



AVR - AUTOMATIC VOLTAGE REGULATORS

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AVR-AUTOMATIC VOLTAGE REGULATORS

Linz Electric has designed and realized a wide range of analog and digital Automatic Voltage Regulators suitable for all applications and characterized by a high reliability and ease of use.

Our HVR and DR series can count on a state of art technology and quality ensured by:

- Embedded protection
- Selection of highly reliable electronic components
- Strict controls and numerous tests performed at every stage of the production process

Name	Type	Sensing	SPE - E1E	E1X - E1V	SL	PRO18-22	PRO28-35-40	COMPATTO
HVR10 E	Analog	1 ph	STD	-	-	-	-	-
HVR11	Analog	1 ph	-	STD	STD	STD	-	STD
HVR30	Analog	3 ph	-	-	-	OPT	STD	-
DR11	Digital	1 ph	-	OPT	OPT	OPT	-	OPT
DR30	Digital	3 ph	-	-	-	OPT	OPT	-

HVR - Analog Regulators Series

HVR is the Analog Automatic Voltage Regulators developed by Linz Electric with all the state-of-the-art electronic components which enable the user to obtain, in reduced dimensions, all the functions required to control any type of alternator granting a voltage static error within $\pm 1\%$.

HVR series of analog voltage regulators is available with 3 different models:

- HVR-10 E single-phase sensing with adjustable protection from overload
- HVR-11 single-phase sensing. Wide stability control, adjustable protection from low voltage operation and from overload, remote potentiometer inlet
- HVR-30 three-phase sensing. Wide stability control, adjustable protection from low voltage operation and from overload. Incorporated radio filter and remote potentiometer inlet or control through an external signal.

KEY FEATURES

- Analog Electronic Design
- User Friendly thanks to multi-round trimmers that allow an accurate voltage adjustment
- AVR are designed to ensure optimal dynamic performances on all alternator models
- Multi-round trimmers to adjust many other AVR parameters
- Replaceable fuse for added safety against damage
- High Voltage Accuracy

HVR10 E

Single phase sensing Analog Automatic Voltage regulator



Technical Data

General Specifications	
Model	HVR10 E
System	Analog
Voltage Sensing	Single Phase
AVR Supply/Excitation System	Auxiliary winding
Output	Half Wave
Output Power Switching	SCR
Digital Control	N/A
Monitored parameters	N/A

HVR10 E

Electrical Features	
RSM Voltage Regulation Accuracy	N/A
Average Voltage Accuracy	± 1%
Alternator Voltage range	90V-440V
Alternator Frequency Range	40Hz-400Hz
Terminal Board	Fastons Connector Block
Reference Input Voltages	90V-440V
Supply Voltage Range	160V-250V
Supply Frequency Range	40Hz-400Hz
Thermal Drift	< 100ppm/°C
Exciter Field Resistance	5Ω-50Ω
Max. Power Dissipation	< 15W
Response Time	< 15ms
Voltage Sensing Range	± 20% (Trimmer VG)
Sustained Short Circuit	Yes
Max. Excitation Permanent Current	7Adc
Voltage Recovery Time	< 15ms
Max Field Voltage	95Vdc
Max Field Current	9Adc

