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HEINZMANN®
Electronic Speed Governor

Power Supply Unit

NG 09

Manual E 96 003-e / 05-06

 **Warning**	Read this entire manual and all other publications appertaining to the work to be performed before installing, operating or servicing your equipment. Practice all plant and safety instructions and precautions.
 **Danger**	Failure to follow instructions may result in personal injury and/or damage to property. HEINZMANN will refuse all liability for injury or damage which results from not following instructions
 **Danger! High Voltage**  **Danger**	**Please note before commissioning the installation:** Before starting to install any equipment, the installation must have been switched dead! Be sure to use cable shielding and power supply connections meeting the requirements of the *European Directive concerning EMI*. Check the functionality of the existing protection and monitoring systems.
 **Danger**	**To prevent damages to the equipment and personal injuries, it is imperative that the following monitoring and protection systems have been installed:** Overspeed protection acting independently of the speed governor Overtemperature protection HEINZMANN will refuse all liability for damage which results from missing or insufficiently working overspeed protection **Generator installation will in addition require:** Overcurrent protection Protection against faulty synchronization due to excessive frequency, voltage or phase differences Reverse power protection
	Overspeeding can be caused by: Failure of the voltage supply Failure of the actuator, the control unit or of any accessory device Sluggish and blocking linkage

 **Warning**	**Electronically controlled injection (MVC) will in addition require to observe the following:** With **Common Rail** systems a separate mechanical flow limiter must be provided for each injector pipe. With **Pump-Pipe-Nozzle (PPN)** and **Pump Nozzle (PNE)** systems fuel release may be enabled only by the movement of control piston of the solenoid valve. This is to inhibit fuel from being delivered to the injection nozzle in case of seizure of the control piston.
 **Warning**	The examples, data and any other information in this manual are intended exclusively as instruction aids and should not be used in any particular application without independent testing and verification by the person making the application.
 **Danger**	Independent testing and verification are especially important in any application in which malfunction might result in personal injury or damage to property.
	HEINZMANN make no warranties, express or implied, that the examples, data, or other information in this volume are free of error, that they are consistent with industry standards, or that they will meet the requirements for any particular application.
	HEINZMANN expressly disclaim the implied warranties of merchantability and of fitness for any particular purpose, even if **HEINZMANN** have been advised of a particular purpose and even if a particular purpose is indicated in the manual.
	HEINZMANN also disclaim all liability for direct, indirect, incidental or consequential damages that result from any use of the examples, data, or other information contained in this manual.
	HEINZMANN make no warranties for the conception and engineering of the technical installation as a whole. This is the responsibility of the user and of his planning staff and specialists. It is also their responsibility to verify whether the performance features of our devices will meet the intended purposes. The user is also responsible for correct commissioning of the total installation.

Contents

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1 Safety Instructions and Related Symbols

This publication offers wherever necessary practical safety instructions to indicate inevitable residual risks when operating the engine. These residual risks imply dangers to

persons

product and engine

environment.

The symbols used in this publication are in the first place intended to direct your attention to the safety instructions!

Warning

This symbol is to indicate that there may exist dangers to the engine, to the material and to the environment.

Danger

This symbol is to indicate that there may exist dangers to persons. (Danger to life, personal injury))

Danger! High Voltage

This symbol is to indicate that there exist particular danger due to electrical high tension. (Mortal danger).

Note

This symbol does not refer to any safety instructions but offers important notes for better understanding the functions that are being discussed. They should by all means be observed and practiced. The respective text is printed in italics.

The primary issue of these safety instructions is to prevent personal injuries!

Whenever some safety instruction is preceded by a warning triangle labeled “Danger” this is to indicate that it is not possible to definitely exclude the presence of danger to persons, engine, material and/or environment.

If, however, some safety instruction is preceded by the warning triangle labeled “Caution” this will indicate that danger of life or personal injury is not involved.

The symbols used in the text do not supersede the safety instructions. So please do not skip the respective texts but read them thoroughly!

