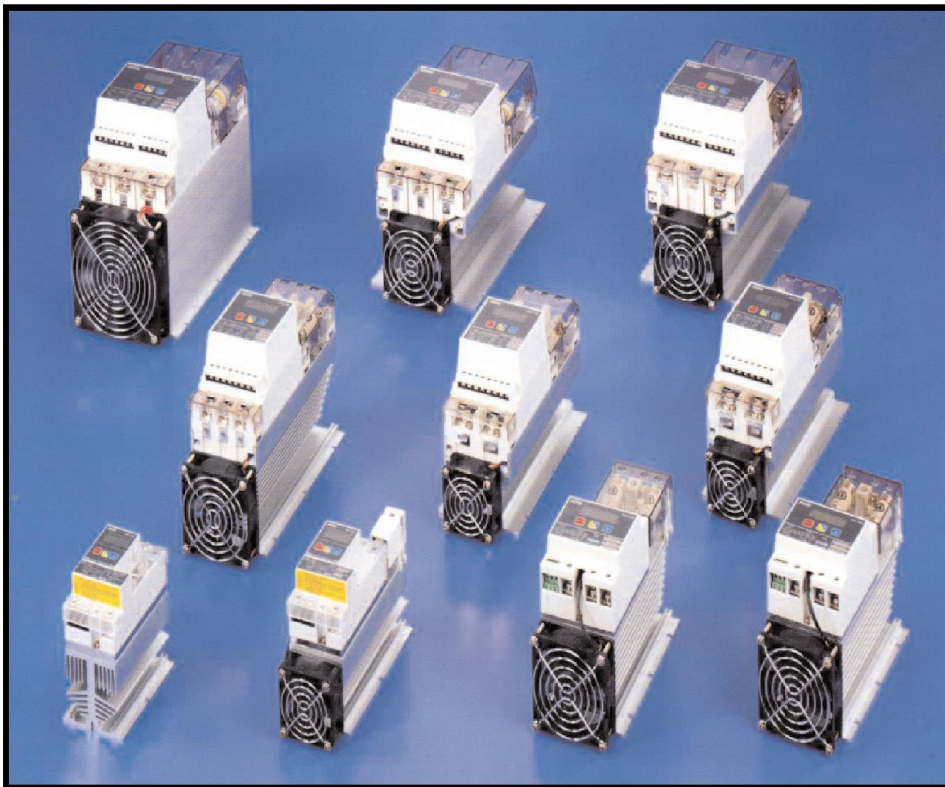


## Digital Power Controllers

### Operating Manual



- *Multi-input type selectable*
- *Multi-dialog alarm function*
- *Cooling fan malfunction detection*
- *Auto output or manual output selectable*
- *High and low output limit settable*
- *Soft-start / kick start time settable*
- *Power frequency 50/60Hz auto-detect*
- *Zero cross control or phase control selectable*

## Digital Power Controllers

### 【EPS series】 (Dual Phase 2 Circuits)

Model	EPS2-40	EPS2-60	EPS2-80	EPS2-100	EPS2-125	EPS2-150
Rated current	40A max.	60A max.	80A max.	100A max.	125A max.	150A max.
Protection fuse	40A.	63A.	80A.	100A.	125A.	160A.
Surge current duration	410A	1200A	1500A	1600A	2000A	2250A
Min. block voltage	600VAC	800VAC		1600VAC		
Cooling fan	60x60 / 12VDC		80x80 / 12VDC			
Main power supply	180 - 440VAC 50/60Hz			280 - 550 VAC 50/60Hz		
Aux. power supply	220 VAC ± 20% 50/60HZ					



### 【EPS series】 (Three Phase 3 Circuits)

Model	EPS3-40	EPS3-60	EPS3-80
Rated current	40A max.	60A max.	80A max.
Protection fuse	40A.	63A.	80A.
Surge current duration	410A	1200A	1500A
Min. block voltage	600VAC	800VAC	
Cooling fan	80x80 / 12VDC		
Main power supply	180 - 440VAC 50/60Hz		280 - 550 VAC 50/60Hz
Aux. power supply	220 VAC ± 20% 50/60HZ		

