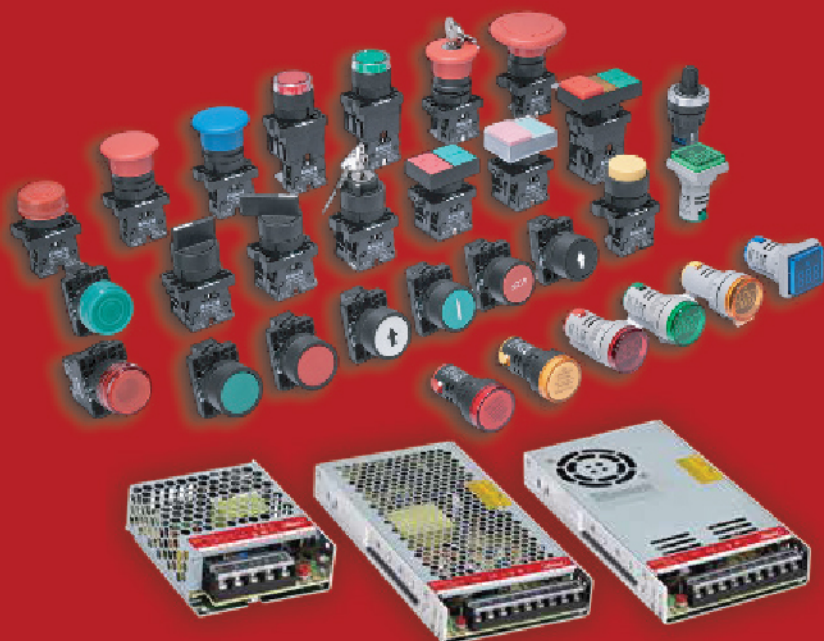




# **HLAY2 Pushbutton & HLD12 Indicator**

Robust, Reliable & Safe

## **Switch Mode Power Supply**







# About Himel

Himel is a multinational manufacturer and provider of electrical products successfully combining global expertise with local knowledge.

Founded by a Spanish entrepreneur in 1958, the company pioneered in exporting quality electrical enclosures, establishing Himel brand globally.

Today, our global footprint and technology enable us to provide the best combination of affordable and reliable offers for Low Voltage Power distribution, Industry Automation and Home Electric to our long-term customers and partners in over 50 countries where we are present.

**Himel. Reliable made affordable**



## SERIES SIGNAL DIGITAL INDICATOR DIGITAL

# HLAY2 Pushbutton

### Range Presentation

HLAY2 is Himel range of Pushbuttons, Switches and Pilot Lights designed to control and indicate the status of the circuit

### Features

- ◆ Compact size, suitable for small cabinet equipment
- ◆ Plastic types are more economical and affordable
- ◆ Plastic type provides high resistance to chemical agents
- ◆ Screw clamp terminals allowing fast and easy connection
- ◆ Modular design allows flexible and simple setup for complete products

### Technical Parameters


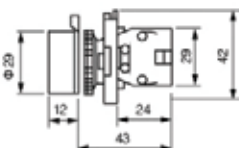

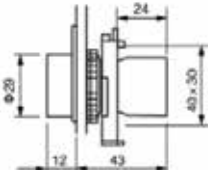

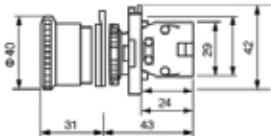

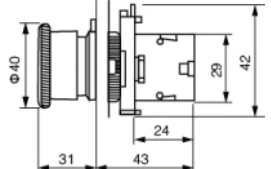

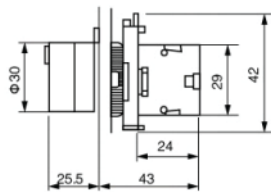
Range name			HLAY2					
Usage mode			Rated value					
AC-15	Rated voltage (Ue)	V	380			240		
	Rated current (Ie)	A	2			3.3		
DC-13	Rated voltage (Ue)	V	240			110		
	Rated current (Ie)	A	0.5			1.1		
Mechanical endurance		10 <sup>5</sup>	10(Flush)					
			1(Other types)					
Electrical endurance		10 <sup>5</sup>	AC: 10 / DC: 2 (Flush,Mushroom type)					
			0.5 (Other types)					
Rated themal current (Ith)		A6						
Rated impulse withstand voltage (Uimp)		V	2500					
Degree of protection			IP40					
Illuminated pushbutton								
Power supplier voltage		V	6	12	24	110	240	380
LED			✓	✓	✓	✓	✓	✓