In this publication the Table of Contents is preceded by diverse instructions that among other things serve to ensure safety of operation. It is absolutely imperative that these hints be read and understood before commissioning or servicing the installation.

1.1 Basic Safety Measures for Normal Operation

- The installation may be operated only by authorized persons who have been duly trained and who are fully acquainted with the operating instructions so that they are capable of working in accordance with them.
- Before turning the installation on please verify and make sure that

  - only authorized persons are present within the working range of the engine;

  - nobody will be in danger of suffering injuries by starting the engine.
- Before starting the engine always check the installation for visible damages and make sure it is not put into operation unless it is in perfect condition. On detecting any faults please inform your superior immediately!
- Before starting the engine remove any unnecessary material and/or objects from the working range of the installation/engine.
- Before starting the engine check and make sure that all safety devices are working properly!

1.2 Basic Safety Measures for Servicing and Maintenance

- Before performing any maintenance or repair work make sure the working area of the engine has been closed to unauthorized persons. Put on a sign warning that maintenance or repair work is being done.
- Before performing any maintenance or repair work switch off the master switch of the power supply and secure it by a padlock! The key must be kept by the person performing the maintenance and repair works.
- Before performing any maintenance and repair work make sure that all parts of engine to be touched have cooled down to ambient temperature and are dead!
- Refasten loose connections!
- Replace at once any damaged lines and/or cables!
- Keep the cabinet always closed. Access should be permitted only to authorized persons having a key or tools.

- Never use a water hose to clean cabinets or other casings of electric equipment!

1.3 Before Putting an Installation into Service after Maintenance and Repair Works

- Check on all slackened screw connections to have been tightened again!
- Make sure the control linkage has been reattached and all cables have been reconnected.
- Make sure all safety devices of the installation are in perfect order and are working properly!

2 General Remarks

HEINZMANN electronic governors with higher output torques (from 64 Nm) require a higher voltage to the output stage to attain the necessary adjustment speed of the actuator; the rest of the electronic needs a normal voltage supply of 24V.

These voltages are provided by the power supply NG 09. The power supply may be used for feeding one governor DG 180.1 or two governors DG 64.1 or DG 90.1. It can be used for feeding one DG 90.1 and one DG 30.1 as well.

There is a further 24 V DC output for connecting accessory units.

For applications that require interrupt-free continuation of the governor's operation in case of mains failure (e.g., marine applications) the power unit with emergency power supply NG 08 + NSV 05 may be used.

The power supply is available in two versions: without housing for build-in applications and with housing for stand-alone applications.

3 Technical Data

Voltage input		3 x 400 V ± 10% phase/phase
	or	3 x 440 V ± 10% phase/phase
		more voltages available on request
Frequency		50/60 Hz
Power consumption		750 VA
Output voltage in mains operation		24 V DC and 40 V DC
Residual ripple		< 10%
Output current		
24 V- range		max. 3 x 1.5 A
40 V- range		max. 12.5 A
or		
24 V- range		max. 1 x 5.5 A
		max. 3 x 1.5 A
40 V- range		max. 7.5 A
Temperature range		-20 °C up to +60 °C
Humidity		up to 90 %
Protection grade		
build-in unit		IP 00
in housing		IP 55
Weight		
build-in unit		approx. 23 kg
in housing		approx. 34 kg

4 Function Mode

By means of the power unit NG 09, three-phase supply voltage is reduced by transformers to lower voltage and converted into DC voltage by a bridge rectifier. A downstream stabilized voltage regulator and a voltage limiter ensure constant output voltage.

