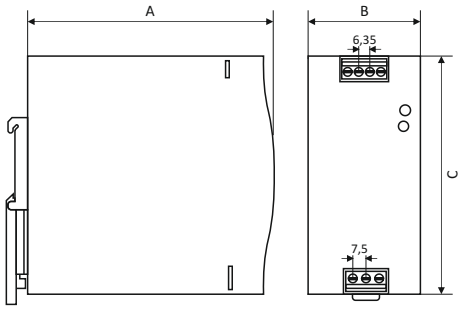
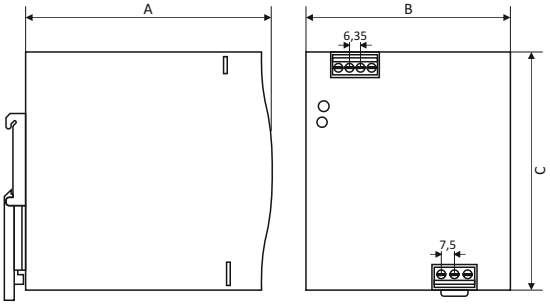
K3SE

Three-phase stabilized pulse power supplies



K3SE 240



K3SE 480; K3SE 960

Power: **248; 480; 960W**
Input voltage: **340 - 550V AC 47/63Hz; 480 - 780V DC**
Output voltage: **24V**
Efficiency: **80 - 94% (typical)**

Stabilized, direct current output power supplies designed for assembly in general electric instalations on T-35 bus. Equipped with LED diode signaling activation and overload, cooled by natural air flow. Overcurrent, short circuit and thermal protection. Manufactured with IP20 protection grade.

Manufactured in compliance with EN55032, EN61000-3-2, EN61000-3-3, EN55035, EN60950-1.

Type	Power	Output voltage	Current	Dimensions [mm]			Weight [kg]
	[W]	[V]	[A]	A	B	C	
K3SE 24024	248	24	10	113,5	63	125,2	1,00
K3SE 48024	480	24	20	128,5	85,5	125,2	1,50
K3SE 96024	960	24	40	150	110	125,2	2,50

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OPERATING MANUAL

K3SE 240, K3SE 480, K3SE 960

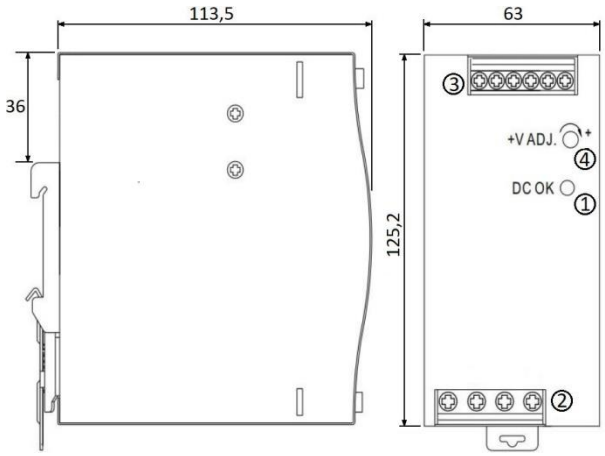
K3SE 24024

1. Introduction:

This series of three-phase DIN-rail-mounted switching power supplies is designed for a wide range of control equipment requiring high-quality DC power supplies with excellent EMC (electromagnetic compatibility) immunity and performance in industrial environments.

2. Features:

- **Overload protection:** The DC electrical circuitry protects the device from overload. In the event of an overload, the DC OK (ON) indicator of the DC output turns off. (1)
- **Overheating protection:** To protect the device from damage caused by high temperatures, an electrical circuit set is activated when the unit exceeds a specified temperature. When this system is triggered, the voltage and current values drop, and the DC OK (ON) indicator of the DC output turns off. (1)
- **Overvoltage protection:** The overvoltage circuit protects the unit and connected equipment from damage caused by excessive input voltage.
- **Adjustment element** (fine-tuning access port) allows precise adjustment of the output voltage. (4)



3. Panel description:

1. DC OK (ON) indicator for the DC output.
2. AC input terminal block assembly.
3. DC output terminal block assembly.
4. Fine-tuning access port.

