

- *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*



DSC Series (Single Phase by single wire)

Model	DSC-240	DSC-340	DSC-440	DSC-265	DSC-365	DSC-465
Operating voltage	220VAC	380VAC	440VAC	220VAC	380VAC	440VAC
Rated current	32A max.			65Amax.		
Protection fuse	32A (Semi-conduct fuse inside)			80A (Semi-conduct fuse inside)		
Surge current duration	410A / 1 cycle of power frequency			1500A / 1 cycle of power frequency		
Alarm output	3A/250VAC ; NO/NC changeable			NON		
Cooling fan	non			60x6012VDC		
Min. block voltage	600VAC (repetitive)			800VAC (repetitive)		

TSC Series

Model	TSC-340	TSC-365
Rated current	40Amax.	65Amax.
Protection fuse	40A (Semi-conduct fuse inside)	BOA (Semi-conduct fuse inside)
Surge current duration	410A / 1 cycle of power frequency	1500A / 1 cycle of power frequency
Min. block voltage	600VAC (repetitive)	800VAC (repetitive)
Alarm output	non	
Cooling fan	80x80 / 12VDC	
Main power supply	180 ~ 440VAC 50 / 60Hz	
Aux. power supply	90 ~ 265 VAC 50 / 60Hz	

EPS Series (Single Phase by two wire)

Model	EPS1-40	EPS1-60	EPS1-80	EPS1-100	EPS1-125	EPS1-150
Rated current	40Amax.	60Amax.	BOA max.	100A max.	125A max.	150Amax.
Protection fuse	40A.	63A.	80A.	100A.	125A.	160A.
Surge current duration	410A	1200A	1500A	1600A	2000A	2250A
Min. block voltage	600VAC	1600VAC		1600VAC		
Cooling fan	60x60 / 12VDC					80x80/12VDC
Main power supply	180~ 440VAC 50 / 60Hz					
Aux. power supply	220 / 380 VAC ± 20% 50 / 60Hz					

EPS Series (Dual Phase by two wires)

Model	EPS2-40	EPS2-60	EPS2-80	EPS2-100	EPS2-125	EPS2-150
Rated current	40Amax.	60Amax.	BOA max.	100A max.	125A max.	150A max.
Protection fuse	40A.	63A.	BOA.	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					
Aux. power supply	220 / 380 VAC ± 20% 50 / 60Hz					

EPS Series (Three Phase by three wires)

Model	EPS3-40	EPS3-60	EPS3-80
Rated current	40Amax.	60Amax.	BOA 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		
Aux. power supply	220 / 380 VAC ± 20% 50 / 60Hz		



EPS3



TPS Series (Single Phase by two wires)

Model	TP51-160	TPS1-200
Rated current	160Amax.	200Amax.
Protection fuse	160A	200A
Surge current duration	2250A	5400A
Min. block voltage	1600VAC	
Cooling fan	80x80 / 12VDC	
Main power supply	180 ~ 440VAC 50 / 60Hz	
Aux. power supply	220VAC ± 20% 50 / 60Hz	

TPS Series (Dual Phase by three wires)

Model	TPS2-100	TPS2-125	TPS2-160	TPS2-200
Rated current	100A max.	125A max.	160A max.	200A max.
Protection fuse	100A	125A	160A	200A
Surge current duration	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			
Aux. power supply	220VAC ± 20% 50 / 60Hz			

TPS Series (Three Phase by three wires)

Model	TPS3-40	TPS3-60	TPS3-80	TPS3-100	TPS3-125	TPS3-160	TPS3-200
Rated current	40Amax.	60Amax.	80Amax.	100A max.	125A max.	160A max.	200A max.
Protection fuse	40A.	63A.	BOA.	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						
Aux. power supply	220 VAC ± 20% 50 / 60Hz						



TPS3

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-10kQ 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)



