OPERATING MANUAL

BRS 025, BRS 035, BRS 050, BRS 075, BRS 100, BRS 150

BRS 02505 / BRS 02512 / BRS 02524

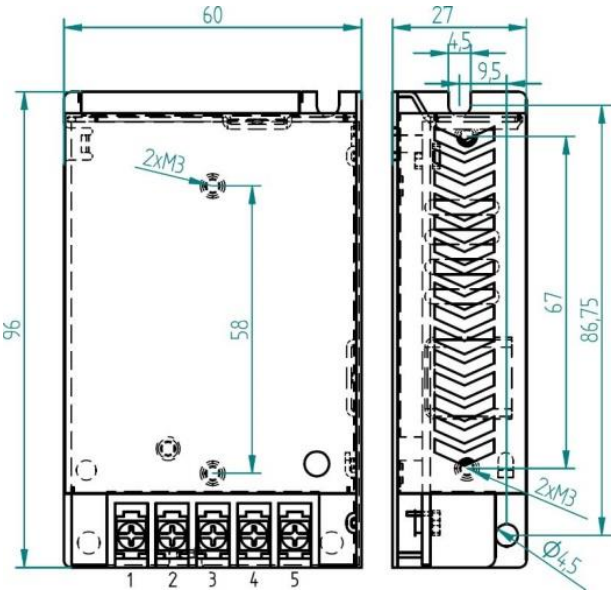
1. Introduction:

The user manual applies to stabilized switching-mode power supplies intended for use in industrial automation systems. The BRS series power supplies are compact devices designed for installation inside industrial equipment enclosures. They feature an economical, low-profile construction and high energy efficiency, making them an ideal solution where installation space is limited. They are equipped with a wide range of protection functions, including Over-Power Protection (OPP), Over-Voltage Protection (OVP), and Short-Circuit Protection (SCP). These protective features effectively safeguard both the power supply and the connected equipment, ensuring safe and stable operation of the entire system. A built-in potentiometer allows precise adjustment of the output voltage, while the LED indicator provides quick and clear information about the power status.

2. Features:

- **Over-load protection:** The power supply is equipped with a hiccup-mode protection scheme, which protects the unit against output overload and short-circuit conditions. If the permissible load is exceeded, the DC output voltage is periodically switched off and on. Normal operation resumes automatically once the fault is cleared or the overload condition ceases.
- **Over-voltage protection:** The power supply is equipped with an Over-Voltage Protection (OVP) function that protects both the unit and the connected equipment from damage caused by excessive output voltage. If an over-voltage condition is detected, the DC output is automatically disconnected to prevent potential failures. After the OVP is triggered, operation is automatically restored once the fault condition has been removed.
- **Output voltage adjustment potentiometer:** The power supply includes a user-accessible potentiometer, enabling precise adjustment of the output voltage to match the requirements of the connected equipment.

3. Mechanical specifications:



CONNECTOR CONFIGURATION

CONNECTOR NO.	DESCRIPTION
1	AC/L
2	AC/N
3	FG/PE
4	DC V-
5	DC V+

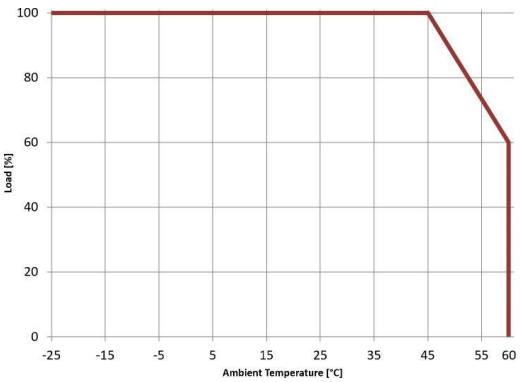


Figure 1. Derating curve of rated output load as a function of ambient temperature.

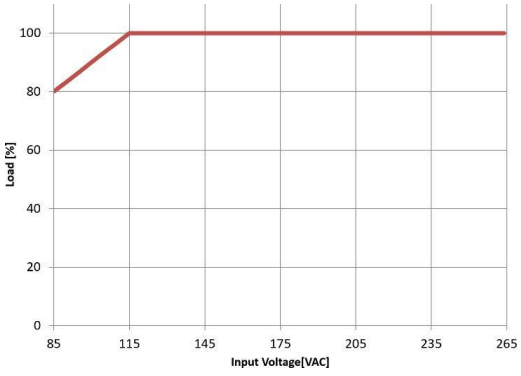


Figure 2. Derating curve of rated output load as a function of input voltage.

4. Installation:

- A protective device (such as a cartridge fuse or miniature circuit-breaker) and readily accessible isolating means to disconnect the power must be provided.
- Before connecting the power supply, ensure that the main power switch to which it will be connected is in the OFF position and properly secured against accidental re-activation. Failure to comply may result in contact with live components, which may cause death or serious injury.
- Connect the device to the mains supply. If flexible cables are used, ferrules must be fitted to ensure correct termination at the terminals. For flexible conductors, the cross-sectional area of the supply cable must be at least 0.5 mm^2.
- Maintain a sufficient insulation clearance between the mounting screws and the internal components of the power supply.
- Ensure that the mounting position of the unit allows optimal cooling performance and that the ventilation openings remain unobstructed.

5. Safety precautions:

- **Do not remove** the metal housing of the power supply while the mains power is connected.
- **Do not touch** the device with wet hands.
- **Do not touch** the housing when the device is fully loaded; high surface temperature may cause burns.
- **Do not use** the device if any metal objects, water or other foreign bodies have entered it.
- **Do not use** the device if it has been damaged, as the voltage-regulating circuitry may have failed or may be operating outside the normal control parameters. Failure to comply may result in high voltage and subsequent damage to the connected load.
- **No objects** may touch the output terminals of the device.
- If inspection of the devices interior is necessary, allow it to cool completely. In case of a fault, the high temperatures of certain components may cause burns.
- **Do not block** the air-intake vent.

6. Specyfications:

	BRS 02505	**BRS 02512**	**BRS 02524**
Voltage Range	100-240VAC; 140-340VDC		
Frequency	47-63Hz~		
Full Load AC Current	0,6A/115VAC; 0,4A/230VAC		
Inrush Current, cold start 25°C*	60A/115V; 44A/230VAC		
Efficiency	73%	80%	82%

Output

Rated DC Voltage	5V	12V	24V
Voltage Adjust Range	4,75-5,5V	10,8-13,2V	21,6-26,4V
Rated Current	4A	2A	1,05A
Rated Power	20W	24W	25,2W
Maksymalny prąd chwilowy	9,376A	4,7A	2,4A
Ripple & Noise (peak to peak)*	≤ 120mV		
Voltage tolerance	≤ 1%		
Line regulation	≤ 0,5%		
Load Regulation (10% - 100%)	≤ 1%		
Setup, Rise Time (Full Load)	2000ms, 30ms/115VAC; 1000ms, 30ms/230VAC (pełne obciążenie)		
Hold-up Time (Full Load)	> 30ms/115VAC; > 40ms/230VAC (pełne obciążenie)		
Parallel Operation	Not possible		

Protection

Over load/Over Current	The power supply may operate at short-term loads in the range of 120 % to 150 % of rated power.		
	Type of protection: Hiccup-mode protection, recovers automatically after fault condition is removed.		
Over Output Voltage	5,6-6,8VDC	13,8-16,2VDC	27,6-32,4VDC
	Type of protection: Hiccup-mode protection, recovers automatically after fault condition is removed.		

