

DIGITAL ANALOG SINGLE PHASE SOLID STATE

RELAYS

I/P: 4-20mA or 0 – 10 VDC or 0-5 VDC Series
S1-240/480-...-AB-12
S1-240/480-...-AC-12

Features

- Using SMT Technology.
- Microcontroller based
- Soft Start enable/disable factory set
- LED indication of loop current.
- Anti-parallel double SCR.
- 0 to 10 VDC control or 0-5VDC or ON/OFF control or Pot
- Galvanic separation between control buffer and power circuits (4000 volts) .
- Rated operational voltage: 25-330VAC, 48-660VAC, 50/60 Hz
- Rated operational current: 25, 50, 75 and 90A.
- Analog switching for resistive loads.
- External power supply of + 8-32 VDC required for Vcc
- Output and input status Red and Green LEDs. LED status indication for various conditions
- Separate ON/OFF control
- Optional: shutdown terminal will be available externally
- Integral snubber network
- Frequency 50Hz/ 60Hz



Description

S-PC-240/480-...-AA/BB/CC-08/12 is an analog single phase solid state relay from Satronix. The analog or phase angle control relay is meant for resistive loads. It controls the load linearly (0-100%) on receiving I/P from PID. It has 3 control input options of 0-10VDC or 0-5VDC. Offered upto operational voltage range of 660 VACrms and operational current options of 25, 50, 90 A. It has LED indication for current. Ideal for Tungsten Lamp dimming, Resistive Heating Control, and Universal Motor Control and many more applications

Type Selection Guide

Input Control	Rated operational voltage	Non-Repetitive voltage	Rated operational Current ACrms			
			Model	A	B	B
				25 Amps	50 Amps /75Amps	90 Amps
4-20 mA /0-10 VDC	48 - 140 VAC rms	800 Vpk		SI-PC-110-D-25AB-12	SI-PC-110-D-50AB-12	
4-20mA/0-5 VDC	48 - 140 VAC rms	800 Vpk		SI-PC-110-D-25AC-12	SI-PC-110-D-50AC-12	
4-20mA/0-10 VDC	180 - 330 VAC rms	800 Vpk		SI-PC-240-D-25AB-12	SI-PC-240-D-50AB-12	-----
4-20mA/0-5VDC	180 - 330 VAC rms	800 Vpk		SI-PC-240-D-25AC-12	SI-PC-240-D-50AC-12	-----
4-20mA/0-10 VDC	280 - 480VAC rms	1200 Vpk		SI-PC-480-D-25AB-12	SI-PC-480-D-50AB-12	SI-PC-480-D-90AB-12
4-20mA/ 0-5 VDC	280 - 480VAC rms	1200 Vpk		SI-PC-480-D-25AC-12	SI-PC-480-D-50AC-12	SI-PC-480-D-90AC-12
4-20mA/0-10 VDC	330 - 600VAC rms	1600 Vpk		SI-PC-660-D-25AB-12	SI-PC-660-D-50AB-12	SI-PC-660-D-90AB-12
4-20mA/0-5 VDC	330 - 600VAC rms	1600 Vpk		SI-PC-660-D-25AC-12	SI-PC-660-D-50AC-12	SI-PC-660-D-90AC-12

Model A: upto 25 Amps Model B: 50 - 90 Amps

Available on request - Rated operational voltage: Up to 660 VAC rms / PIV 1600
also higher current ratings available in microcontroller based models

Input Specifications

Type	SI-PC-110/240/480/660 -D-..AA - 08/12		SI-PC-280/240/480/660-D- ..BB - 08/12	SI-PC-280/240/480/660 -D-..DD - 08/12
External Supply (Vcc) VDC	8-32VDC	External Supply (Vcc) VDC	8-32VDC	8-32VDC
Vcc current range mA		Vcc current range mA		
Control range mADC	4 - 20 mA	Control range	0 - 10VDC	Potentiometer
Pick up current	4.3 mADC	Pick up voltage	0.7 VDC	
Drop out current	4.1 mADC	Drop out voltage	0.2 VDC	
Allowable input current	<=30 mA	Control input current	15mA @ 10VDC	*
Voltage Drop @20mA	<10 VDC	Response time input to output	<= 20 ms	*
Reverse Polarity Protection	Yes	Reverse Polarity Protection	Yes	*
Impedance (Rc) Dynamic	>=330 Ω	Impedance (Rc) Dynamic	>=20 KΩ	*

Current to input should not exceed 30 mA

Output Specifications

TYPE	SI-PC-240-D/D-330/480/660-25AA/BB/CC-08/12	SI-240-D/D-330/480/660-50AA/BB/CC-08/12	SI-240-D/D-330/480/660-75AA/BB/CC-08/12	SI-240-D/D-330/480/660-90AA/BB/CC-08/12
Current Range with proper heat sink (IT)	25 A	50 A	75A	90 A
On-state voltage drop (VTM)	1.6	1.85	1.85	1.85
Off-state leakage current @ voltage, frequency (IDRM)	<5 mA	<5 mA	<5 mA	<5 mA
Load Voltage Range	90-280VAC / 24-330VAC / 48-480VAC / 48-660VAC feedback resistor adjustment			
Peak one cycle surge current (non-rep) (ITM)	260 A	625 A		1500 A
Holding Current (IH)	75 mA	100 mA	100mA	100 mA
dv/dt off-state (critical)	1000 V/μs	1000 V/μs	1000 V/μs	1000 V/μs
I ² T Fusing (t = 1 - 10ms)	450 A ² S	1680 A ² S	7800 A ² S	11000 A ² S
Thermal Resistance Junction to case Rjc °C/W	1.02 °C/W	0.63 °C/W	0.43 °C/W	0.28 °C/W