### 【TPS series】 (Three Phase 3 Circuits)

Model	TPS3-40	TPS3-60	TPS3-80	TPS3-100	TPS3-125	TPS3-160	TPS3-200
Rated current	40A max.	60A max.	80A max.	100A max.	125A max.	160A max.	200A max.
Protection fuse	40A.	63A.	80A.	100A.	125A.	160A.	200A.
Surge current duration	500A	1000A	1500A	1600A	2000A	2250A	5400A
Min. block voltage	1600VAC						
Cooling fan	80 x 80 / 12VDC			120 x 120 / 230VAC			
Main power supply	180 - 440VAC 50/60Hz			280 - 550 VAC 50/60Hz			
Aux. power supply	220 VAC ± 20% 50/60HZ						



### ◆ General data

Leakage current	25 mA max.
Surge resistance	Over 4KV
Noise resistance	± 2KV / 1 μs
Input method	4~20mA / 0~20mA / 1~5V / 2~10V / 0~5V / 0~10V or VR-10kΩ selectable
Control method	Zero cross control or phase angle control selectable ; Excluding EPS2-□□□ & TPS2-□□□
Output control	Auto output or manual output selectable
Output range	0 ~ 100%
Input resolution	0.39%
Output low limit	0 ~ 100% (L.000 ~ L.100) settable
Output high limit	0 ~ 199% (H.000 ~ H.199) settable
Soft start	0 ~ 199 sec (t.00 ~t.199) settable
Dielectric strength	Over 2.5KV
Isolation strength	Over 100MΩ / 500VDC
Operating temp	- 20°C ~ + 80°C ; 35 ~ 85%RH
Housing material	Intensive PC+ABS (UL-94V0)

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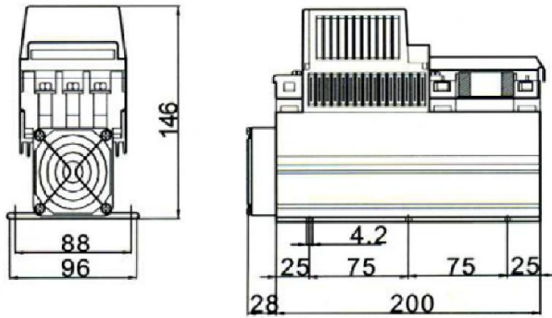
## ◆ Function setting

Status	Symb	Description
<p><b>Running status</b></p> <p>Press [SET] &amp; [▽] Key 3 sec</p>	R.100	<p>1&gt; Running status /</p> <p>2&gt; 「A」 : Output volume /</p> <p>3&gt; 「i」 : Output current volume (0.0~i) /</p> <p>4&gt; 「n」 : Manual output volume /</p>
<p><b>Setting of lock</b></p> <p>Press [SET] Key ↓</p>	Lck.0	<p>1&gt; 「Lck=0」 : All lock /</p> <p>2&gt; 「Lck=1」 : Data settable /</p> <p>3&gt; 「Lck=2」 : Unlock /</p>
<p><b>Selection of display</b></p> <p>Press [SET] Key ↓</p>	R.050	<p>1&gt; 「A」 : Output volume (0~100%) /</p> <p>2&gt; 「i」 : Output current volume (0.0~i) /</p> <p>3&gt; 「n」 : Manual output volume (0~100%) /</p>
<p><b>Selection of input</b></p> <p>Press [SET] Key ↓</p>	Int.0	<p>1&gt; Input type selection : Int.0 ~ Int.6</p> <p>2&gt; 「Int.0」 = [4~20mA] ; 「Int.1」 = [0~20mA] ; 「Int.2」 = [1~5V]</p> <p>「Int.3」 = [2~10V] ; 「Int.4」 = [0~5V] ; 「Int.5」 = [0~10V]</p> <p>「Int.6」 = Variable resistance (10kΩ) /</p>
<p><b>Selection of control method</b></p> <p>Press [SET] Key 3 sec</p>	Con.0	<p>1&gt; 「Con.0」 : Zero cross control /</p> <p>2&gt; 「Con.1」 : Phase control /</p>
<p><b>Selection of start method</b></p> <p>Press [SET] Key</p>	Str.0	<p>1&gt; 「Str.0」 = Soft start /</p> <p>2&gt; 「Str.1」 = Kick start /</p>

