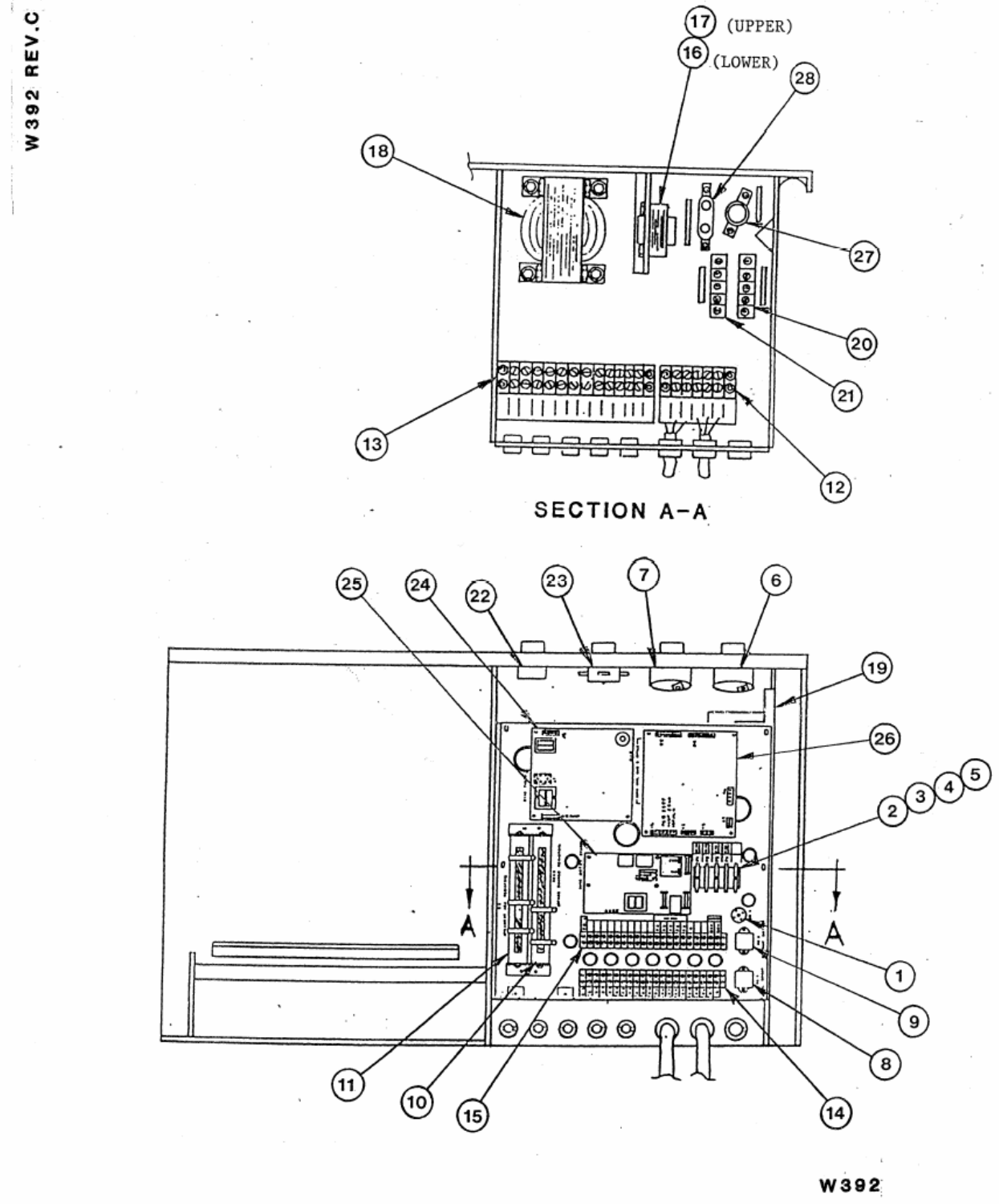
COMPONENT LOCATION IDENTIFICATION

Item No.	Legend	Description
1	BR1	Bridge Rectifier, mA (10A)
2	F1	Fuse, 8A
3	F2	Fuse, 8A
4	F3	Fuse, 10A
5	F4	Fuse, 2A
6	KV Major	Tap Sw., Ohmite 312-8
7	KV Minor	Tap Sw., Ohmite 312-8
8	RE1	Relay, DPDT, 120VAC HH91
9	RE2	Relay, DPDT, 120VAC HH91
10	RSCC	Resistor, 25 Ohm, 175 W
11	RX	Resistor, 100 Ohm, 175 W
12	TB1	Terminal Strip, 5 Terminals
13	TB2	Terminal Strip, 12 Terminals
14	TB3	Terminal Strip, 20 Terminals
15	TB4	Terminal Strip, 20 Terminals
16	TS	Transformer, Stabilizer (CVT), 120/120 volt
17	TSCC	Transformer, Space Charge, 300/30 volt
18	-----	Transformer, Auto
19	-----	Circuit Breaker/On-Off Switch
20	-----	SCR Block, Main
21	-----	SCR Block, Back-up
22	-----	Switch Assembly, Time Select
23	-----	Switch Assembly, mA Select
24	-----	PCB Assembly, Time Select
25	-----	PCB Assembly, kVp, Motor Start
26	-----	PCB Assembly, kVp / mAs / Interlock
27	C1	Capacitor, Rotor Start
28	C2	Capacitor, Stabilizer

