# MDR-10/20

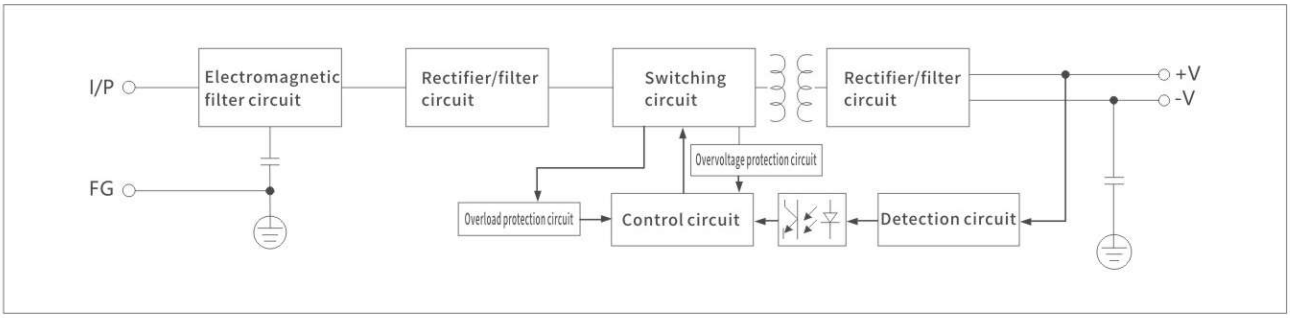
## DIN RAIL TYPE SWITCH POWER SUPPLY


## Product overview

The MDR-10、20 series is a 10、20W single group output closed type power supply that uses 85 to 264VAC full range AC input. The entire series provides 5V、12V、15V、24V、36V and 48V output.

In addition to the efficiency of up to 91.5%, the design of the environmentally friendly flame-retardant housing enhances the heat dissipation ability, allowing the MDR-10、20 to operate in the temperature range of - 20 °C to+70 °C without a fan. Making it easy for the terminal system to meet international energy requirements. The MDR-10、20 have complete protection functions and resistance to 5G vibration; It complies with TUV EN60950-1、EN60335-1、EN61558-1/-2-16、UL60950-1 and GB4943 international safety regulations. The MDR-10、20 series provide a cost-effective solution for various industrial applications.

## Principle diagram



KEEN SIDE electronics

## Technical parameter

| Type | | Technical indicators | | | |
|---|---|---|---|---|---|
| Output | DC voltage | 5V | 12V | 15V | 24V |
| | Ripple and noise ① | ＜80mV | ＜120mV | ＜120mV | ＜150mV |
| | Voltage regulation range | ±10% | | | |
| | Linear adjustment rate | ±1% | | | |
| | Load adjustment rate | ±5% | ±3% | ±3% | ±2% |
| Input | Start up time | 1000ms、30ms、25ms： 110VAC　　500ms、30ms、120ms： 220VAC | | | |
| | Voltage range/frequency | 85-264VAC 47Hz～63Hz (120VDC～370VDC) | | | |
| | Efficiency (typical) ② | ＞77% | ＞81% | ＞81% | ＞84% |
| | Impulse current | 110VAC 35A， 220VAC 70A | | | |
| Protection characteristics | Overload protection | When the rated output power is ⩾ 105% - 135%: protection mode: hiccup mode, which can be automatically restored after removing abnormal conditions | | | |
| | Overvoltage protection | When the output voltage is greater than 135%, the shutdown output will automatically recover after the abnormal condition is removed | | | |
| Environment | Operating temperature、humidity | -20°C～+70°C；20%～90RH | | | |
| | Storage temperature、humidity | -40°C～+85°C；10%～95RH | | | |
| Security | Withstand voltage | Input-output: 3KVAC | | | |
| | Isolation resistor | Input - output and input - shell, output - shell: 500 VDC / 100 mΩ | | | |
| Other | Size | 22.5*90*100mm(L*W*H) | | | |
| | Net weight/gross weight | 170g/185g | | | |
| Remarks | ①Ripple and noise measurement method: use a 12 twisted pair, and connect 0.1uF and 47uF capacitors in parallel at the terminal, and measure at 20MHz bandwidth.<br>② The efficiency is tested at the input voltage of 230VAC, rated load and ambient temperature of 25 °C.<br>Precision: including setting error, linear adjustment rate and load adjustment rate.<br>Test method of linear regulation: test from low voltage to high voltage under rated load.<br>Load adjustment rate test method: from 0% to 100% of rated load.<br>The starting time is measured under the cold start state. Fast and frequent startup and shutdown may increase the starting time. When the operating altitude is higher than 2000 meters, the operating ambient temperature needs to be reduced by 5 °C/1000 meters. | | | | |