Safety & EMC

Safety Standards	EN IEC 62368-1
Withstand Voltage	I/P-O/P 3kVAC; I/P-F/G 1,5kVAC; O/P-F/G 0,5kVAC
Insulation Resistance	I/P-O/P, I/P-F/G, O/P-F/G 100MOhm/500VDC/25°C/70%RH
EMI Radiation & Conduction	Compliance with EN55032(CISPR32)
Harmonics Current	Compliance with EN61000-3-2, -3
EMC Immunity	Compliance with EN61000-4-2, -3, -4, -5, -6, -8, -11

Environment

Working Temperature	-25°C ~ +60°C
Derating Temperature above 45°C	See: Derating curve.
Working Humidity	20-90% RH, non-condensing.
Storage Temperature & Humidity	from -40°C to +85°C, 10-95% RH, non-condensing.
Vibration	10-500Hz, 2G 10min/1cycle, 60min each along X, Y, Z axes.

General

Case Material	Electro-galvanized steel and aluminium enclosure.
Case Protection	IP 20
Weight	0,136kg
Dimensions	96 × 60 × 27mm
Mounting	Rear or side mounting.
Connection	Screw-terminal connectors with single output terminal.

Note

1. *Unless otherwise specified, all technical parameters are measured at an input voltage of 230 VAC, rated load and an ambient temperature of 25 °C.*
2. *Method for measuring ripple and noise: a twisted-pair cable of approximately 30 cm in length is used, with capacitors of 0.1 µF and 47 µF connected in parallel at the output terminals; measurement is carried out with a bandwidth of 20 MHz.*
3. *Output voltage accuracy includes: setting error, line regulation and load regulation.*
4. *Line regulation test: performed by measuring changes in the output voltage when the input voltage is varied from minimum to maximum, while maintaining rated load.*
5. *Load regulation test: performed by varying the load from 0% to 100% of the rated value.*
6. *Start-up time is specified for a cold start. Frequent power-on/power-off cycles may prolong the start-up time.*
7. *The power supply is intended for safe use only in areas up to 2000 meters above sea level and in non-tropical climate conditions, in accordance with the requirements of the GB4943.1 standard.*

7. Additional information:

The latest version of the user manual is available on the website:
https://www.brevetrafo.com/catalog/power-supplies/brs.html

(scan the QR code below to go directly to the website)

BRS 03505 / BRS 03512 / BRS 03524

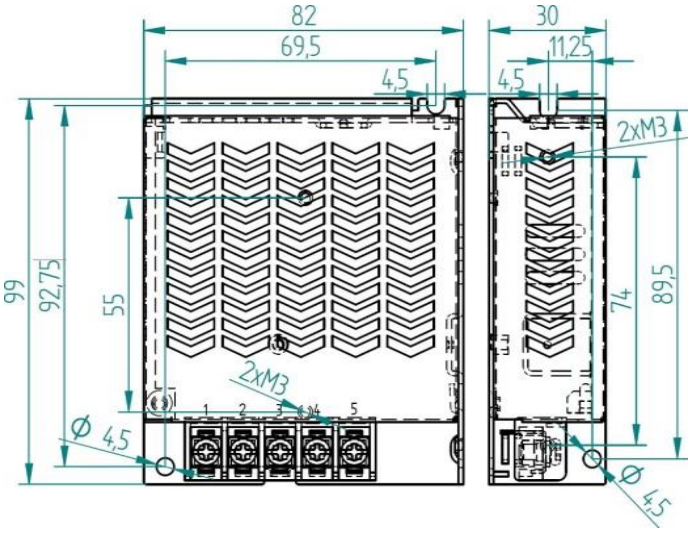
1. Introduction:

The user manual applies to stabilized switching-mode power supplies intended for use in industrial automation systems. The BRS series power supplies are compact devices designed for installation inside industrial equipment enclosures. They feature an economical, low-profile construction and high energy efficiency, making them an ideal solution where installation space is limited. They are equipped with a wide range of protection functions, including Over-Power Protection (OPP), Over-Voltage Protection (OVP), and Short-Circuit Protection (SCP). These protective features effectively safeguard both the power supply and the connected equipment, ensuring safe and stable operation of the entire system. A built-in potentiometer allows precise adjustment of the output voltage, while the LED indicator provides quick and clear information about the power status.

2. Features:

- **Over-load protection:** The power supply is equipped with a hiccup-mode protection scheme, which protects the unit against output overload and short-circuit conditions. If the permissible load is exceeded, the DC output voltage is periodically switched off and on. Normal operation resumes automatically once the fault is cleared or the overload condition ceases.
- **Over-voltage protection:** The power supply is equipped with an Over-Voltage Protection (OVP) function that protects both the unit and the connected equipment from damage caused by excessive output voltage. If an over-voltage condition is detected, the DC output is automatically disconnected to prevent potential failures. After the OVP is triggered, operation is automatically restored once the fault condition has been removed.
- **Output voltage adjustment potentiometer:** The power supply includes a user-accessible potentiometer, enabling precise adjustment of the output voltage to match the requirements of the connected equipment.

3. Mechanical specifications:



CONNECTOR CONFIGURATION:

CONNECTOR NO.	DESCRIPTION
1	AC/L
2	AC/N
3	FG/PE
4	DC V-
5	DC V+

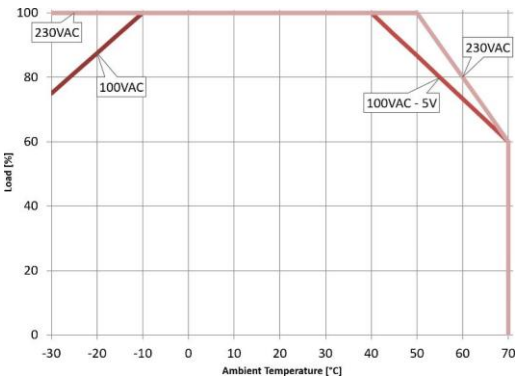


Figure 1. Derating curve of rated output load as a function of ambient temperature.

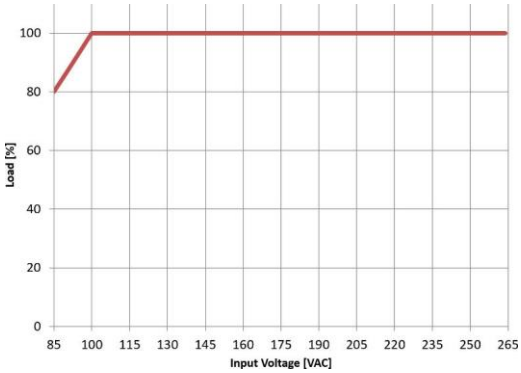


Figure 2. Derating curve of rated output load as a function of input voltage.

4. Installation:

- A protective device (such as a cartridge fuse or miniature circuit-breaker) and readily accessible isolating means to disconnect the power must be provided.
- Before connecting the power supply, ensure that the main power switch to which it will be connected is in the OFF position and properly secured against accidental re-activation. Failure to comply may result in contact with live components, which may cause death or serious injury.
- Connect the device to the mains supply. If flexible cables are used, ferrules must be fitted to ensure correct termination at the terminals. For flexible conductors, the cross-sectional area of the supply cable must be at least 0.5 mm^2.
- Maintain a sufficient insulation clearance between the mounting screws and the internal components of the power supply.
- Ensure that the mounting position of the unit allows optimal cooling performance and that the ventilation openings remain unobstructed.