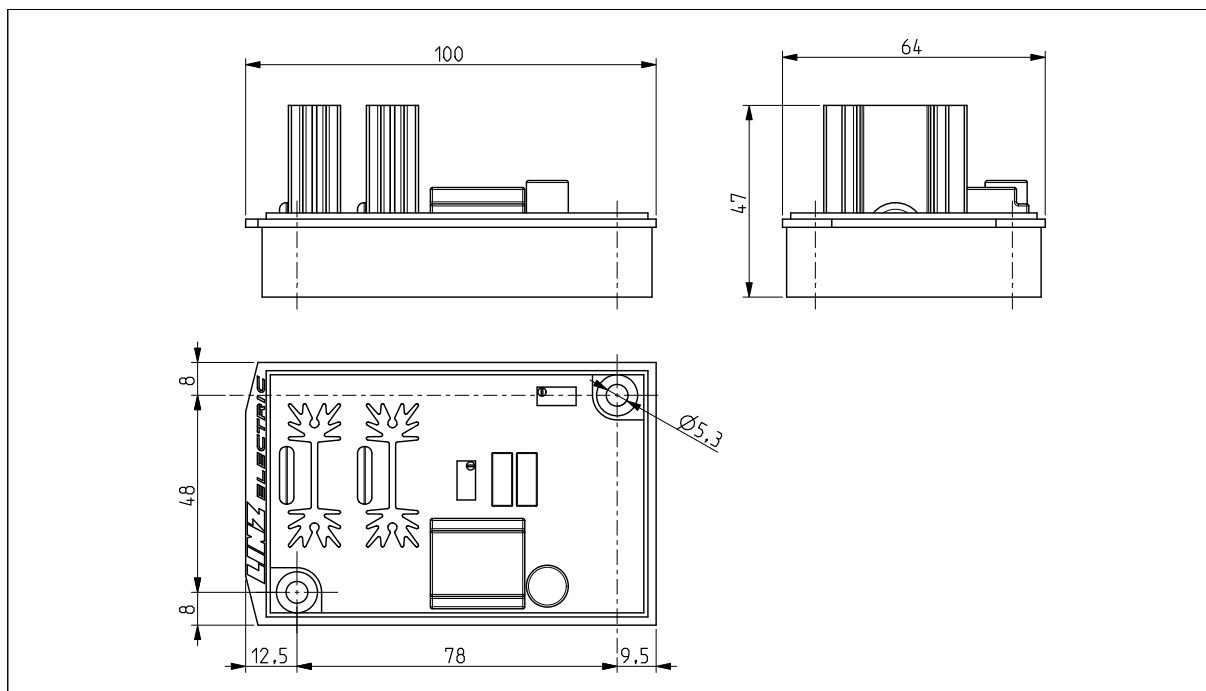
Protections and additional features	
Protections	Fuse on Cabling Connector
Under Frequency Protection	Yes. Factory Fixed Setup
Over-Excitation Protection	Yes. (Timmer OL)
Fault Status indication	No
Remote Control by Potentiometer	No
Paralleling capability	Optional

HVR10 E

Temperature, weight and dimensions

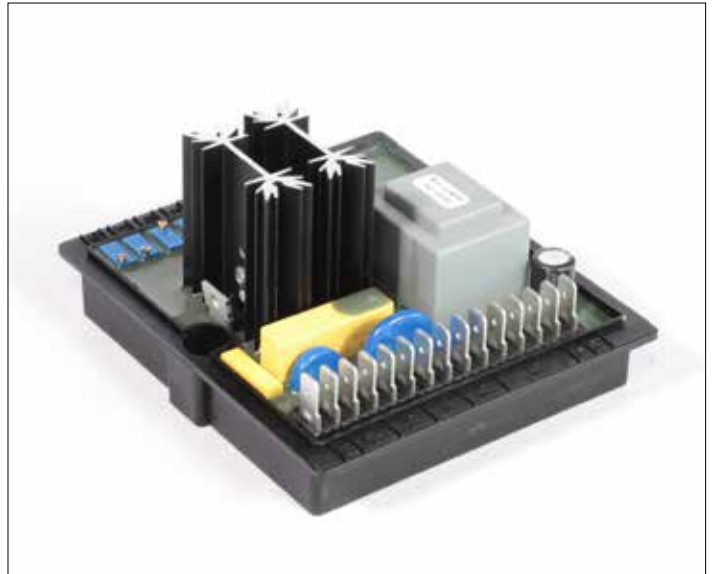
Operating Temperature	-25°C/+85°C
Storage Temperature	-40°C/+85°C
Weight	238g
Size L x W x H	100mm x 64mm x 47mm

Dimensions



HVR11

Single phase sensing Analog Automatic Voltage regulator



Technical Data

General Specifications	
Model	HVR11
System	Analog
Voltage Sensing	Single Phase
AVR Supply/Excitation System	Auxiliary winding
Output	Half Wave
Output Power Switching	SCR
Digital Control	N/A
Monitored parameters:	N/A