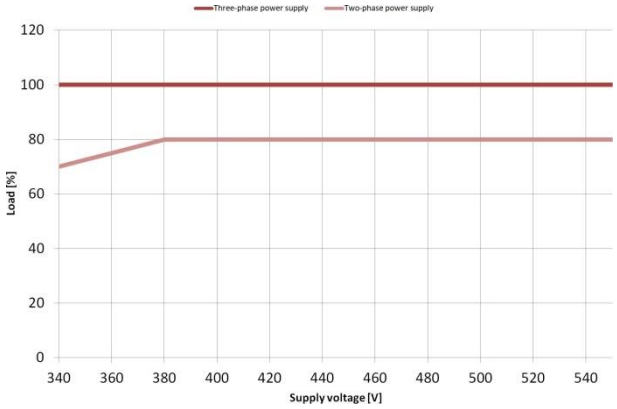


Figure 1. Derating Curve vs. Input Power Supply (3-Phase or 2-Phase).

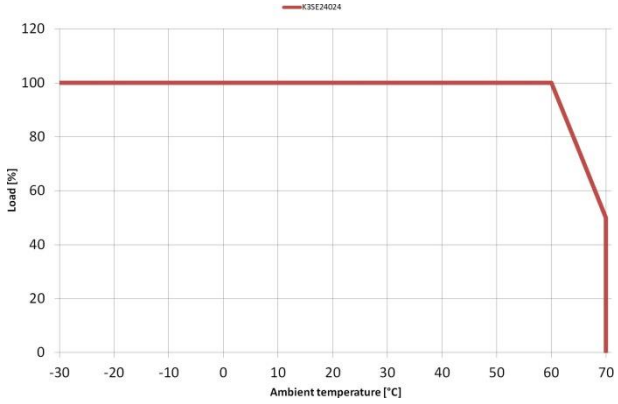


Figure 2. Derating Curve vs. Ambient Temperature.

4. Installation:

- The K3SE series switching power supplies are devices designed for mounting on a standard TS35 DIN rail (35 x 15 / 7.5).
- Ensure the mounting position allows optimal cooling performance; the ideal operating position is vertical.
- To mount the device on the DIN rail, hook the upper part of the terminal onto the rail, then press the device down and inward until you hear a distinct click, indicating that the terminal is securely locked in place.
- To remove the unit from the rail, insert a flat, insulated screwdriver into the recess of the terminal, as close to the bottom of the device as possible, and press to release the unit from the recess before removing it from the DIN rail.
- **NOTE:** For indoor use only.

5. Safety precautions:

- **NEVER** remove the metal cover of the power supply while the AC power is live or connected.
- **NEVER** touch the unit with wet hands.
- **NEVER** touch the enclosure while the unit is under full load power; touching it may burn your hands or other parts of your body due to high temperature.
- This series consists of built-in power supplies and should be installed inside a main frame with at least 200 CFM of airflow.
- **NEVER** operate the unit if foreign materials, such as metallic objects, water, or debris, have fallen inside. Contact your dealer for inspection and repair.
- **NEVER** operate a damaged unit, as the voltage regulation circuit may be compromised. The resulting high voltage could damage your equipment.
- **NEVER** allow foreign objects to come into contact with the DC power output terminals.
- If you need to inspect the interior of the unit, allow it to cool down completely, as some components may be hot enough to burn your hand in the event of a failure.
- **NEVER** block the air intake vent.

6. Connection and operation:

- Ensure the use of a protective device (fuse, miniature automatic fuse) and easily accessible insulating devices that allow for power disconnection.
- Ensure that the main switch is turned off and secured against being turned on again. Failure to follow this recommendation could result in electric shock, death, or serious injury from touching live parts or improper handling of the power supply.
- Connect the equipment to the unit. When using flexible cables, connect them to the terminals (e.g. using ferrules).
- The cross-sectional area of the power cable should range from 1.0 mm² to 1.5 mm² for flexible cables.

