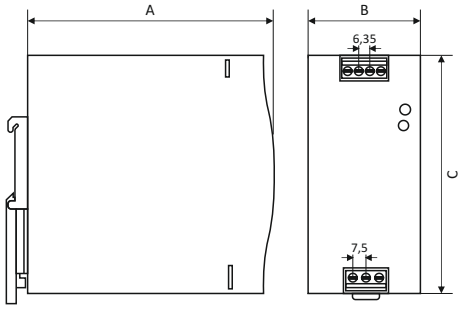
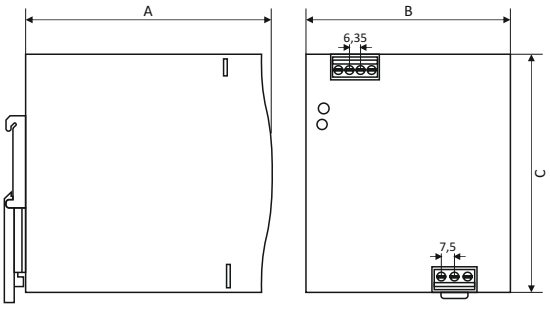
KSE M

Stabilized pulse power supplies in metal housing



KSE 075; KSE 120; KSE 240



KSE 480

Power: **75; 120; 240; 480W**
Input voltage: **85 - 264V AC 47/63Hz; 140 - 340V DC**
Output voltage: **12; 24; 48V**
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. The 240W and 480W power supplies are additionally equipped with the PFC power factor improvement system. 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	
KSE 07512M	75,6	12	6,3	102	32	125,2	0,55
KSE 12012M	120	12	10	113,5	40	125,2	0,65
KSE 24012M	168	12	14	113,5	63	125,5	1,08
KSE 07524M	76,8	24	3,2	102	32	125,2	0,55
KSE 12024M	120	24	5	113,5	40	125,2	0,65
KSE 24024M	240	24	10	113,5	63	125,5	1,08
KSE 48024M	480	24	20	128	85,5	125,2	1,90
KSE 12048M	120	48	2,5	113,5	40	125,2	0,65
KSE 24048M	240	48	5	113,5	63	125,5	1,08
KSE 48048M	480	48	10	128	85,5	125,2	1,90

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OPERATING MANUAL

KSE 75M, KSE 120M, KSE 240M, KSE 480M

KSE 07512M / KSE 07524M

1. Introduction:

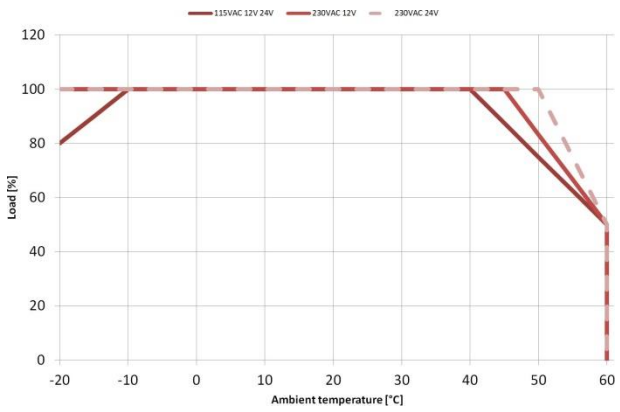
This series of single-phase DIN-rail-mounted switching power supplies is designed for a wide range of control equipment requiring high-quality DC power supplies with excellent EMC (electromagnetic compatibility) immunity and performance in industrial environments.