HVR11

Electrical Features	
RSM Voltage Regulation Accuracy	N/A
Average Voltage Accuracy	$\pm 1\%$
Alternator Voltage range	90V-440V
Alternator Frequency Range	40Hz-400Hz
Terminal Board	Fastons Connector on Board
Reference Input Voltages	90V-440V
Supply Voltage Range	(a) $110V \pm 15\%$ (b) $220V -25\%/+15\%$
Supply Frequency Range	40Hz-400Hz
Thermal Drift	$< 100\text{ppm}/^{\circ}\text{C}$
Exciter Field Resistance	$5\Omega-50\Omega$
Max. Power Dissipation	$< 20\text{W}$
Response Time	$< 15\text{ms}$
Voltage Sensing Range	$\pm 20\%$ (Trimmer VG)
Sustained Short Circuit	Yes
Max. Excitation Permanent Current	7Adc
Voltage Recovery Time	$< 15\text{ms}$ (Trimmer ST)
Max Field Voltage	95Vdc
Max Field Current	10Adc

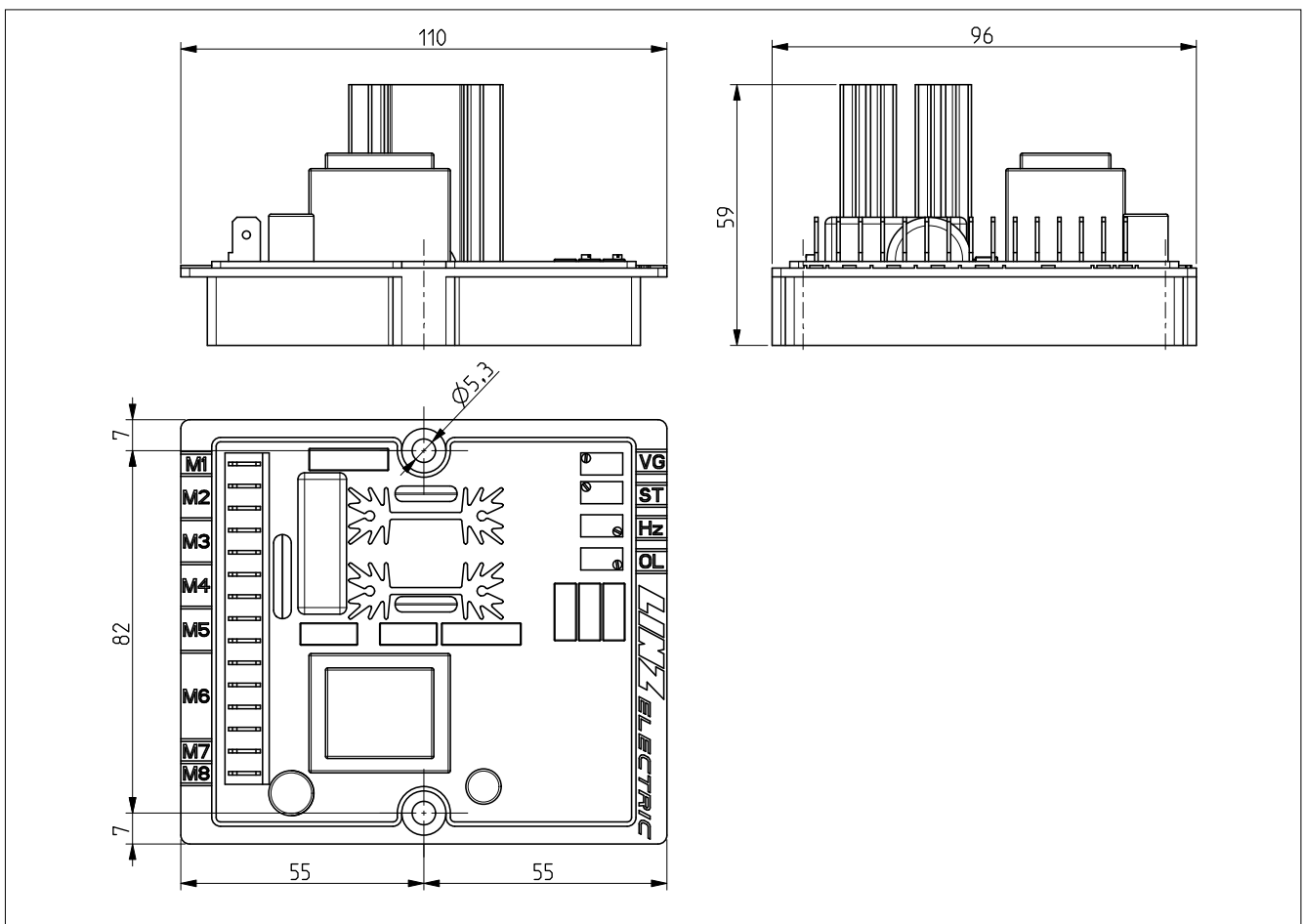
Protections and additional features	
Protections	Fuse on Cabling
Under Frequency Protection	Yes (Trimmer Hz)
Over-Excitation Protection	Yes (Trimmer OL)
Fault Status indication	No
Remote Control by Potentiometer	Yes
Remote Control by External DC Voltage	Yes
Paralleling capability	Yes