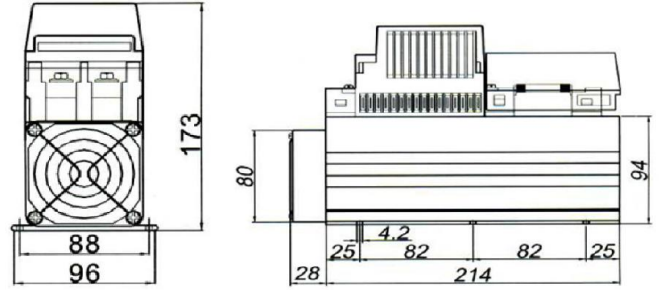
## ◆ Data setting /

Status /	Symb./	Description /
<p><b>Volume of Output or input</b></p> <p>Press [SET] Key 3 sec</p>	R.100	<p>1&gt; Running status /</p> <p>2&gt; 「A」 : Output volume /</p> <p>3&gt; 「i」 : Output current volume (0.0~i) /</p> <p>4&gt; 「n」 : Manual output volume /</p>
<p><b>Setting of min. output</b></p> <p>Press [SET] Key ↓</p>	L.000	<p>1&gt; Range : 0 ~ 100</p> <p>2&gt; Min. output volume setting /</p>
<p><b>Setting of max. output</b></p> <p>Press [SET] Key ↓</p>	H.100	<p>1&gt; Range : 0 ~ 199</p> <p>2&gt; Max. output volume setting /</p>
<p><b>Setting of Max. load current</b></p> <p>Press [SET] Key ↓</p>	199.9	<p>1&gt; Range : 0.0~99.9</p> <p>2&gt; Max. load current setting /</p>
<p><b>Setting of start time</b></p> <p>Press [SET] Key 3 sec</p>	t.010	<p>1&gt; Range : 0 ~ 199 sec</p> <p>2&gt; Time of soft start /</p> <p>Time of kick start /</p>
<p><b>Setting of Input offset</b></p> <p>Press [SET] Key</p>	F.000	<p>1&gt; Range : - 99 ~ 99</p> <p>2&gt; Setting of Input offset /</p>

