SCR Power Unit





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□ Abstraction

SCR unit composed of DSP-XX3R/XX6L is to focus for multiple application to control a power of the electrical heater, particulary the important fuction like over current protection due to short circuit and over temperature protection due to over heated heat sink is basically embeded.

Also the normal operation is executed even though the phase of incoming power source is not orderly.

It is recommended that the applied SCR unit will be choosed properly to the kind of the load

D Main Feature

✓ Delay START Function

If SCR unit is run on while the internal full signal is outcoming to the output, the fault caused by inrush current could be happened in the SCR unit, particulary for inductive load. So this fuction is able to make SCR unit complete a starting action as outcoming a output step by step proportional to time devision based on delay start time preset by "ST" VR. The adjustable time by "VR" is 0~30 sec.

✓ Over-current protection

Over protection algorithm is embeded to protect a damage from over load, short circuit,etc. This function is able not only to make the SCR output off immediately in case load current exceeds preset "oc" value, but also to make a fault output as energizing internal alarm relay and turning on red LED on the PCB. The operator needs to make a reset an energized relay(CM -NO) after checking a system and a load.

✓ Output Limit

The maximum output of SCR unit can be limited within preset range for $0\sim100\%$ as adjusting gain Vr on the PCB, so the output voltage of SCR unit can be reached only to the preset value even though T.I.C and manual Vr require the maximized output.

✓ Over-temperature protection

The output of SCR unit is disable not only to make the SCR output off immediately in case the temperature of heat sink is over 80^oC, but also to make a fault output as energizing internal alarm relay and turning on yellow LED on the PCB.

Current Limit

This is to define current limit in case the resistance of the heater is varied according to the temperature and/or the heater with low resistance in the initial low temperature state is used. The operator is able to preset the limited current value by adjusting C,L Vr on the PCB. This fuction is optional condition according to customer's requirement(Type:DSP-XX6L) Also the useful application is for PT heater,Super Khantal heater,Mo wire heater,Melting furnace for glass, trans load, other inductive load,etc

✓ Soft-Up/Dn

The inrush load current or the reverse regenerated energy of the output could be created in case the output is rapidly changed as the signal from T.I.C is up-down fastly, so this result could make the life time of semiconductor shorter or make the fuse short state. Therefore Soft-Up/Dn function is able to prevent the abnormal condition from the reverse regenerated energy as making the output change be soft in case the control signal is changed with a great fluctuation

✓ Alarm signal output for fuse melting

This function is to stop the SCR unit output in case the fuse is melting and makes an alarm. This is optional condition required by the customer.



Item	DSP-XX3R/resistive load	DSP-XX6L/Inductive load			
Rating voltage	3phase 220 V,380V,440V,480V				
Rating current	25A~400A				
Control element	3-SCR + 3-DIODE 6-SCR				
Adjusting range	Voltage adjust range: 0~98%				
Control signal	4-20 mA, ON-OFF/dry contact, Manual VR				
Starting method	Soft Up - Soft Down				
Applied load	3Phase Heater				
Alarm output	Relay 1a(SP-ST), LED				
Melting fuse	Basically embeded over 60A				
Colling fan	FAN				
Protection	*Over current(OC), Over temperature(OT)				
	*Current limit: only available for XX6L Type				
Option	Fuse melting alarm, Trip				

□ Technical specification

PCB Description

	DSP - 333R Control PCB			
	RS-VR	Adj Vr/Phase R SHIFT		
DCD - 222D Control DCB	SS-VR	Adj Vr/Phase S SHIFT		
DSF - 335K CONTOLLCD	ST-VR	Adj Vr/Phase T SHIFT		
	DSP - 346L Control PCB			
	ST-VR	Soft start time VR		
	CL-VR	Current limiter VR		
RS SS TS PL OC OT RESET IN MAN OC GAIN	SP-VR	Out voltage VR		
	Common			
	RESET	Fault reset seitch		
	PL	Power LAMP		
MAN	OC	Over current fault		
	OT	Over temperature LAMP		
	INT-EXT	NT-EXT Internal ResExternal Res		
DCD - 2461 Control DCB	MAN-VR	Internal variable resistance		
DSI 540L CONTOTICD	OC-VR	Over current VR		
	GAIN-VR	Max out current VR		
IN 77	CM-ON	Fault RELAY		
ST CL SP RESET PL OC OT IN I MAN OC GAIN SPT SPT SPT	S1-S2	SCR Unit RUN Command		
	А-С-М	AUTO & MAN.Selector		
CM NO S1 S2 + - A C M V1 V2 V3	V1,V2,V3External variable resistance			
FLULT RUN 4~20mA AUTO/ MAN VR				

Dimension



Phase	Rating(A)	W	Н	L	С	А	В
3	20-40A	210	190	300	260	170	280
	60-110A	235	210	370	330	175	355
	130-200A	280	235	440	400	230	425
	250-400A	345	270	500	450	280	470
	Over 400A	Optional					
1	20-40A	130	130	195	165	90	180
	55-110A	125	175	250	210	105	205
	130-250A	125	180	320	280	108	305
	300-400A	280	235	440	400	230	425
	Over 400A	345	270	500	450	280	470

□ Application Diagram



Order Form



