

ADM-500

500W Programmable Digital Power Supply



- **Features:**

- ITE and Medical Safety Approvals
- Universal AC Input Full Range (90~264Vac)
- Programmable output voltage & current 0~105%
- Current sharing at parallel operation
- Constant current limit
- AUX POWER : 5V/1A
- Built-in OR'ing FETs
- Remote on/off & sense
- Support PMBus, Modbus, CANBus and Ethernet communication
- Protection: OLP, OCP, OVP, OTP and AC Input Failure
- Built-in VR to adjust output voltage
- Built-in EEPROM to memorize power supply settings

- **Model Naming Rule:** ADM-500-XXV-①②③

ADM : Product Series

500 : Wattage

XX: Output voltage

①②③ : can be RS4 or ETH

RS4:

Modbus, CANBus, Meet PMBus and RS-485 (Cotek STD protocol)

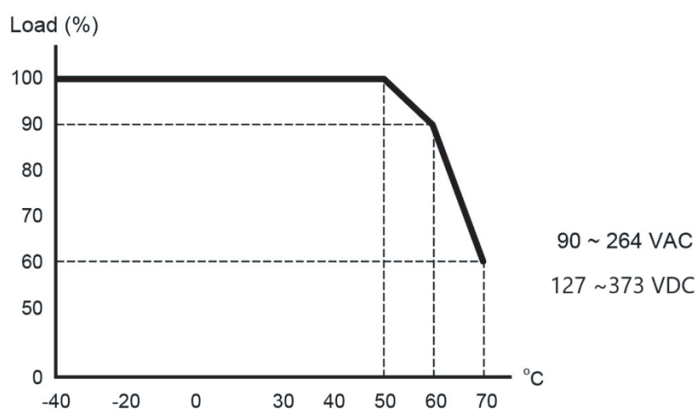
ETH:

ETHERNET (ARP, Device Search Utility, DHCP Client, IPv4, SNMP, TCP, UDP, ICMP)

