



**Advanced Test Equipment Rentals**  
**www.atecorp.com 800-404-ATEC (2832)**

## H A S T   S Y S T E M

(Highly Accelerated Temperature  
and Humidity Stress Test System)

T P C - 2 1 2 (M) , 2 2 2 (M)

4 1 2 (M) , 4 2 2 (M)

I N S T R U C T I O N   M A N U A L

Main Specifications

Model		TPC-212(M)	TPC-222(M)	TPC-412(M)	TPC-422(M)
Control method					
Method		Continuous control of set temperature and humidity, Program operation, Temperature heat-up or pull-down rate · Humidity control (M type)			
Temperature and humidity setting		Direct setting of temperature and relative humidity			
Control action		PID control, SSR drive system			
Power supply		200V AC $\phi$ 1 50/60 Hz		220V AC $\phi$ 1 50/60 Hz	
Total loaded current	200V AC	1.5 A	2.0 A	1.5 A	2.0 A
	220V AC	1.4 A	1.8.5 A	1.4 A	1.8.5 A
Performance					
Unsaturated control					
Temperature control range		+105.0 ~ +142.9 °C		+105.0 ~ +162.2 °C	
Relative humidity control range		7.5 ~ 100% RH		7.5 ~ 100% RH	
Pressure control range		0.2 ~ 2.0kg/cm <sup>2</sup> G		0.2 ~ 4.0kg/cm <sup>2</sup> G	
Temperature and humidity constancy		$\pm 0.5$ °C / $\pm 3$ % RH		$\pm 0.5$ °C / $\pm 3$ % RH	
Temperature uniformity		$\pm 0.5$ °C (at 100%RH)		$\pm 0.7$ °C (at 75%RH)	
Heat up and pressurizing time (at RT+23°C)		0 → 2.0kg/cm <sup>2</sup> G		0 → 4.0kg/cm <sup>2</sup> G	
		About 30 minutes	About 60 minutes	About 45 minutes	About 90 minutes
Saturated control					
Temperature control range		+105.0 ~ +132.9 °C		+105.0 ~ +151.1 °C	
Pressure control range		0.2 ~ 2.0kg/cm <sup>2</sup> G		0.2 ~ 4.0kg/cm <sup>2</sup> G	
Temperature constancy		$\pm 0.5$ °C		$\pm 0.5$ °C	
Temperature uniformity		$\pm 0.5$ °C		$\pm 0.5$ °C	
Heat up and pressurizing time (at RT+23°C)		0 → 2.0kg/cm <sup>2</sup> G		0 → 4.0kg/cm <sup>2</sup> G	
		About 30 minutes	About 60 minutes	About 45 minutes	About 90 minutes
Dry and wet-bulb temperature control					
Temperature rise					
Temperature control range		+105.6 ~ +142.9 °C		+105.6 ~ +162.2 °C	
Relative humidity control range		7.5 ~ 95% RH		7.5 ~ 95% RH	
Heat up and pressurizing time (at RT +23°C)		0.2 → 2.0kg/cm <sup>2</sup> G		0.2 → 4.0kg/cm <sup>2</sup> G	
		About 60 minutes	About 90 minutes	About 75 minutes	About 120 minutes
Test process					
Temperature control range		+105.6 ~ +142.9 °C		+105.6 ~ +162.2 °C	
Relative humidity control range		7.5 ~ 98% RH		7.5 ~ 98% RH	
Pressure control range		0.2 ~ 2.0kg/cm <sup>2</sup> G		0.2 ~ 4.0kg/cm <sup>2</sup> G	
Temperature and humidity constancy		$\pm 0.5$ °C / $\pm 3$ % RH		$\pm 0.5$ °C / $\pm 3$ % RH	
Temperature uniformity		$\pm 0.5$ °C (at 98%RH)		$\pm 0.7$ °C (at 75%RH)	

M o d e l	TPC-212(M)	TPC-222(M)	TPC-412(M)	TPC-422(M)
<b>Performance</b>				
Dry and wet-bulb temperature control				
Temperature pull-down Temperature control range Temperature pull-down rate (at RT +23°C no-specimen)	+50.0~+95.0°C From +142.9 °C/75%RH   From +162.2 °C/75%RH To +85.0°C/85%RH   To +85.0°C/85%RH Min. about 120 minutes			
Hold process Temperature control range Relative humidity control range	+50.0~+95.0°C 75~95%RH			
Cloth wick	200 hours continuous use (with no specimen)			
<b>Construction</b>				
Door Inner cylinder Control console Others	Left hinge. Locking handle (door hook lever only for TPC-212 (M)) Specimen shelves and 2-supports Temperature and humidity indicator, Time indicator, Key switch, Setting buttons, Process indicator lamps, Trouble alarm lamps Exhaust valve, Air inlet valve, Drain filter, Drain valve and Air lead-in pump			
<b>Equipments</b>				
Specimen signal terminals Pressure gauge	Connector of 12 pins (125V AC/DC 1A) Bourdon type			
	Scale -76cmHg ~ 4kg/cm <sup>2</sup> G		Scale -76cmHg ~10kg/cm <sup>2</sup> G	
Safety mechanism	Pressure vessel overheat protector, Boil-dry protector, Over- pressure protector, Power failure safety mechanism, Leakage breaker for power supply, Safety valve, Temp. sensor discon- nection safety mechanism, Agitator fan stop mechanism, Wet- bulb wick drying protector mechanism.			
Control connector for external alarm and specimen power supply	For external alarm signal Function: Contact output ON when in trouble status For specimen power supply signal Function: Contact output ON when in test status			
Auto start timer	Digital setting, indication			
<b>Dimensions</b>				
Test area volume (ℓ) Inside diameter of test area (φ×L cm) Outside diameter (W×H×D cm) Weight (kg)	22 29.5×33 51×136×80 About 117	55 39.5×45 61×147×95 About 180	20 29.5×30 51×136×80 About 127	55 39.5×45 61×147×95 About 200