5 Block Diagram

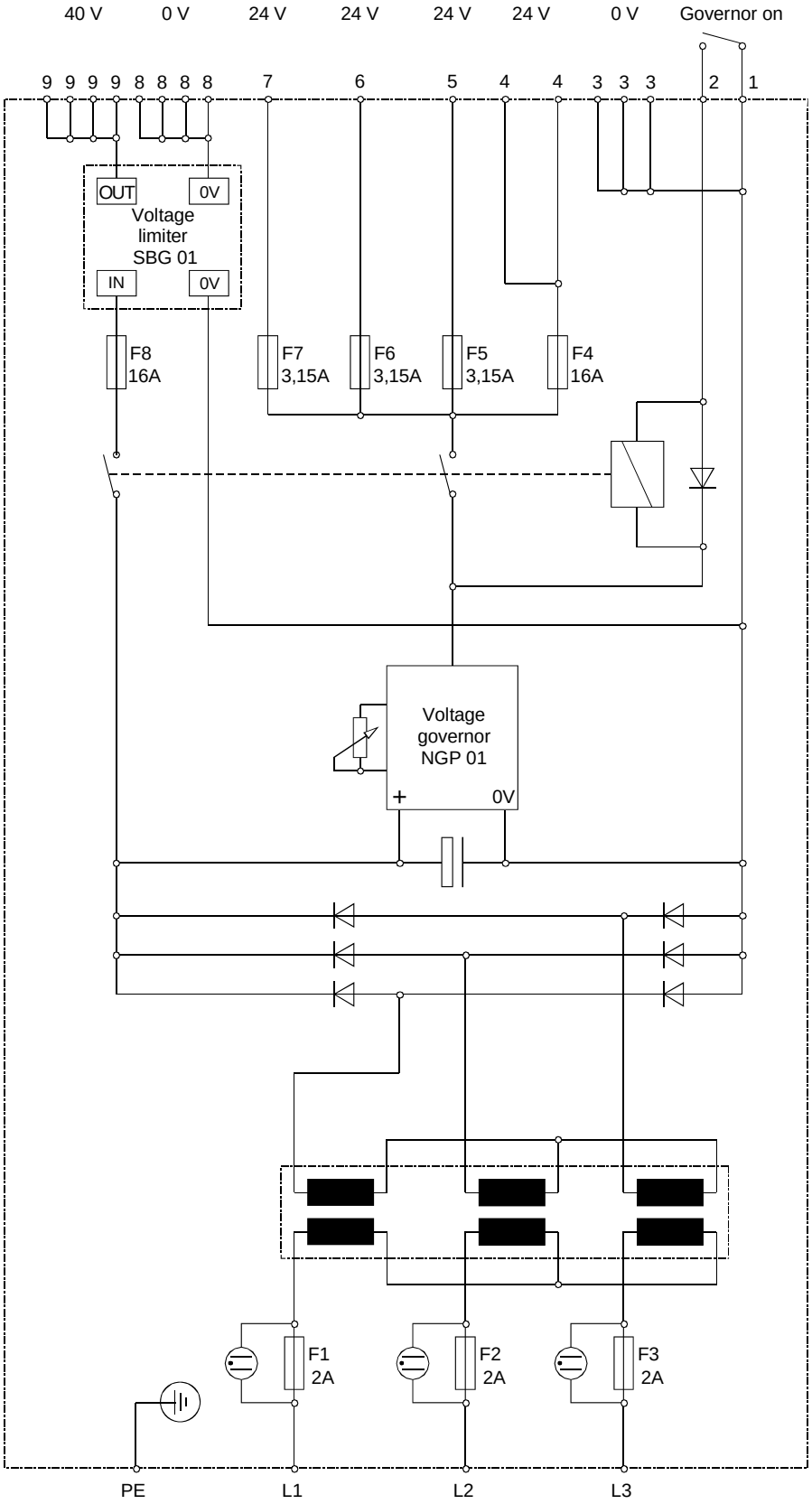

Figure 1: Block Diagram

6 Electrical Connection

6.1 Example of Connection for 1 Governor DG 180.1 - 04