| Type | MDR-10 | | | |
|---|---|---|---|---|
| DC voltage | 5V | 12V | 15V | 24V |
| Rated current | 2A | 0.84A | 0.67A | 0.42A |
| Rated power | 10W | 10W | 10W | 10W |
| Voltage accuracy | ±5% | ±1% | ±1% | ±1% |
| Operating current | 0.33A/110VAC 0.21A/230VAC | | | |

| Type | MDR-20 | | | |
|---|---|---|---|---|
| DC voltage | 5V | 12V | 15V | 24V |
| Rated current | 3A | 1.67A | 1.34A | 1A |
| Rated power | 15W | 20W | 20W | 24W |
| Voltage accuracy | ±2% | ±1% | ±1% | ±1% |
| Operating current | 0.55A/110VAC 0.35A/230VAC | | | |

# MDR-40/60

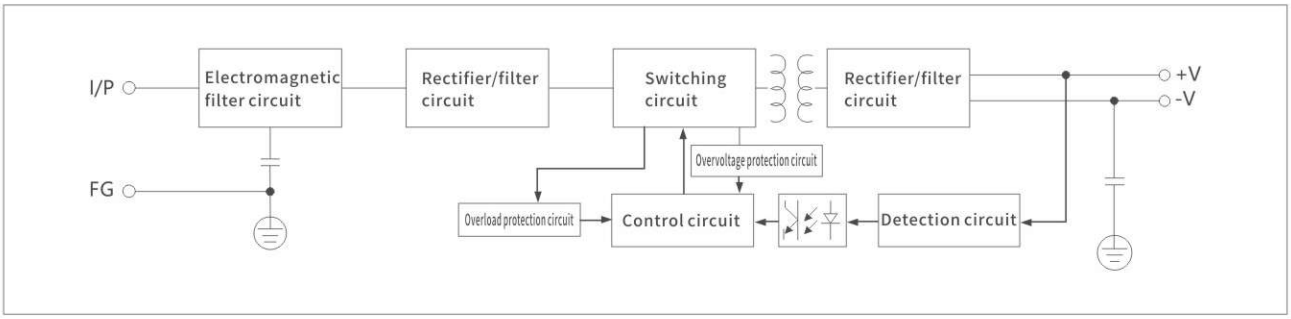
## DIN RAIL TYPE SWITCH POWER SUPPLY


## Product overview

The MDR-40、60 series is a 40、60W single group output closed type power supply that uses 85 to 264VAC full range AC input. The entire series provides 5V、12V、15V、24V、36V and 48V output.

In addition to the efficiency of up to 91.5%, the design of the environmentally friendly flame-retardant housing enhances the heat dissipation ability, allowing the MDR-40、60 to operate in the temperature range of - 20 °C to+70 °C without a fan. Making it easy for the terminal system to meet international energy requirements. The MDR-40、60 have complete protection functions and resistance to 5G vibration; It complies with TUV EN60950-1、EN60335-1、EN61558-1/-2-16、UL60950-1 and GB4943 international safety regulations. The MDR-40、60 series provide a cost-effective solution for various industrial applications.