HVR11

Temperature, weight and dimensions

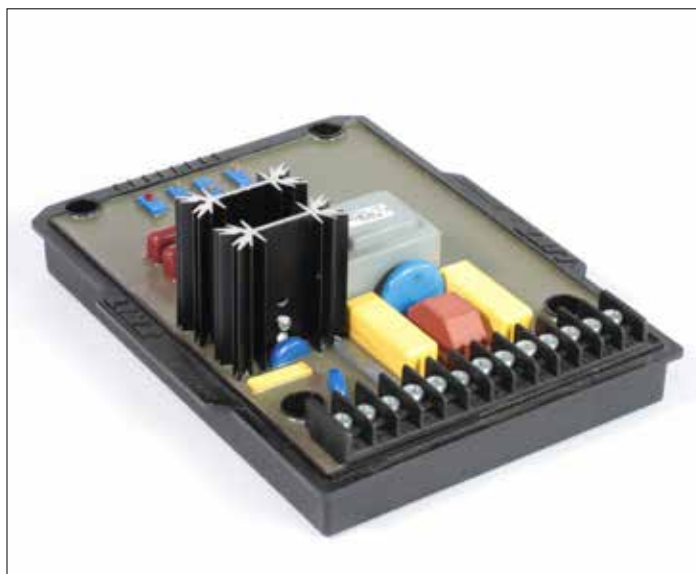
Operating Temperature	-25°C/+85°C
Storage Temperature	-40°C/+85°C
Weight	412g
Size L x W x H	110mm x 96mm x 59mm

Dimensions



HVR30

Three phase sensing Analog Automatic Voltage regulator



Technical Data

General Specifications	
Model	HVR30
System	Analog
Voltage Sensing	Three Phase
AVR Supply/Excitation System	Auxiliary winding
Output	Half Wave
Output Power Switching	SCR
Digital Control	N/A
Monitored parameters:	N/A