5. Safety precautions:

- **Do not remove** the metal housing of the power supply while the mains power is connected.
- **Do not touch** the device with wet hands.
- **Do not touch** the housing when the device is fully loaded; high surface temperature may cause burns.
- **Do not use** the device if any metal objects, water or other foreign bodies have entered it.
- **Do not use** the device if it has been damaged, as the voltage-regulating circuitry may have failed or may be operating outside the normal control parameters. Failure to comply may result in high voltage and subsequent damage to the connected load.
- **No objects** may touch the output terminals of the device.
- If inspection of the devices interior is necessary, allow it to cool completely. In case of a fault, the high temperatures of certain components may cause burns.
- **Do not block** the air-intake vent.

6. Specyfications:

	BRS 03505	**BRS 03512**	**BRS 03524**
Voltage Range	100-240VAC; 140-340VDC		
Frequency	47-63Hz~		
Full Load AC Current	0,7A/115VAC; 0,56A/230VAC		
Leakage current	< 2mA/230VAC		
Inrush Current, cold start 25°C*	60A/115V; 45A/230VAC		
Efficiency	83%	86%	88%

Output

Rated DC Voltage	5V	12V	24V
Voltage Adjust Range	4,5-5,5V	10,2-13,8V	21,6-26,4V
Rated Current	7A	3A	1,5A
Rated Power	35W	36W	36W
Ripple & Noise (peak to peak)*	≤ 80mV	≤ 120mV	≤ 150mV
Voltage tolerance	≤ 2%	≤ 1%	
Line regulation	≤ 0,5%		
Load Regulation (10% - 100%)	≤ 1%	≤ 0,5%	
Setup, Rise Time (Full Load)	2000ms, 30ms/115VAC; 1000ms, 30ms/230VAC (Full Load)		
Hold-up Time (Full Load)	> 16ms/115VAC; > 20ms/230VAC (Full Load)		
Parallel Operation	Not possible		

Protection

Over load/Over Current	The power supply may operate at short-term loads in the range of 110 % to 150 % of rated power.		
	Type of protection: Hiccup-mode protection, recovers automatically after fault condition is removed.		
Over Output Voltage	5,9-7,3VDC	5,9-7,3VDC	5,9-7,3VDC
	Type of protection: Hiccup-mode protection, recovers automatically after fault condition is removed.		

Safety & EMC

Safety Standards	EN IEC 62368-1
Withstand Voltage	I/P-O/P 3kVAC; I/P-F/G 1,5kVAC; O/P-F/G 0,5kVAC
Insulation Resistance	I/P-O/P, I/P-F/G, O/P-F/G 100MOhm/500VDC/25°C/70%RH
EMI Radiation & Conduction	Compliance with EN55032(CISPR32)
Harmonics Current	Compliance with EN61000-3-2, -3
EMC Immunity	Compliance with EN61000-4-2, -3, -4, -5, -6, -8, -11

Environment

Working Temperature	-30°C ~ +70°C
Derating Temperature above 40°C	See: Derating curve.
Working Humidity	20-90% RH, non-condensing.
Storage Temperature Humidity	from -40°C to +85°C, 10-95% RH, non-condensing.
Vibration	10-500Hz, 2G 10min/1cycle, 60min each along X, Y, Z axes.

General

Case Material	Electro-galvanized steel and aluminium enclosure.
Case Protection	IP 20
Weight	0,24kg
Dimensions	99 × 82 × 30mm
Mounting	Rear or side mounting.
Connection	Screw-terminal connectors with single output terminal.

Note

1. *Unless otherwise specified, all technical parameters are measured at an input voltage of 230 VAC, rated load and an ambient temperature of 25°C.*
2. *Method for measuring ripple and noise: a twisted-pair cable of approximately 30 cm in length is used, with capacitors of 0.1 µF and 47 µF connected in parallel at the output terminals; measurement is carried out with a bandwidth of 20 MHz.*
3. *Output voltage accuracy includes: setting error, line regulation and load regulation.*
4. *Line regulation test: performed by measuring changes in the output voltage when the input voltage is varied from minimum to maximum, while maintaining rated load.*
5. *Load regulation test: performed by varying the load from 0% to 100% of the rated value.*
6. *Start-up time is specified for a cold start. Frequent power-on/power-off cycles may prolong the start-up time.*
7. *The power supply is intended for safe use only in areas up to 2000 meters above sea level and in non-tropical climate conditions, in accordance with the requirements of the GB4943.1 standard.*
8. *If the load of the unit drops below 50% of its rated value, the power supply switches to burst-mode operation to reduce switching losses. In this mode, the output ripple voltage may exceed the level stated in the specifications.*

7. Additional information:

The latest version of the user manual is available on the website:
https://www.brevetrafo.com/catalog/power-supplies/brs.html

(scan the QR code below to go directly to the website)

BRS 05005 / BRS 05012 / BRS 05024

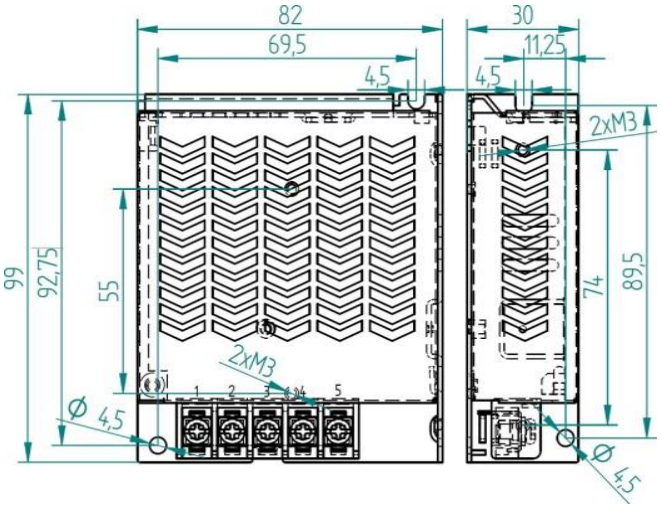
1. Introduction:

The user manual applies to stabilized switching-mode power supplies intended for use in industrial automation systems. The BRS series power supplies are compact devices designed for installation inside industrial equipment enclosures. They feature an economical, low-profile construction and high energy efficiency, making them an ideal solution where installation space is limited. They are equipped with a wide range of protection functions, including Over-Power Protection (OPP), Over-Voltage Protection (OVP), and Short-Circuit Protection (SCP). These protective features effectively safeguard both the power supply and the connected equipment, ensuring safe and stable operation of the entire system. A built-in potentiometer allows precise adjustment of the output voltage, while the LED indicator provides quick and clear information about the power status.

2. Features:

- **Over-load protection:** The power supply is equipped with a hiccup-mode protection scheme, which protects the unit against output overload and short-circuit conditions. If the permissible load is exceeded, the DC output voltage is periodically switched off and on. Normal operation resumes automatically once the fault is cleared or the overload condition ceases.
- **Over-voltage protection:** The power supply is equipped with an Over-Voltage Protection (OVP) function that protects both the unit and the connected equipment from damage caused by excessive output voltage. If an over-voltage condition is detected, the DC output is automatically disconnected to prevent potential failures. After the OVP is triggered, operation is automatically restored once the fault condition has been removed.
- **Output voltage adjustment potentiometer:** The power supply includes a user-accessible potentiometer, enabling precise adjustment of the output voltage to match the requirements of the connected equipment.