COMPONENT LOCATION DIAGRAM

W392 REV.C



Technical Support Dept.
Ph: (800) 729-9729
ext. 1 for customer service
ext. 2 for Tech Service

Original InnoVet Part Description rev.12/06	Part Number
W300, W375, W400, W438 (Generator L802)	
Air Cylinder, Damper for hinged generator tilt	W369 (Bimba 125)
cable, F377 to C118 Timer PCBA	E948
Cable, kVp display	E950
Cable, mAs display	E951
Curtain Strip, OlderTbST W200	W215
Foot Loop	K090
Grid Cabinet	W048
Knob with pointer	W344
Knob without pointer	A312
kVp Tap Switch (8 position)	02255-000
LED replacement kit	00312-000
mA Selector Switch assy	W354
mA selector switch cable	comes with W354
Manual - (See MASTERS = Not in OBSOLETE)	K186
On/Off Circuit Breaker	A365
pcb, kVp/mAs Interlock	F377
pcb, Motor Start (rotor control)	A455
pcb, Timer Driver	C118
Relay, RE-1 / RE-2	HH91
Relay socket assy for RE-2 (exposure)	W351
Relay socket for RE-1 (boost)	HH81
Remote exposure switch (wall mount)	W413
Resistor, Filament 100 Ohm, 175 W RX/RXS	A347
Resistor, Filament 25 Ohm, 175 W RSCC	A345
Rotor Cap 25uF, 330V	HAB18
SCR Kit (includes Instructions)	00424-000
SCR block ^ Please order with instructions ^	00194-000
Sliders, Front Grid Cabinet	00673-000
Snubber/Suppressor (Tap Switch)	W440
Stabilizer cap, C2, 660V 2.5*u*F	A343
Stator Capacitor, C1, 330V 25*u*F(formerly A351)	HAB18
Switches for RemoteAssy (Cap J783)	C414
Two position prep/exposure switch button	J783
Time encoder EPROM (for F377 Board)	W341
Time Selector Switch assy	J976
Time Selector Switch Cable	comes with J976
Transformer, Space Charge	L926
Transformer, Stabilizer, Filament	A342
TS Capacitor, C2	A343
Two position prep/exposure foot switch	A981

GENERAL TIPS

Verify basic voltages: Line tap is correctly set for supply, 120 VAC F1 to F2, on F377 board, H6-5 to H6-6 is 14 VAC, TP9 is +5 VDC, TP11 is -5 VDC, TP10 common

Verify basic connections: P1 white, P2 black, Ground green. XL white, XS green, XC black, M1 red. Rotor 07 black, 08 red, 09 white; typically 30 ohms 07 to 09 and 60 ohms 08 to 09. Insure tight crimps, receptor studs and screw terminals.

"--E--" in mAs window

This occurs because the F377 does not know the kV, mA or time selected. It can happen from improper kV selection (above 125 or below 40 kVp), bad tap switch, timer switch, mA switch, poor cable connections from these devices, P1/P2 voltage in idle (a loose stud on transformer top), or a failure of the F377 board.

1. **kVp window blank and "--E--" in the mAs window**, suspect no tap switch voltage input to the F377 board. Adjust kVp tap switches so that 200 VAC is present between the common poles. Insure 200 VAC is present at pins H7-1 and H7-4 of the F377 board. Find the open connection or replace the board.

2. **kVp window blank and "--E--" in the mAs window**, a second cause is no mA select signal on H3 of the F377. Insure H3-1 is +5 VDC when selecting small filament, H3-2 is +5 VDC for large filament. Insure +5V on H3-3. Remove the H3 plug short pins H3-3 to H3-2 on the board. If the problem is resolved replace the selector and cable, if not, replace the board.

3. **kVp is between 40 and 125 kVp but the mAs window is "--E--"**, the problem is related to the time station code. Monitor H1 pins 3, 4, 2, 5 and 6 (time station code) to insure binary increment count of +5 VDC as time is changed. The pins on H1 as shown above are in Most Significant Bit to Least Significant Bit sequence. Replace time selector and cable if bits are missing.

4. **kVp display reads "333"**, or some other scrambled, invalid kVp, U18 on F377 board (part number W341) has probably been damaged from electrical noise. Cycling power may clear the problem, and replacing the W341 chip will likely clear the problem. It is important to look for sources of noise, such as arcing in the high voltage secondary, rotor circuitry, solid grounding, and so on. Putting a 0.1mfd capacitor from pin 5 to pin 7 of U6, and another from pin 21 to pin 20 of U18 may help. Confirm that in IDLE, D11 to ground is +5VDC. If less, remove U18 and confirm that D11 returns to +5V. If it does, replace U18 (part #W341--even though removing this chip may not clear the "333" during this test). If +5V does not return, replace the F377 board.

No exposure & No "beep" from timer.

The two most likely causes are a failure of the motor start board to transition from boost to run during the prep cycle (due to 50k pot R17), or an open R30 on the kVp/mAs Interlock board. To determine which is the cause, rotate the kVp tap switches while the unit is in prep. If the kVp display changes the F377 kVp/mAs interlock board resistor is bad, if it does not suspect the A455 motor start board.