2. Features:

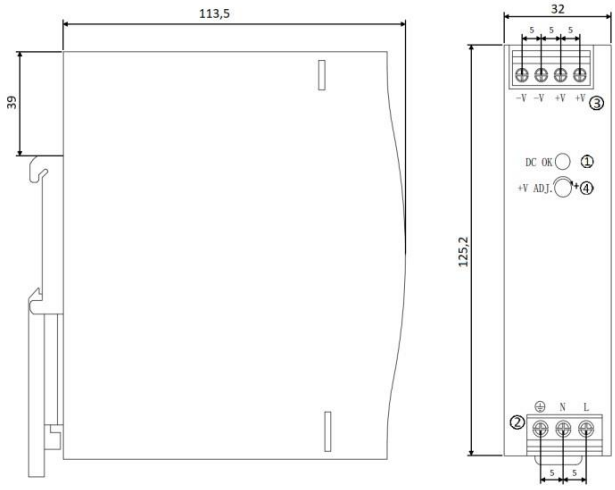
- **Overload protection:** The DC electrical circuitry protects the device from overload. In the event of an overload, the DC OK (ON) indicator of the DC output turns off. (1)
- **Overheating protection:** To protect the device from damage caused by high temperatures, an electrical circuit set is activated 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.



Graph 1. The derating curve of the rated output load as a function of temperature.



4. Installation:

- The KSE 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 0,5 mm^2 to 0,75 mm^2 for flexible cables.

7. Specifications:

	KSE 07512M	**KSE 07524M**
Voltage Range	100-240VAC; 140-340VDC	
Frequency	47-63Hz~	
Full Load AC Current	1,45A/100VAC; 0,9A/230VAC	
No Load AC Current	30mA/100VAC; 62mA/230VAC	
Inrush Current, cold start 25°C*	20A/100VAC; 35A/230VAC	
Efficiency	84%	87%

Output

Rated DC Voltage	12V	24V
Voltage Adjust Range	12-14V	24-28V
Rated Current	6,3A	3,2A
Rated Power	75,6W	76,8W
Ripple & Noise (peak to peak)**	≤ 80mV	≤ 120mV
Line Regulation	≤ 0,5%	
Load Regulation (10% - 100%)	≤ 1%	
Hold-up Time (Full Load)	> 20ms/100VAC; > 50ms/230VAC	
Parallel Operation	Not possible	

Protection

Over load/Over Current	105%-130% of rated output power, constant current limit, automatic restart	
Over Output Voltage	14-17VDC, restart required	29-33VDC, restart required

Safety & EMC

Safety Standards	EN60950, UL508
Withstand Voltage	I/P - O/P 3kVAC ; I/P - F/G 2kVAC ; O/P - F/G 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 EN55011, EN55032(CISPR32), EN61204-3 class B
Harmonics Current	Compliance with EN61000-3-2, -3
EMC Immunity	Compliance with EN61000-4-2, -3, -4, -5, -6, -8, -11

Environment

Working Temperature	-20°C ~ +60°C
Derating Temperature above 40°C	See: Derating curve
Working Humidity	10-95% 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

General

Case Material	Electro-Galvanized steel and Aluminium Enclosure
Case Protection	IP 20
Weight	0,65kg
Dimensions	32 × 125,2 × 113,5mm
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.*

KSE 12012M / KSE 12024M / KSE 12048M

1. Introduction:

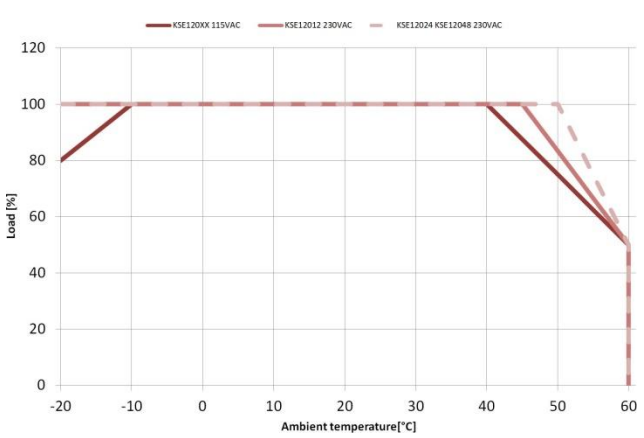
This series of single-phase DIN-rail-mounted switching power supplies is designed for a wide range of control equipment requiring high-quality DC power supplies with excellent EMC (electromagnetic compatibility) immunity and performance in industrial environments.