7. Specifications:

	K3SE 24024
Voltage Range	3x340-3x550VAC (two-phase operation is possible with connection L1, L3, FG or L2, L3, FG); 480-780VDC
Frequency	47 – 63 Hz~
Full Load AC Current	0,69A/400VAC; 0,6A/500VAC
No Load AC Current	90mA/400VAC; 110mA/500VAC
Inrush Current, cold start 25°C*	50A
Efficiency	92%

Output

Rated DC Voltage	24V
Voltage Adjust Range	24 – 28 V
Rated Current	10 A
Rated Power	240W
Ripple & Noise (peak to peak)**	≤ 100mVp-p
Line Regulation	≤ 1%
Load Regulation (10% - 100%)	≤ 1%
Hold-up Time (Full Load)	>20ms/400VAC; >40ms/500VAC
Parallel Operation	Not possible
Relay contact specification (DC OK)	0,3A/60VDC; 1A/30VDC; 0,5A/30VAC resistive load

Protection

Over load / Over Current	105%-130% of rated output power, constant current limit, automatic restart
Over Output Voltage	30-36VDC, automatic restart
Temperature protection	Voltage shutdown with automatic restart after temperature drops

Safety & EMC

Safety Standards	EN61558-1, EN61558-2-16
Withstand Voltage	I/P - O/P: 3kVAC; I/P - F/G: 2kVAC; O/P - F/G: 0,5kVAC; O/P-DC OK: 0,5kVAC
Insulation Resistance	I/P-O/P, I/P-F/G, O/P-F/G: >100M Ohm/500 VDC/25°C/70% RH
EMI Radiation & Conduction	Compliance with EN55032(CISPR32), EN610204-3 class B
Harmonics Current	Compliance with EN61000-3-2, -3
EMC Immunity	Compliance with EN61000-4-2, 3, 4, 5, 6, 8, 11 EN55035, EN61000-6-2, class A criteria

Environment

Working Temperature	-30°C to +70°C
Derating temperature above 60°C	See: Derating curve
Working Humidity	20 – 95% RH, non-condensing
Storage Temperature Humidity	from -40°C to +85°C , 10 – 95% RH, non-condensing
Vibration	10-500Hz, 2G 10min/1cycle, period for 60min each along X, Y, Z axes; Mounting: Compliance with IEC60068-2-6

General

Case Material	Electro-Galvanized steel and Aluminium Enclosure
Case Protection	IP 20
Weight	1kg
Dimensions	63 x 125,2 x 113,5 mm
Mounting	Snap-on type with self-locking feature, can be installed on 35 mm DIN rails / 7.5 or 15
Connection	Screw terminals with double terminals for output
REMARK	* Ta = 25°C , cold start

* All values are based on a standard ambient temperature of 25°C and pressure of 0.1MPa.*

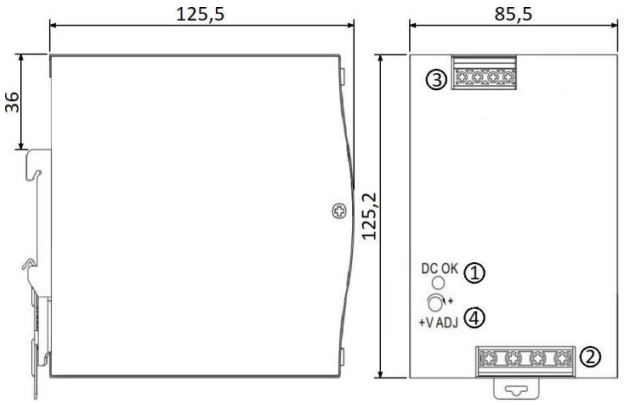
K3SE 48024

1. Introduction:

This series of three-phase DIN-rail-mounted switching power supplies is designed for a wide range of control equipment requiring high-quality DC power supplies with excellent EMC (electromagnetic compatibility) immunity and performance in industrial environments.

