PWM Control Type

MTS series

MTS series is PWM AC switching automatic voltage regulator. It can provide stable AC power for load with fast response speed, because the AC is switched directly in high efficiency and high frequency.
Please use it as a power supply for AC control along with constant current, which is provided as an option.

MTS系列是PWM交流开关方式自动电压调节器。由于是直接对交流进行开关操作，所以效率高，而且由高频进行开关操作，所以响应速度快，可提供为负载提供稳定的交流功率。
请把它与选配的定电流一起，作为交流控制用电源共同使用。

Application 用途

- Power supply for inspection and test of various electric products
  各种电气产品检验和试验用的电源
- For load power source, light adjuster, temperature adjuster that requires high-speed response
  需要快速响应的负载用电源，调光器和温度调节器
- For voltage adjustment of high voltage withstand tester and various types of electric power conditioning
  耐压试验器电压调节用和各种功率调节用
- Product line etc.
  生产线 等等

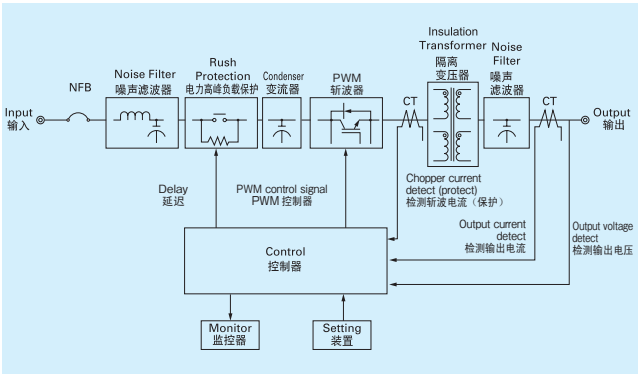
Feature 特长

- Ultrafast response
  响应速度极快。
- The voltage accuracy at a wave distortion is high because of effective value detection
  由于可检测出的均方根值，故波形变形时的电压精度良好。
- Insulated between input and output
  输入－输出间绝缘。
- The output variable type can set the output voltage from 0V as needed (external signal DC0-10V standard equipment)
  输出可变型开关方式可从 0V 开始任意设定输出电压
  （外部信号 DC0 ～ 10V 标准配置）。
- The output variable type can switch the power source ON/OFF, setup voltage, setup startup/shutdown time, schedule such operations, like repeatitive task through a personal computer by connecting the output signal terminal with the GP-IB adaptor programming controller (optional).
  输出可变型开关方式可以通过使外部信号端子与 GP-IB 适配器和程序调节器（选配）连接，进行开闭电源，设定电压，开启 / 关闭时间的设定，重复等的预定运行及电脑控制等应用。
- The single phase variable type (KR and HR) can switch 100V /200V type of output voltage.
  单相可变型（KR・HR）开关方式可对输出电压 100V 系 / 200V 系进行切换。

Option 选项

- Change in input or output voltage
  输入电压或者输出电压的变更
- Insertion output variable type of input side line filter
  输入端线路滤波器插入输出可变型
- Change of external signal (DC4-20mA etc.)
  外部信号的变更（DC4 ～ 20mA 等）
- Attachment of GP-IB adaptor
  附带 GP-IB 适配器
- Attachment of programming controller
  附带程序调节器
- Constant current control
  定电流控制

Block diagram 结构图



1) Line filter part (option) Prevents high frequency chopping noise from going back to the power source.
2) Rush current prevention Restricts the rushing current when the input opening/closing device is ON.
3) Input capacitor part Stabilizes high frequency chopping
4) Chopper part Chops alternating inputand restrict output.
5) Insulation transformer part Input and output are insulated and also, output filter's reactance is utilized.
6) Output filter part Superimposed high frequency on the basic wave is removed.

Protection function
1. Instant overcurrent ratings current Constant current at 300% peak current of rated current
2. Overcvoltage Constant current at 120% of the ratings effect value
3. Overcurrent Output intercepted at 115% of the ratings effect value
Note 1) The input capacitance in the specification column is a value at the ratings voltage.
Note 2) When a voltage is lowered in the KR·HR type, please use it within current rating or less.