1. Does LED 1 on the motor start board light? If not, check stator circuitry, stator cap, and stator connections. Replace A455 motor start board.
2. D11 on F377 board must go from +5 VDC to ground at PREP. This signal turns the time select signal into an anticipated pulse count. Most common cause for this signal to be missing is an open R30 on the F377 board. Replace it with a 12k ohm resistor of at least 3 Watts. OC1 on the board is also suspect.
3. If there is a +5V to ground transition at PREP, verify an anticipated pulse count at the J3 input of C118. Pin one of J3 is the +5V supply, pins 2, thru 11 are Most Significant to Least Significant bits of the binary code for anticipated pulse count. If code and +5/+12 VDC supplies are good, replace C118 timer.
4. Is there 120 VAC between J1-1 and J1-2 on the C118 timer board at EXPOSE? If not, check pin 11 of motor start board, connections, and exposure switch.

No exposure, but timer "beeps"

1. Verify line tap is correctly set; the SCR drive voltage is an unregulated supply.
2. Verify filament voltage and mA. Typically 24 VAC in idle, 52 VAC (XL to XC) for 80 kVp at 300 mA boost. If close to zero volts, look for open in control. If 120 VAC look for an open in high voltage secondary.
3. Verify primary voltage and kVp. Look for RE-2 to close, insure good connections from J2 to primary SCR, confirm primary and backup SCRs conduct. Sometimes a resistor/diode component in the harness of the RE-2 socket will be open, preventing backup SCR gating. Replace C118 timer.

kVp or mAs segments do not light

Insure good connections between the wires and the plugs at either end of the kVp/mAs display cables. Remove the spring clip cover at the plug to inspect. Switch cables at control end, then tubestand end, to determine source of the open.

Unit exposes but no mA can be measured

Verify filament voltages (see description above), lit filaments, and presence of kVp. Ensure that the spark gap is not shorted to the top of the transformer.

Technical Support Dept.
Ph: (800) 729-9729

No Exposure condition for InnoVets and 325 / 360 generators.
A455 Motor Start Board Troubleshooting

The A455 has a quick visual indicator LED which lights when all is ok for exposure. This should light approx. 1.5 seconds after PREP begins. Does Anode energize? If yes, does LED light?

Included for you here are the collected documentation for the A455 Motor Start board, and we suggest you always consider these failure instances in the following logical sequence (slightly revised sequence from prior documents included in attachment).

1. Measure Mains voltage to generator and adjust Line Compensation if needed.

   a. Confirmation measurement, Chassis F1 to F2 should measure 120VAC, when **Generator ON**.
   b. Test DC volts measured on motor start board across C3 capacitor, typical 20 to 24volts (unregulated, only at boost/run).

2. Measure proper connection of anode motor windings with ohm Meter, generator OFF. You do not need to disconnect the cable unless ohms measured are incorrect.

   a. COM.09 to MAIN.07 should be lowest measured value = 25 to 30 ohms.
   b. COM.09 to AUX.08 should be approx 2x main = 50 to 60 ohms.
   c. AUX.08 to MAIN.07 should be the sum, both windings = 75 to 90 ohms.
   d. ALL windings must be Open to chassis ground, >1MEG ohm.

(Past cases a reverse wired tube had run for 5 or 6 years, and eventually current sensing reduced to below allowable limit. In some cases correcting the wiring recovers operation without parts.)

3. The anode motor Auxilliary Capacitor (also known as Start cap or Shift cap), location C1 on generator chassis, Summit part number HAB18, 25*u*F 450 VAC.

   a. Measure AC Volts COM09 to MAIN07, note both boost (240v) and run (50v). Do not use Auto-Range option on voltmeter. Instead, pre-set meter range to 400V or higher.
   b. C1: Rarely service personnel have a meter to accurately measure this as a capacitor, so we test this as AC Volts measured COM09 to AUX08, expected are 350v boost and 70v run.
   c. In case of erroneous readings, double-check by measuring directly on C1 capacitor.
   d. Consider measured values in relation to main motor winding (07 to 09) values. MAIN winding values need to be correct before expecting AUX winding values to be correct.

4. Define Failure mode after windings and capacitor have been confirmed.

   a. Time delay for motor and filament boost:
      Generally this is confirmed with test 3a, but should be duration 1.5 seconds.
      Adjust R17 to fine tune. If R17 has no effect, check also R16, CR11, C4, IC2 (type LM358).
   b. Current sensing protection to prevent exposure to a stationary anode.
      Confirm Reference to IC1 pin6 by measuring dc volts across R7, typical 1.6vdc.
      Confirm Main sensed current by measuring dc volts across R20, typical 5.4vdc.
      Confirm Aux. sensed current by measuring dc volts across R3, typical 5.9vdc

5. Bypass current sensing options:
      c1. Short across R7 (setting reference to 0v).

6. SWAP or replace IC1 and IC2 (type LM325) - and repeat 4a and 4b to test for chip failure.

NO Exposure & No LED light on A455 Motor Start Board

FIRST – Check your line voltage and re-tap auto transformer if needed.