2. Features:

- **Overload protection:** The DC electrical circuitry protects the device from overload. In the event of an overload, the DC OK (ON) indicator of the DC output turns off. (1)
- **Overheating protection:** To protect the device from damage caused by high temperatures, an electrical circuit set is activated when the unit exceeds a specified temperature. When this system is triggered, the voltage and current values drop, and the DC OK (ON) indicator of the DC output turns off. (1)
- **Overvoltage protection:** The overvoltage circuit protects the unit and connected equipment from damage caused by excessive input voltage.
- **Adjustment element** (fine-tuning access port) allows precise adjustment of the output voltage. (4)



3. Panel description:

1. DC OK (ON) indicator for the DC output.
2. AC input terminal block assembly.
3. DC output terminal block assembly.
4. Fine-tuning access port.

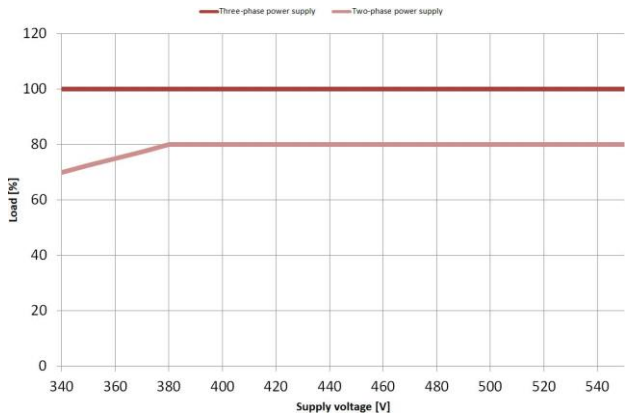


Figure 1. Derating Curve vs. Input Power Supply (3-Phase or 2-Phase).

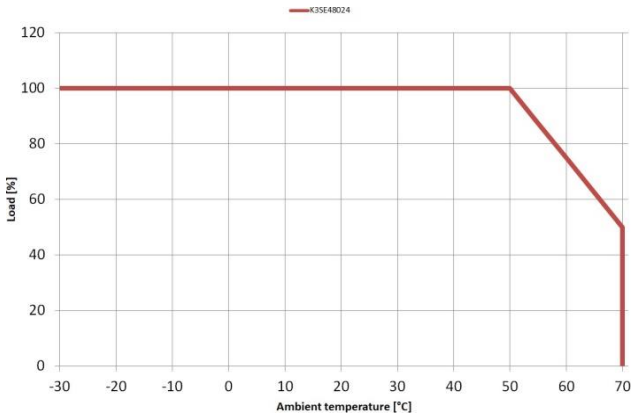


Figure 2. Derating Curve vs. Ambient Temperature.

4. Installation:

- The K3SE series switching power supplies are devices designed for mounting on a standard TS35 DIN rail (35 x 15 / 7.5).
- Ensure the mounting position allows optimal cooling performance; the ideal operating position is vertical.
- To mount the device on the DIN rail, hook the upper part of the terminal onto the rail, then press the device down and inward until you hear a distinct click, indicating that the terminal is securely locked in place.
- To remove the unit from the rail, insert a flat, insulated screwdriver into the recess of the terminal, as close to the bottom of the device as possible, and press to release the unit from the recess before removing it from the DIN rail.
- **NOTE:** For indoor use only.

5. Safety precautions:

- **NEVER** remove the metal cover of the power supply while the AC power is live or connected.
- **NEVER** touch the unit with wet hands.
- **NEVER** touch the enclosure while the unit is under full load power; touching it may burn your hands or other parts of your body due to high temperature.
- This series consists of built-in power supplies and should be installed inside a main frame with at least 200 CFM of airflow.
- **NEVER** operate the unit if foreign materials, such as metallic objects, water, or debris, have fallen inside. Contact your dealer for inspection and repair.
- **NEVER** operate a damaged unit, as the voltage regulation circuit may be compromised. The resulting high voltage could damage your equipment.
- **NEVER** allow foreign objects to come into contact with the DC power output terminals.
- If you need to inspect the interior of the unit, allow it to cool down completely, as some components may be hot enough to burn your hand in the event of a failure.
- **NEVER** block the air intake vent.

