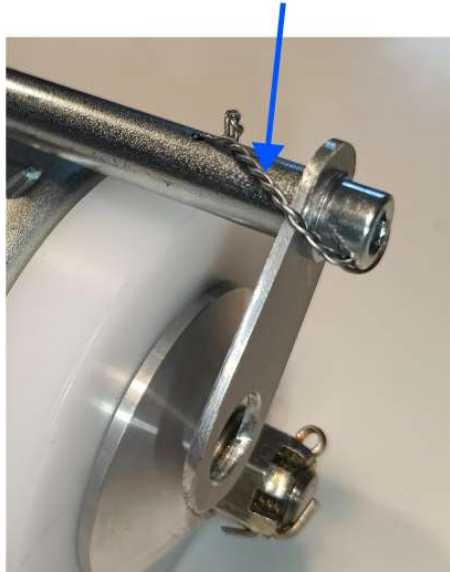
6. Complete the sensor holder assembly and secure with safety wire

Assemble the end parts of the sensor holding assembly, so that the center of the bracket hole aligns with the center of path of motion of the trigger magnets in the timing wheel.



Once aligned, the assembly should be tightened securely in place and be equipped with safety wire.

Safety Wire



7. Install the sensor

The sensor should now be mounted in the sensor holder assembly in such a way that the face of the sensor is 1,5 mm from touching the timing wheel.

Gently tighten the nuts of the sensor for full compression of the lock washers.

8. Perform timing

Once all components are in place, the timing should be performed.

Section 9 of the Owners and User manual of the CVI-4-V3 Electronic Ignition System should be followed up until the section of "Perform Timing"

Instead of turning the engine to achieve timing, as mentioned in the third bullet, position the engine in 5 degrees past top-dead-center, and follow below approach:

Remove the lightly seated cotter pin of the 7/16-20 castellated nut near the timing wheel of the power generating unit.



Now, gently loosen the nut, until tension is gone (about half a turn), and no further.

Note:

The reason it should not be loosened any further is risk of un-engaging the torque transfer linkage between the aluminum part, and the main magnet housing.

With the tension gone, it should be possible to rotate the timing wheel relative to the main magnet by hand, to perform timing.

Once the CVI-4-V3 ignition system is timed, the 7/16 nut should be initially tightened to 25 Nm, and if not aligned with the cotter-pin hole in the shaft, then further tightened until the next groove aligns with the hole.

Once aligned, install and secure the cotter pin.

Ensure that everything in the affected areas of the installation is secure, and check that all tools and surplus materials are removed from the plane.

The system is now timed and ready for operation.



9. Initial Testing

Start the engine according to normal startup procedures.

Once in an engine-running and idle state it is time to perform the initial testing.

Do a standard ignition system check, and see that both ignition systems are operating as intended.

With engine RPM above 1100, the voltage meter should show an increase in voltage, coming from the power supply system.

Increasing engine RPM will further increase the charging voltage, and it should level out at around 14.8 V.

If you have an amp-meter in place, test the net amperage with the engine running operational RPM, and the consumers engaged. It is important not to load the battery with more consumers than what can be sustained by the power-supply system during flight.

10. Finalization

Once testing is done check the engine room for any oil leaks, and that everything has remained tight and secure throughout the test.

Store this manual with the technical journal of the plane.



MAINTENANCE

Once the system has been installed and timed on the motor the only maintenance needed is to make sure all fasteners are still tight (controller, coil, sensor, trigger magnets, etc.), wires and cables are undamaged and not subjected to mechanical wear/grinding, and to exchange the spark plugs when needed. The maintenance should be planned as part of normal annual inspection.

NEED HELP?