For the Spectra, this is simple operator task: hold the "Line Check" switch and turn the "Line Adjust" Tap switch so that the needle of the kV Meter is at "V" position.

Second, find which of the 2 general functions are failing, and then swap IC chips U1 and U2 to see if failure remains consistent, or if failure mode changes with change of chips then get new IC chips LM358N or equivalent.

Function 1 failure: Time Delay, Boost to Run.
Function 2 failure: Current sensing of the Rotor windings.
Failure 3: IC Chip failure.

1. Measure voltage to the Anode motor main winding
Where?: AC volts 07 to 09, located at bottom of TB3)
Normally 0V in idle, 240 VAC Boost (start of PREP) After 1.5 seconds 50 VAC Run (R17)

If correct, continue on to #2 current sensing.
If NOT correct, try adjusting the potentiometer R17. Time delay is created by R16, R17 and C4, and charging "ramp" can be checked at anode of Diode CR11.

2. Check resistance Ω of Anode windings, to be sure nothing has changed.
Main (07 to 09) measures 25 to 30 Ohms.
Phase (08 to 09) measures 50 to 60 Ohms.
SUM both (07 to 08) measures 75 to 90 Ohms.
NOTE: ALL SHOULD BE OPEN TO GROUND.

2b. Use (-) negative side of C3 capacitor for common or ground reference. Measure the following voltages during Boost or Run mode (sometimes measure separate for both boost and run), because this board is not powered at other times.

Positive side of C3 = 20 to 24 vdc (unregulated DC supply).

check both sides of R7. measurements should be 0 vdc, and 1.6 vdc (approx), this is your reference.
Phase current sensing: Cathode of CR1 should be approx 5.9 vdc
Main current sensing: Cathode of CR2 should be approx 5.4 vdc

If Main is OK but Phase is lower, then maybe you need to replace the C1 Rotor Capacitor.

Please call if you need any additional help.

Roger Frueh
Technical Support
Summit Industries Inc.
Toll Free 1 (800) 729-9729 ext 4037

Technical Support Dept
Ph: (800) 729 - 9729
Fax: (773) 588 - 3404

Troubleshooting the A455 Motor Start Board

FIRST – check your incoming line voltage and if needed re-tap your auto transformer.

Note that the K1 relay energizes at boost, putting 240 VAC between the "07" main and "09" common terminals on the tube stator cable. This voltage drops to 50 VAC during the run stage of PREP as K1 drops out and K2 is energized. Due to the stator capacitor, there should be about 360 VAC during boost and 70 VAC during run between "07" main and "08" phase terminals.

1. Throughout the PREP sequence (both boost and run) there must be 1.5 VDC across R7. Use the right side of R20 at top of board for ground reference. This sets the threshold voltage for minimum main and phase rotor current.

2. Throughout the PREP sequence there should be about 5 VDC on IC1 pin 3, and 8 VDC on IC1 pin 5. This is the sensed rotor current for main and phase windings respectively.

3. As a result of these voltages, IC1 pin 1 goes to 12 VDC, and IC1 pin 7 goes to 10 VDC.

4. Throughout the PREP sequence IC2 pins 2 and 6 each go to 6 VDC.

5. IC2 pin 5 charges to about 7 VDC during the PREP sequence. Once it charges to about 5 VDC, the output at IC2 pin 7 goes to 10 VDC. The time it takes to charge is controlled by R17 and C4, typically 1.5 seconds.

6. When IC2 pin 7 goes to 10 VDC, K1 drops out and K2 pulls in, the 240 VAC is removed and 50 VAC is applied to the stator as the board transitions from boost to run.

7. The 10 VDC output of IC2 pin 7 also changes the 3.4 VDC seen at IC2 pin 3 in boost to 7 VDC, making the output of IC1 pin 1 go to 10 VDC. This 10 VDC output turns on Q4, which energizes K4, turns on the LED, and closes the connection between J6 pins 7 and 11, passing 120 VAC hot to the timer to initiate the exposure.