HVR30

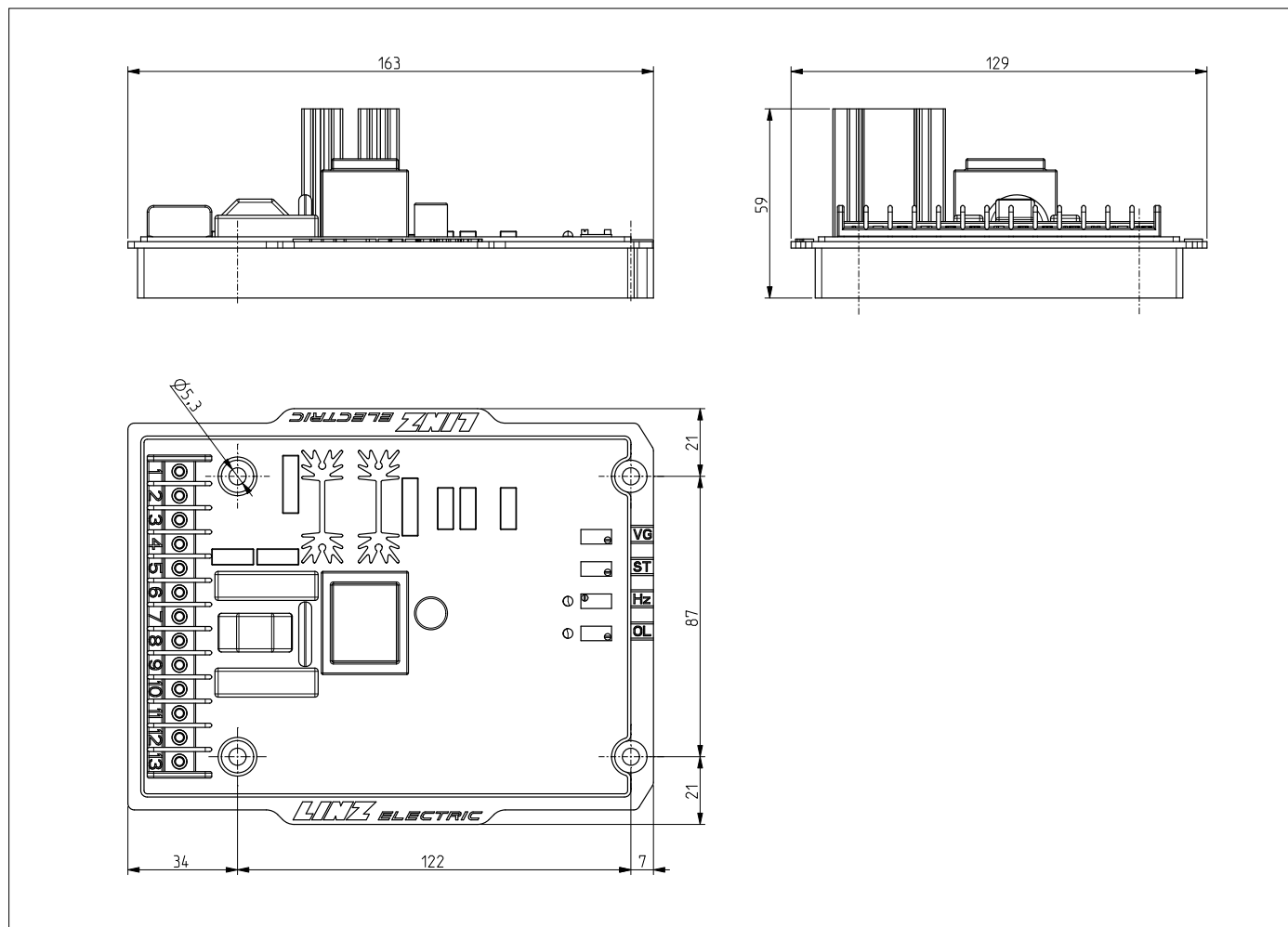
Electrical Features	
RSM Voltage Regulation Accuracy	N/A
Average Voltage Accuracy	$\pm 1\%$
Alternator Voltage range	90V-440V
Alternator Frequency Range	40Hz-400Hz
Terminal Board	13 Screws
Reference Input Voltages	90V-440V
Supply Voltage Range	(a) $110V \pm 15\%$ (b) $220V -25\%/+15\%$
Supply Frequency Range	40Hz-400Hz
Thermal Drift	$< 100\text{ppm}/^{\circ}\text{C}$
Exciter Field Resistance	5Ω - 50Ω
Max. Power Dissipation	$< 22\text{W}$
Response Time	$< 15\text{ms}$
Voltage Sensing Range	$\pm 20\%$ (Trimmer VG)
Sustained Short Circuit	Yes
Max. Excitation Permanent Current	7Adc
Voltage Recovery Time	$< 15\text{ms}$ (Trimmer ST)
Max Field Voltage	95Vdc
Max Field Current	10Adc

Protections and additional features	
Protections	Fuse on Cabling
Under Frequency Protection	Yes (Trimmer Hz + Red Led)
Over-Excitation Protection	Yes (Trimmer OL + Yellow Led)
Fault Status indication	No
Remote Control by Potentiometer	Yes
Remote Control by External DC Voltage	Yes
Paralleling capability	Yes

HVR30

Temperature, weight and dimensions	
Operating Temperature	-25°C/+85°C
Storage Temperature	-40°C/+85°C
Weight	660g
Size L x W x H	163mm x 129mm x 59mm

Dimensions



DR - Digital Regulators Series

DR is the last generation of Digital Automatic Voltage Regulators developed by Linz Electric with all latest technologies offered by the Electronic Industry.

DR are Full-Wave digital regulators, totally programmable and easily interfaceable, supplied by the alternator auxiliary winding which is a standard feature on all Linz Electric brushless self-excited models.