**EPS2-40 / EPS2-60**

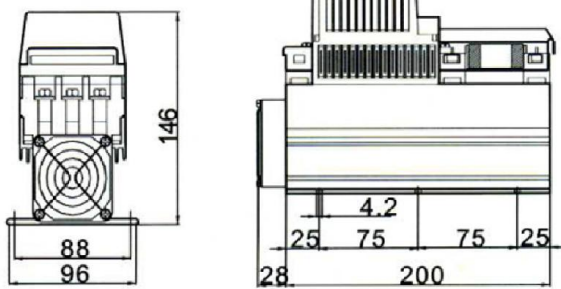


**TPS3-40 / TPS3-60 / TPS3-80**



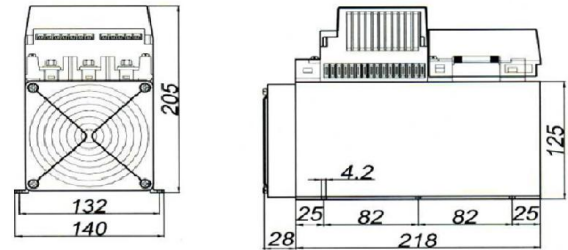
**EPS2-80**

**EPS2-100 / EPS3-40 / EPS3-60 / EPS3-80**



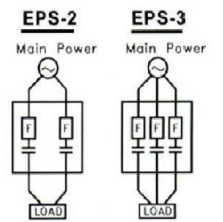
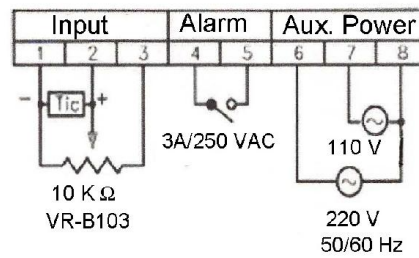
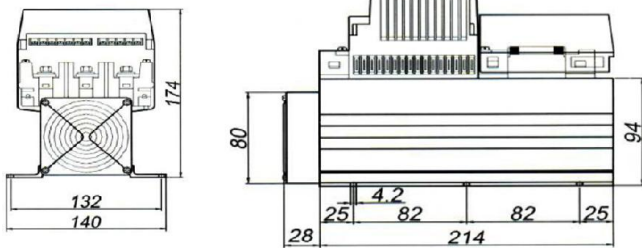
**TPS3-100**

**TPS3-125 / TPS3-160 / TPS3-200**

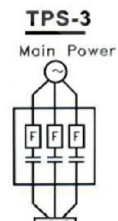
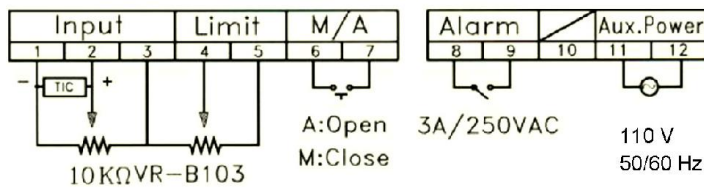


**EPS2-150**

**EPS □ □ □ □**





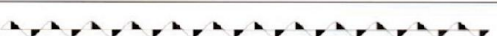





**TPS □ □ □ □**



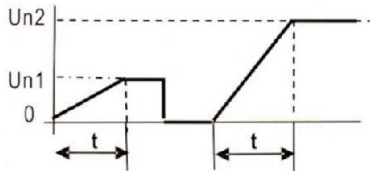
**Southeast Thermal Systems LLC**

# Digital Power Controllers

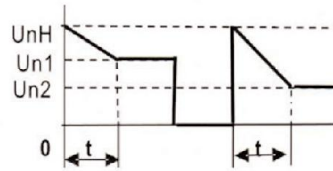
## ◆ Type of control method

Control method	Phase angle control	Zero cross control
Output volume 電圧調節	   	   
Feature	1. Suited to control the inductive load or The variable resistance load (IR, Pure metal heater, Silicone carbonate heater or Transformer) 2. The power factor $\cos\theta < 1$ 3. Higher harmonic noise	1. Suited to control the constant resistance load or The capacity load. (Alloy heater or Capacitor) 2. The power factor $\cos\theta = 1$ 3. Lower harmonic noise

## ◆ Soft start /




## ◆ Kick start /



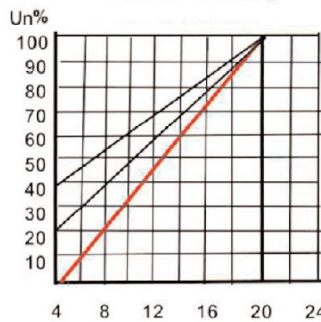
t : Soft or kick start time  
 Un or Un2 : Output volume  
 UnH : Maximum output volume (H)

## ◆ Setting of manual output /

Manual output status	Description
	1. On the 「manual」 output status, Press $\Delta$ or $\nabla$ key to change the manual output volume 2. Press [SET] to finish setting