### Environment

Temperature	5°C to +40°C
Relative humidity	≤50% (40°C) & 90% (20°C)
Altitude	≤2000m
Pollution degree	3



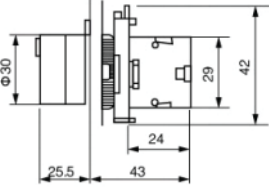







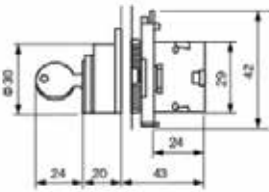







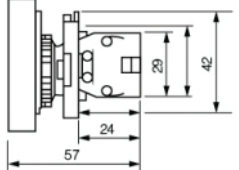



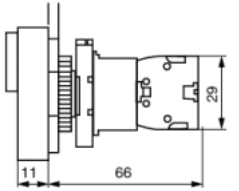

## SERIES SIGNAL DIGITAL INDICATOR DIGITAL

# HLAY2 Pushbutton

Picture	Name	Model	Colour	Contact type		Structure drawing
				NO	NC	
	Flat pushbutton switch	HLAY2EA11	□ W	1	-	
		HLAY2EA21	■ BL	1	-	
		HLAY2EA31	■ G	1	-	
		HLAY2EA51	■ Y	1	-	
		HLAY2EA61	■ B	1	-	
		HLAY2EA42	■ R	-	1	
		HLAY2EA15	□ W	1	1	
		HLAY2EA25	■ BL	1	1	
		HLAY2EA35	■ G	1	1	
		HLAY2EA55	■ Y	1	1	
		HLAY2EA65	■ B	1	1	
		HLAY2EA45	■ R	1	1	
	Mark pushbutton	HLAY2EA3311	ⓘ	1	-	
		HLAY2EA3361	ⓘ	1	-	
		HLAY2EA3341	⬆	1	-	
		HLAY2EA3351	⬆	1	-	
		HLAY2EA4322	⊘	-	1	
		HLAY2EA4342	⊘	-	1	
		HLAY2EA4331	⊘	1	-	
	Mushroom pushbutton switch Φ40mm, Φ60mm	HLAY2EC42	■ R Ø40	-	1	
		HLAY2EC21	■ BL Ø40	1	-	
		HLAY2EC31	■ G Ø40	1	-	
		HLAY2ER21	■ BL Ø60	1	-	
		HLAY2ER31	■ G Ø60	1	-	
		HLAY2ER42	■ R Ø60	-	1	
	Emergency stop switch Φ30mm, Φ40mm Φ60mm	HLAY2ES442	■ Ø30	-	1	
		HLAY2ES542	■ Ø40	-	1	
		HLAY2ES642	■ Ø60	-	1	
		HLAY2ES142	■ Ø40&Key	-	1	
	2 Position maintain	HLAY2ED21	∨	1	-	
		HLAY2ED25	∨	1	1	
	2 Position spring	HLAY2ED41	∨	1	-	
		HLAY2ED45	∨	1	1	
	3 Position maintain	HLAY2ED33	∨	2	-	
	3 Position spring	HLAY2ED53	∨	2	-	
		HLAY2ED73	∨	2	-	
		HLAY2ED83	∨	2	-	

## SERIES SIGNAL DIGITAL INDICATOR DIGITAL

# HLAY2 Pushbutton

Picture	Name	Model	Colour	Contact type		Structure drawing
				NO	NC	
	2 Position maintain	HLAY2EJ21		1	-	
		HLAY2EJ25		1	1	
	2 Position spring	HLAY2EJ41		1	-	
		HLAY2EJ45		1	1	
	3 Position maintain	HLAY2EJ33		2	-	
	3 Position spring	HLAY2EJ53		2	-	
		HLAY2EJ73		2	-	
		HLAY2EJ83		2	-	
	2 Position switch with key	HLAY2EG21		1	-	
		HLAY2EG25		1	1	
		HLAY2EG41		1	-	
		HLAY2EG45		1	1	
		HLAY2EG61		1	-	
		HLAY2EG65		1	1	
	3 Position switch with key	HLAY2EG33		2	-	
		HLAY2EG53		2	-	
		HLAY2EG03		2	-	
	Double head pushbutton with light	HLAY2EW8365M	 240V	1	1	
		HLAY2EW8365B	 24V	1	1	
	Double head pushbutton with light	HLAY2EW8465M	 240V	1	1	
		HLAY2EW8465B	 24V	1	1	