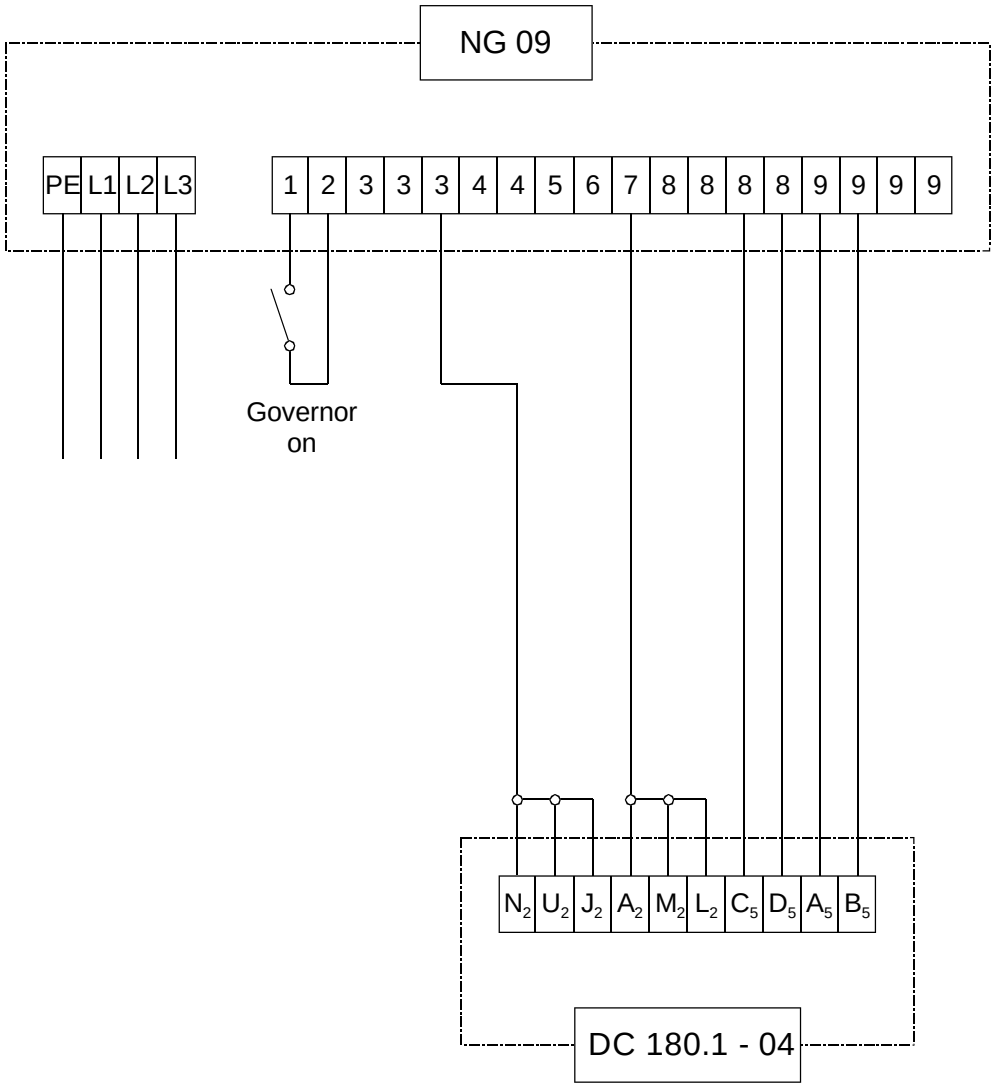

Figure 2: Example of Connection for 1 Governor DG 180.1 - 04

6.2 Example of Connection for 2 Governors DG 90.1 - 03