## Principle diagram



## Technical parameter

| Type | | Technical indicators | | | |
|---|---|---|---|---|---|
| Output | DC voltage | 5V | 12V | 15V | 24V |
| | Ripple and noise ① | ＜80mV | ＜120mV | ＜120mV | ＜200mV |
| | Voltage regulation range | ±10% | | | |
| | Linear adjustment rate | ±1% | | | |
| | Load adjustment rate | ±1% | ±1% | ±1% | ±1% |
| Input | Start up time | 500ms、30ms、25ms： 110VAC　500ms、30ms、120ms： 220VAC | | | |
| | Voltage range/frequency | 85-264VAC 47Hz～63Hz (120VDC～370VDC) | | | |
| | Efficiency (typical) ② | ＞78% | ＞86% | ＞88% | ＞88% |
| | Impulse current | 110VAC 35A， 220VAC 70A | | | |
| Protection characteristics | Overload protection | When the rated output power is ⩾ 105% - 135%: protection mode: hiccup mode, which can be automatically restored after removing abnormal conditions | | | |
| | Overvoltage protection | When the output voltage is greater than 135%, the shutdown output will automatically recover after the abnormal condition is removed | | | |
| Environment | Operating temperature、humidity | -20°C～+70°C；20%～90RH | | | |
| | Storage temperature、humidity | -40°C～+85°C；10%～95RH | | | |
| Security | Withstand voltage | Input-output: 3KVAC duration: 1 minute | | | |
| | Isolation resistor | Input - output and input - shell, output - shell: 500 VDC / 100 mΩ | | | |
| Other | Size | 40*90*100mm(L*W*H) | | | |
| | Net weight/gross weight | 300g/325g | | | |
| Remarks | ① Ripple and noise measurement method: use a 12 twisted pair, and connect 0.1uF and 47uF capacitors in parallel at the terminal, and measure at 20MHz bandwidth.<br>② The efficiency is tested at the input voltage of 230VAC, rated load and ambient temperature of 25 °C.<br>Precision: including setting error, linear adjustment rate and load adjustment rate.<br>Test method of linear regulation: test from low voltage to high voltage under rated load.<br>Load adjustment rate test method: from 0% to 100% of rated load.<br>The starting time is measured under the cold start state. Fast and frequent startup and shutdown may increase the starting time. When the operating altitude is higher than 2000 meters, the operating ambient temperature needs to be reduced by 5 °C/1000 meters. | | | | |

| Type | MDR-40 | | | |
|---|---|---|---|---|
| DC voltage | 5V | 12V | 24V | 48V |
| Rated current | 6A | 3.3A | 1.7A | 0.83A |
| Rated power | 30W | 40W | 40.8W | 39.8W |
| Voltage accuracy | ±2% | ±1% | ±1% | ±1% |
| Operating current | 1.1A/110VAC 0.7A/220VAC | | | |

| Type | MDR-60 | | | |
|---|---|---|---|---|
| DC voltage | 5V | 12V | 24V | 48V |
| Rated current | 10A | 5A | 2.5A | 1.25A |
| Rated power | 50W | 60W | 60W | 60W |
| Voltage accuracy | ±2% | ±1% | ±1% | ±1% |
| Operating current | 1.8A/110VAC 1A/230VAC | | | |

