

## MT24-AN3 POWER SUPPLY / BATTERY CHARGER

### Product description

The MT24-AN3 series are rack mounting convection cooled power supply modules with 24Vdc output. They are 5U high with rear connectivity and are suitable as a standalone DC power source or to charge batteries. The mating connector for input and output is supplied separately so the units can be used with or without a 19" subrack as long as correct airflow is allowed for. These rectifiers are designed for high voltage Power Plants, Substations, Oil & Gas installations and many other applications.

Because the units are highly modular it is possible to configure systems with multiple units per rack for higher power or n+1 redundant applications. The robust construction with rugged metal handles make them ideal for industrial hot swap applications.

Each rectifier can be used as a standalone power supply or battery charger with all parameters programmed via the dip switches on the front. Alternatively they can be used with an optional control and monitoring unit which delivers operating parameters via an internal RS485 Bus. Modules will still operate with their default values if the monitoring unit is disconnected, therefore the continuity of all connected loads and the charging of batteries are guaranteed without any interruption.

The rectifiers operate from a 3-wire, 3-Phase mains input connection without neutral.

### Applications

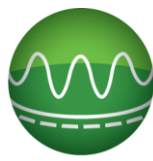
These power supplies are designed for a wide range of applications such as:

- Power supply for all medium to high power DC loads
- Rectifiers in DC systems with battery backup
- Telecommunication
- Industrial control systems
- Charging and buffering of stationary batteries in electrical power plants



### Key features

- Three-phase Input, 415Vac without neutral
- 24Vdc Output, 30A and 50A
- Protection for Input and output over voltage, under voltage, over temperature, phase reversal, phase failure, and short circuit
- "Hot plug-in" design with backplane connection
- High power density
- RS 485 Interface for Remote Control, Monitoring and Signalling.
- Digital display for output voltage, current and buttons for adjustment of values
- CE Certification for Safety and EMC
- LED indication for module status reporting.



## Input

Type	24V/30A	24V/50A
<b>Model No.</b>	<b>MT24V/30A-AN3</b>	<b>MT24V/50A-AN3</b>
Input voltage	350 – 460VAC	
Input current	3.2 A	4.8 A
Input frequency range	45 Hz-65 Hz	
Power Factor	≥ 0.93	

## Output

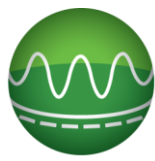
Nominal output voltage (Vnom)	24V DC	24V DC
Adjustable output voltage range	21-29 DC	
Voltage Stabilization Accuracy	± 0.5%	
Current Stabilization Accuracy	± 1 %	
Nominal output current (Inom)	30A DC @ 24V	50A DC @ 24V
Nominal output power at 143 V DC	900 W	1500 W
Efficiency	≥ 95 %	
Charge characteristic line	IU Characteristic according to DIN41772/DIN41773	
Default value of the charging voltage	26-27 V DC	
O/p Overvoltage Vo> (factory set)	31V DC	
Voltage ripple	≤ ± 0.5%	
Dynamic accuracy of the charging voltage	<3% of Venom at load change from 10% -90%-10% ;Transient time <50 ms	
Short circuit protection	15% - 30% of Inom when in short circuit	
Parallel operation	Yes .Current Sharing ± 3%	
Internal decoupling at the output	Yes ,In positive output line	

## Mechanical

Type	24V/30A	24V/50A
<b>Model No.</b>	<b>MT24V/30A-AN3</b>	<b>MT24V/50A-AN3</b>
Weight approx.	4.5kgs	4.5kgs
Dimensions (H/W/D)	179x109x260	179x109x260
Type of enclosure / Protection class	IP 20	
Colour (front panel)	Grey	

## Technical data

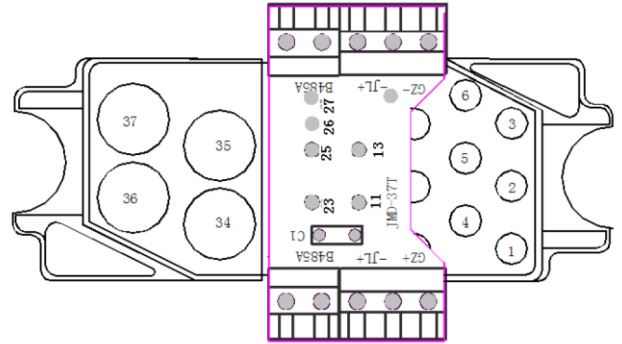
Communications interface	RS 485
Ambient temperature	Operation: -20° to+50° C , Storage:-40° to +60° C
Humidity	≤ 95 % RH
Cooling	Air Natural
Climatic conditions	IEC-68-2-2, IEC-68-2-3, IEC-68-2-6
Max. installation altitude	≤2000 m
Audible noise	< 50 db
Connections	AC Input DC Output and Signalization at rear
CE conformity	Yes
Compliance to EMC standards	EN61000-4-2, EN-61000-4-6, EN-61000-4-3, EN-61000-4-12
Air Pressure	70-106 Pa
Insulation Resistance	Input Chassis & Output > 10M Ohms at 500VDC
Dielectric strength	2000V between Input, Output & Chassis for 1Min.



## Parameters Adjustable Via DIP Switch

Dip Switches	Function	Setting Range	Default
0000	Working mode	0-Independent 1-Manual 2-Automatic	2
0001	Communication Protocol	0-Modbus 1- ZTM	1
0010	Over voltage alarm	Under voltage threshold-150V	29V
0011	Under voltage alarm	Under voltage threshold-95V	21V
0100	Charging state	0-Float charge 1-Boost charge	0
0101	Float charge voltage	21V-29V	27.6V
0110	Boost charge voltage	21V-29V	28.8V
0111	Charging current limit set	10%-105% rated current	105%
1000	Current threshold float to boost charge	105%	80%
1001	Current threshold boost to float charge	0.5	20%
1010	Tail current charging time	0-10 Hours	3
1011	Boost charge time	0-99 Hours	10
1100	Boost charge cycle	0-999 Days	180
1101	Fault output node set	0-Normally Open 1-Normally Closed	0

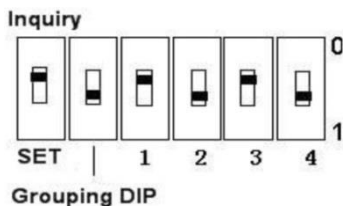
## Connector



## 20A module

Pin	Definition	Function
36, 37	DC+	DC output+
34, 35	DC-	DC output-
5	G	Earth
1	A	Input 380V
2	B	Input 380V
3	C	Input 380V

## DIP Switch Operation



Settings can be configured by using the DIP Switches and the ▼,▲ buttons. To begin, the first DIP switch must be placed in position 1, and the required function entered on the remaining DIP switches. Press the 'V/A' button once and the display will flash. The value can now be adjusted using the ▼,▲ buttons. Press the V/A button once more to store the value.