6. Connection and operation:

- Ensure the use of a protective device (fuse, miniature automatic fuse) and easily accessible insulating devices that allow for power disconnection.
- Ensure that the main switch is turned off and secured against being turned on again. Failure to follow this recommendation could result in electric shock, death, or serious injury from touching live parts or improper handling of the power supply.
- Connect the equipment to the unit. When using flexible cables, connect them to the terminals (e.g. using ferrules).
- The cross-sectional area of the power cable should range from 1.0 mm² to 1.5 mm² for flexible cables.

7. Specifications:

	K3SE 48024
Voltage Range	3x340-3x550VAC (Two-phase operation is possible); 480-780VDC
Frequency	47-63Hz~
Full Load AC Current	0,85A/400VAC; 0,7A/500VAC
No Load AC Current	60mA/400VAC; 70mA/500VAC
Inrush Current, cold start 25°C*	50A
Efficiency	92,5%

Output

Rated DC Voltage	24V
Voltage Adjust Range	24 – 28 V
Rated Current	20 A
Rated Power	480W
Ripple & Noise (peak to peak)**	≤ 150mVp-p
Line Regulation	≤ 0,5%
Load Regulation (10% - 100%)	≤ 1%
Hold-up Time (Full Load)	>20ms/400VAC; >20ms/500VAC
Parallel Operation	Not possible
Relay contact specification (DC OK)	0,3A/60VDC; 1A/30VDC; 0,5A/30VAC resistive load

Protection

Over load / Over Current	105%-130% of rated output power, constant current limit, automatic restart
Over Output Voltage	29-33VDC, automatic restart
Temperature protection	Voltage shutdown with automatic restart after temperature drops

Safety & EMC

Safety Standards	EN62368-1
Withstand Voltage	I/P - O/P: 3kVAC; I/P - F/G: 2kVAC; O/P - F/G: 0,5kVAC O/P-DC OK: 0,5kVAC
Insulation Resistance	I/P-O/P, I/P-F/G, O/P-F/G: >100M Ohm/500 VDC/25°C/70% RH
EMI Radiation & Conduction	Compliance with EN55032(CISPR32), EN610204-3 class B
Harmonics Current	Compliance with EN61000-3-2, -3
EMC Immunity	Compliance with EN61000-4-2, 3, 4, 5, 6, 8, 11 EN55035, EN61000-6-2, class A criteria

Environment

Working Temperature	-30°C to +70°C
Derating temperature above 60°C	See: Derating curve
Working Humidity	20 – 95% RH, non-condensing
Storage Temperature Humidity	from -40°C to +85°C , 10 – 95% RH, non-condensing
Vibration	10-500Hz, 2G 10min/1 cycle, period for 60min each along X, Y, Z axes; Mounting: Compliance with IEC60068-2-6

General

Case Material	Electro-Galvanized steel and Aluminium Enclosure
Case Protection	IP 20
Weight	1,5kg
Dimensions	85,5 x 125,2 x 128,5 mm
Mounting	Snap-on type with self-locking feature, can be installed on 35 mm DIN rails / 7.5 or 15
Connection	Screw terminals with double terminals for output
REMARK	* Ta = 25°C , cold start

* All values are based on a standard ambient temperature of 25°C and pressure of 0.1MPa.*