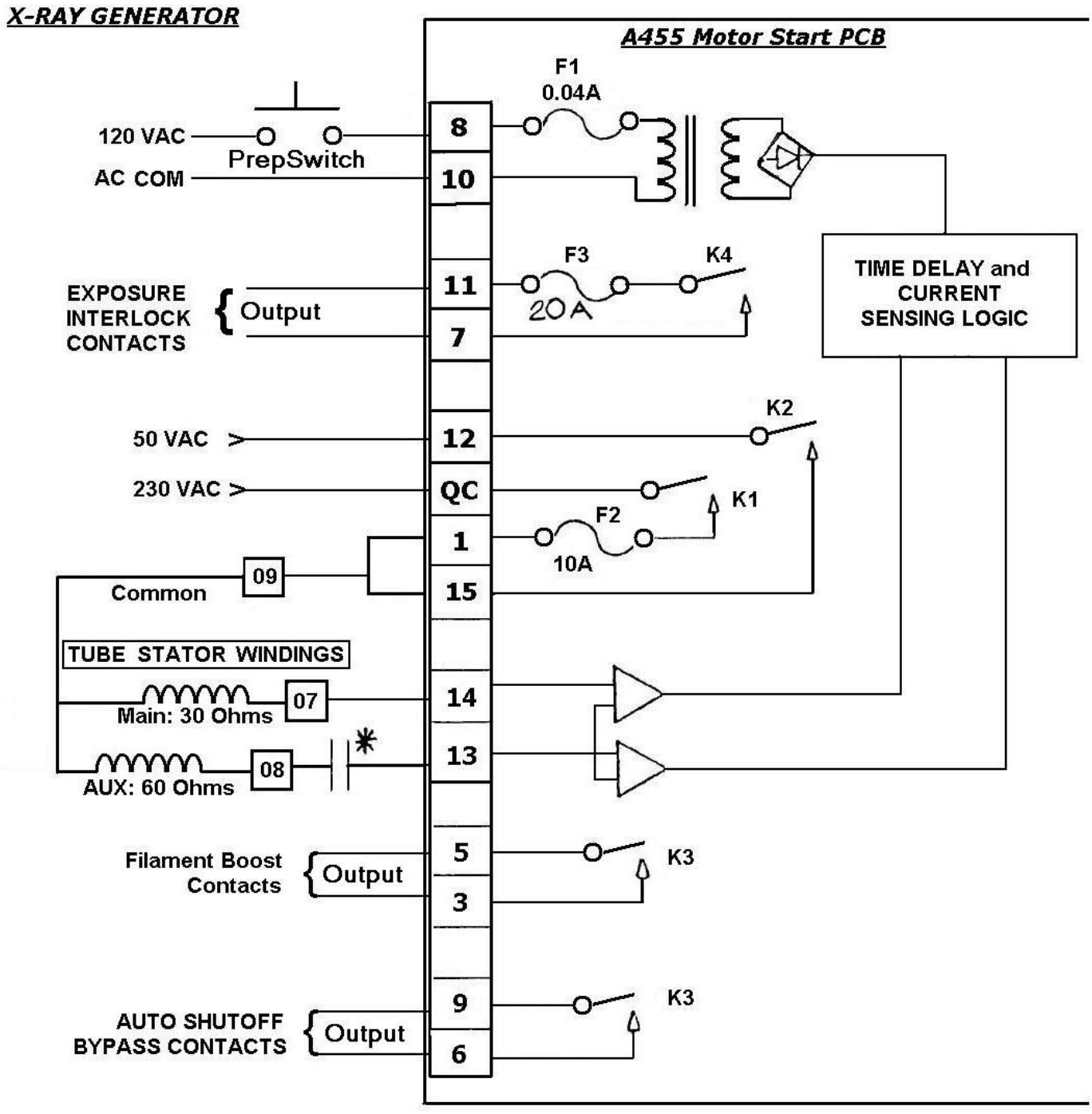
Please call if you need any additional help.

Best Regards,

Technical Support
Summit Industries Inc.
Toll Free 1 (800) 729-9729
Direct 1 (773) 588-2444

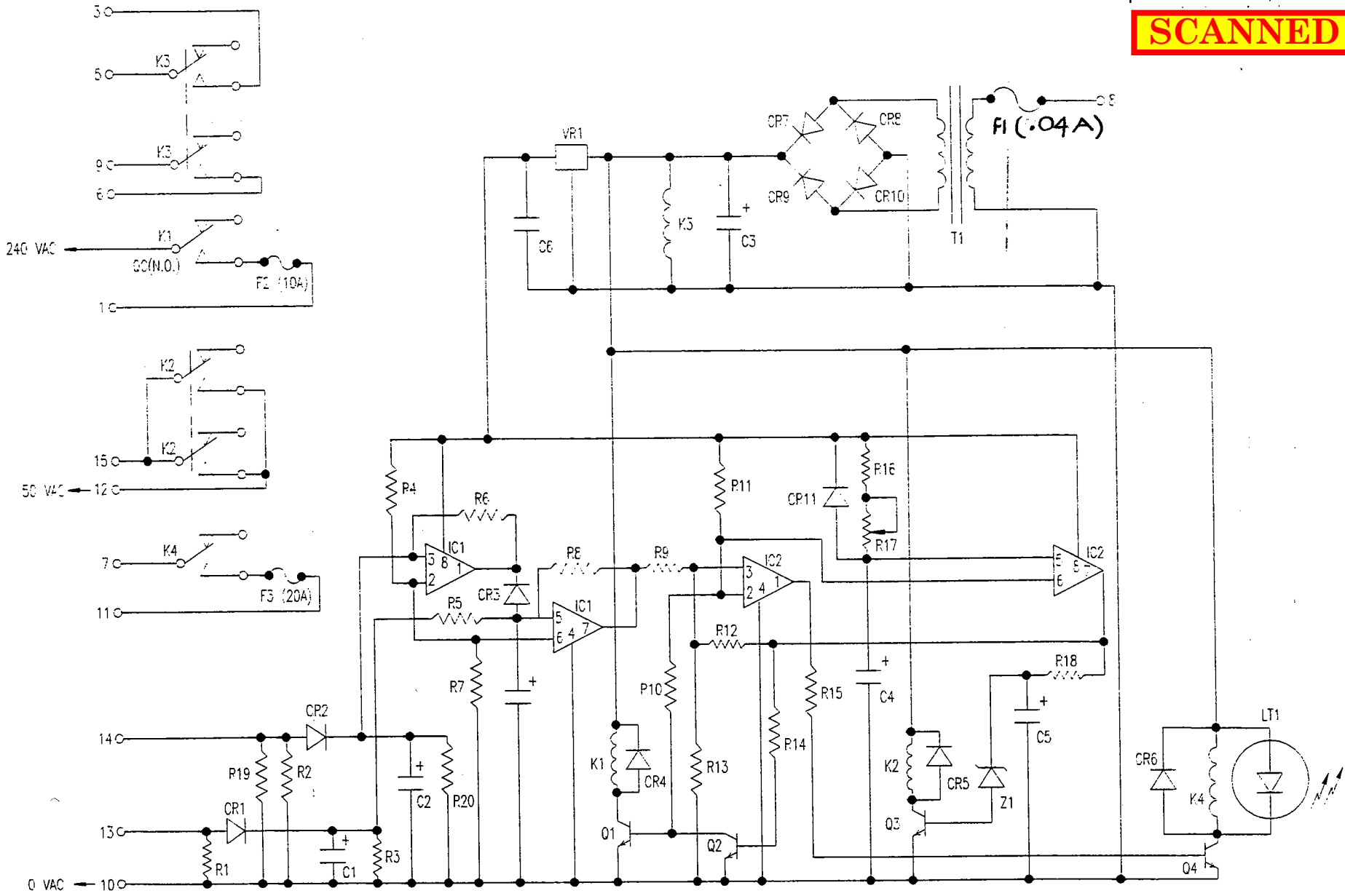
Technical Support Dept
Ph: (800) 729 - 9729
Fax: (773) 588 - 3404