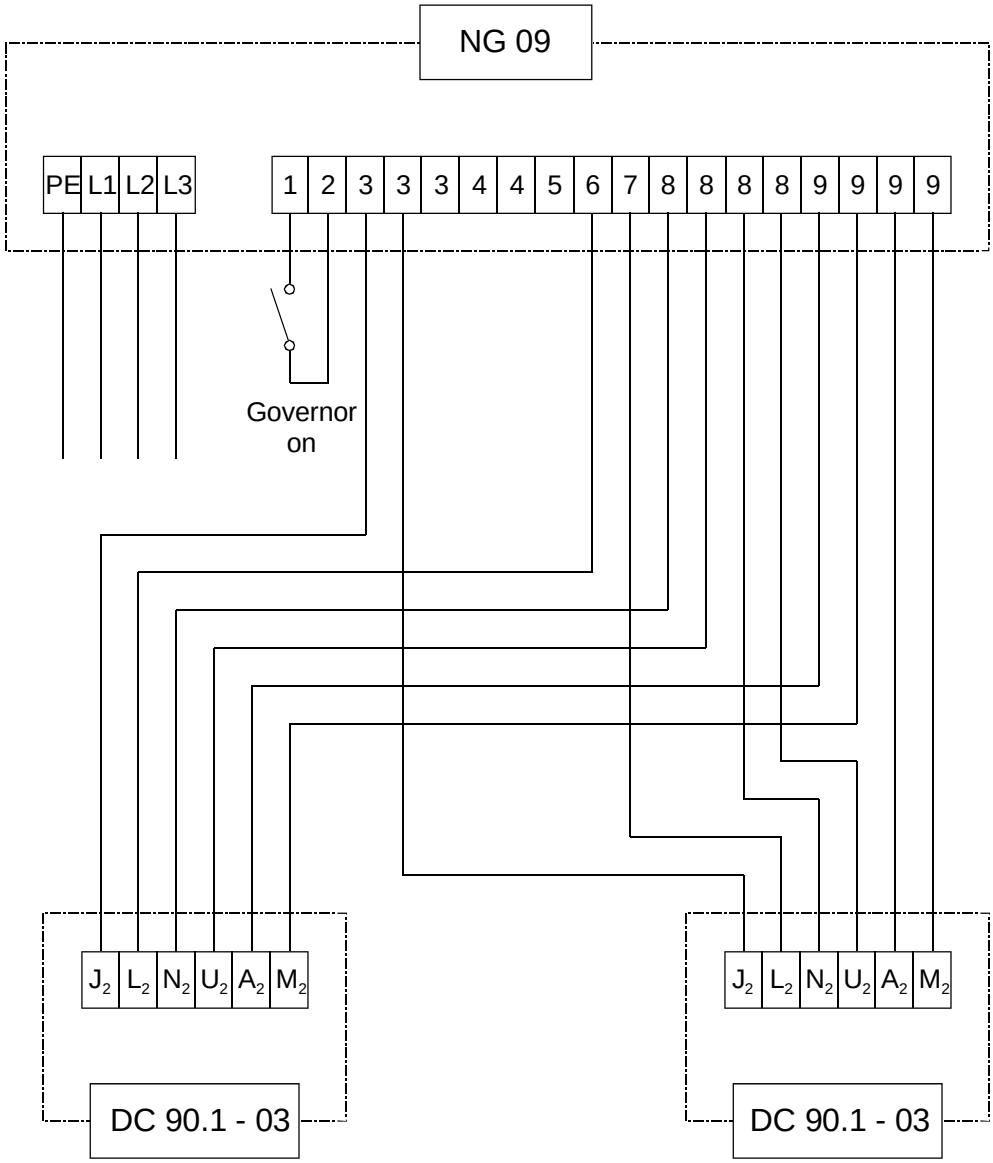

Figure 3: Example of Connection for 2 Governors DG 90.1 - 03

6.3 Example of Connection for 1 Governor DG 90.1 – 03, 1 Governor DG 