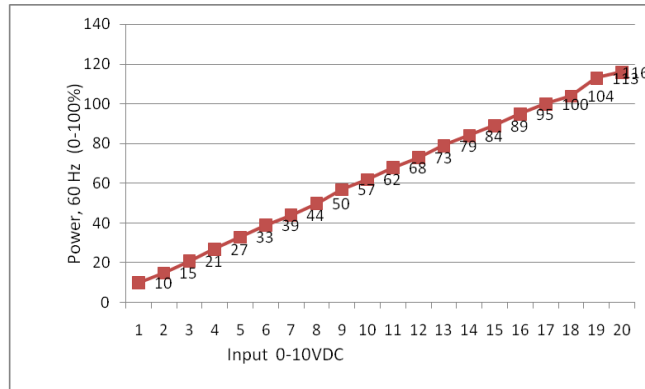
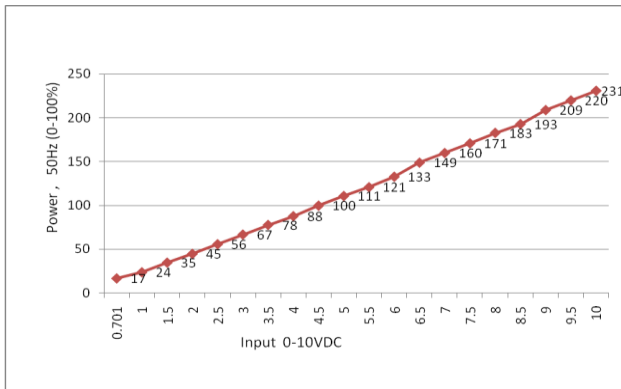
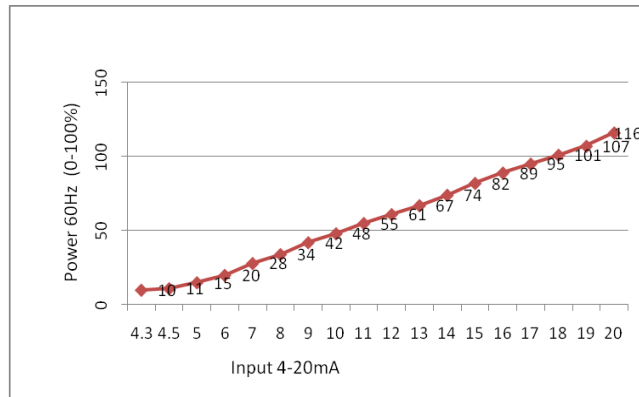
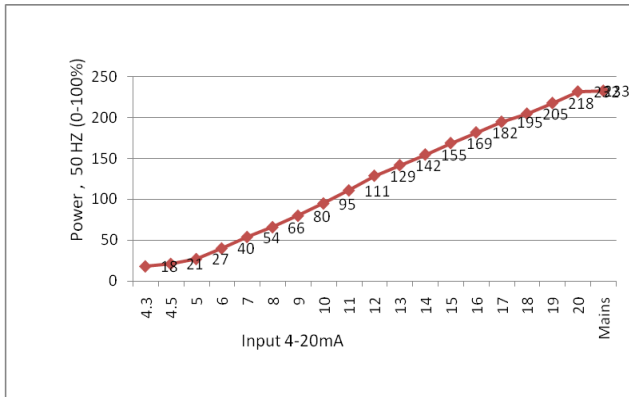
LED Status Functions

Initial Logic Supply ON	Green LED continues flashing (1 sec on, 1sec off), Red LED off
Load voltage missing/Load open but control voltage absent	Green LED continues flashing intermittently 2.6 sec on, Red LED on
Load voltage missing/Load open but control voltage present	Green LED continues flashing 2 sec on, 4 sec off, Red LED on
Analog input <Threshold	Green LED ON 1 sec On- Off, Red LED off
Analog input >Threshold	Green LED ON, Red LED off
Potential free auxiliary contact if shorted then output switched off (to trip the output)	Red LED on, Green LED off
<u>Factory Set</u> Output will switch on instantaneously Condition soft start is in picture when high current 20mA or high voltage is given suddenly then 5 secs soft start will happen	