◆ **Function setting**

Press Set Key and then ↓(Down Key); hold both keys for 3 Seconds

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

◆ **Data setting /**

Press Set Key; hold for 3 Seconds

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

Additional Items:

d.099 : When the Output Volume is > d.0nn, It Starts The Soft Start Function

ALn.0 → Alarm output status is Normally Open (NO); ALn.1 → Alarm output status is Normally Closed (NC)

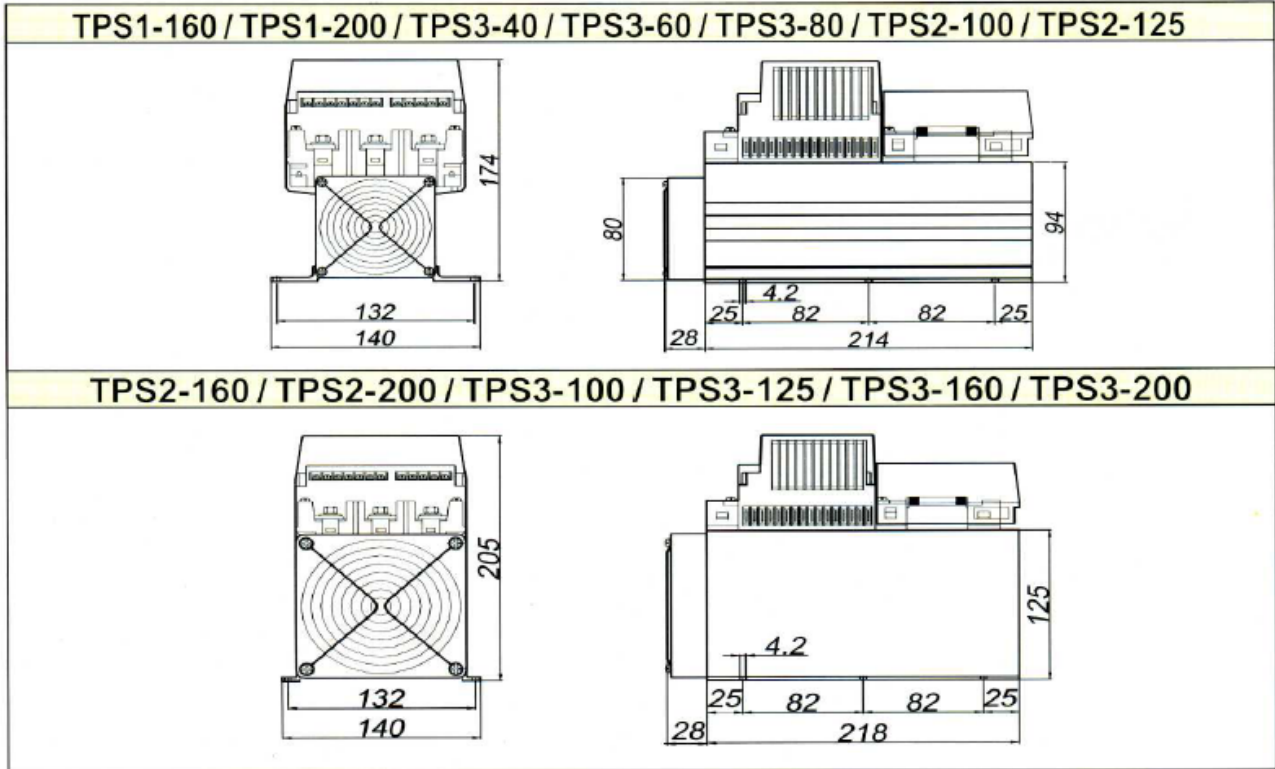


Outline dimension

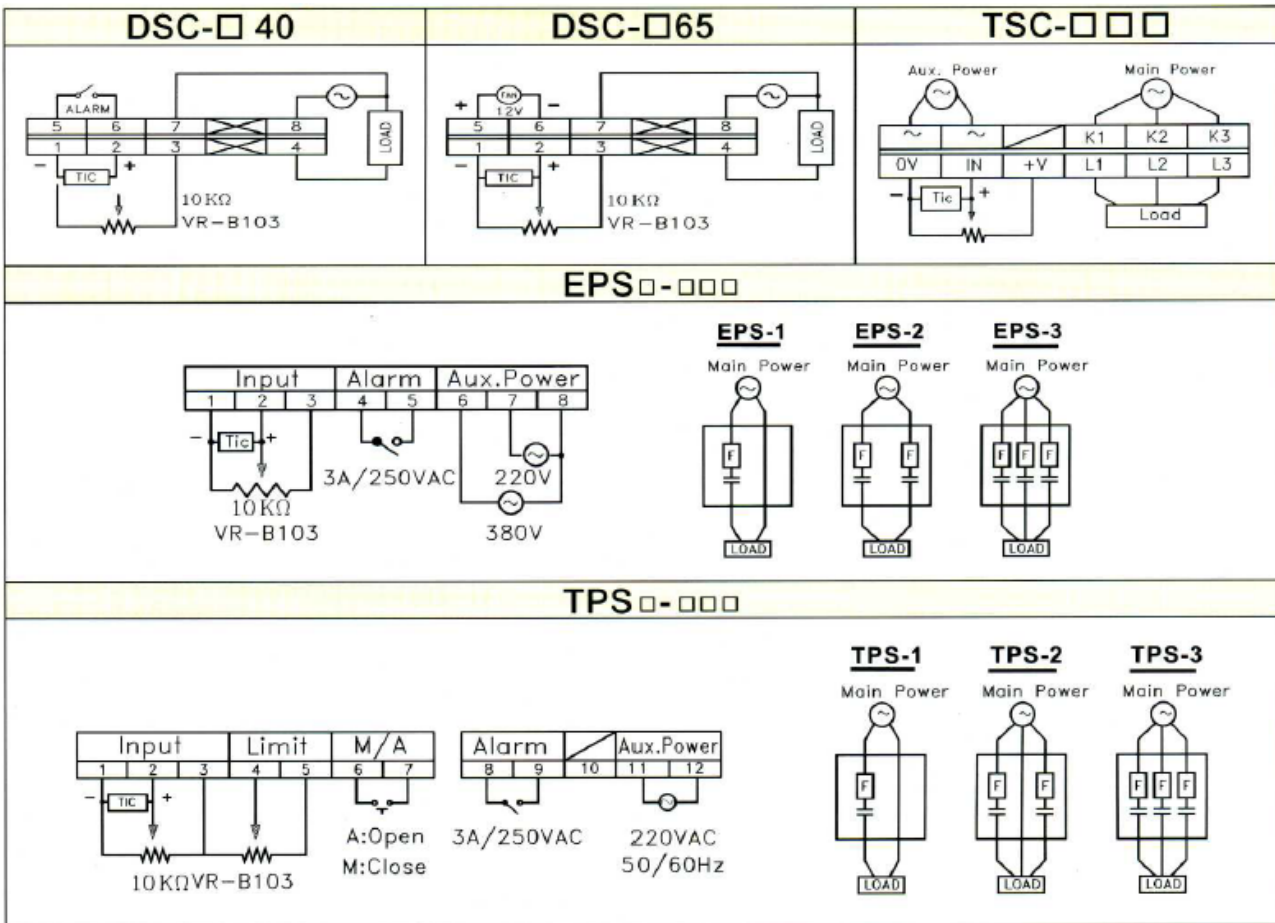
DSC-□40	DSC-□65
TSC-340 / TSC-365	EPS1-40 / EPS1-60 / EPS1-80 EPS1-100 / EPS1-125 / EPS2-40 / EPS2-60
EPS2-80 / EPS2-100 / EPS2-125 / EPS3-40 / EPS3-60 / EPS3-80	
EPS1-150 / EPS2-150	