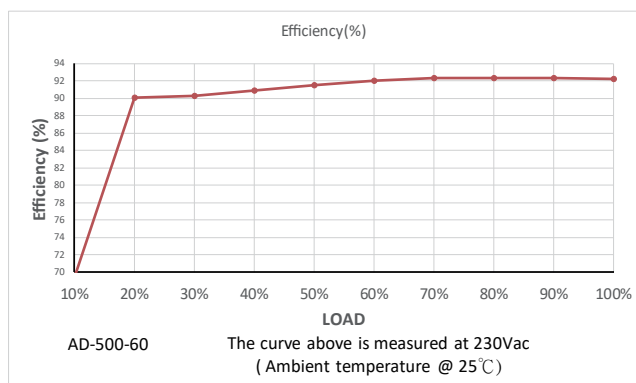
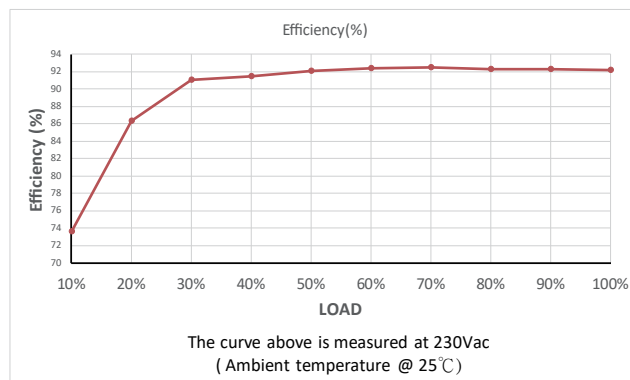
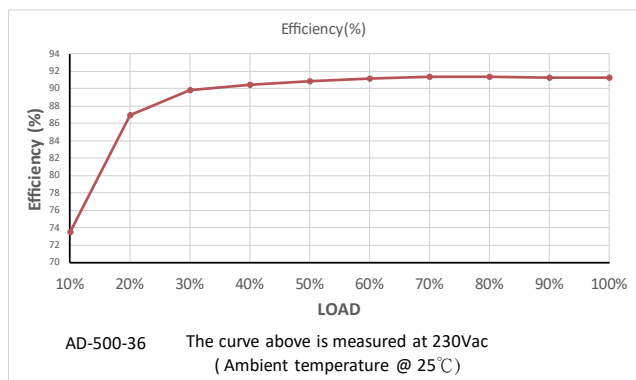
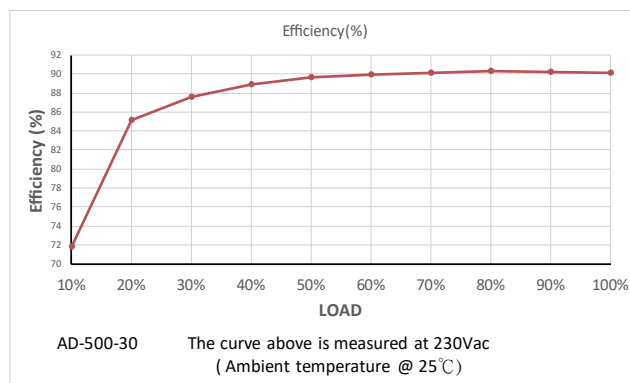
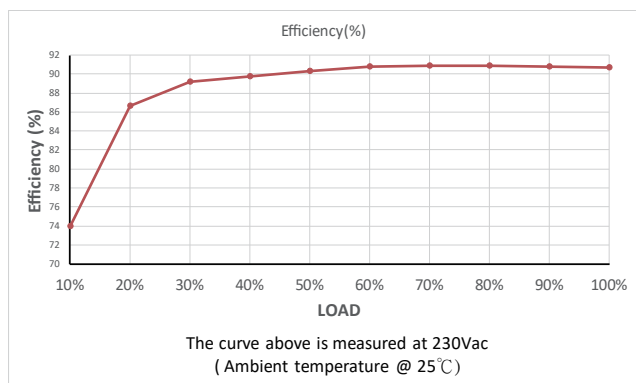
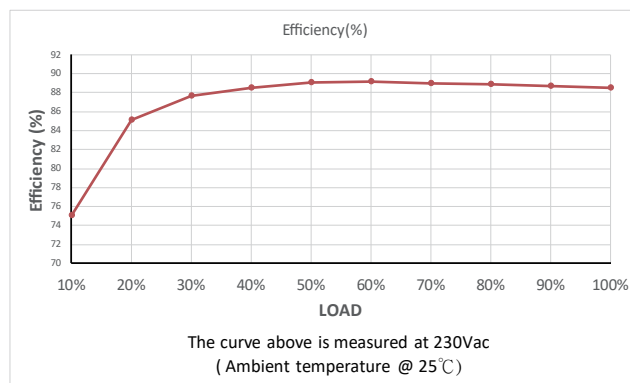
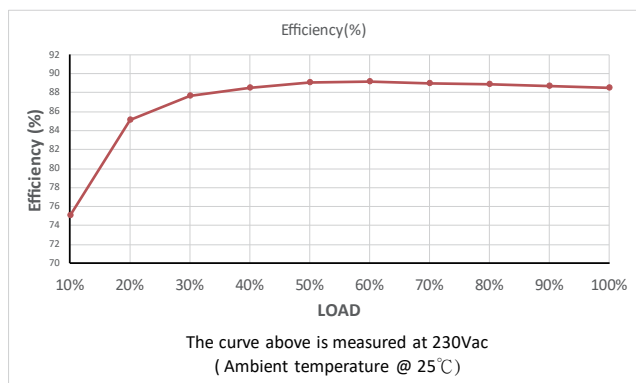
		ADM-500-12	ADM-500-15	ADM-500-24	ADM-500-30	ADM-500-36	ADM-500-48	ADM-500-60
Output	DC Voltage Rated	12V	15V	24V	30V	36V	48V	57V
	Rated Current	41.7A	33.4A	20.9A	16.7A	13.9A	10.5A	8.8A
	Current Range	0~105% Rated Current						
	Voltage Range	0~105% Rated Voltage						
	Rated Power	500W						
	Ripple & Noise (Max.)	150mVp-p	150mVp-p	240mVp-p	300mVp-p	360mVp-p	480mVp-p	570mVp-p
	Voltage Tolerance	±1.0% at rated voltage of single unit						
	Current Tolerance	±3.0% at rated current of single unit						
	Line Regulation	±1.0% at rated voltage						
	Load Regulation	±1.0% at rated voltage						
	Setup, Rise Time	1800ms , 130ms / 230Vac at full load						
Input	Hold Up Time (Typ.)	16ms / 230Vac at full load						
	Voltage Range	90~264Vac & 127~373Vdc						
	Frequency Range	47/63Hz						
	Power Factor (Typ.)	115V/0.98 ; 230V/0.95						
	Efficiency (Typ.)	87%	88%	90%	90%	90%	90%	91%
	AC Current (Typ.)	2.6A at 230Vac						
	Inrush Current (Typ.)	30A / 115VAC, 60A / 230VAC						