3. Mechanical specifications:



CONNECTOR CONFIGURATION:					
CONNECTOR NO.	**1**	**2**	**3**	**4**	**5**
DESCRIPTION	AC/L	AC/N	FG/PE	DC V-	DC V+

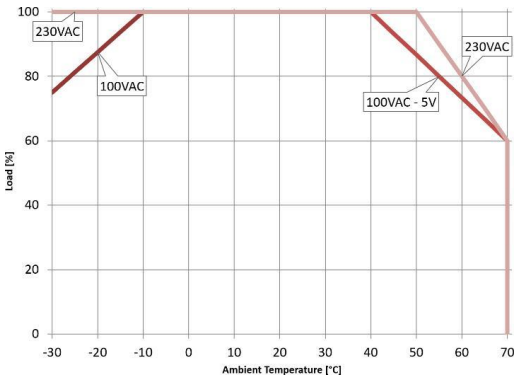


Figure 1. Derating curve of rated output load as a function of ambient temperature.

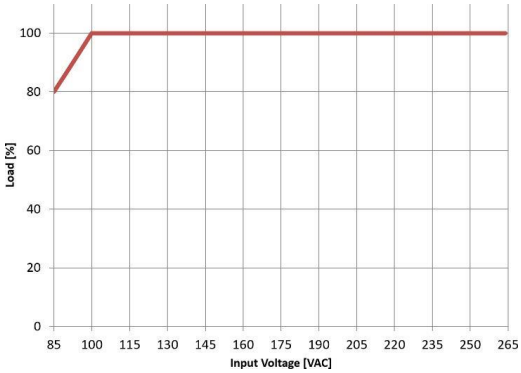


Figure 2. Derating curve of rated output load as a function of input voltage.

4. Installation:

- A protective device (such as a cartridge fuse or miniature circuit-breaker) and readily accessible isolating means to disconnect the power must be provided.
- Before connecting the power supply, ensure that the main power switch to which it will be connected is in the OFF position and properly secured against accidental re-activation. Failure to comply may result in contact with live components, which may cause death or serious injury.
- Connect the device to the mains supply. If flexible cables are used, ferrules must be fitted to ensure correct termination at the terminals. For flexible conductors, the cross-sectional area of the supply cable must be at least 0.5 mm^2.
- Maintain a sufficient insulation clearance between the mounting screws and the internal components of the power supply.
- Ensure that the mounting position of the unit allows optimal cooling performance and that the ventilation openings remain unobstructed.

5. Safety precautions:

- **Do not remove** the metal housing of the power supply while the mains power is connected.
- **Do not touch** the device with wet hands.
- **Do not touch** the housing when the device is fully loaded; high surface temperature may cause burns.
- **Do not use** the device if any metal objects, water or other foreign bodies have entered it.
- **Do not use** the device if it has been damaged, as the voltage-regulating circuitry may have failed or may be operating outside the normal control parameters. Failure to comply may result in high voltage and subsequent damage to the connected load.
- **No objects** may touch the output terminals of the device.
- If inspection of the devices interior is necessary, allow it to cool completely. In case of a fault, the high temperatures of certain components may cause burns.
- **Do not block** the air-intake vent.

6. Specyfications:

	BRS 05005	**BRS 05012**	**BRS 05024**
Voltage Range	100-240VAC; 140-340VDC		
Frequency	47-63Hz~		
Full Load AC Current	0,95A/115VAC; 0,56A/230VAC		
Leakage current	< 2mA/230VAC		
Inrush Current, cold start 25°C*	60A/115V; 45A/230VAC		
Efficiency	83%	86%	88%

Output

Rated DC Voltage	5V	12V	24V
Voltage Adjust Range	4,5-5,5V	10,2-13,8V	21,6-26,4V
Rated Current	10A	4,2A	2,2A
Rated Power	50W	50,4W	52,8W
Ripple & Noise (peak to peak)*[2]	≤ 80mV	≤ 120mV	≤ 150mV
Voltage tolerance	≤ 2%	≤ 1%	
Line regulation	≤ 0,5%		
Load Regulation (10% - 100%)	≤ 1%	≤ 0,5%	
Setup, Rise Time (Full Load)	2000ms, 30ms/115VAC; 1000ms, 30ms/230VAC		
Hold-up Time (Full Load)	> 16ms/115VAC; > 20ms/230VAC		
Parallel Operation	Not possible		

Protection

Over load/Over Current	The power supply may operate at short-term loads in the range of 110 % to 150 % of rated power.		
	Type of protection: Hiccup-mode protection, recovers automatically after fault condition is removed.		
Over Output Voltage	5,75-7,25VDC	13,8-17,4VDC	27,6-34,8VDC
	Type of protection: Hiccup-mode protection, recovers automatically after fault condition is removed.		

Safety & EMC

Safety Standards	EN IEC 62368-1
Withstand Voltage	I/P-O/P 3kVAC; I/P-F/G 1,5kVAC; O/P-F/G 0,5kVAC
Insulation Resistance	I/P-O/P, I/P-F/G, O/P-F/G 100MOhm/500VDC/25°C/70%RH
EMI Radiation & Conduction	Compliance with EN55032(CISPR32)
Harmonics Current	Compliance with EN61000-3-2, -3
EMC Immunity	Compliance with N61000-4-2, -3, -4, -5, -6, -8, -11

Environment

Working Temperature	-30°C ~ +70°C
Derating Temperature above 40°C	See: Derating curve.
Working Humidity	20-90% RH, non-condensing.
Storage Temperature Humidity	from -40°C to +85°C, 10-95% RH, non-condensing.
Vibration	10-500Hz, 5G 10min/1cycle, 60min each along X, Y, Z axes.

General

Case Material	Electro-galvanized steel and aluminium enclosure.
Case Protection	IP 20
Weight	0,24kg
Dimensions	99 × 82 × 30mm
Mounting	Rear or side mounting.
Connection	Screw-terminal connectors with single output terminal.