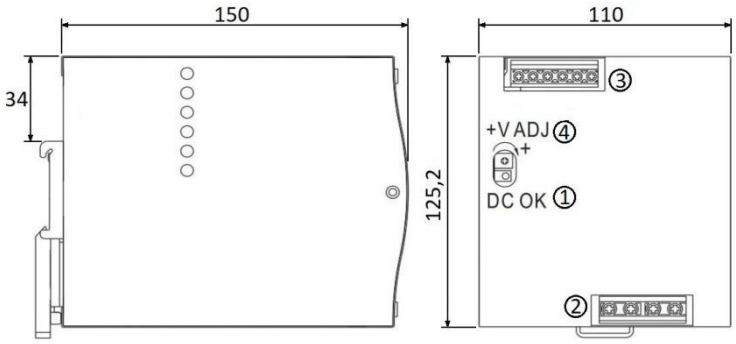
K3SE 96024

1. Introduction:

This series of three-phase DIN-rail-mounted switching power supplies is designed for a wide range of control equipment requiring high-quality DC power supplies with excellent EMC (electromagnetic compatibility) immunity and performance in industrial environments.

2. Features:

- **Overload protection:** The DC electrical circuitry protects the device from overload. In the event of an overload, the DC OK (ON) indicator of the DC output turns off. (1)
- **Overheating protection:** To protect the device from damage caused by high temperatures, an electrical circuit set is activated when the unit exceeds a specified temperature. When this system is triggered, the voltage and current values drop, and the DC OK (ON) indicator of the DC output turns off. (1)
- **Overvoltage protection:** The overvoltage circuit protects the unit and connected equipment from damage caused by excessive input voltage.
- **Adjustment element** (fine-tuning access port) allows precise adjustment of the output voltage. (4)



3. Panel description:

1. DC OK (ON) indicator for the DC output.
2. AC input terminal block assembly.
3. DC output terminal block assembly.
4. Fine-tuning access port.

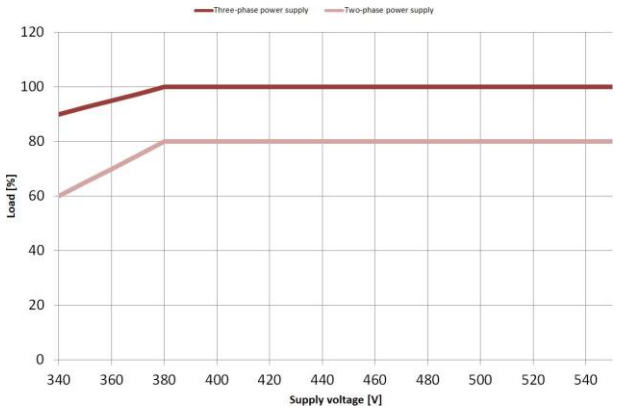


Figure 1. Derating Curve vs. Input Power Supply (3-Phase or 2-Phase).

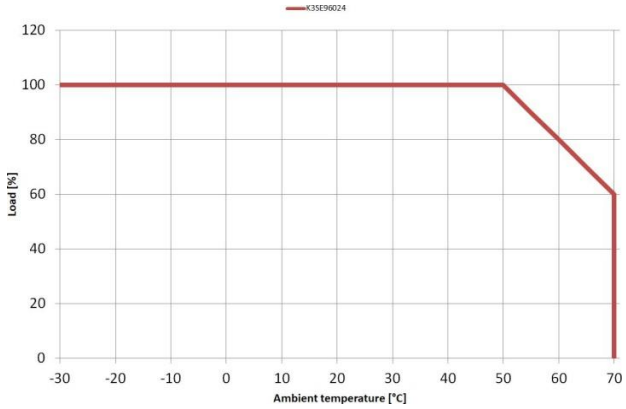


Figure 2. Derating Curve vs. Ambient Temperature.

4. Installation:

- The K3SE series switching power supplies are devices designed for mounting on a standard TS35 DIN rail (35 x 15 / 7.5).
- Ensure the mounting position allows optimal cooling performance; the ideal operating position is vertical.
- To mount the device on the DIN rail, hook the upper part of the terminal onto the rail, then press the device down and inward until you hear a distinct click, indicating that the terminal is securely locked in place.
- To remove the unit from the rail, insert a flat, insulated screwdriver into the recess of the terminal, as close to the bottom of the device as possible, and press to release the unit from the recess before removing it from the DIN rail.
- **NOTE:** For indoor use only.