A455 Interfacing to the Generator



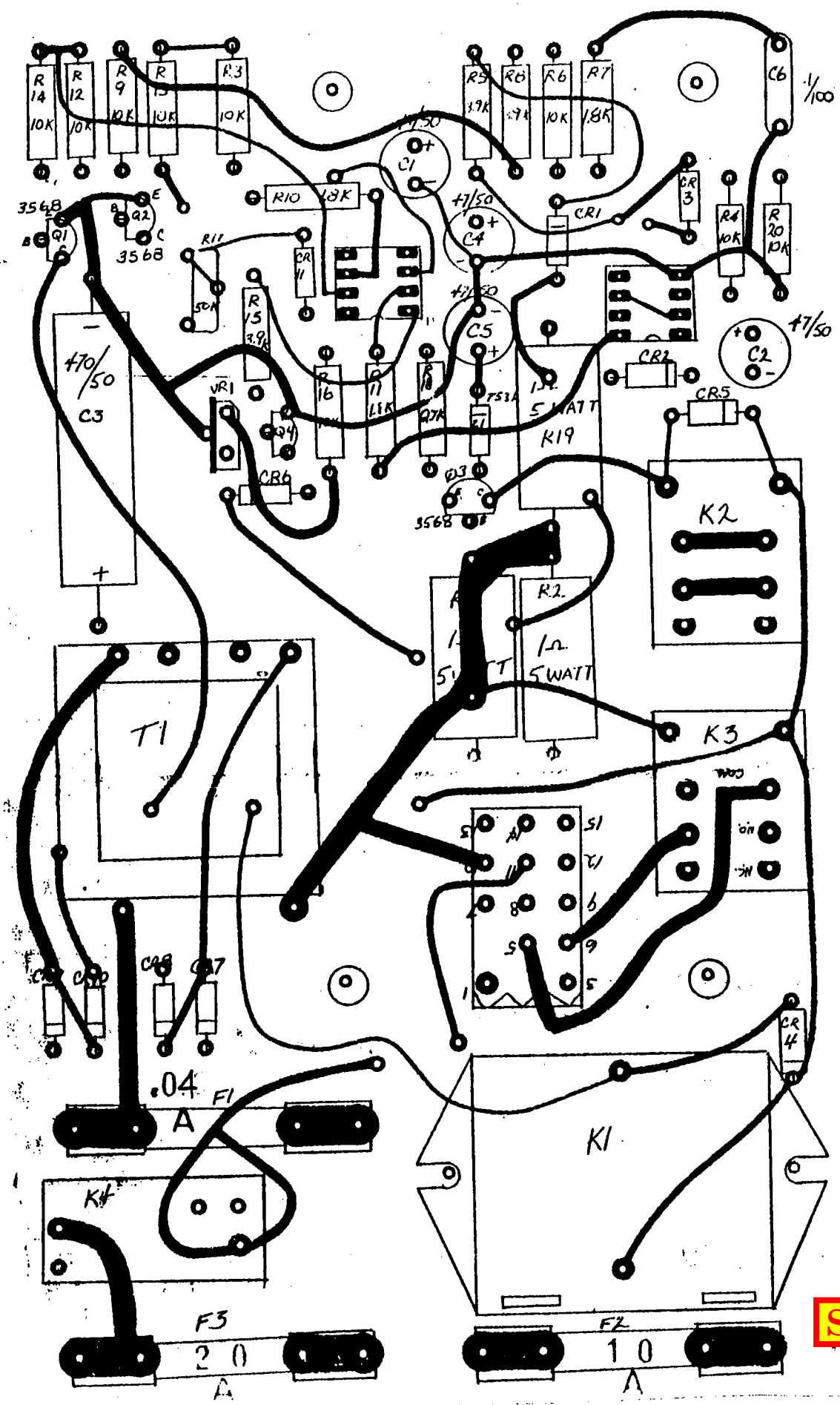
✱ PHASE SHIFT CAPACITOR: $25uF$: Summit Part Number HAB18