		ADM-500-12	ADM-500-15	ADM-500-24	ADM-500-30	ADM-500-36	ADM-500-48	ADM-500-60
Protection	Output Over Load	>105% Rated Output Power		Protection Type : Constant Current Limit				
	Output Over Current	>105% Rated Output Current		Protection Type : Constant Current Limit				
	Output Over Voltage	Programmable OVP, 120 ±7% Vout						
		Protection Type :Auto Recovery after Output Voltage is within allowed range						
	Over Temperature	Yes, Protection Type : Auto Recovery after Temperature goes down						
	Input AC Failure	Yes, Protection Type : Auto Recovery after AC Voltage is within allowed range						
	Input Over Current	AC Input Fuse, 10A time lag type (not for user replacement)						
Function	Auxiliary Power	5V up to 1A (0.1A With Ethernet , 1A Without Ethernet)						
	Remote ON/OFF control	Yes, By external switch or communication (With EPO function)						
	Remote Sense	Yes, Sense Load side voltage						
	DC OK Signal	Yes, base on the status of output voltage			Signal type : open drian, sink current 20mA max, drian voltage 40Vdc max.			
	Output Voltage Adj.	Built-In VR : ±5% rated output voltage			User Interface : 1~105% rated output voltage			
	Output Current Adj.	User Interface : 1~105% rated output current						
	Parallel / Series Connection	Parallel: Up to 3 units / Series : 2 units (PAR, SYNC, ISOGND have to be connected)						
	Built-In OR'ing FETs	Yes						
	Memory Power Setting	Yes						
		Intelligent GUI	Yes					
Environment	Operating Temperature	-40~70 degree C (Refer to load de-rating curve)						
	Operating Humidity	20~90%RH non-condensing						
	Operating Altitude	up to 3000M						
	Storage Altitude	up to 13000M						
	Storage Temp. & Humidity	-40~80 degree eC, 10~95%RH						
	Temp. Coefficient	±0.02% / °C (0~50 degree °C)						
	IP code	meet IP10						
	Drop (with packing)	ISTA 1A						
	Vibration (Operating)	IEC60068-2-6						
Communication	Ethernet	Option (10Base-T)						
	PMBus	Option (SDA,SCL)						
	Modbus	Yes (485-A, 485-B)						
	CANBus	Option (CANH, CANL)						
Safety & EMC	Safety	UL/EN62368-1, IEC/EN60601-1(type BF), cUL Recognized, TUV mark, CE doc, UKCA doc, CB report						
	Withstand Voltage	I/P-O/P : 4kVac(2xMOPP) I/P-FG : 1.5kVac(MOPP) O/P-FG : 1.5kVac(MOPP)						
	Touch Leakage Current	<100uA(NC) <500uA(SFC)						
	Earth Leakage Current	<5mA(NC) <10mA(SFC)						
	AC Patient Leakage Current	<100uA(NC) <500uA(SFC) (DC+,DC- to earth)						
	EMI	EN55032 Class B FCC part 15 subpart B Class B						
	Power Harmonic	EN61000-3-2						
	Voltage Fluctuation & Flicker	EN61000-3-3						
	EMS	EN55035						
Others	Cooling	Load & Temperature control fan						
	Enclosure	Aluminum sheet with ventilation hole						
	Dimension(WxHxD)	127 x 41 x 203 mm						
	Weight	1.2kg						

■ De-rating Curve

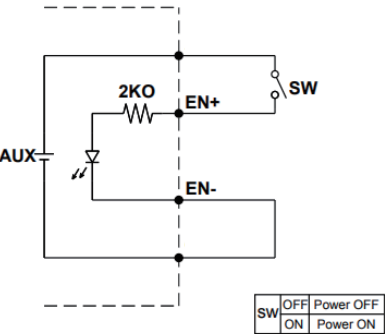


■ Efficiency Curve:



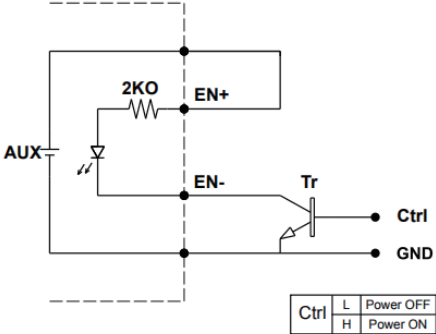
REMOTE ON/OFF

(A) Default Setting



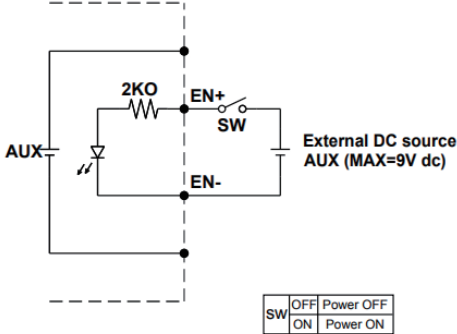
(A) Using internal 5V auxiliary source

(B)