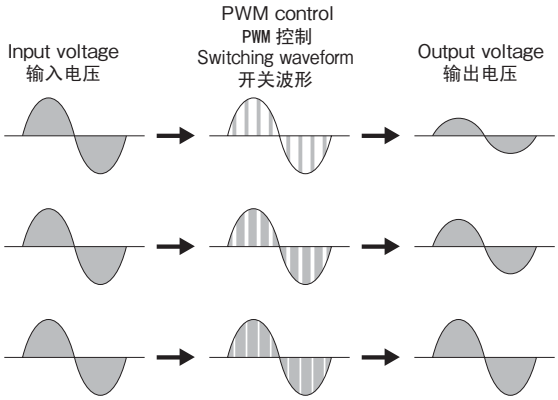
1）线路滤波器部（可选） 防止高频截波噪音返回电源。
2）突流防止 限制输入开闭器开启时的冲击电流。
3）输入电容器部 使高频截波稳定。
4）斩波器部 对交流输入进行截波以限制输出。
5）绝缘变压器部 使输入和输出绝缘，同时，还兼作输出滤波器的阻抗。
6）输出滤波器部 去除重叠在基波上的高频波。

保护功能 1. 瞬间过电流 额定电流的 300%峰值定电流
2. 过电流 额定均方根值的 120%定电流
3. 过电压 额定输出电压的 115%，输出截止
注 1）规格栏中的输入容量为额定电压时的值。
注 2）KR 和 HR 类型当电压降低时，请在额定电流以内使用。

开关控制方式

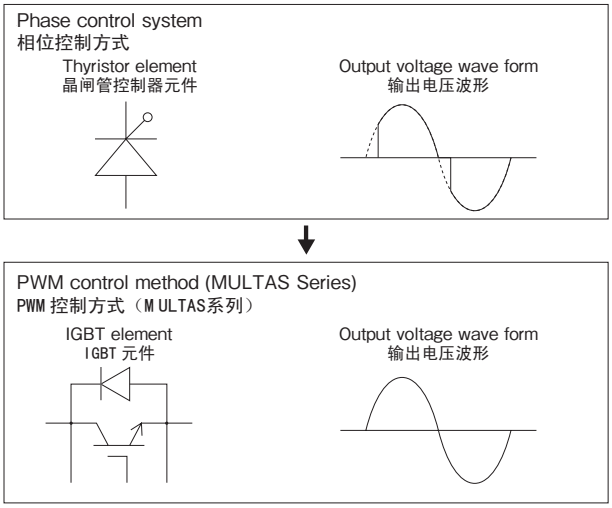
MTS系列

Principle of operation 工作原理



By using the semiconductor element for the main circuit of the device switching alternating input directly to high frequency wave and doing PWM (pulse width modulation) control, the amplitude of output voltage is controlled. As a result, the output voltage wave form is able to become sine wave. In addition, the voltage can be arbitrarily set from 0V for the output variable type device.

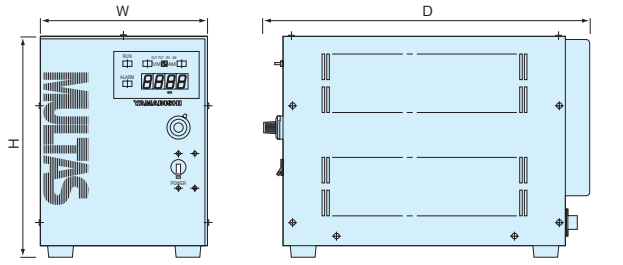
在装置主电路中使用半导体元件，直接对交流输入进行高频开关操作，进行 PWM（脉宽调制）控制，从而可控制输出电压的振幅。结果，可以使输出电压波形变成正弦波。此外，对于输出可变型的装置，可以从 0V 开始任意设定电压。



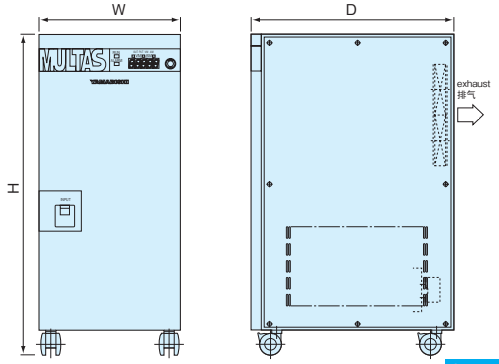
Comparing with the phase control system that uses a thyristor, the wave shape distortion of the output voltage is less distorted sine wave.