5. Safety precautions:

- **NEVER** remove the metal cover of the power supply while the AC power is live or connected.
- **NEVER** touch the unit with wet hands.
- **NEVER** touch the enclosure while the unit is under full load power; touching it may burn your hands or other parts of your body due to high temperature.
- This series consists of built-in power supplies and should be installed inside a main frame with at least 200 CFM of airflow.
- **NEVER** operate the unit if foreign materials, such as metallic objects, water, or debris, have fallen inside. Contact your dealer for inspection and repair.
- **NEVER** operate a damaged unit, as the voltage regulation circuit may be compromised. The resulting high voltage could damage your equipment.
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- If you need to inspect the interior of the unit, allow it to cool down completely, as some components may be hot enough to burn your hand in the event of a failure.
- **NEVER** block the air intake vent.

6. Connection and operation:

- Ensure the use of a protective device (fuse, miniature automatic fuse) and easily accessible insulating devices that allow for power disconnection.
- Ensure that the main switch is turned off and secured against being turned on again. Failure to follow this recommendation could result in electric shock, death, or serious injury from touching live parts or improper handling of the power supply.
- Connect the equipment to the unit. When using flexible cables, connect them to the terminals (e.g. using ferrules).
- The cross-sectional area of the power cable should range from 1.0 mm² to 1.5 mm² for flexible cables.

7. Specifications:

	K3SE 96024
Voltage Range	3x340-3x550VAC (Two-phase operation is possible); 480-780VDC
Frequency	47-63Hz~
Full Load AC Current	2,0A/400VAC; 1,4A/500VAC
No Load AC Current	60mA/400VAC; 80mA/500VAC
Inrush Current, cold start 25°C*	60A
Efficiency	94%

Output

Rated DC Voltage	24V
Voltage Adjust Range	24 – 28 V
Rated Current	40 A
Rated Power	960W
Ripple & Noise (peak to peak)**	≤ 180mVp-p
Line Regulation	≤ 1%
Load Regulation (10% - 100%)	≤ 1%
Hold-up Time (Full Load)	>12ms/400VAC; >14ms/500VAC
Parallel Operation	Not possible
Relay contact specification (DC OK)	0,3A/60VDC; 1A/30VDC; 0,5A/30VAC resistive load

Protection

Over load / Over Current	105%-130% of rated output power, constant current limit, automatic restart
Over Output Voltage	29-33VDC, automatic restart
Temperature protection	Voltage shutdown with automatic restart after temperature drops

Safety & EMC

Safety Standards	EN62368-1
Withstand Voltage	I/P - O/P: 3kVAC; I/P - F/G: 2kVAC; O/P - F/G: 0,5kVAC; O/P-DC OK: 0,5kVAC
Insulation Resistance	I/P-O/P, I/P-F/G, O/P-F/G: >100M Ohm/500 VDC/25°C/70% RH
EMI Radiation & Conduction	Compliance with EN55032(CISPR32), EN610204-3 class B
Harmonics Current	Compliance with EN61000-3-2, -3
EMC Immunity	Compliance with EN61000-4-2, 3, 4, 5, 6, 8, 11 EN55035, EN61000-6-2, class A criteria

Environment

Working Temperature	-30°C to +70°C
Derating temperature above 60°C	See: Derating curve
Working Humidity	20 – 95% RH, non-condensing
Storage Temperature Humidity	from -40°C to +85°C , 10 – 95% RH, non-condensing
Vibration	10-500Hz, 2G 10min/1 cycle, period for 60min each along X, Y, Z axes; Mounting: Compliance with IEC60068-2-6

General

Case Material	Electro-Galvanized steel and Aluminium Enclosure
Case Protection	IP 20
Weight	2,47kg
Dimensions	110 x 125,2 x 150 mm
Mounting	Snap-on type with self-locking feature, can be installed on 35 mm DIN rails / 7.5 or 15
Connection	Screw terminals with double terminals for output
REMARK	* Ta = 25°C , cold start

* All values are based on a standard ambient temperature of 25°C and pressure of 0.1MPa.*