Note

1. *Unless otherwise specified, all technical parameters are measured at an input voltage of 230 VAC, rated load and an ambient temperature of 25 °C.*
2. *Method for measuring ripple and noise: a twisted-pair cable of approximately 30 cm in length is used, with capacitors of 0.1 µF and 47 µF connected in parallel at the output terminals; measurement is carried out with a bandwidth of 20 MHz.*
3. *Output voltage accuracy includes: setting error, line regulation and load regulation.*
4. *Line regulation test: performed by measuring changes in the output voltage when the input voltage is varied from minimum to maximum, while maintaining rated load.*
5. *Load regulation test: performed by varying the load from 0% to 100% of the rated value.*
6. *Start-up time is specified for a cold start. Frequent power-on/power-off cycles may prolong the start-up time.*
7. *For operation at altitudes above 2000 m (6500 ft) above sea level, the permissible ambient operating temperature must be reduced by 5 °C for each additional 1000 m.*

7. Additional information:

The latest version of the user manual is available on the website:
https://www.brevetrafo.com/catalog/power-supplies/brs.html

(scan the QR code below to go directly to the website)

BRS 07505 / BRS 07512 / BRS 07524

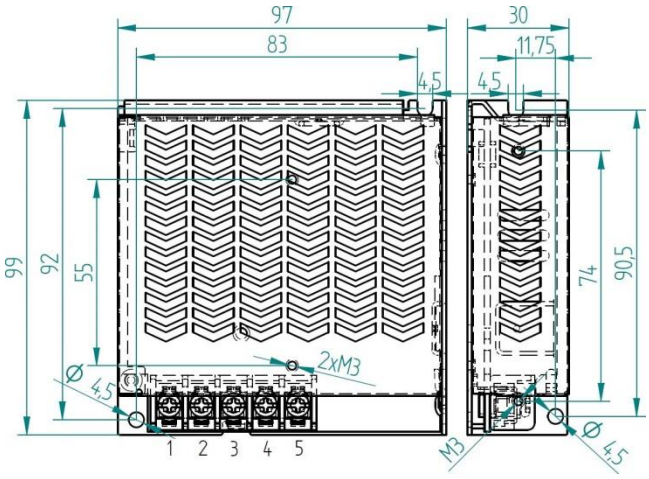
1. Introduction:

The user manual applies to stabilized switching-mode power supplies intended for use in industrial automation systems. The BRS series power supplies are compact devices designed for installation inside industrial equipment enclosures. They feature an economical, low-profile construction and high energy efficiency, making them an ideal solution where installation space is limited. They are equipped with a wide range of protection functions, including Over-Power Protection (OPP), Over-Voltage Protection (OVP), and Short-Circuit Protection (SCP). These protective features effectively safeguard both the power supply and the connected equipment, ensuring safe and stable operation of the entire system. A built-in potentiometer allows precise adjustment of the output voltage, while the LED indicator provides quick and clear information about the power status.

2. Features:

- **Over-load protection:** The power supply is equipped with a hiccup-mode protection scheme, which protects the unit against output overload and short-circuit conditions. If the permissible load is exceeded, the DC output voltage is periodically switched off and on. Normal operation resumes automatically once the fault is cleared or the overload condition ceases.
- **Over-voltage protection:** The power supply is equipped with an Over-Voltage Protection (OVP) function that protects both the unit and the connected equipment from damage caused by excessive output voltage. If an over-voltage condition is detected, the DC output is automatically disconnected to prevent potential failures. After the OVP is triggered, operation is automatically restored once the fault condition has been removed.
- **Output voltage adjustment potentiometer:** The power supply includes a user-accessible potentiometer, enabling precise adjustment of the output voltage to match the requirements of the connected equipment.

3. Mechanical specifications:



CONNECTOR CONFIGURATION:

CONNECTOR NO.	1	2	3	4	5
DESCRIPTION	AC/L	AC/N	FG/PE	DC V-	DC V+

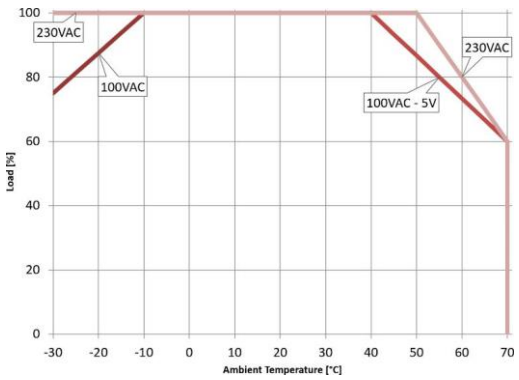


Figure 1. Derating curve of rated output load as a function of ambient temperature.

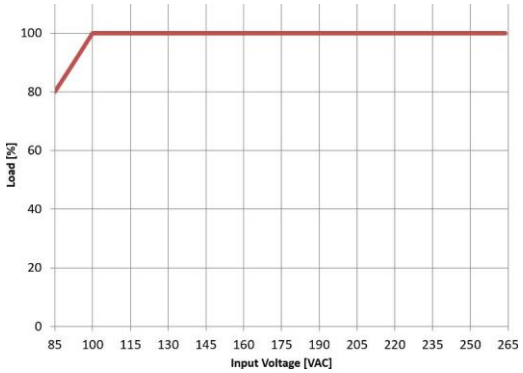


Figure 2. Derating curve of rated output load as a function of input voltage.

4. Installation:

- A protective device (such as a cartridge fuse or miniature circuit-breaker) and readily accessible isolating means to disconnect the power must be provided.
- Before connecting the power supply, ensure that the main power switch to which it will be connected is in the OFF position and properly secured against accidental re-activation. Failure to comply may result in contact with live components, which may cause death or serious injury.
- Connect the device to the mains supply. If flexible cables are used, ferrules must be fitted to ensure correct termination at the terminals. For flexible conductors, the cross-sectional area of the supply cable must be at least 0.5 mm^2.
- Maintain a sufficient insulation clearance between the mounting screws and the internal components of the power supply.
- Ensure that the mounting position of the unit allows optimal cooling performance and that the ventilation openings remain unobstructed.

5. Safety precautions:

- **Do not remove** the metal housing of the power supply while the mains power is connected.
- **Do not touch** the device with wet hands.
- **Do not touch** the housing when the device is fully loaded; high surface temperature may cause burns.
- **Do not use** the device if any metal objects, water or other foreign bodies have entered it.
- **Do not use** the device if it has been damaged, as the voltage-regulating circuitry may have failed or may be operating outside the normal control parameters. Failure to comply may result in high voltage and subsequent damage to the connected load.
- **No objects** may touch the output terminals of the device.
- If inspection of the devices interior is necessary, allow it to cool completely. In case of a fault, the high temperatures of certain components may cause burns.
- **Do not block** the air-intake vent.

6. Specyfications:

	BRS 07505	**BRS 07512**	**BRS 07524**
Voltage Range	100-240VAC; 140-340VDC		
Frequency	47-63Hz~		
Full Load AC Current	1,4A/115VAC; 0,85A/230VAC		
Inrush Current, cold start 25°C*	50A/115V; 40A/230VAC		
Efficiency	85%	88%	89%

Output

Rated DC Voltage	5V	12V	24V
Voltage Adjust Range	4,5-5,5V	10,2-13,8V	21,6-28,8V
Rated Current	14A	6A	3,2A
Rated Power	70W	72W	76,8W
Ripple & Noise (peak to peak)*[2]	≤ 80mV	≤ 120mV	≤ 150mV
Voltage tolerance	≤ 2%	≤ 1%	
Line regulation	≤ 0,5%		
Load Regulation (10% - 100%)	≤ 1%	≤ 0,5%	
Setup, Rise Time (Full Load)	500ms, 30ms/115VAC; 500ms, 30ms/230VAC		
Hold-up Time (Full Load)	> 12ms/115VAC; > 60ms/230VAC		
Parallel Operation	Not possible		

Protection

Over load/Over Current	The power supply may operate at short-term loads in the range of 110 % to 150 % of rated power.
	Type of protection: Hiccup-mode protection, recovers automatically after fault condition is removed.

Over Output Voltage	5,75-7,25VDC	13,8-17,4VDC	27,6-34,8VDC
	Type of protection: Hiccup-mode protection, recovers automatically after fault condition is removed.		