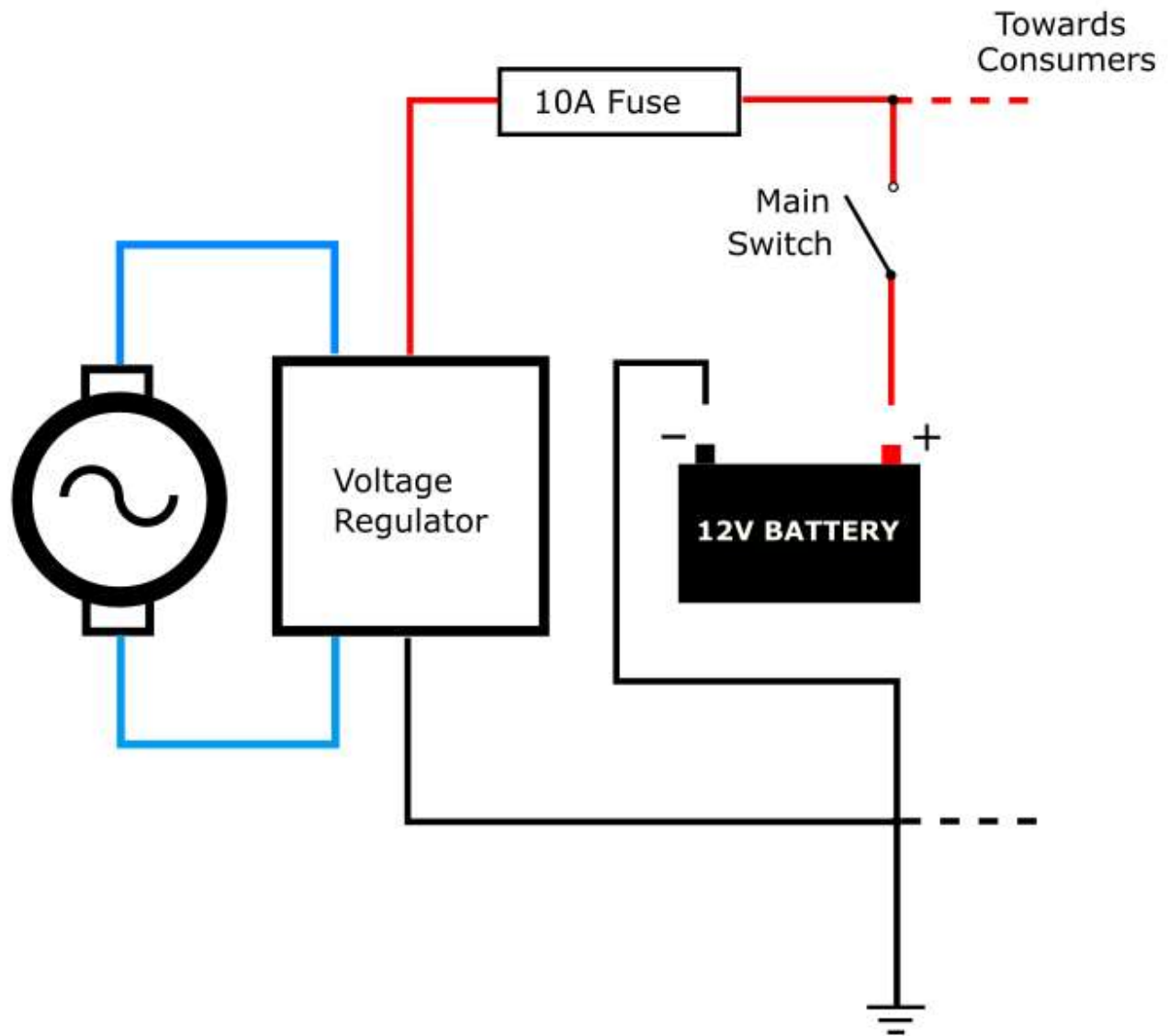
You are always welcome to contact DRINO on info@drino.dk for support and advice.

WARRANTY

All PSS-series products come with a 2-year warranty from date of sales.



ELECTRICAL DIAGRAM





EC Declaration of Conformity

We

DRINO ApS
Ring Byvej 15
DK-8740 Braedstrup
Denmark
WWW.DRINO.DK
CVR:46176383

declare under our sole responsibility, that the following product

PSS - Power Supply System product series

is in conformity with the

General product safety regulation, 2023/988 (GPSR)
Machinery regulation, 2023/1230

Date: 1 February 2026

Manufacturer / Authorized Representative:

A handwritten signature in blue ink, appearing to read 'Claus Vad'.

Claus Vad, CEO.



UK Declaration of Conformity

We

DRINO ApS
Ring Byvej 15
DK-8740 Brædstrup
Denmark
WWW.DRINO.DK
CVR: 46176383

declare under our sole responsibility, that the following product

PSS - Power Supply System product series

is in conformity with the

The General Product Safety Regulations 2005 No. 1803.

The Supply of Machinery (Safety) Regulations 2008 No. 1597

Date: 1 February 2026

Manufacturer / Authorized Representative:

A handwritten signature in blue ink that reads "Vad".

Claus Vad, CEO.

APPENDIX A – Photos of Installations



PSS-CL-P-V1 during installation on a Lycoming O-360