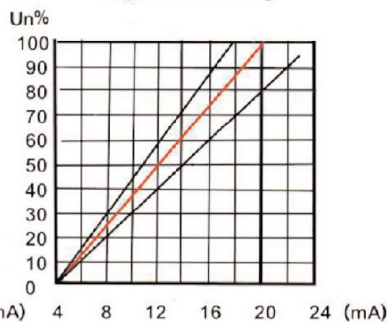
## ◆ Setting of output limit /

Low limit setting



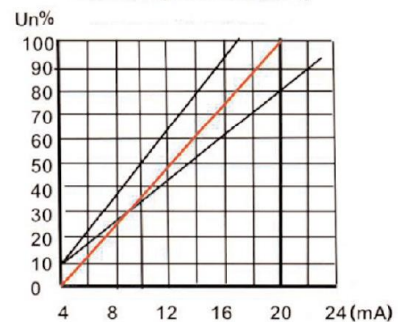
1> A : Low limit = 0 ; High limit = 100  
 2> B : Low limit = 20 ; High limit = 100  
 3> C : Low limit = 40 ; High limit = 100

High limit setting



1> A : Low limit = 0 ; High limit = 100  
 2> B : Low limit = 0 ; High limit = 80  
 3> C : Low limit = 40 ; High limit = 120

Low + High limit setting



1> A : Low limit = 0 ; High limit = 100  
 2> B : Low limit = 10 ; High limit = 80  
 3> C : Low limit = 10 ; High limit = 120

### Note :

- 1> 「Un」 : Output ratio
- 2> Setting range : Low limit = 0 ~ 100% · High limit = 0 ~ 199% /
- 3> Low + high limit setting is suited to control the radial heating heater such as IR lamp.

Southeast Thermal Systems LLC

### ◆ Multi-input type /

- \* [Int.0] : 4 ~ 20 mA   \* [Int.1] : 0 ~ 20 Ma   \* [Int.2] : 1 ~ 5V   \* [Int.3] : 2 ~ 10V
- \* [Int.4] : 0 ~ 5V   \* [Int.5] : 0 ~ 10V   \* [Int.6] : VR / 10K $\Omega$  (103KB)

### ◆ External limit for output volume

**【EPS & TPS series】**

Please use a Variable resistance (10k $\Omega$ /103KB) to adjust the maximum output volume.  
(10k $\Omega$ /103KB)

### ◆ Trouble shooting /

Alarm	Description /	Checking /
<b>【nPEr】</b>	Fuse break or phase loss	Please check load or power supply
<b>【FnEr】</b>	Cooling fan malfunction	Please check the cooling fan
<b>【OhEr】</b>	Over heat (120°C)	Please improve cooling condition

## SCR and SSR Price List

Page 69

<b>Digital Power Controllers (1-Phase 2-Pole; Auxiliary 110/220 VAC)</b>		<b>Description</b>	<b>Price</b>
EPS2-40-H	40 Amps; Input Voltage: Universal; Output Voltage: 480 VAC; Zero Cross or Phase Fired		\$ 199.00
EPS2-60-H	60 Amps; Input Voltage: Universal; Output Voltage: 480 VAC; Zero Cross or Phase Fired		\$ 229.00
EPS2-80-H	80 Amps; Input Voltage: Universal; Output Voltage: 480 VAC; Zero Cross or Phase Fired		\$ 295.00
EPS2-100-H	100 Amps; Input Voltage: Universal; Output Voltage: 480 VAC; Zero Cross or Phase Fired		\$ 360.00

<b>Digital Power Controllers (3-Phase); Auxiliary 110/220 VAC</b>		<b>Description</b>	<b>Price</b>
EPS3-40-H	40 Amps; Input Voltage: Universal; Output Voltage: 480 VAC; Zero Cross or Phase Fired		\$ 315.00
EPS3-60-H	60 Amps; Input Voltage: Universal; Output Voltage: 480 VAC; Zero Cross or Phase Fired		\$ 369.00
EPS3-80-H	80 Amps; Input Voltage: Universal; Output Voltage: 480 VAC; Zero Cross or Phase Fired		\$ 430.00
TPS3-100-H	125 Amps; Input Voltage: Universal; Output Voltage: 480 VAC; Zero Cross or Phase Fired		\$ 715.00
TPS3-125-H	125 Amps; Input Voltage: Universal; Output Voltage: 480 VAC; Zero Cross or Phase Fired		\$ 803.00
TPS3-160-H	160 Amps; Input Voltage: Universal; Output Voltage: 480 VAC; Zero Cross or Phase Fired		\$1,130.00