Safety & EMC

Safety Standards	EN IEC 62368-1
Withstand Voltage	I/P-O/P 3kVAC; I/P-F/G 1,5kVAC; O/P-F/G 0,5kVAC
Insulation Resistance	I/P-O/P, I/P-F/G, O/P-F/G 100MOhm/500VDC/25°C/70%RH
EMI Radiation & Conduction	Compliance with EN55032(CISPR32)
Harmonics Current	Compliance with EN61000-3-2, -3
EMC Immunity	Compliance with EN61000-4-2, -3, -4, -5, -6, -8, -11

Environment

Working Temperature	-25°C ~ +70°C
Derating Temperature above 40°C	See: Derating curve.
Working Humidity	20-90% RH, non-condensing.
Storage Temperature Humidity	from -40°C to +85°C, 10-95% RH, non-condensing.
Vibration	10-500Hz, 5G 10min/1cycle, 60min each along X, Y, Z axes.

General

Case Material	Electro-galvanized steel and aluminium enclosure.
Case Protection	IP 20
Weight	0,24kg
Dimensions	99 × 97 × 30mm
Mounting	Rear or side mounting.
Connection	Screw-terminal connectors with single output terminal.

Note

1. *Unless otherwise specified, all technical parameters are measured at an input voltage of 230 VAC, rated load and an ambient temperature of 25 °C.*
2. *Method for measuring ripple and noise: a twisted-pair cable of approximately 30 cm in length is used, with capacitors of 0.1 µF and 47 µF connected in parallel at the output terminals; measurement is carried out with a bandwidth of 20 MHz.*
3. *Output voltage accuracy includes: setting error, line regulation and load regulation.*
4. *Line regulation test: performed by measuring changes in the output voltage when the input voltage is varied from minimum to maximum, while maintaining rated load.*
5. *Load regulation test: performed by varying the load from 0% to 100% of the rated value.*
6. *Start-up time is specified for a cold start. Frequent power-on/power-off cycles may prolong the start-up time.*
7. *For operation at altitudes above 2000 m (6500 ft) above sea level, the permissible ambient operating temperature must be reduced by 5 °C for each additional 1000 m.*

7. Additional information:

The latest version of the user manual is available on the website:
https://www.brevetrafo.com/catalog/power-supplies/brs.html

(scan the QR code below to go directly to the website)

BRS 10005 / BRS 10012 / BRS 10024

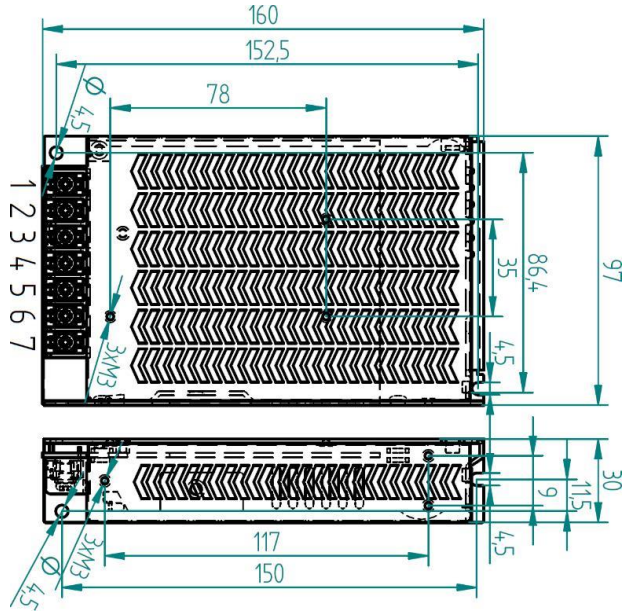
1. Introduction:

The user manual applies to stabilized switching-mode power supplies intended for use in industrial automation systems. The BRS series power supplies are compact devices designed for installation inside industrial equipment enclosures. They feature an economical, low-profile construction and high energy efficiency, making them an ideal solution where installation space is limited. They are equipped with a wide range of protection functions, including Over-Power Protection (OPP), Over-Voltage Protection (OVP), and Short-Circuit Protection (SCP). These protective features effectively safeguard both the power supply and the connected equipment, ensuring safe and stable operation of the entire system. A built-in potentiometer allows precise adjustment of the output voltage, while the LED indicator provides quick and clear information about the power status.

2. Features:

- **Over-load protection:** The power supply is equipped with a hiccup-mode protection scheme, which protects the unit against output overload and short-circuit conditions. If the permissible load is exceeded, the DC output voltage is periodically switched off and on. Normal operation resumes automatically once the fault is cleared or the overload condition ceases.
- **Over-voltage protection:** The power supply is equipped with an Over-Voltage Protection (OVP) function that protects both the unit and the connected equipment from damage caused by excessive output voltage. If an over-voltage condition is detected, the DC output is automatically disconnected to prevent potential failures. After the OVP is triggered, operation is automatically restored once the fault condition has been removed.
- **Output voltage adjustment potentiometer:** The power supply includes a user-accessible potentiometer, enabling precise adjustment of the output voltage to match the requirements of the connected equipment.

3. Mechanical specifications:



CONNECTOR CONFIGURATION:

CONNECTOR NO.	1	2	3	4, 5	6, 7
DESCRIPTION	AC/L	AC/N	FG/PE	DC V-	DC V+

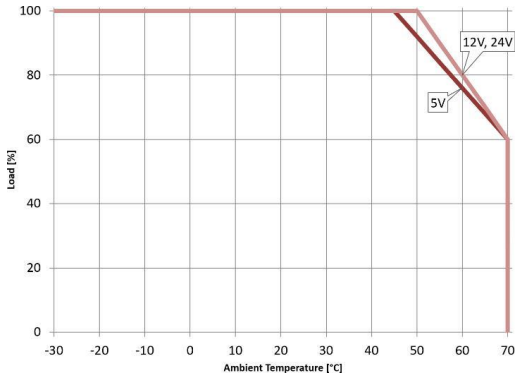


Figure 1. Derating curve of rated output load as a function of ambient temperature.

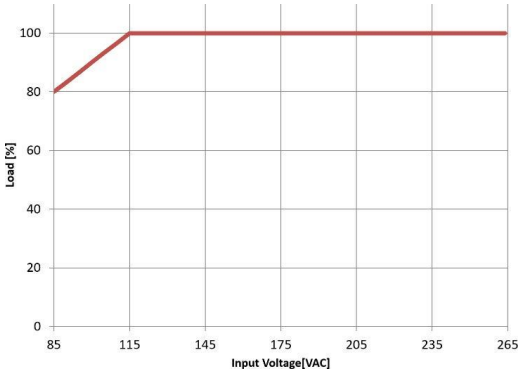


Figure 2. Derating curve of rated output load as a function of input voltage.

4. Installation:

- A protective device (such as a cartridge fuse or miniature circuit-breaker) and readily accessible isolating means to disconnect the power must be provided.
- Before connecting the power supply, ensure that the main power switch to which it will be connected is in the OFF position and properly secured against accidental re-activation. Failure to comply may result in contact with live components, which may cause death or serious injury.
- Connect the device to the mains supply. If flexible cables are used, ferrules must be fitted to ensure correct termination at the terminals. For flexible conductors, the cross-sectional area of the supply cable must be at least 0.5 mm2.
- Maintain a sufficient insulation clearance between the mounting screws and the internal components of the power supply.
- Ensure that the mounting position of the unit allows optimal cooling performance and that the ventilation openings remain unobstructed.