与以往的使用晶闸管控制器进行的相位控制方式相比，本系列可得到输出电压波形变形小的正弦波。

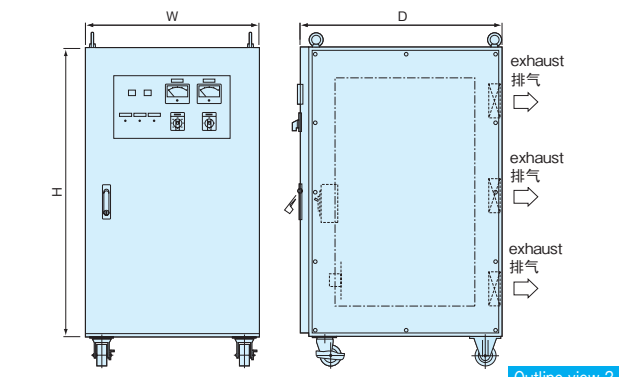
Outline view 外观图



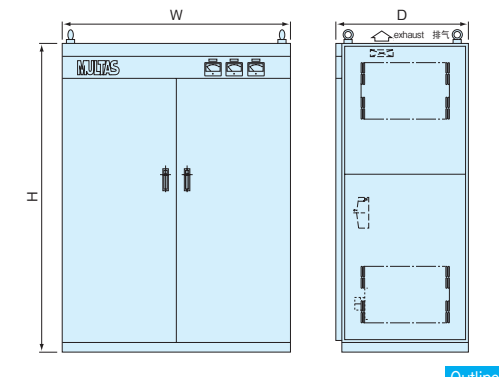
Outline view 1
图 1



Outline view 2
图 2



Outline view 3
图 3



Outline view 4
图 4

PWM Control Type

Specifications 规格

Output Voltage Fixed Type Single Phase 100V
输出电压固定型 单相 100V

	Model 型号	MTS							
		1KX	2KX	3KX	5KX	7.5KX	10KX	15KX	30KX
Output 输出	Capacity(KVA) 容量(KVA)	1	2	3	5	7.5	10	15	30
	Phase 相位	Single Phase 2 Wire 单相二线							
	Voltage 电压	100V or 110V or 115 or 120V or another 100V或110V或115V或120V或其它							
	Voltage Accuracy 电压精度	less than ± 0.5% 低于 ± 0.5%							
	Response Time 响应时间	less than 0.03Sec. 少于0.03秒							
	Adjust Range 调整范围	± 10%							
	Wave Distortion 波形失真	less than 1% 少于1%							
	Insulation 绝缘性	Insulation 绝缘							
Input 输入	Capacity(KVA) 容量(KVA)	1.1	2.2	3.3	5.5	8.3	11	16.5	33
	Phase 相位	Single Phase 2 Wire 单相二线							
	Voltage 电压	100V or 110V or 115 or 120V or another 100V或110V或115V或120V或其它							
	Voltage Range 电压范围	± 15%							
	Efficiency 效率	90%							

Output Voltage Fixed Type Single Phase 200V
输出电压固定型 单相 200V

	Model 型号	MTS								
		1HX	2HX	3HX	5HX	7.5HX	10HX	15HX	20HX	30HX
Output 输出	Capacity(KVA) 容量(KVA)	1	2	3	5	7.5	10	15	20	30
	Phase 相位	Single Phase 2 Wire 单相二线								
	Voltage 电压	200V or 220V or 230 or 240V or another 200V或220V或230V或240V或其它								
	Voltage Accuracy 电压精度	less than ± 0.5% 低于 ± 0.5%								
	Response Time 响应时间	less than 0.03Sec. 少于0.03秒								
	Adjust Range 调整范围	± 10%								
	Wave Distortion 波形失真	less than 1% 少于1%								
	Insulation 绝缘性	Insulation 绝缘								
Input 输入	Capacity(KVA) 容量(KVA)	1.1	2.2	3.3	5.5	8.3	11	16.5	22	33
	Phase 相位	Single Phase 2 Wire 单相二线								
	Voltage 电压	200V or 220V or 230 or 240V or another 200V或220V或230V或240V或其它								
	Voltage Range 电压范围	± 15%								
	Efficiency 效率	90%								

Output Voltage Fixed Type Three Phase 200/400V
输出电压固定型 三相 200/400V

	Model 型号	MTS										
		5SX	7.5SX	10SX	15SX	20SX	30SX	40SX	50SX	75SX	100SX	150SX
Output 输出	Capacity(KVA) 容量(KVA)	5	7.5	10	15	20	30	40	50	75	100	150
	Phase 相位	Three Phase 4 Wire 三相四线										
	Voltage 电压	200 or 380 or 400 or 415V or another 200V或380V或400V或415V或其它										
	Voltage Accuracy 电压精度	less than ± 0.5% 低于 ± 0.5%										
	Response Time 响应时间	less than 0.03Sec. 少于0.03秒										
	Adjust Range 调整范围	± 10%										
	Wave Distortion 波形失真	less than 1% 少于1%										
	Insulation 绝缘性	Insulation 绝缘										
Input 输入	Capacity(KVA) 容量(KVA)	5.5	8.3	11	16.5	22	33	44	55	83	110	165
	Phase 相位	Three Phase 4 Wire 三相四线										
	Voltage 电压	200 or 380 or 400 or 415V or another 200V或380V或400V或415V或其它										
	Voltage Range 电压范围	± 15%										
	Efficiency 效率	90%										