2. Features:

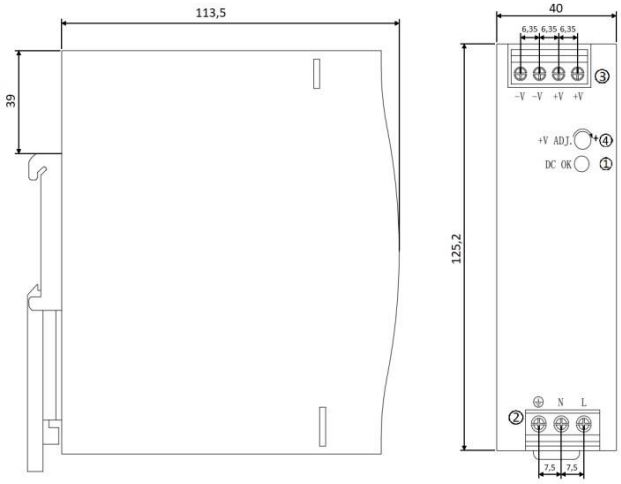
- **Overload protection:** The DC electrical circuitry protects the device from overload. In the event of an overload, the DC OK (ON) indicator of the DC output turns off. (1)
- **Overheating protection:** To protect the device from damage caused by high temperatures, an electrical circuit set is activated 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.



Graph 1. The derating curve of the rated output load as a function of temperature.



4. Installation:

- The KSE 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 0,5 mm^2 to 0,75 mm^2 for flexible cables.

7. Specifications:

	KSE 12012M	**KSE 12024M**	**KSE 12048M**
Voltage Range	100-240VAC; 140-340VDC		
Frequency	47-63Hz~		
Full Load AC Current	2,2A/100VAC; 1A/230VAC		
No Load AC Current	30mA/100VAC; 62mA/230VAC		
Inrush Current, cold start 25°C*	20A/100VAC; 35A/230VAC		
Efficiency	84%	87%	88%

Output

Rated DC Voltage	12V	24V	48V
Voltage Adjust Range	12-14V	24-28V	48-55V
Rated Current	10A	5A	2,5A
Rated Power	120W		
Ripple & Noise (peak to peak)**	≤ 100mV	≤ 120mV	≤ 150mV
Line Regulation	≤ 0,5%		
Load Regulation (10% - 100%)	≤ 1%		
Hold-up Time (Full Load)	> 20ms/100VAC; > 50ms/230VAC		
Parallel Operation	Not possible		

Protection

Over load/Over Current	105%-130% of rated output power, constant current limit, automatic restart		
Over Output Voltage	14-17VDC, restart required	29-33VDC, restart required	56-65VDC, restart required

Safety & EMC

Safety Standards	EN60950, UL508
Withstand Voltage	I/P - O/P 3kVAC ; I/P - F/G 2kVAC ; O/P - F/G 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 EN55011, EN55032(CISPR32), EN61204-3 class B
Harmonics Current	Compliance with EN61000-3-2, -3
EMC Immunity	Compliance with EN61000-4-2, -3, -4, -5, -6, -8, -11

Environment

Working Temperature	-20°C ~ +60°C
Derating Temperature above 40°C	See: Derating curve
Working Humidity	10-95% 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

General

Case Material	Electro-Galvanized steel and Aluminium Enclosure
Case Protection	IP 20
Weight	0,65kg
Dimensions	125,2 × 40 × 113,5mm
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.*