A455 SHEET 4 OF 4
REV A



SCHEMATIC, MOTOR START CIRCUIT

A455 SHEET 3 OF 4
REV. A



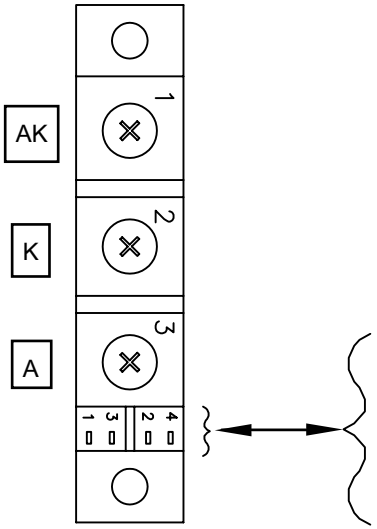
PARTS LAYOUT FOR MOTOR START CRCT (A455).

A455
REV. A

PART NO.	00425-000	REV	A

SCR WIRING INSTRUCTIONS

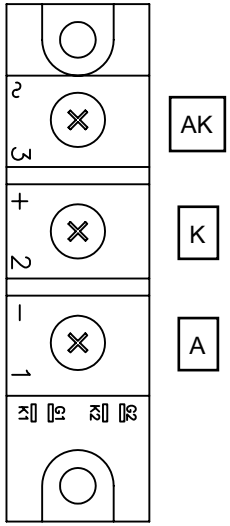
The gate terminal layout of SCR assemblies manufactured by SANREX, are slightly different from SCR assemblies manufactured by GE, WESTINGHOUSE, AEG, EUPEC, etc. Therefore, when replacing an SCR assembly with one of a different gate terminal layout, care must be taken to properly connect the corresponding gate leads. Incorrect wiring of the SCR gate terminals will not damage the SCR but will result in failure of the SCR to turn ON. It is strongly suggested that the serviceman make a wiring diagram of the original SCR, before any wires are removed. Then, using the terminal locations table indicated below, reconnect the new SCR to the proper terminals.



EUPEC SCR

A316

EUPEC SCR ALL LEADS CONNECTED TO:	SANREX SCR TO BE CONNECTED TO:
TERMINAL "1"	TERMINAL "3"
TERMINAL "2"	TERMINAL "2"
TERMINAL "3"	TERMINAL "1"
TERMINAL "4"	TERMINAL "K2"
TERMINAL "2"	TERMINAL "G2"
TERMINAL "3"	TERMINAL "K1"
TERMINAL "1"	TERMINAL "G1"



SANREX SCR

00194-000

A	2289	RELEASED	JP	07/16/01	DWG BY TP	DATE 06/25/01	APPROVED	DATE	SIZE A	SHEET 1 OF 1	PART NO. 00425-000	REV A
LTR	ECR	REVISION	BY	DATE								

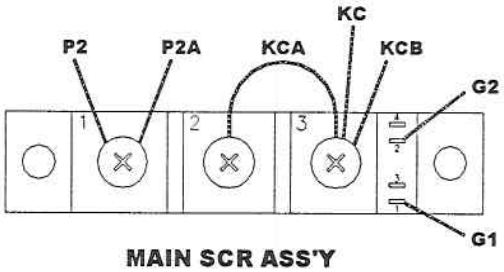
X.X ±.030 X.XX ±.015 X.XXX ±.005 1/X ±1/64 ANGLES ±1/2°	TOLERANCE UNLESS OTHERWISE SPECIFIED
	SUMMIT INDUSTRIES,INC. 2901 W. LAWRENCE AVE, CHICAGO, IL TEL 773-509-6273 FAX 773-588-6820
TITLE	INSTRUCTIONS, SCR WIRING INSTRUCTION
NEXT ASS'Y 00424-000	MATERIAL SEE ABOVE
SCALE —	FINISH NONE

ORIGINAL INNOVET, GENERATOR MODEL W300

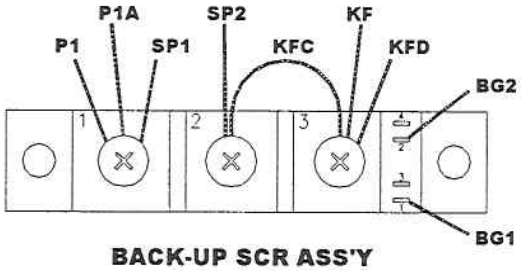
SCR WIRING INSTRUCTIONS

The gate terminal layout of SCR assemblies manufactured by SANREX, are slightly different from SCR assemblies manufactured by GE, WESTINGHOUSE, AEG, EUPEC, etc. Therefore, when replacing an SCR assembly with one of a different gate terminal layout, care must be taken to properly connect the corresponding gate leads. Incorrect wiring of the SCR gate terminals will not damage the SCR but will result in failure of the SCR to turn ON. Each of the INNOVET x-ray controls, model numbers W300 & W400, contain two SCR assemblies, one as the MAIN SCR & the other as the BACK-UP SCR. The following wiring diagrams can be used to properly connect the SCR gate leads, if required:

SCR's manufactured by GE, WESTINGHOUSE, AEG, EUPEC, etc.