Specifications 规格

Output Voltage Variable Type Single Phase 100V
输出电压可调型 单相 100V

Model 型号		MTS							
		1KRX	2KRX	3KRX	5KRX	7.5KRX	10KRX	15KRX	30KRX
Output 输出	Capacity(KVA) 容量(KVA)	1	2	3	5	7.5	10	15	30
	Phase 相位	Single Phase 2 Wire 单相二线							
	Voltage 电压	0 ～ 220V or 0 ～ 242V or 0 ～ 253 or 0 ～ 264V or another 0~220V或0~242V或0~253V或0~264V或其它							
	Voltage Accuracy 电压精度	less than ± 0.5% at the time of output voltage 30 ～ 100% 在输出电压30~100％时，低于±0.5%							
	Response Time 响应时间	less than 0.03Sec. 少于0.03秒							
	Wave Distortion 波形失真	less than 1% 少于1%							
	Insulation 绝缘性	Insulation 绝缘							
Input 输入	Capacity(KVA) 容量(KVA)	1.1	2.2	3.3	5.5	8.3	11	16.5	33
	Phase 相位	Single Phase 2 Wire 单相二线							
	Voltage 电压	100V or 110V or 115 or 120V or another 100V或110V或115V或120V或其它							
	Voltage Range 电压范围	± 15%							
	Efficiency 效率	90%							

Output Voltage Variable Type Single Phase 200V
输出电压可调型 单相 200V

Model 型号		MTS								
		1HRX	2HRX	3HRX	5HRX	7.5HRX	10HRX	15HRX	20HRX	30HRX
Output 输出	Capacity(KVA) 容量(KVA)	1	2	3	5	7.5	10	15	20	30
	Phase 相位	Single Phase 2 Wire 单相二线								
	Voltage 电压	0 ～ 220V or 0 ～ 242V or 0 ～ 253 or 0 ～ 264V or another 0~220V或0~242V或0~253V或0~264V或其它								
	Voltage Accuracy 电压精度	less than ± 0.5% at the time of output voltage 30 ～ 100% 在输出电压30~100％时，低于±0.5%								
	Response Time 响应时间	less than 0.03Sec. 少于0.03秒								
	Wave Distortion 波形失真	less than 1% 少于1%								
	Insulation 绝缘性	Insulation 绝缘								
Input 输入	Capacity(KVA) 容量(KVA)	1.1	2.2	3.3	5.5	8.3	11	16.5	22	33
	Phase 相位	Single Phase 2 Wire 单相二线								
	Voltage 电压	200V or 220V or 230 or 240V or another 200V或220V或230V或240V或其它								
	Voltage Range 电压范围	± 15%								
	Efficiency 效率	90%								

Output Voltage Variable Type Three Phase 200/400V
输出电压可调型 三相 200/400V

Model 型号		MTS									
		5SRX	7.5SRX	10SRX	15SRX	20SRX	30SRX	40SRX	50SRX	75SRX	100SRX	150SRX
Output 输出	Capacity(KVA) 容量(KVA)	5	7.5	10	15	20	30	40	50	75	100	150
	Phase 相位	Three Phase 4 Wire 三相四线										
	Voltage 电压	0 ～ 220 or 0 ～ 418 or 0 ～ 440 or 0 ～ 456V or another 0~220V或0~418V或0~440V或0~456V或其它										
	Voltage Accuracy 电压精度	less than ± 0.5% at the time of output voltage 30 ～ 100% 在输出电压30~100％时，低于±0.5%										
	Response Time 响应时间	less than 0.03Sec. 少于0.03秒										
	Wave Distortion 波形失真	less than 1% 少于1%										
	Insulation 绝缘性	Insulation 绝缘										
Input 输入	Capacity(KVA) 容量(KVA)	5.5	8.3	11	16.5	22	33	44	55	83	110	165
	Phase 相位	Three Phase 4 Wire 三相四线										
	Voltage 电压	200 or 380 or 400 or 415V or another 200V或380V或400V或415V或其它										
	Voltage Range 电压范围	± 15%										
	Efficiency 效率	90%										