30.1 - 03 and Accessory Unit

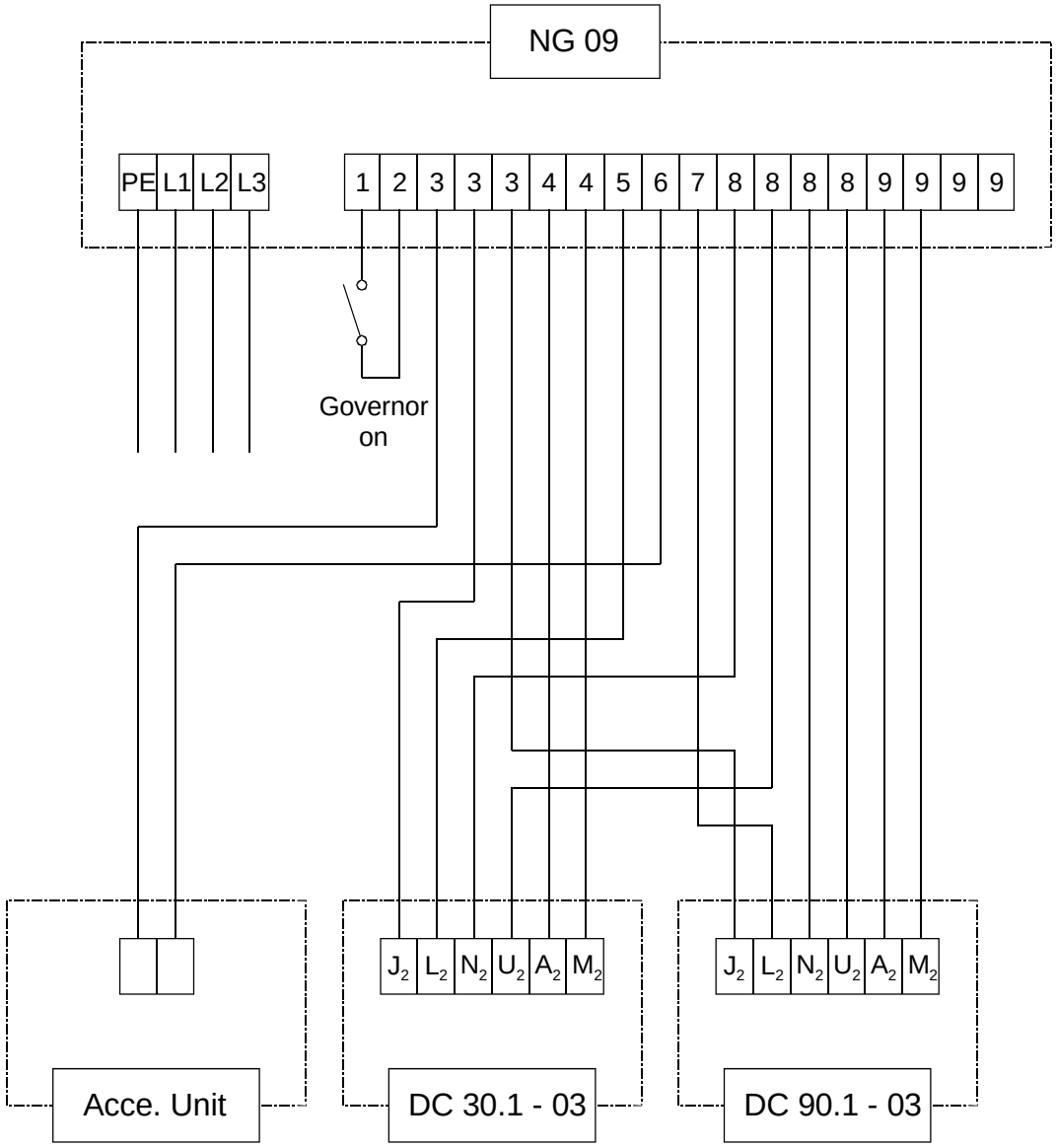

Figure 4: Example of Connection for 1 Governor DG 90.1 – 03, 1 DG 30.1 - 03 and Accessory Unit