## HLAY2 Pushbutton

06

SERIES SIGNAL DIGITAL INDICATOR DIGITAL

HLD12 Indicators & Potentiometer

HLD12 Selection Code

Series name	Hole size	Type	Shape/ vlotage	Colour/resistance
HLD12	22	V	S	G
HLD12		V---Voltmeter A---Ammeter HZ---Hertz meter VA---Voltmeter & ammeter VAZ---Voltmeter & ammeter & hertz meter T-----Thermometer P----Pilot light KB---Potentiometer	S---Square M---Round A(pilot light)---AC 240V D(pilot light)---DC 24V potentiometer ----NA	G----Green R----Red Y---Yellow B----Blue W---White R(potentiometer) ----1 2 5 10...value of resistance KΩ

Working Condition

- 1. Ambient temperature: -25°C to +55°C
- 2. Relative humidity: 98%
- 3. Normally workable when vibration frequency is 2-80Hz with acceleration of 0.7g
- 4. Pollution degree is 3, installation group is II

Features


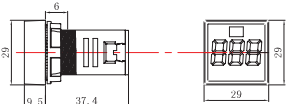

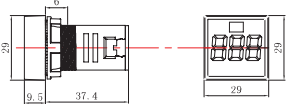

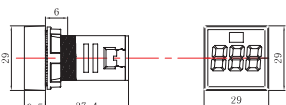

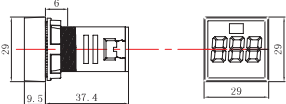

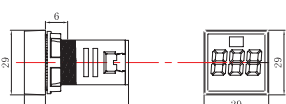

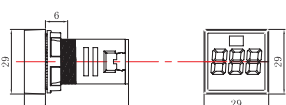

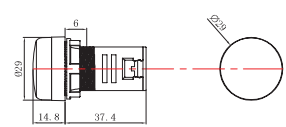
- ◆ Compact design, all-in-one construction
- ◆ LED light provides long life, low consumption, high brightness
- ◆ Excellent resistance to mechanical shock and vibration
- ◆ Anti-interference, no improper indication of residual lights
- ◆ Plastic type provides high resistance to chemical agents

Technical Parameters	
Pilot Lights	HLD12
Rated voltage	DC:24/AC 240V
Rated current (mA)	≤20mA
Working life (H)	10000
Brightness of light (cd/m2)	100
Power frequency withstand oltage	1.9KV/1min(effective AC value)
Applying frequency	AC50-60Hz



## SERIES SIGNAL DIGITAL INDICATOR DIGITAL

# HLD12 Indicators & Potentiometer

Picture	Name	Model	Colour	Voltage/Current/ Frequency/ Temperature	Structure drawing
	Indicator Voltmeter	HLD1222VSG HLD1222VSR HLD1222VSY HLD1222VSB HLD1222VSW	<div></div> Green <div></div> Red <div></div> Yellow <div></div> Blue <div></div> White	AC20~500V	
	Indicator Ammeter	HLD1222ASG HLD1222ASR HLD1222ASY HLD1222ASB HLD1222ASW	<div></div> Green <div></div> Red <div></div> Yellow <div></div> Blue <div></div> White	0~100A Max AC380V	
	Indicator Frequency meter	HLD1222HZSG HLD1222HZSR HLD1222HZSY HLD1222HZSB HLD1222HZSW	<div></div> Green <div></div> Red <div></div> Yellow <div></div> Blue <div></div> White	0-99Hz	
	Indicator Thermometer	HLD1222TSG HLD1222TSR HLD1222TSY HLD1222TSB HLD1222TSW	<div></div> Green <div></div> Red <div></div> Yellow <div></div> Blue <div></div> White	0℃ ~+199℃	
	Indicator Voltmeter& Ammeter	HLD1222VASG HLD1222VASR HLD1222VASY HLD1222VASB HLD1222VASW	<div></div> Green <div></div> Red <div></div> Yellow <div></div> Blue <div></div> White	AC20-500V 0-100A	
	Indicator Voltmeter& Ammeter Frequency meter	HLD1222VAZSG HLD1222VAZSR HLD1222VAZSY HLD1222VAZSB HLD1222VAZSW	<div></div> Green <div></div> Red <div></div> Yellow <div></div> Blue <div></div> White	AC50-500V 0-100A 0-99Hz	
	Indicator Voltmeter	HLD1222VMG HLD1222VMR HLD1222VMY HLD1222VMB HLD1222VMW	<div></div> Green <div></div> Red <div></div> Yellow <div></div> Blue <div></div> White	AC50~500V	