5. Safety precautions:

- **Do not remove** the metal housing of the power supply while the mains power is connected.
- **Do not touch** the device with wet hands.
- **Do not touch** the housing when the device is fully loaded; high surface temperature may cause burns.
- **Do not use** the device if any metal objects, water or other foreign bodies have entered it.
- **Do not use** the device if it has been damaged, as the voltage-regulating circuitry may have failed or may be operating outside the normal control parameters. Failure to comply may result in high voltage and subsequent damage to the connected load.
- **No objects** may touch the output terminals of the device.
- If inspection of the devices interior is necessary, allow it to cool completely. In case of a fault, the high temperatures of certain components may cause burns.
- **Do not block** the air-intake vent.

6. Specyfications:

	BRS 10005	**BRS 10012**	**BRS 10024**
Voltage Range	100-240VAC; 140-340VDC		
Frequency	47-63Hz~		
Full Load AC Current	1,2A/115VAC; 1,9A/230VAC		
Leakage current	< 0,75mA/230VAC		
Inrush Current, cold start 25°C*	50A/230VAC		
Efficiency	86%	88%	88%
Output			
Rated DC Voltage	5V	12V	24V
Voltage Adjust Range	4,5-5,5V	10,2-13,8V	21,6-28,8V
Rated Current	11,5A	8,5A	4,5A
Rated Power	57,5W	102W	108W
Ripple & Noise (peak to peak)*[2]	≤ 150mV		
Voltage tolerance	≤ 3%	≤ 1,5%	≤ 1%
Line regulation	≤ 0,5%		
Load Regulation (10% - 100%)	≤ 2%	≤ 1%	≤ 0,5%
Setup, Rise Time (Full Load)	1000ms, 30ms/230VAC; 2000ms, 30ms/115VAC		
Hold-up Time (Full Load)	>46ms/115VAC; > 50ms/230VAC		
Parallel Operation	Not possible		

Protection

Over load/Over Current	The power supply may operate at short-term loads in the range of 110 % to 150 % of rated power.		
	Type of protection: Hiccup-mode protection, recovers automatically after fault condition is removed.		
Over Output Voltage	5,75-7,25VDC	13,8-17,5VDC	27,6-34,8VDC
	Type of protection: Hiccup-mode protection, recovers automatically after fault condition is removed.		

Safety & EMC

Safety Standards	EN IEC 62368-1
Withstand Voltage	I/P-O/P 3kVAC; I/P-F/G 1,5kVAC; O/P-F/G 0,5kVAC
Insulation Resistance	I/P-O/P, I/P-F/G, O/P-F/G 100MOhm/500VDC/25°C/70%RH
EMI Radiation & Conduction	Compliance with EN55032(CISPR32)
Harmonics Current	Compliance with EN61000-3-2, -3
EMC Immunity	Compliance with EN61000-4-2, -3, -4, -5, -6, -8, -11

Environment

Working Temperature	-25°C ~ +70°C
Derating Temperature above 40°C	See: Derating curve.
Working Humidity	20-90% RH, non-condensing.
Storage Temperature Humidity	from -40°C to +85°C, 10-95% RH, non-condensing.
Vibration	10-500Hz, 5G 10min/1cycle, 60min each along X, Y, Z axes.

General

Case Material	Electro-galvanized steel and aluminium enclosure.
Case Protection	IP 20
Weight	0,35kg
Dimensions	215 × 115 × 30mm
Mounting	Rear or side mounting.
Connection	Screw terminals with dual terminals for output.

Note

1. *Unless otherwise specified, all technical parameters are measured at an input voltage of 230 VAC, rated load and an ambient temperature of 25 °C.*
2. *Method for measuring ripple and noise: a twisted-pair cable of approximately 30 cm in length is used, with capacitors of 0.1 µF and 47 µF connected in parallel at the output terminals; measurement is carried out with a bandwidth of 20 MHz.*
3. *Output voltage accuracy includes: setting error, line regulation and load regulation.*
4. *Line regulation test: performed by measuring changes in the output voltage when the input voltage is varied from minimum to maximum, while maintaining rated load.*
5. *Load regulation test: performed by varying the load from 0% to 100% of the rated value.*
6. *Start-up time is specified for a cold start. Frequent power-on/power-off cycles may prolong the start-up time.*
7. *For operation at altitudes above 2000 m (6500 ft) above sea level, the permissible ambient operating temperature must be reduced by 5 °C for each additional 1000 m.*

7. Additional information:

The latest version of the user manual is available on the website:
https://www.brevetrafo.com/catalog/power-supplies/brs.html

(scan the QR code below to go directly to the website)

BRS 15012 / BRS 15024

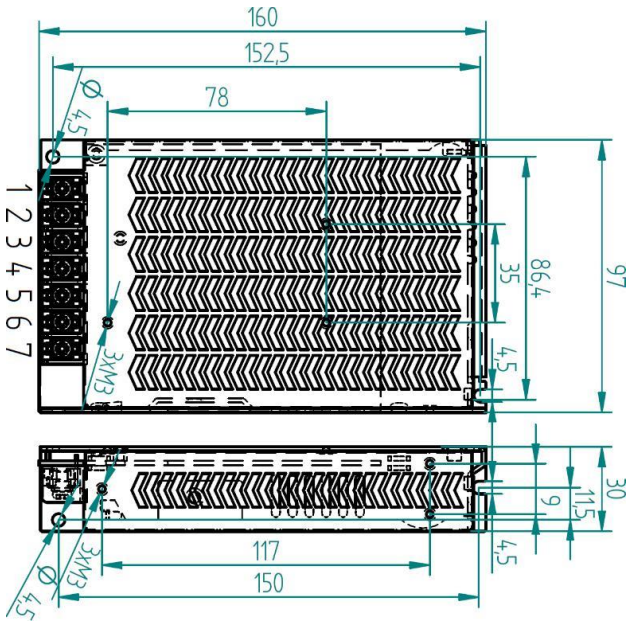
1. Introduction:

The user manual applies to stabilized switching-mode power supplies intended for use in industrial automation systems. The BRS series power supplies are compact devices designed for installation inside industrial equipment enclosures. They feature an economical, low-profile construction and high energy efficiency, making them an ideal solution where installation space is limited. They are equipped with a wide range of protection functions, including Over-Power Protection (OPP), Over-Voltage Protection (OVP), and Short-Circuit Protection (SCP). These protective features effectively safeguard both the power supply and the connected equipment, ensuring safe and stable operation of the entire system. A built-in potentiometer allows precise adjustment of the output voltage, while the LED indicator provides quick and clear information about the power status.

2. Features:

- **Over-load protection:** The power supply is equipped with a hiccup-mode protection scheme, which protects the unit against output overload and short-circuit conditions. If the permissible load is exceeded, the DC output voltage is periodically switched off and on. Normal operation resumes automatically once the fault is cleared or the overload condition ceases.
- **Thermal protection:** The power supply features a thermal protection system that prevents damage from excessive internal temperatures. If the allowable operating temperature is exceeded, the DC output is automatically disabled and the LED indicator which signals correct operation is turned off. To resume operation after thermal protection has been triggered, allow the unit to return to safe temperature conditions.
- **Over-voltage protection:** The power supply is equipped with an Over-Voltage Protection (OVP) function that protects both the unit and the connected equipment from damage caused by excessive output voltage. If an over-voltage condition is detected, the DC output is automatically disconnected to prevent potential failures. After the OVP is triggered, operation is automatically restored once the fault condition has been removed.
- **Output voltage adjustment potentiometer:** The power supply includes a user-accessible potentiometer, enabling precise adjustment of the output voltage to match the requirements of the connected equipment.