(B) ON / OFF Control by NPN transistor

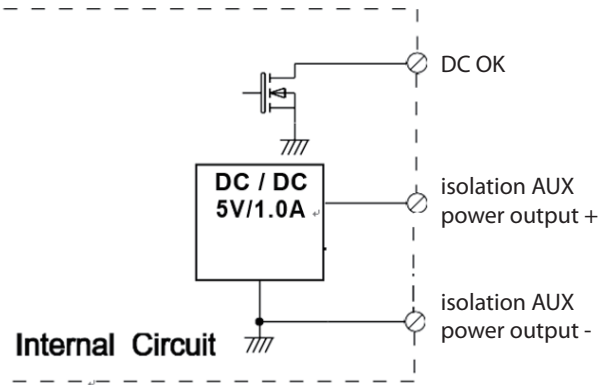
(C)



(C) Using external voltage source

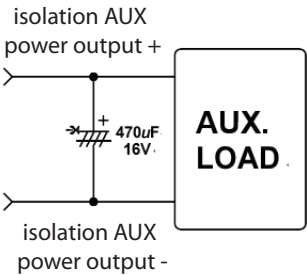
GND shown in above diagram is referring to the GND of the interchangeable interface card, not the Grounding from main power(NEG-).

DC OK Signal & Auxiliary Power Setting



AUX and DC OK Signal

Open drain signal low when PSU turns on, Max. DC OK sink current: 20mA, Max. drain voltage: 40V



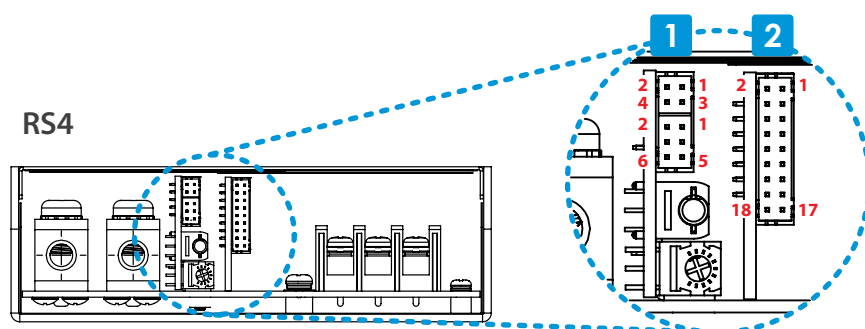
Do NOT exceed 5V/1.0A

To ensure better auxiliary power operation performance, place an additional capacitor per diag. as shown above

Function LED

LED	LED Signal
Standby	
DC_OK_Local	
DC_OK_Remote	
OVP fail	
OLP fail	
OTP/UTP fail	
AC fail	
Parallel Connection	
Standby	
DC_OK_Remote	
OTP/UTP fail	

■ PIN Function Description:



RS4

Built-In VR : Output Voltage Adj.

1 4 PIN connector : (form factor equal to JST PHDR-20VS & JST SPHD-002T-P0.5)

Pin No.	Description	Pin No.	Description
1 , 3	SYNC , PAR for parallel	2 , 4	ISOGND

6 PIN connector : (form factor equal to JST PHDR-20VS & JST SPHD-002T-P0.5)

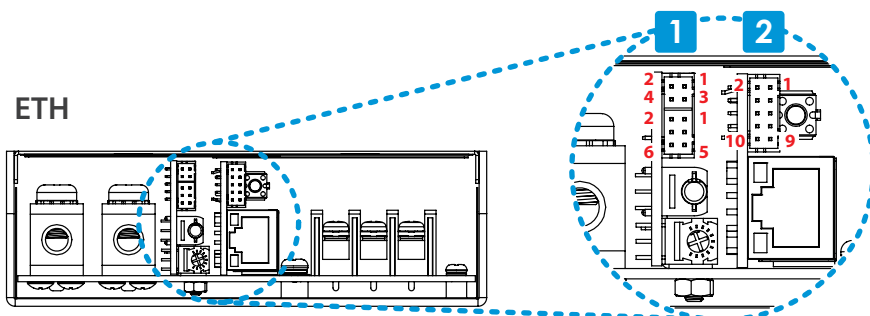
Pin No.	Description	Pin No.	Description
1 , 2	Load side voltage sense +/-	4 , 6	GND
3 , 5	VCI , ACI		