## SERIES SIGNAL DIGITAL INDICATOR DIGITAL METER

### HLD12 Indicators & Potentiometer

Picture	Name	Model	Colour	Voltage/Current/ Frequency/ Temperature	Structure drawing
	Indicator Ammeter	HLD1222AMG HLD1222AMR HLD1222AMY HLD1222AMB HLD1222AMW	<div>Green</div> <div>Red</div> <div>Yellow</div> <div>Blue</div> <div>White</div>	0~100A Max AC380V	
	Indicator Frequency meter	HLD1222HZMG HLD1222HZMR HLD1222HZMY HLD1222HZMB HLD1222HZMW	<div>Green</div> <div>Red</div> <div>Yellow</div> <div>Blue</div> <div>White</div>	0-99Hz	
	Indicator Thermometer	HLD1222TMG HLD1222TMR HLD1222TMY HLD1222TMB HLD1222TMW	<div>Green</div> <div>Red</div> <div>Yellow</div> <div>Blue</div> <div>White</div>	0℃ ~199℃	
	Indicator Voltmeter& Ammeter	HLD1222VAMG HLD1222VAMR HLD1222VAMY HLD1222VAMB HLD1222VAMW	<div>Green</div> <div>Red</div> <div>Yellow</div> <div>Blue</div> <div>White</div>	AC50-500V 0-100A	
	Indicator	HLD1222PDG HLD1222PDR HLD1222PDY HLD1222PDB HLD1222PDW	<div>Green</div> <div>Red</div> <div>Yellow</div> <div>Blue</div> <div>White</div>	AC/DC 24V	
	Indicator	HLD1222PAG HLD1222PAR HLD1222PAY HLD1222PAB HLD1222PAW	<div>Green</div> <div>Red</div> <div>Yellow</div> <div>Blue</div> <div>White</div>	AC 240V	
Picture	Name	Type	Resistance	Outline Dimensions	
	Potentiometer	HLD1222KBR1 HLD1222KBR2 HLD1222KBR5 HLD1222KBR10 HLD1222KBR20 HLD1222KBR50 HLD1222KBR100 HLD1222KBR200	1KΩ 2KΩ 5KΩ 10KΩ 20KΩ 50KΩ 100KΩ 200KΩ		

# ***What is Switch Mode Power Supply?***

Switch mode power supply, also known as switching power, is a type of power supply using power electronics technology to control the time ratio of opening and closing.



## **Features**

- 30mm ultra-thin enclosure design
- High frequency PWM control technology & fast response
- Easy to install and light weight
- High power MOSFET driving; stable and reliable operation; strong overload ability
- Full range of AC input voltage (90~264VAC); high efficiency and small output ripple
- 100% full load aging test can be passed for all products
- Low power loss design; less heat consumption; no load power consumption is only 0.2-1.0W
- Complete protection functions: overvoltage protection, overload protection, over-temperature protection, short circuit protection, etc.

## What is Switch Mode Power Supply?



## Application

Our product can be widely used in the following fields:

- ◇ Industrial control system
- ◇ Industrial automation machinery
- ◇ Mechanical and electrical equipment
- ◇ Electronic instruments
- ◇ Household appliances

In those fields, our product is used as the power supply for LED screen, electronic testing equipment, control equipment, radio and television, computer network, medical apparatus and instruments, intelligent monitoring, and many more.