3. Mechanical specifications:



KONFIGURACJA ZŁĄCZY

CONNECTOR NO.	DESCRIPTION
1	AC/L
2	AC/N
3	FG/PE
4,5	DC V-
6,7	DC V+

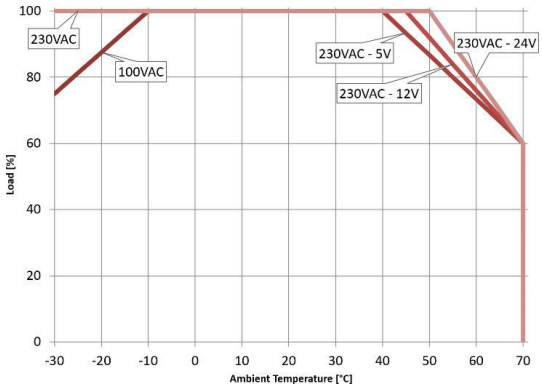


Figure 1. Derating curve of rated output load as a function of ambient temperature.

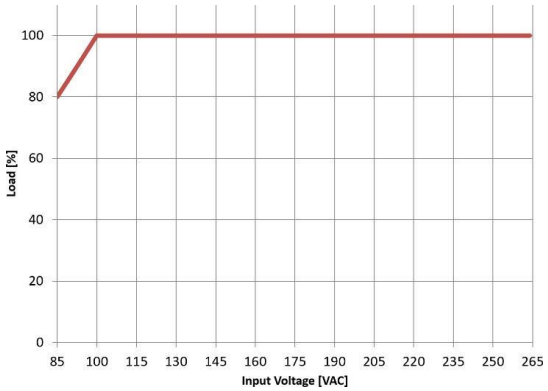


Figure 2. Derating curve of rated output load as a function of input voltage.

4. Installation:

- A protective device (such as a cartridge fuse or miniature circuit-breaker) and readily accessible isolating means to disconnect the power must be provided.
- Before connecting the power supply, ensure that the main power switch to which it will be connected is in the OFF position and properly secured against accidental re-activation. Failure to comply may result in contact with live components, which may cause death or serious injury.
- Connect the device to the mains supply. If flexible cables are used, ferrules must be fitted to ensure correct termination at the terminals. For flexible conductors, the cross-sectional area of the supply cable must be at least 0.5 mm^2.
- Maintain a sufficient insulation clearance between the mounting screws and the internal components of the power supply.
- Ensure that the mounting position of the unit allows optimal cooling performance and that the ventilation openings remain unobstructed.

5. Safety precautions:

- **Do not remove** the metal housing of the power supply while the mains power is connected.
- **Do not touch** the device with wet hands.
- **Do not touch** the housing when the device is fully loaded; high surface temperature may cause burns.
- **Do not use** the device if any metal objects, water or other foreign bodies have entered it.
- **Do not use** the device if it has been damaged, as the voltage-regulating circuitry may have failed or may be operating outside the normal control parameters. Failure to comply may result in high voltage and subsequent damage to the connected load.
- **No objects** may touch the output terminals of the device.
- If inspection of the devices interior is necessary, allow it to cool completely. In case of a fault, the high temperatures of certain components may cause burns.
- **Do not block** the air-intake vent.

6. Specifications:

	BRS 15012	**BRS 15024**
Voltage Range	100-240VAC; 140-340VDC	
Frequency	47-63Hz~	
Full Load AC Current	3A/115VAC; 2A/230VAC	
Leakage current	< 1mA/230VAC	
Inrush Current, cold start 25°C*	40A/230VAC	
Efficiency	85%	87%

Output

Rated DC Voltage	12V	24V
Voltage Adjust Range	10,2-13,8V	21,6-28,8V
Rated Current	12,5A	6,5A
Rated Power	150W	156W
Ripple & Noise (peak to peak)*	≤ 150mV	≤ 200mV
Voltage tolerance	≤ 1%	
Line regulation	≤ 0,5%	
Load Regulation (10% - 100%)	≤ 0,5%	
Setup, Rise Time (Full Load)	1000ms, 30ms/115VAC; 1500ms 30ms/230VAC (Full Load)	
Hold-up Time (Full Load)	> 20ms/115VAC; > 20ms/230VAC (Full Load)	
Parallel Operation	Not possible	

Protection

Over load/Over Current	The power supply may operate at short-term loads in the range of 120 % to 150 % of rated power.	
	Type of protection: Hiccup-mode protection, recovers automatically after fault condition is removed.	
Over Output Voltage	13,8-17,4VDC	28,8-34,8VDC
	Type of protection: Hiccup-mode protection, recovers automatically after fault condition is removed.	
Over Temperature	***Type of protection:*** Output voltage shutdown, automatic recovery once the temperature drops to 35°C	

Safety & EMC

Safety Standards	EN IEC 62368-1
Withstand Voltage	I/P-O/P 3kVAC; I/P-F/G 1,5kVAC; O/P-F/G 0,5kVAC
Insulation Resistance	I/P-O/P, I/P-F/G, O/P-F/G 100MOhm/500VDC/25°C/70%RH
EMI Radiation & Conduction	Compliance with EN55032(CISPR32)
Harmonics Current	Compliance with EN61000-3-2, -3
EMC Immunity	Compliance with EN61000-4-2, -3, -4, -5, -6, -8, -11

Environment

Working Temperature	-25°C ~ +70°C
Derating Temperature above 40°C	See: Derating curve.
Working Humidity	20-90% RH, non-condensing.
Storage Temperature Humidity	od -40°C do +85°C, 10-95% RH, non-condensing.
Vibration	10-500Hz, 5G 10min/1cycle, 60min each along X, Y, Z axes.

General

Case Material	Electro-galvanized steel and aluminium enclosure.
Case Protection	IP 20
Weight	0,35kg
Dimensions	160 × 97 × 30mm
Mounting	Rear or side mounting.
Connection	Screw terminals with dual terminals for output.

Note

1. *Unless otherwise specified, all technical parameters are measured at an input voltage of 230 VAC, rated load and an ambient temperature of 25 °C.*
2. *Method for measuring ripple and noise: a twisted-pair cable of approximately 30 cm in length is used, with capacitors of 0.1 µF and 47 µF connected in parallel at the output terminals; measurement is carried out with a bandwidth of 20 MHz.*
3. *Output voltage accuracy includes: setting error, line regulation and load regulation.*
4. *Line regulation test: performed by measuring changes in the output voltage when the input voltage is varied from minimum to maximum, while maintaining rated load.*
5. *Load regulation test: performed by varying the load from 0% to 100% of the rated value.*
6. *Start-up time is specified for a cold start. Frequent power-on/power-off cycles may prolong the start-up time.*
7. *For operation at altitudes above 2000 m (6500 ft) above sea level, the permissible ambient operating temperature must be reduced by 5 °C for each additional 1000 m.*

7. Additional information:

The latest version of the user manual is available on the website:
https://www.brevetrafo.com/catalog/power-supplies/brs.html

(scan the QR code below to go directly to the website)