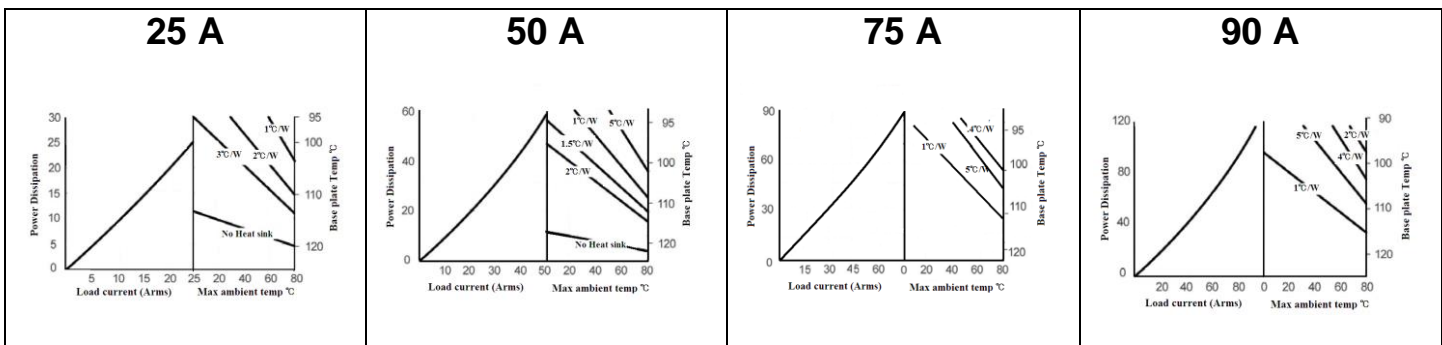
General Specifications

Frequency Range	50/60 Hz
Isolation I/P to O/P, I/P to case, O/P to case	$10^{10} \Omega$
Insulation Capacitance I/P to O/P	$\leq 8 \text{ pF}$
Insulation voltage I/P to O/P to case	4000 VACrms
Weight	Approx. 100 g
Storage Temp.	- 40 °C to 100 °C
Ambient Operating Temp	- 20 °C to 80 °C
Junction Temp.	100 °C
Encapsulation	Thermally conductive epoxy

Characteristic Curve



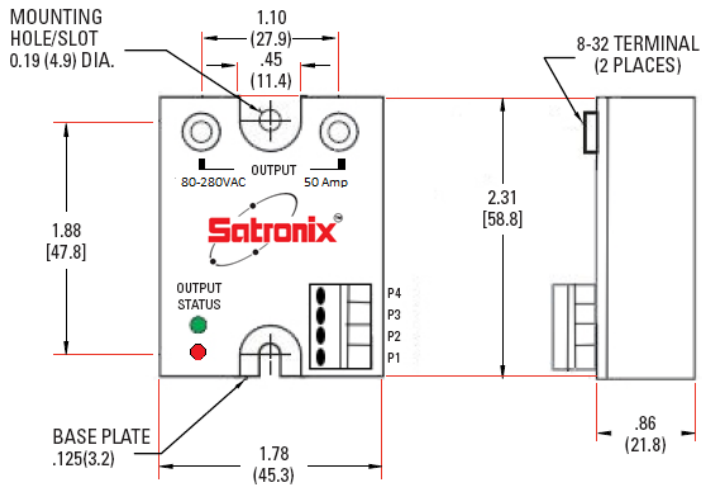
Characteristic Curve



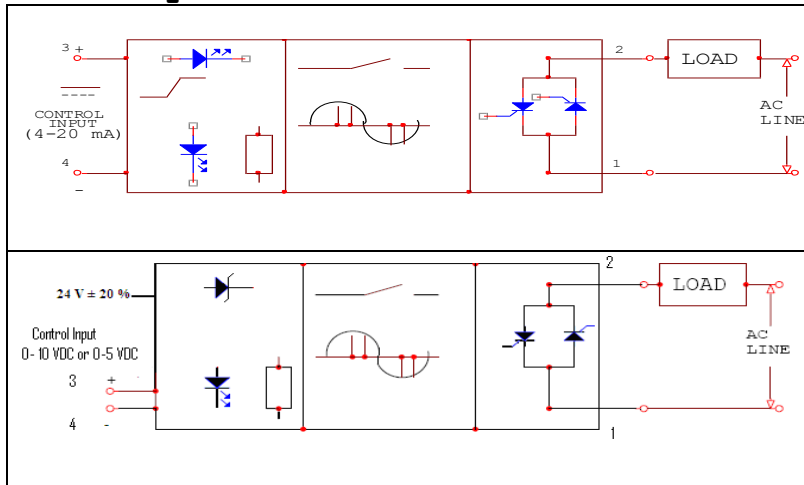
Dimensions

AB series & AC series

Analog Input OPTIONS: A, B, C, D



Functional Block Diagrams



SATRONIX (INDIA) Pvt.Ltd.

OFFICE: 412, Laxmi Plaza, Laxmi Indl. Est., Link Rd, Andheri (W), Mumbai- 400 053,INDIA

Works:Unit No. 1,Electronic Sadan 1 & Unit No.12, Electronic Sadan 3,Bhosari MIDC, PUNE –411026,INDIA

Tele/ Fax: 91 22 26325242 Cell: 9820143488

Email: sales@satronixindia.com sales@satronix.net

www.satronixindia.com www.satronix.net