The external device connected to the Pin connector need to be isolated to PE (when for type BF medical equipment purpose)

2 18PIN connector : (JST PHDR-20VS & JST SPHD-002T-P0.5 equivalent)

Pin No.	Description	Pin No.	Description
1 , 2	PMbus (SCL, SDA)	10 , 13	isolation AUX power output + (5V/1A)
3 , 4	Modbus (485-A, 485-B)	8 , 12 , 14	isolation AUX power output -
5 , 6	Modbus termination	15 , 16	CANBus (CANH, CANL), Reserved
7	DC Output OK indication	17 , 18	CANBus termination
9 , 11	Remote on/off control(ENB+, ENB-)		

NOTE: When integrating ADM-500 with Type BF medical system, any external device connected to Pin 18 must maintain galvanic isolation from the Protective Earth (PE) / Chassis Ground to ensure patient safety and minimize leakage current.



RJ45 : Ethernet (SNMP)

button : Reset for Ethernet

Built-In VR : Output Voltage Adj.

1 4 PIN connector : (form factor equal to JST PHDR-20VS & JST SPHD-002T-P0.5)

Pin No.	Description	Pin No.	Description
1 , 3	SYNC , PAR for parallel	2 , 4	ISOGND

6 PIN connector : (form factor equal to JST PHDR-20VS & JST SPHD-002T-P0.5)

Pin No.	Description	Pin No.	Description
1 , 2	Load side voltage sense +/-	4 , 6	GND
3 , 5	VCI , ACI		

The external device connected to the Pin connector need to be isolated to PE (when for type BF medical equipment purpose)

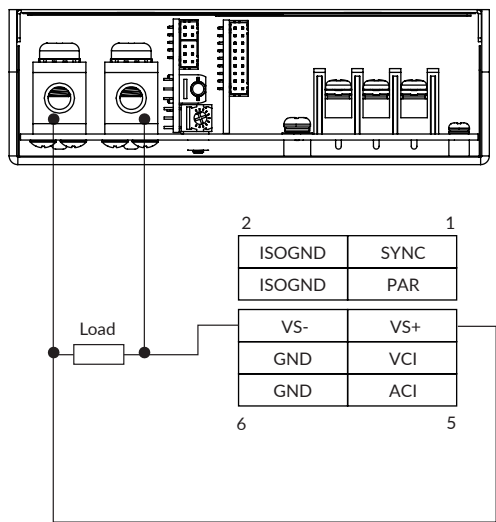
2 10PIN connector : (JST PHDR-20VS & JST SPHD-002T-P0.5 equivalent)

Pin No.	Description	Pin No.	Description
1 , 2	Modbus (485-A, 485-B)	7 , 9	Remote on/off control(ENB+, ENB-)
3 , 4	Modbus termination	8	isolation AUX power output + (5V/1A)
5	DC Output OK indication	6 , 10	isolation AUX power output -

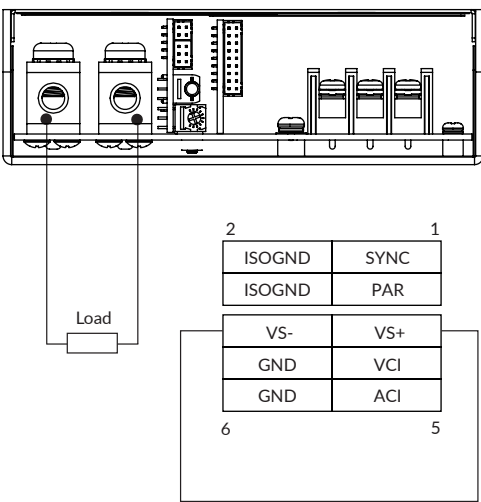
NOTE: When integrated into Type BF medical systems, any external device connected to Pin 10 or RJ45 connectors must maintain galvanic isolation from the Protective Earth (PE) / Chassis Ground to ensure patient safety and minimize leakage current.