# MDR-100

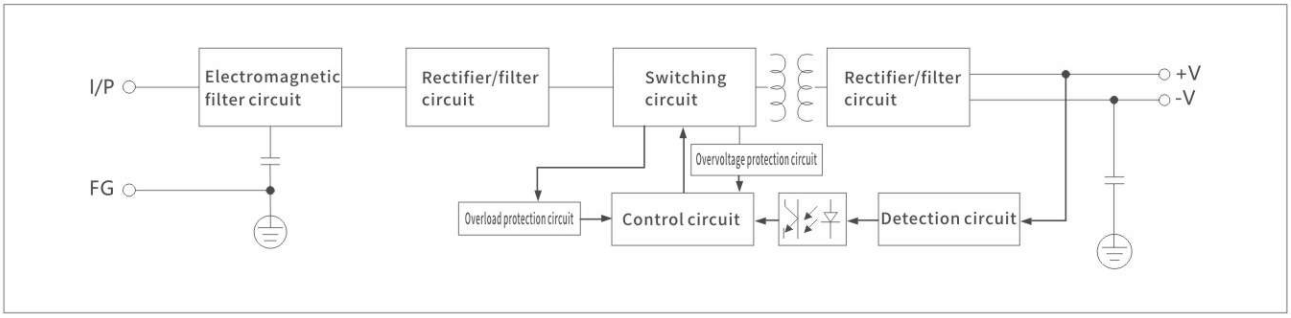
## DIN RAIL TYPE SWITCH POWER SUPPLY


## Product overview

The MDR-100 series is a 100W single group output closed type power supply that uses 85 to 264VAC full range AC input. The entire series provides 5V、12V、15V、24V、36V and 48V output.

In addition to the efficiency of up to 91.5%, the design of the environmentally friendly flame-retardant housing enhances the heat dissipation ability, allowing the MDR-100 to operate in the temperature range of - 20 °C to+70 °C without a fan. Making it easy for the terminal system to meet international energy requirements. The MDR-100 have complete protection functions and resistance to 5G vibration; It complies with TUV EN60950-1、 EN60335-1、EN61558-1/-2-16、 UL60950-1 and GB4943 international safety regulations. The MDR-100 series provide a cost-effective solution for various industrial applications.

## Principle diagram



## Technical parameter

| Type | | Technical indicators | | |
|---|---|---|---|---|
| Output | Dc voltage | 12V | 24V | 48V |
| | Rated current | 7.5A | 4A | 2A |
| | Rated power | 90W | 96W | 96W |
| | Ripple and noise ① | ＜120mV | ＜150mV | ＜200mV |
| | Voltage accuracy | ±1% | ±1% | ±1% |
| | Voltage regulation range | ±10% | | |
| | Load adjustment rate | ±1% | ±1% | ±1% |
| | Linear adjustment rate | ±1% | | |
| Input | Voltage range | 85-264VAC 47Hz~63Hz (120VDC~370VDC) | | |
| | Power factor | PF≥0.95/230VAC PF≥0.98/115VAC (full load) | | |
| | Efficiency (typical) ② | ＞83% | ＞86% | ＞87% |
| | Operating current | ＜1.3A 110VAC ＜0.8A 220VAC | | |
| | Impulse current | 110VAC 35A， 220VAC 70A | | |
| | Start up time | 3000ms、50ms、20ms： 110VAC 3000ms、50ms、50msms： 220VAC | | |
| Protection characteristics | Overload protection | When the rated output power is ≥ 105% - 150%: protection mode: hiccup mode, which can be automatically restored after removing abnormal conditions | | |
| | Overvoltage protection | When the output voltage is greater than 135%, the shutdown output will automatically recover after the abnormal condition is removed | | |
| | Over temperature protection | ＞85° turn off the output and recover after the power is restarted after the temperature drops | | |
| Environment | Operating temperature、humidity | -20°C～+70°C；20%～90RH | | |
| | Storage temperature、humidity | -40°C～+85°C；10%～95RH | | |
| Security | Withstand voltage | Input-output: 3KVAC duration: 1 minute | | |
| | Isolation resistor | Input - output and input - shell, output - shell: 500 VDC / 100 mΩ | | |
| Other | Size | 55*90*100mm(L*W*H) | | |
| | Net weight/gross weight | 420kg/450kg | | |
| Remarks | ①Ripple and noise measurement method: use a 12 twisted pair, and connect 0.1uF and 47uF capacitors in parallel at the terminal, and measure at 20MHz bandwidth.<br>② The efficiency is tested at the input voltage of 230VAC, rated load and ambient temperature of 25 °C.<br>Precision: including setting error, linear adjustment rate and load adjustment rate.<br>Test method of linear regulation: test from low voltage to high voltage under rated load.<br>Load adjustment rate test method: from 0% to 100% of rated load.<br>The starting time is measured under the cold start state. Fast and frequent startup and shutdown may increase the starting time. When the operating altitude is higher than 2000 meters, the operating ambient temperature needs to be reduced by 5 °C/1000 meters. | | | |