KSE 24012M / KSE 24024M / KSE 24048M

1. Introduction:

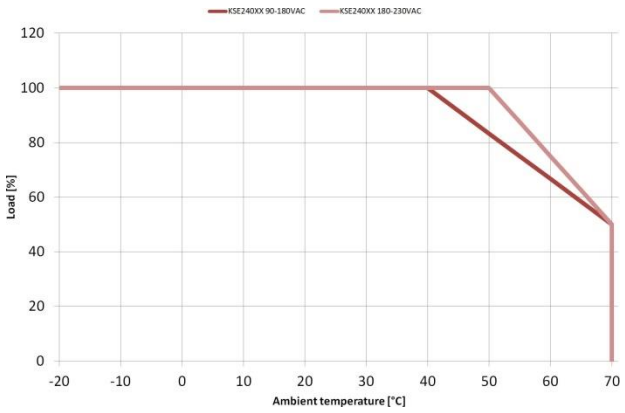
This series of single-phase DIN-rail-mounted switching power supplies is designed for a wide range of control equipment requiring high-quality DC power supplies with excellent EMC (electromagnetic compatibility) immunity and performance in industrial environments.

2. Features:

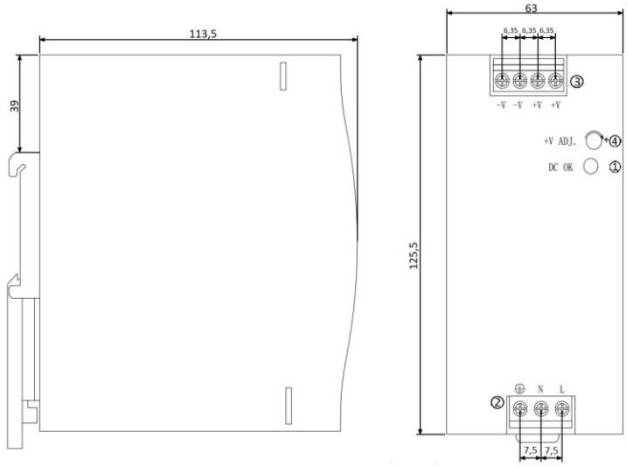
- **Overload protection:** The DC electrical circuitry protects the device from overload. In the event of an overload, the DC OK (ON) indicator of the DC output turns off. (1)
- **Overheating protection:** To protect the device from damage caused by high temperatures, an electrical circuit set is activated 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.



Graph 1. The derating curve of the rated output load as a function of temperature.



4. Installation:

- The KSE 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 0,5 mm^2 to 0,75 mm^2 for flexible cables.

7. Specifications:

	KSE 24012M	**KSE 24024M**	**KSE 24048M**
Voltage Range	100-240VAC; 140-340VDC		
Frequency	47-63Hz~		
Full Load AC Current	2,9A/100VAC; 1,3A/230VAC		
No Load AC Current	90mA/100VAC; 140mA/230VAC		
Inrush Current, cold start 25°C*	20A/100VAC; 35A/230VAC		
Efficiency	83%	87%	88%

Output

Rated DC Voltage	12V	24V	48V
Voltage Adjust Range	12-14V	24-28V	48-56V
Rated Current	14A	10A	5A
Rated Power	150W	240W	240W
Ripple & Noise (peak to peak)**	≤ 120mV	≤ 150mV	≤ 240mV
Line Regulation	≤ 1%		
Load Regulation (10% - 100%)	≤ 1%		
Hold-up Time (Full Load)	>22ms/100VAC ; >28ms/230VAC		
Parallel Operation	Not possible		

Protection

Over load/Over Current	105%-130% of rated output power, constant current limit, automatic restart		
Over Output Voltage	14,4-16,5VDC, restart required	29-33VDC, restart required	57,6-66V, restart required

Safety & EMC

Safety Standards	EN60950, UL508
Withstand Voltage	I/P - O/P 3kVAC ; I/P - F/G 2kVAC ; O/P - F/G 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 EN55011, EN55032(CISPR32), EN61204-3 class B
Harmonics Current	Compliance with EN61000-3-2, -3
EMC Immunity	Compliance with EN61000-4-2, -3, -4, -5, -6, -8, -11

Environment

Working Temperature	-20°C ~ +70°C
Derating Temperature above 40°C	See: Derating curve
Working Humidity	10-95% 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