■ Models Sensing

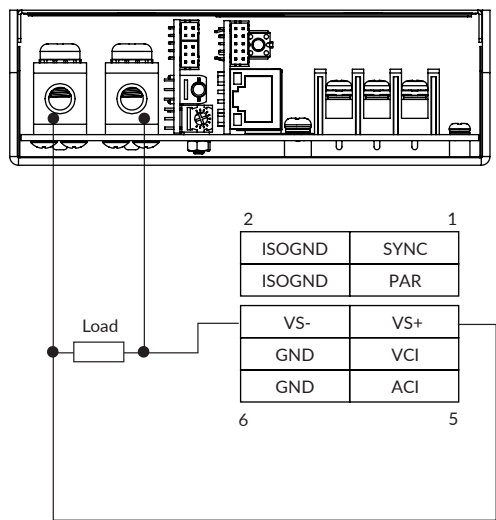
RS4 / Remote Sense



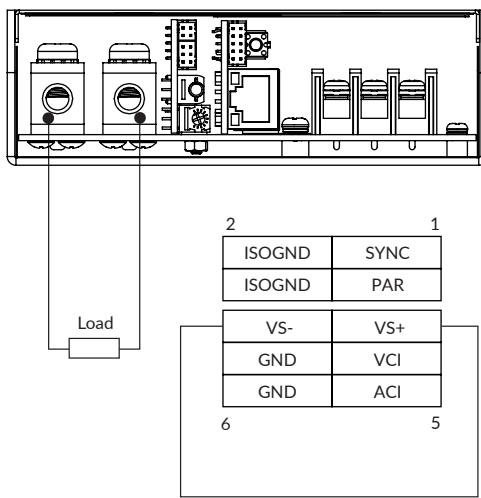
RS4 / Local Sense



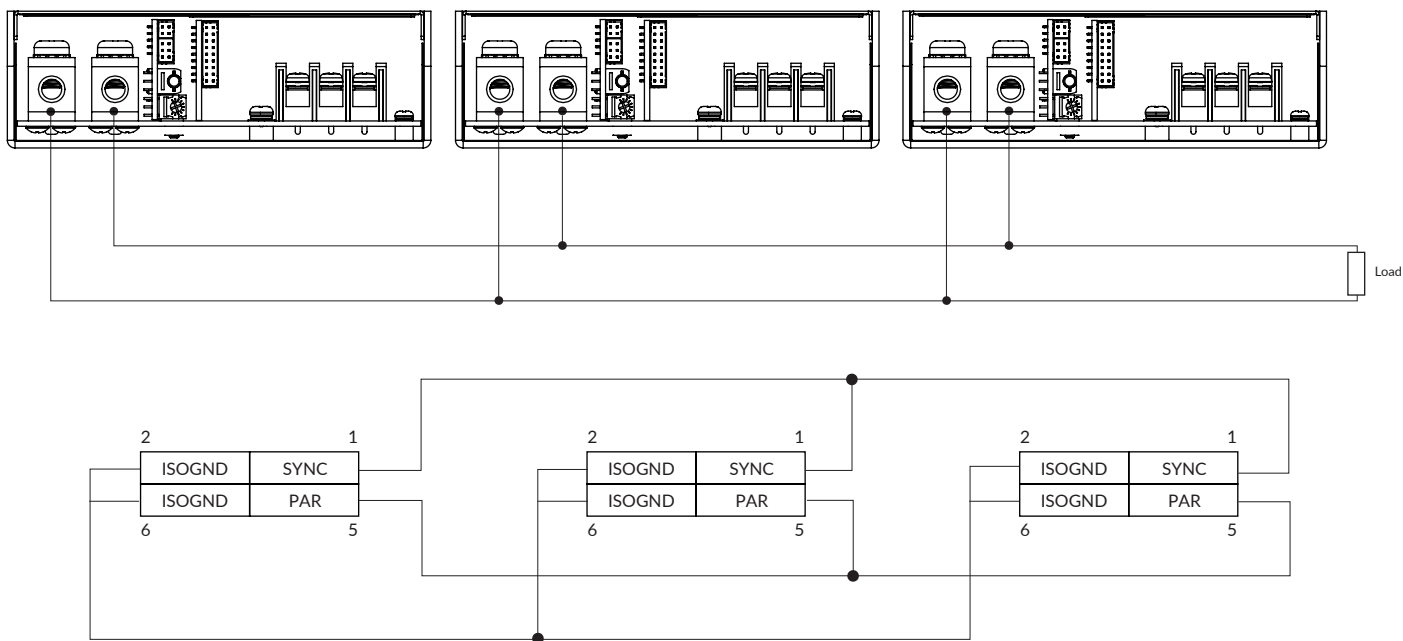
ETH / Remote Sense



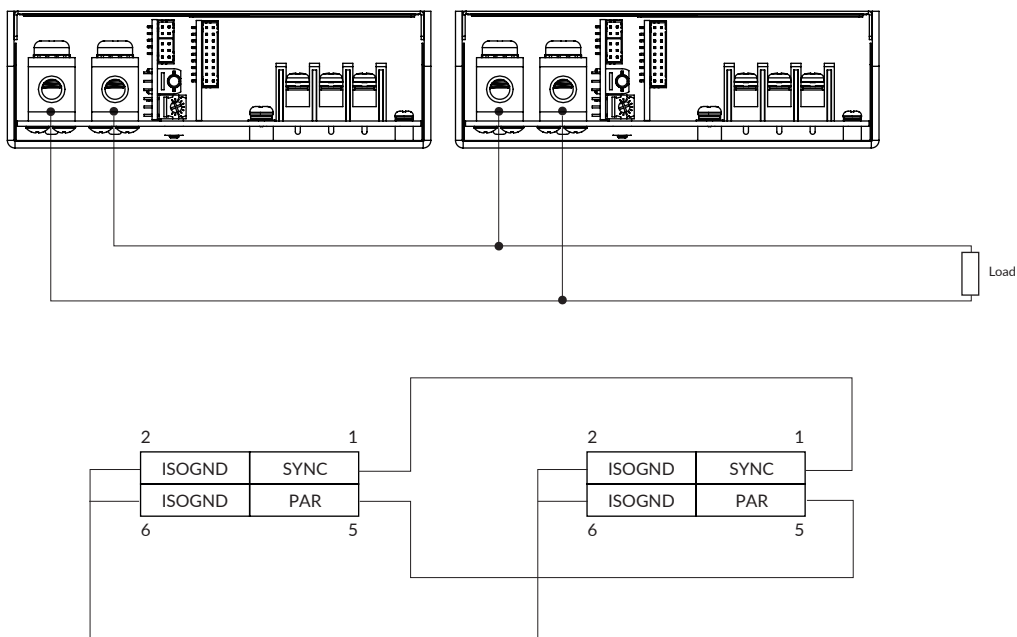
ETH / Local Sense