DR regulators present high reliability thanks to:

- Output power stage controlled by IGBTs, which are durable and robust components, with high switching capacity
- Internal regulator power supply without the use of electrolytic capacitors

KEY FEATURES

- Digital electronic design allowing higher customisation
- Easy to use and interface thanks to a communication cable between PC and AVR
- Flexible configuration for all types of alternators
- Higher dynamic performance thanks a full wave regulation (DR30)
- High ceiling capacity (DR30)
- Increased electrical motor starting capacity (DR30)
- Protections with LED indicators: operation, alarm states, and protections
- Compactness and Ease of replacement of the fuse
- Voltage adjustment: by DIP-Switch, and Trimmer (DR30)
- High Voltage Accuracy on Voltage RMS value
- Suitable for a wide range of alternators
- Quick setting thanks to the build-in DIP-Switch (DR30)
- Remote Adjustment by potentiometer or by a control voltage
- The response of the regulator allows excellent alternator operation even with distorting loads

DR11

Single Phase Sensing Digital Automatic Voltage Regulator



Technical Data

General Specifications	
Model	DR11
System	Digital
Voltage Sensing	Single Phase
AVR Supply/Excitation System	Auxiliary winding
Output	Half Wave
Output Power Switching	SCR
Digital Control	PID
Monitored parameters:	Frequency, Output Voltage, Stability, Excitation Voltage.

DR11

Electrical Features	
RSM Voltage Regulation Accuracy	+/- 0.5%
Average Voltage Accuracy	+/- 0.5%
Alternator Voltage range	80V-480V
Alternator Frequency Range	40Hz-400Hz
Terminal Board	Fastons, easy to connect
Reference Input Voltages	380V-480V / 200V-280V / 100V-140V
Supply Voltage Range	80V-280V
Supply Frequency Range	40Hz-400Hz
Thermal Drip OR Thermal Drift	100ppm/°C
Exciter Field Resistance	4Ω-60Ω
Max. Power Dissipation	< 20W
Response Time	< 10ms
Voltage Sensing Range	± 10% (Programmable)
Sustained Short Circuit	Yes (I ² x t)
Max. Excitation Permanent Current	8Adc
Voltage recovery Time	< 10ms
Max Field Voltage	130Vdc
Max Field Current	10Adc

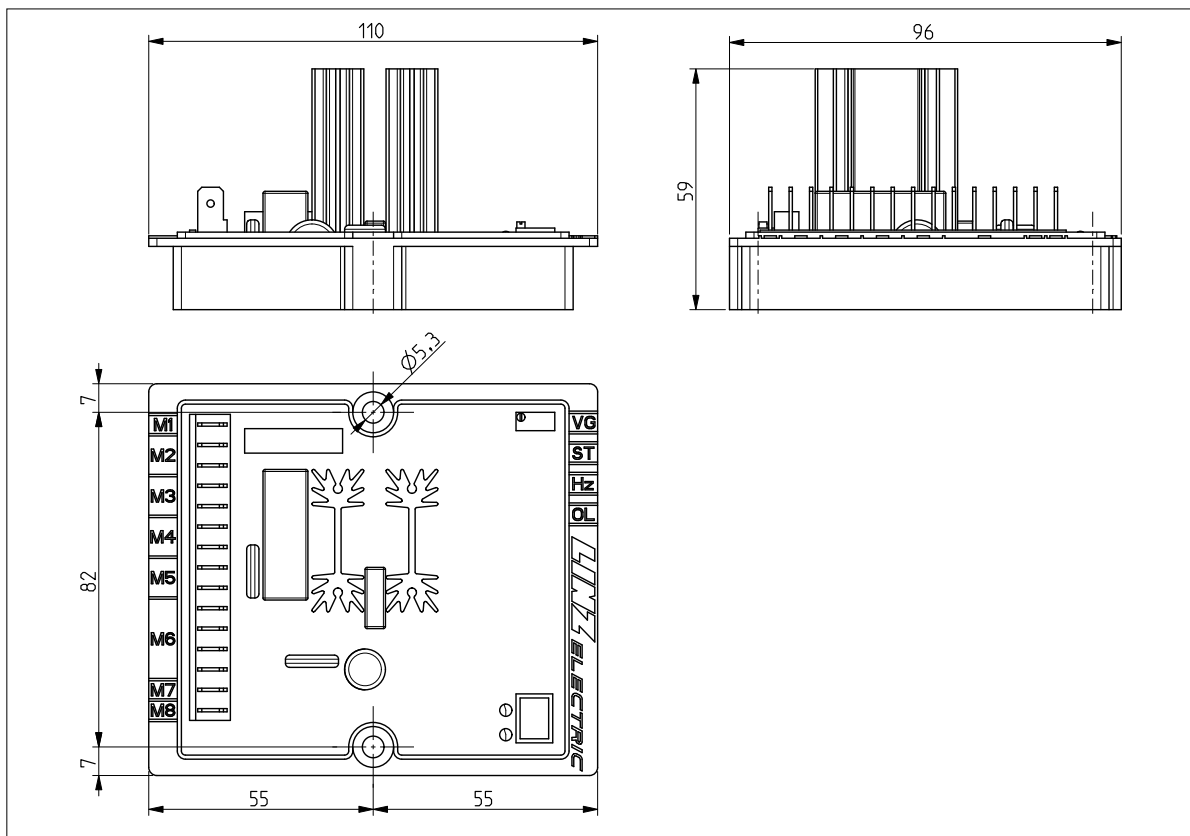
Protections and additional features	
Protections	Under Frequency Over-excitation On board Fuse Over Voltage
Under Frequency Protection	47 Hz preset for 50 Hz and 57 Hz preset for 60Hz
Over-Excitation Protection	Yes
Fault Status indication	LED for Alarm states, and Protections
Remote Control by Potentiometer	>500Ω/0.25W
Remote Control by External 0-5Vdc	Yes
Paralleling capability	Yes