<b>Digital Power Controllers</b>	<b>Fuses</b>	<b>Description</b>	<b>Price</b>
F-40ET	40 Amp Quick Blow Fuse for 480 VAC for EPS-40 and TPS-40		\$ 9.95
F-63ET	63 Amp Quick Blow Fuse for 480 VAC for EPS-60 and TPS-60		\$ 9.95
F-80ET	80 Amp Quick Blow Fuse for 480 VAC for EPS-80 and TPS-80		\$ 10.95
F-100 FE	100 Amp Quick Blow Fuse for 480 VAC for EPS-100 and TPS-100		\$ 12.20
F-660GHX 125	125 Amp Quick Blow Fuse for 480 VAC for TPS-125		\$ 17.50
F-660GH-160ULCT	160 Amp Quick Blow Fuse for 480 VAC for TPS-160		\$ 24.90
F-660GH-200ULCT	200 Amp Quick Blow Fuse for 480 VAC for TPS-200		\$ 24.90

<b>SSR Series Power Controllers (1 Pole)</b>		<b>Description</b>	<b>Price</b>
SSR1-0511-TSHS1	5 Amps; Input Voltage: 3-32 VDC; Output Voltage: 5-60 VDC; TS; HS; 120VAC Fan		\$ 62.50
SSR1-0511-TSHS2	5 Amps; Input Voltage: 3-32 VDC; Output Voltage: 5-60 VDC; TS; HS; 240VAC Fan		\$ 62.50
SSR1-0511-TSHS3	5 Amps; Input Voltage: 3-32 VDC; Output Voltage: 5-60 VDC; TS; HS; without Fan		\$ 43.25
SSR1-0511-TSHS1-D	5 Amps; Input Voltage: 3-32 VDC; Output Voltage: 5-60 VDC; TS; HS; 120VAC Fan; DIN Rail		\$ 79.50
SSR1-0511-TSHS2-D	5 Amps; Input Voltage: 3-32 VDC; Output Voltage: 5-60 VDC; TS; HS; 240VAC Fan; DIN Rail		\$ 79.50
SSR1-0511-TSHS3-D	5 Amps; Input Voltage: 3-32 VDC; Output Voltage: 5-60 VDC; TS; HS; without Fan; DIN Rail		\$ 60.25
SSR1-2512-TSHS1	25 Amps; Input Voltage: 3-32 VDC; Output Voltage: 24-380 VAC; TS; HS; 120VAC Fan		\$ 62.50
SSR1-2512-TSHS2	25 Amps; Input Voltage: 3-32 VDC; Output Voltage: 24-380 VAC; TS; HS; 240VAC Fan		\$ 62.50
SSR1-2512-TSHS3	25 Amps; Input Voltage: 3-32 VDC; Output Voltage: 24-380 VAC; TS; HS; without Fan		\$ 43.25
SSR1-2512-TSHS1-D	25 Amps; Input Voltage: 3-32 VDC; Output Voltage: 24-380 VAC; TS; HS; 120VAC Fan; DIN Rail		\$ 79.50
SSR1-2512-TSHS2-D	25 Amps; Input Voltage: 3-32 VDC; Output Voltage: 24-380 VAC; TS; HS; 240VAC Fan; DIN Rail		\$ 79.50
SSR1-2512-TSHS3-D	25 Amps; Input Voltage: 3-32 VDC; Output Voltage: 24-380 VAC; TS; HS; without Fan; DIN Rail		\$ 60.25