## Technical Parameters

Item		Technical Parameter						
Rated power		35W	50W	75W	100W	150W	200W	350W
AC Input voltage		100~264 V (actual input voltage range: 90~264 V )					85~132 V / 176~264 V (can be switched)	
AC Input frequency		47~63 Hz						
Output stability		≤1%						
Load regulation rate		≤1% (standard)						
Micro regulation range of output voltage		± 10% (rated output voltage)						
Ripple and noise		≤1% peak value (100mVp-p standard)						
Overvoltage protection		110%~140% (protection mode: output is tripped, and it will be recovered automatically when the abnormal condition is eliminated)						
Overload protection		110%~150% (protection mode: hiccup mode is activated, and it will be recovered automatically when the abnormal condition is eliminated)						
Over-temperature protection		--					100±5℃	
Output loop		Single						
Cooling method		Natural wind cooling ( < 200W)						
Working environment		Working temperature: -10℃ +60℃ Humidity: 20%~90%RH						
Outline dimension	mm	99×82×30		99×97×30	129×97×30	159×97×30	215×115×30	
Installation dimension		Figure 1		Figure 2	Figure 3	Figure 4	Figure 5	Figure 6
Weight	kg	0.23	0.23	0.25	0.34	0.48	0.66	0.76
Safety & EMC	Safety standard	UL60950-1, TUV EN60950-1, EN60335-1, EN61558-1/-2-16						
	Withstand voltage	Input versus output: 4kVAC Input versus grounding: 2kVAV Output versus grounding: 1.25kAC/1min						
	Insulation resistance	Input versus output,input versus grounding, output versus grounding/500VDC/25℃ /70%RH						
	EMC emission	EN55032(CISPR32) Class B, EN55014, EN61000-3-2						
	EMC immunity	EN61000-4-2, 3, 4, 5, 6, 8, 11; EN61000-6-2 (EN50082-2)						

# Switch Mode Power Supply



## Construction of references Principle

Product Name	Rated Power	Output Voltage
HDKUS	50	12
↓	↓	↓
0230: 230V	35: 35W 50: 50W ... 350: 350W	05: 5V 12: 12V ... 48: 48V

## Order Information for HDKUS

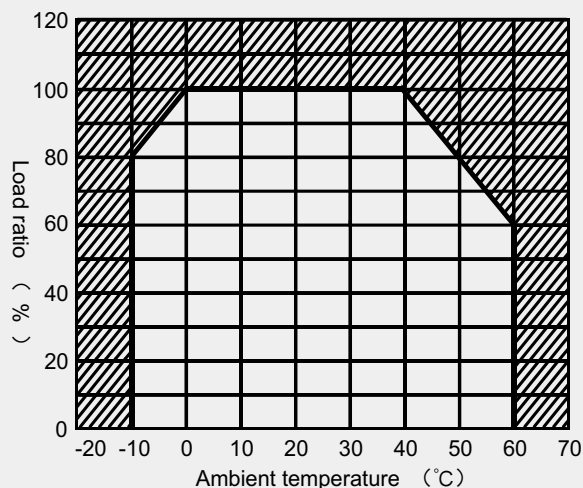
Model	Power	Input	DC Output (A)						Function
	W	Remark 1	5V	12V	15V	24V	36V	48V	Remark 2
HDKUS-35	35	F	7	3	2.4	1.5	1	0.8	ABK
HDKUS-50	50	F	10	4.2	3.4	2.2	1.45	1.1	ABK
HDKUS-75	75	F	14	6	5	3.2	2.1	1.6	ABK
HDKUS-100	100	F	18	8.5	7	4.5	2.8	2.3	ABK
HDKUS-150	150	F/S	22	12.5	10	6.5	4.3	3.3	ABK
HDKUS-200	200	S	40	17	14	8.8	5.9	4.4	ABCK
HDKUS-350	350	S	60	29	23.2	14.6	9.7	7.3	ABCDK

Remark 1: selection method for 85-132/170-264VAC: F: full range; S: switching selection

Remark 2: function A: overload (overcurrent) short circuit protection; B: output overvoltage protection;

C: over-temperature protection; D: automatic switch control of cooling fan (prolong service life); K: output LED display

## Derating Curve



Note: working temperature is very important as the load is varying linerly when the temperature is below 0°C or more than 40°C .

- The load ratio is reduced by 2% per degree when the working temperature is decreased from 0°C to -10°C ;
- The load ratio is reduced by 2% per degree when the working temperature is increased from 40°C to 60°C .



*Increased resistance to external disturbances  
helps achieve stable equipment operation.*