DR11

Interfaces and configuration	
USB	Option with connector
Configuration device	PC

Temperature, weight and dimensions	
Operating Temperature	-25°C/+85°C
Storage Temperature	-40°C/+85°C
Weight	248gr
Size L x W x H	110mm x 96mm x 59mm

Dimensions



DR30

Three Phase Sensing Digital Automatic Voltage Regulator

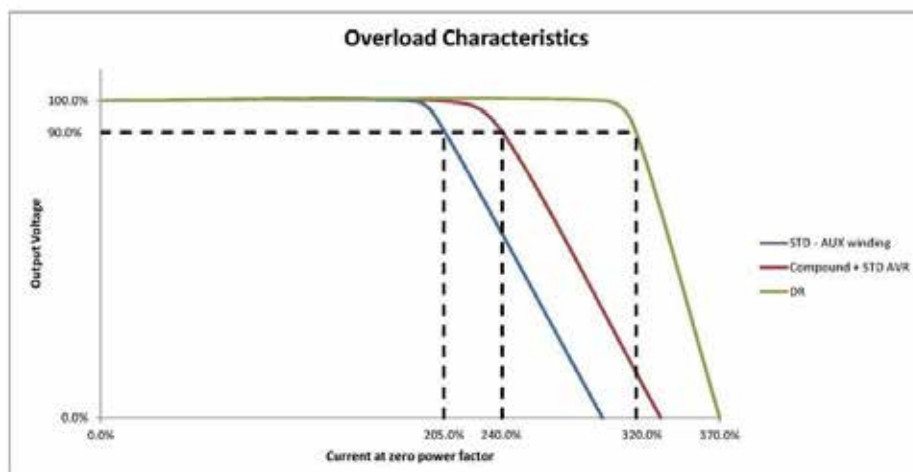


Technical Data

General Specifications	
Model	DR30
System	Digital
Voltage Sensing	Three Phase
AVR Supply/Excitation System	Auxiliary winding
Output	Full Wave
Output Power Switching	IGBT
Digital Control	PID
Monitored parameters:	Frequency, Output Voltage, Stability, Excitation Voltage, Output Current (with Ext. T.A)

Overload Characteristics

DR30 regulators present stunning over-excitation capacity, being able to keep constant output voltage for peaks up to 320% alternator nominal power



DR30

Electrical Features	
Radio Interference Suppressor	Yes
RSM Voltage Regulation Accuracy	+/- 0.25%*
Average Voltage Accuracy	+/- 0.25%*
Overload capacity	320%
Alternator Voltage range	80V-480V
Alternator Frequency Range	40Hz-400Hz
Terminal Board	13 screws
Reference Input Voltages	380V-480V / 200V-280V / 100V-140V
Supply Voltage Range	80V-280V
Supply Frequency Range	40Hz-400Hz
Thermal Drift	100ppm/°C
Exciter Field Resistance	4Ω-60Ω
Power Dissipation	< 20W
Response Time	< 10ms
Voltage Sensing Range	± 10% (Programmable)
Sustained Short Circuit	Yes (I ² x t)
Max. Excitation Permanent Current	8Adc
Voltage recovery Time	< 10ms
Max Field Voltage	250Vdc
Max Field Current	10Adc