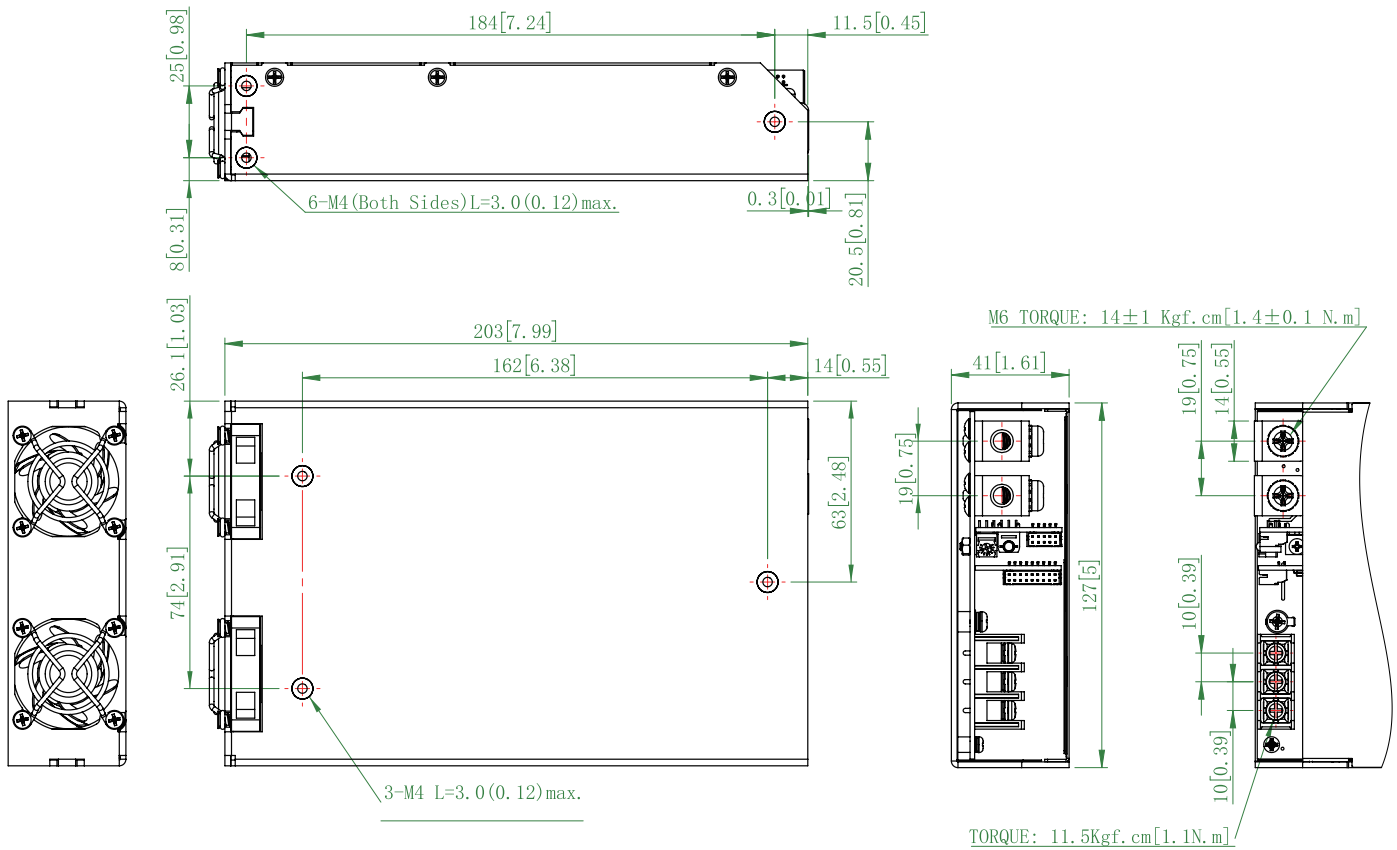
■ Parallel Connection



■ Series Connection



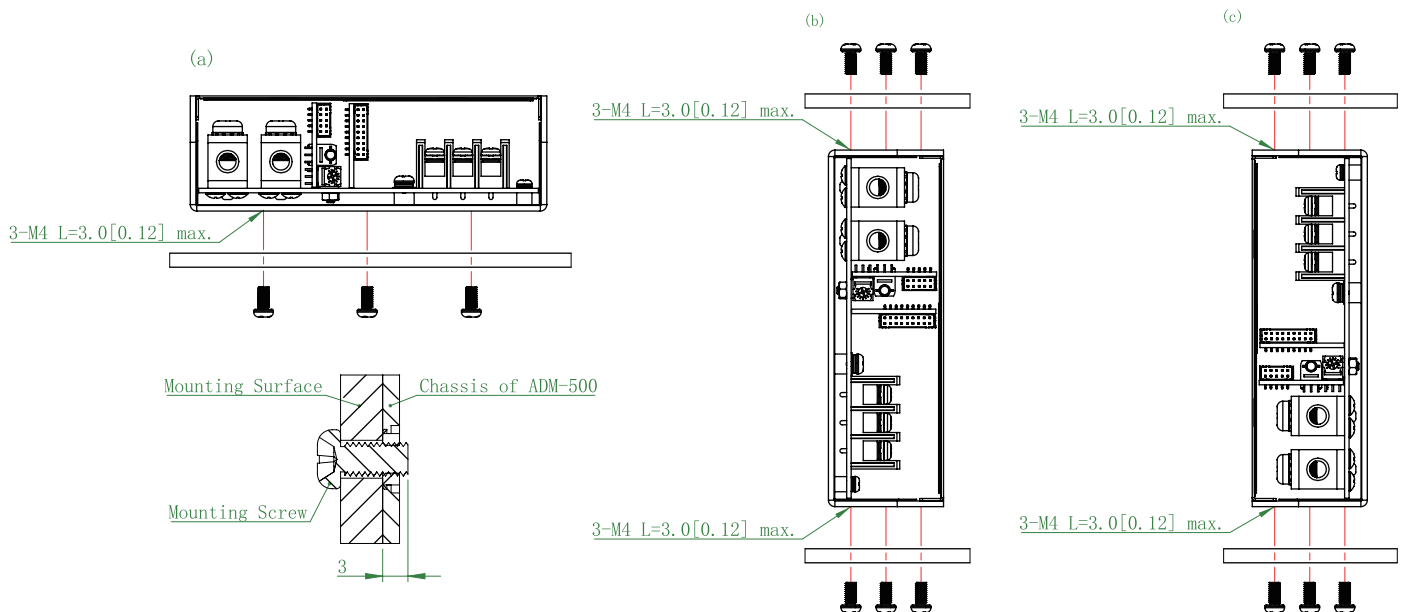
■ Mechanical Drawings : Unit: mm [inch]



■ Installation Instruction

1. Mounting Directions

1-1 Recommended standard mounting methods:



Recommended screw length is measured from the power supply surface

2. Mounting Method

2-1 There are ventilating holes on the front and back side panels, do not obstruct; allow 50mm at least for air flow.

2-2 Recommended the torque of mounting screw: M4 screw: 1.27N $\cdot$ m (13.0kgf $\cdot$ cm)