## Application



**We Provide AC / DC Power Solutions for a variety of Industrial Applications**



### **Industrial Automation**

As the DC power for PLC,  
touch screen, controller,  
coil of miniature relay



### **Electronic Information**

As the DC power for switch,  
touch screen



### **Security Monitoring**

As the DC power for  
camera, fire module



### **City Lighting**

As the DC power for LED  
screen, light box, streetlight,  
billboard

# Switch Mode Power Supply

## Model and Overall Dimensions

Figure 1: 35W/50W

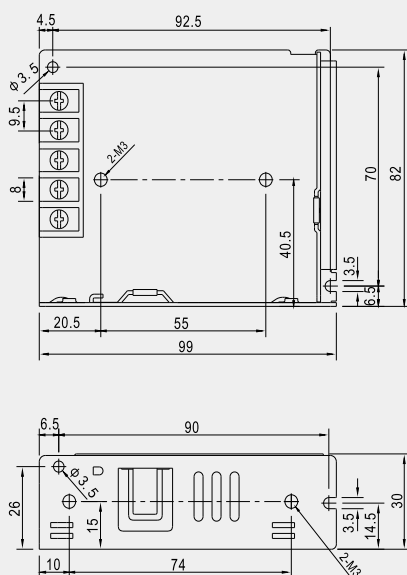


Figure 2: 75W

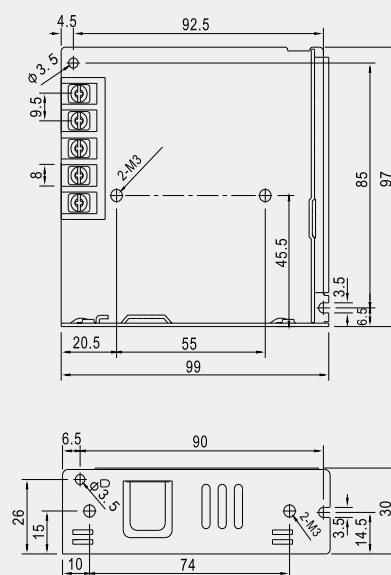


Figure 3: 100W

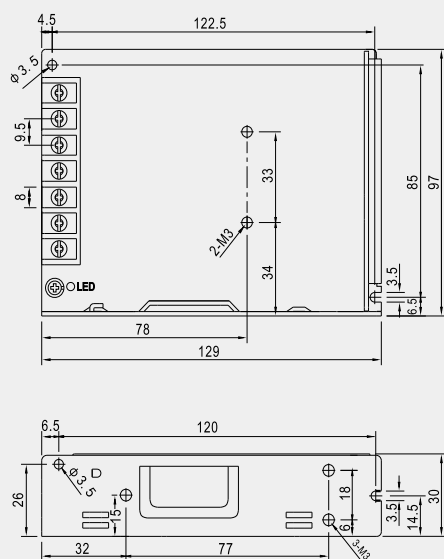
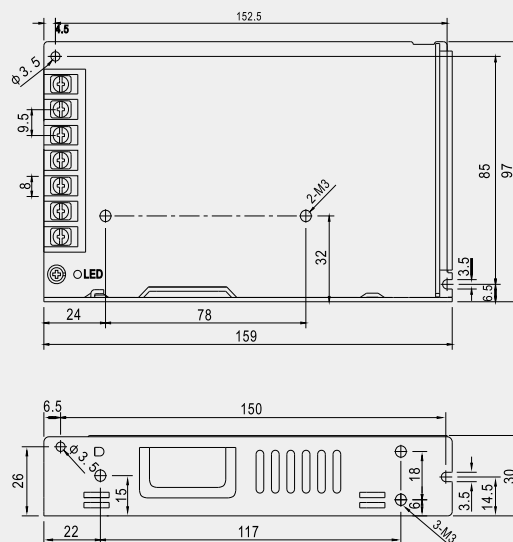


Figure 4: 150W



# Switch Mode Power Supply

## Model and Overall Dimensions

Figure 5: 200W

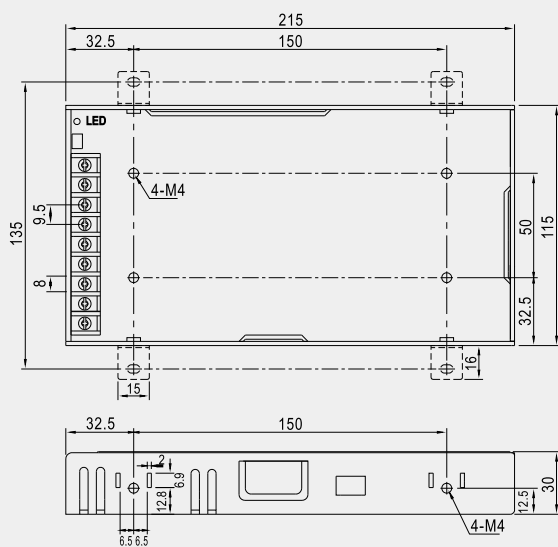


Figure 6: 350W