* on the average voltage connected to the sensing input with linear load and frequency ±4%

Protections and additional features	
Protections	Under Frequency Over-excitation On board Fuse
Under Frequency Protection	47 Hz preset for 50 Hz and 57 Hz preset for 60Hz
Over-Excitation Protection	Yes
Fault Status indication	Alarm states, and Protections by Led
Remote Control by Potentiometer	>500Ω/0.25W
Remote Control by External 0-5Vdc	Yes
Paralleling capability	Yes

DR30

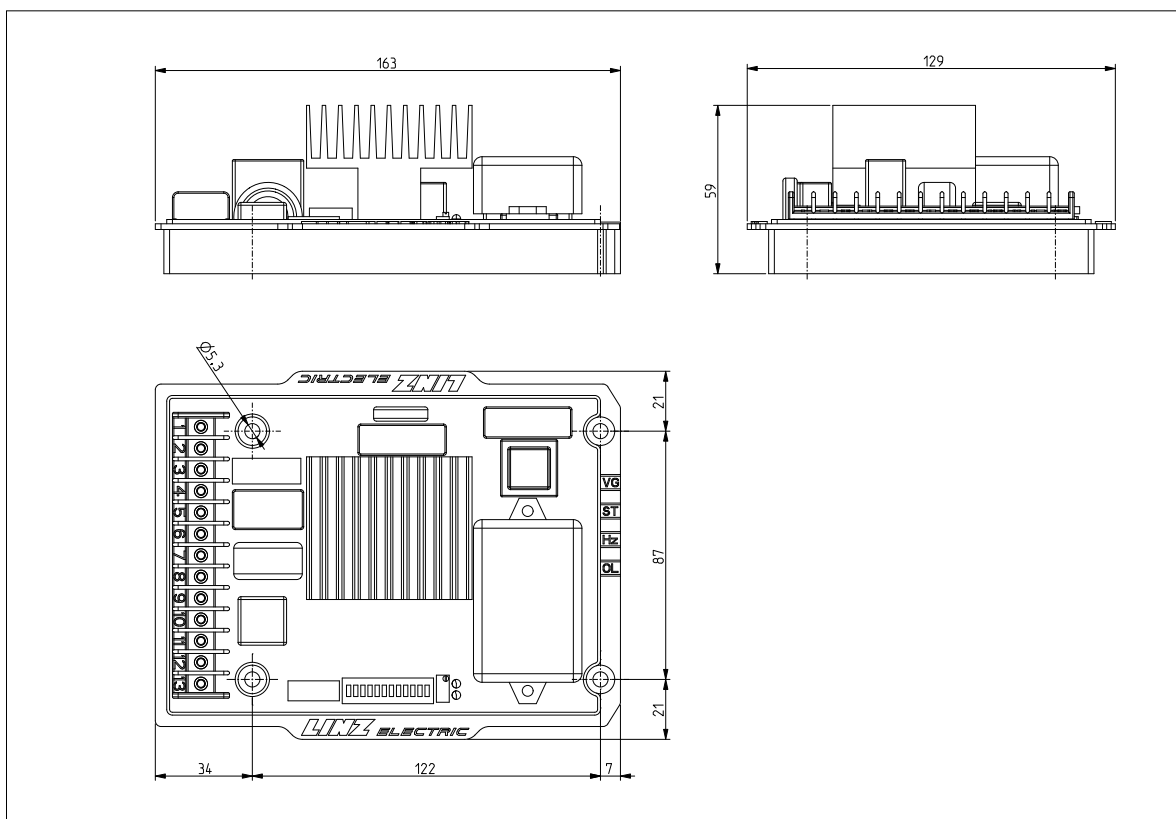
Interfaces and configuration

NFC	Standard
Bluetooth	Optional Module on Board
CAN BUS	Optional Module on Board
USB	Optional Module with Connector
Configuration device	Smartphone, PC

Temperature, weight and dimensions

Operating Temperature	-25°C/+85°C
Storage Temperature	-40°C/+85°C
Weight	644gr
Size L x W x H	163mm x 129mm x 59mm

Dimensions



AVR- AUTOMATIC VOLTAGE REGULATORS_2025

The features and specifications herein stated are in no way binding for LINZ ELECTRIC S.p.A. LINZ ELECTRIC S.p.A. is free to modify the product at any time without previous notice.



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