Outline dimension



Connection Diagram

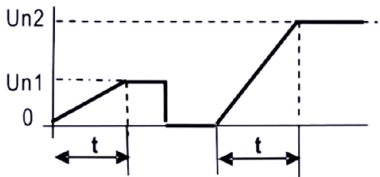




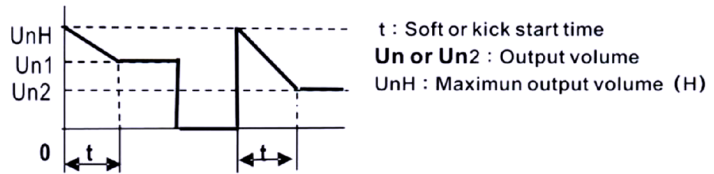
◆ **Type of Control Method**

Control Method	Phase angle control	Zero cross control
Output volume		
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 /**



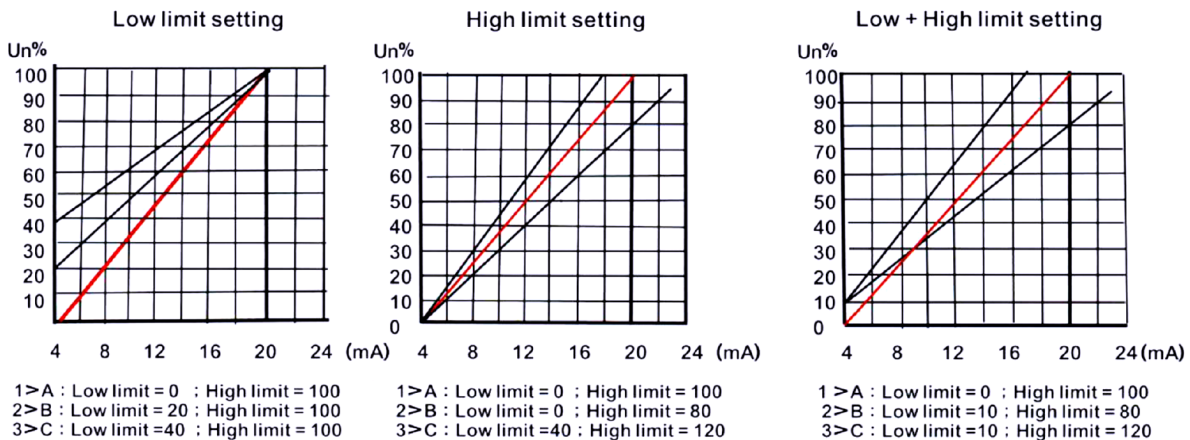
◆ **Kick start /**



◆ **Setting of manual output /**

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

◆ **Setting of output limit /**



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.



◆ **Multi-input type /**

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


◆ **External limit for output volume** **【EPS & TPS series】**

Please use a Variable resistance (10kΩ/103KB) to adjust the maximum output volume.
(10kΩ/103KB)

◆ **Trouble shooting /**

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

◆ **Notice of safety /**

 Warning	Potentially hazardous situation, if mishandling, may result in death or serious injury.
--	---

- 1) Please confirm the input type and connection method with this controller, if not, it may result in malfunction.
- 2) Please do not touch any terminal of this controller while power supply is supplied, if do, it may result in electronic shock.
- 3) 「Power supply system」 must to be shutdown before renew the fuse, if not, it may result in electronic shock.
- 4) Please rated the load current within the specified value, if not, it may result to burn up this controller or fuse.
- 5) Please tighten the screw terminal over 100kg-cm, if not, it may result to burn up this controller or fuse.
- 6) If this controller is burned up, it may be in short circuit condition or malfunction, please settle an independent alarm system to ensure safety protection, if not, it may result in a serious accident.

Specifications may be modified without notice in advance.