7 Measurements

7.1 Power Supply in Housing

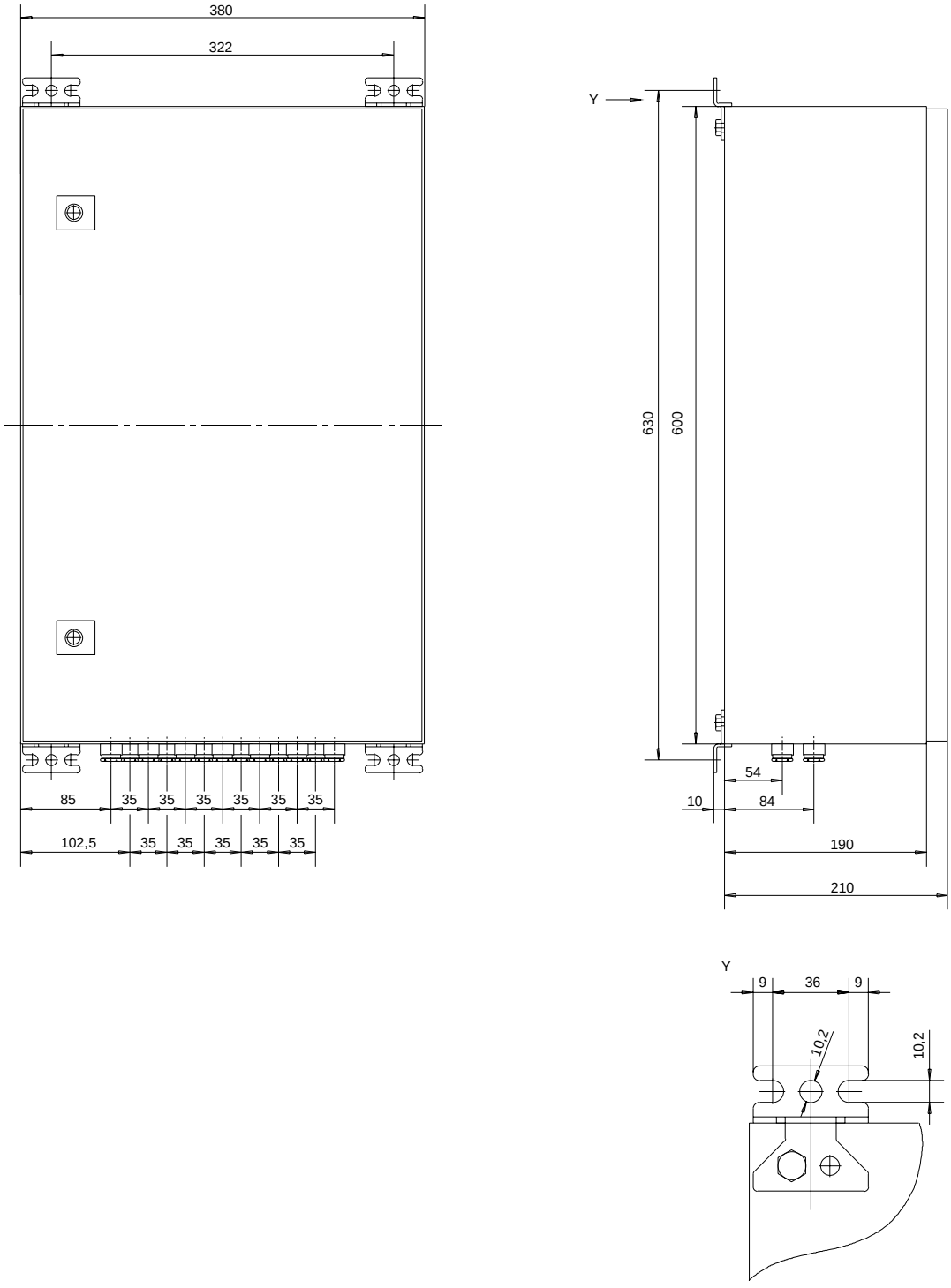

Figure 5: Measurement of Power Supply in Housing

7.2 Build-in Power Supply

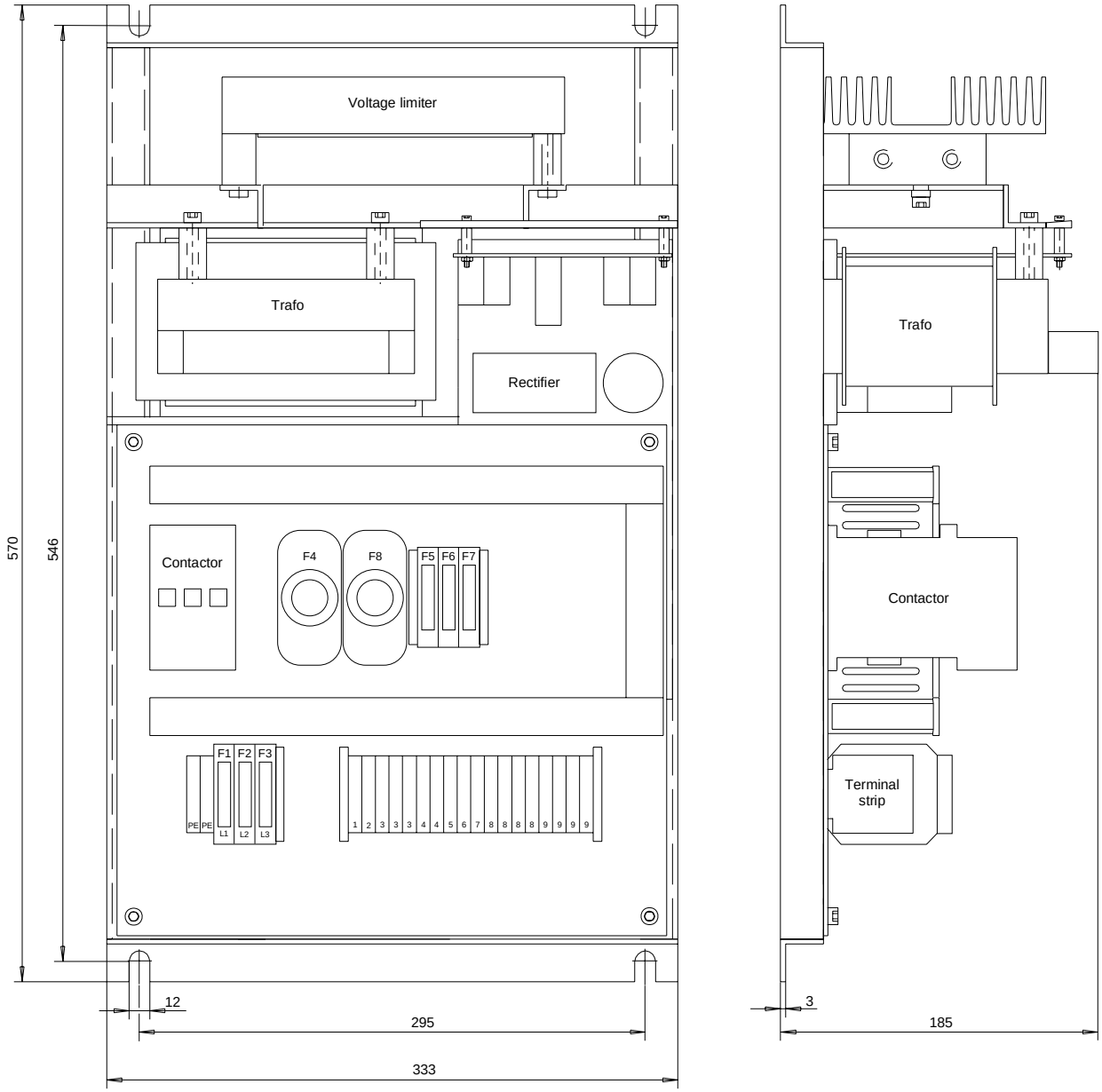

Figure 6: Measurements of Build-in Power Supply

8 Calibration

The device has been calibrated in the factory; there is neither need for further calibration nor should any such adjustment be carried out.

9 Ordering Specification

The ordering designation is:

NG 09

Furthermore, it is requested to give following information:

Build-in supply	☐
in housing	☐
Connection voltage	 V

10 Order Specifications for Manuals

There is no charge for our technical manuals ordered in reasonable quantities.

Order the necessary manuals on our speed governors from your nearest

HEINZMANN location.

(Please click on “HEINZMANN location” to see the list of our subsidiaries and agents in the world).

Please include the following information:

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