General

Case Material	Electro-Galvanized steel and Aluminium Enclosure
Case Protection	IP 20
Weight	1,08kg
Dimensions	125,5 × 63 × 113,5mm
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.*

KSE 48024M / KSE 48048M

1. Introduction:

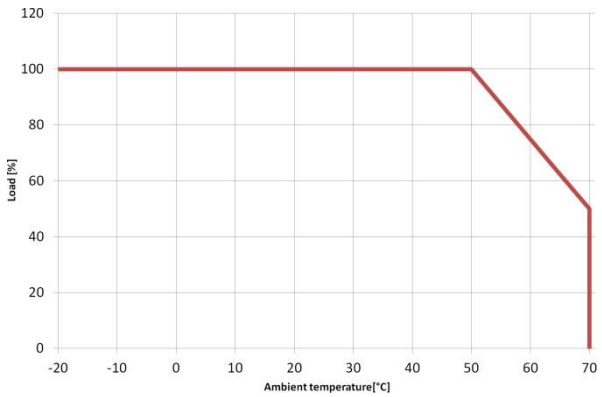
This series of single-phase DIN-rail-mounted switching power supplies is designed for a wide range of control equipment requiring high-quality DC power supplies with excellent EMC (electromagnetic compatibility) immunity and performance in industrial environments.

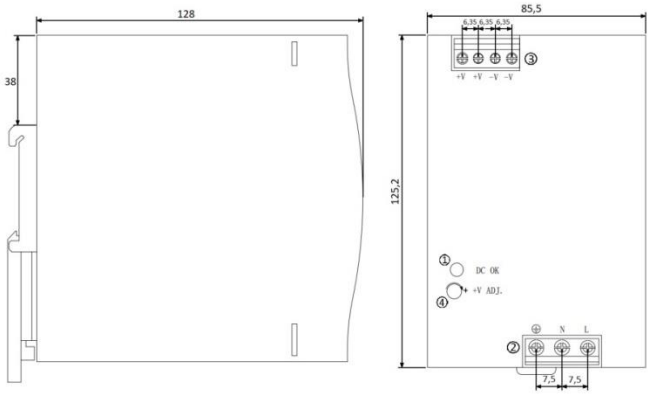
2. Features:

- **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.





Graph 1. The derating curve of the rated output load as a function of temperature.

4. Installation:

- The KSE 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 0,5 mm^2 to 0,75 mm^2 for flexible cables.

7. Specifications:

	KSE 48024M	**KSE 48048M**
Voltage Range	100-240VAC; 140-340VDC	
Frequency	47-63Hz~	
Full Load AC Current	5,5A/100VAC; 2,4A/230VAC	
No Load AC Current	120mA/100VAC; 220mA/230VAC	
Inrush Current, cold start 25°C*	20A/100VAC; 35A/230VAC	
Efficiency	90%	

Output

Rated DC Voltage	24V	48V
Voltage Adjust Range	24-28V	48-55V
Rated Current	20A	10A
Rated Power	480W	
Ripple & Noise (peak to peak)**	≤ 150mV	
Line Regulation	≤ 1%	
Load Regulation (10% - 100%)	≤ 1%	
Hold-up Time (Full Load)	> 16ms/100VAC; >16ms/230VAC	
Parallel Operation	Not possible	

Protection

Over load/Over Current	105%-130% of rated output power, constant current limit, automatic restart	
Over Output Voltage	29-33VDC, restart required	56-65VDC, restart required

Safety & EMC

Safety Standards	EN60950, UL508
Withstand Voltage	I/P - O/P 3 kVAC ; I/P - F/G 1.5 kVAC ; O/P - F/G 0,5 kVAC
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 EN55011, EN55032(CISPR32), EN61204-3 class B
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 50°C	See: Derating curve
Working Humidity	10-95% 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

General

Case Material	Electro-Galvanized steel and Aluminium Enclosure
Case Protection	IP 20
Weight	1,9kg
Dimensions	125,2 × 85,5 × 128,5mm
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.*