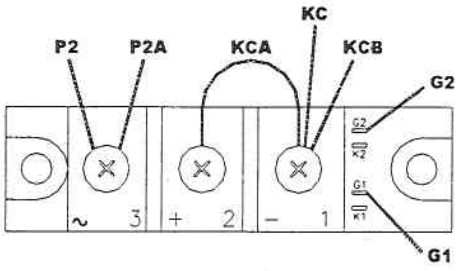


MAIN SCR ASS'Y

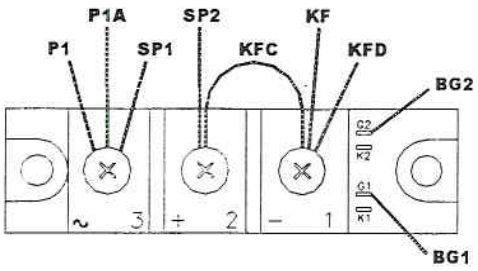


BACK-UP SCR ASS'Y

SCRs manufactured by SANREX



MAIN SCR ASS'Y



BACK-UP SCR ASS'Y

SCR PKG 00194-000

PART NO. 00194 REV B

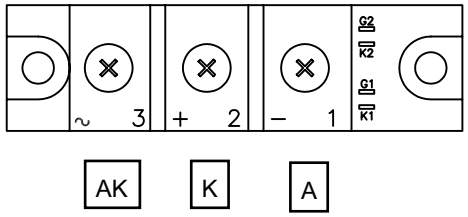
SCR (SILICON CONTROLLED RECTIFIER) BLOCK (ALSO KNOWN " PHASE CONTROL THYRISTOR MODULE")

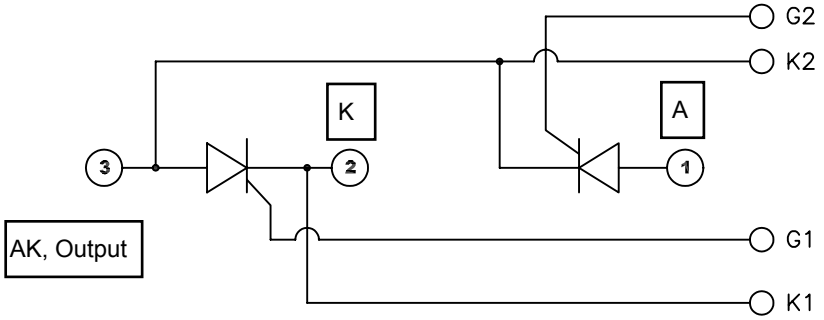
DUAL SCR PACKAGE

RMS ON – STATE CURRENT – 86 AMPS @ 81 DEGREES C.
AVERAGE ON–STATE CURRENT–55 AMPS @ 81 DEGREES C.
SURGE ON–STATE CURRENT (1/2 CYCLE) – 1190 AMPS @ 50 HZ
– 1300 AMPS @ 60 HZ
REPTITIVE REVERSE VOLTAGE – 800 V
NON–REPETITIVE REVERSE VOLTAGE – 960 V
GATE TRIGGER CURRENT (MAXIMUM REQUIRED TO ASSURE CONDUCTION) – 50 mA
GATE TRIGGER VOLTAGE (MAXIMUM REQUIRED TO ASSURE CONDUCTION) – 3 V

MFR: SANREX CORP. (PORT WASHINGTON, NY)
MFR P/N: PK55FG80

NOTE:
(SIMILAR TO A316)





FOR SERVICE PART
REF: 00424–000

B	2289	IMPROVED DOCUMENTATION	JP	07/16/01
LTR	ECR	REVISION	BY	DATE

X.X ±.030
X.XX ±.015
X.XXX ±.005
1/X ±1/64
ANGLES ±1/2°

TOLERANCE UNLESS OTHERWISE SPECIFIED

SUMMIT INDUSTRIES,INC.
2901 W. LAWRENCE AVE, CHICAGO, IL
TEL 733–588–2480 FAX 733–588–0983

TITLE: SCR BLOCK

NEXT ASS'Y: ––
MATERIAL: AS NOTED
SCALE: NONE
FINISH: NONE

DWG BY	DATE	APPROVED	DATE	SIZE	SHEET	PART NO.	REV
JPP	06/05/01			A	1 OF 1	00194	B

THYRISTOR MODULE

PK(PD,PE)55FG

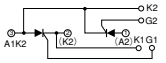
UL;E76102(M)

Power Thyristor/Diode Module **PK55FG** series are designed for various rectifier circuits and power controls. For your circuit application, following internal connections and wide voltage ratings up to 1600V are available. and electrically isolated mounting base make your mechanical design easy.

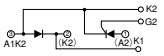
- $I_{T(AV)}$ 55A, $I_{T(RMS)}$ 86A, I_{TSM} 1300A
- di/dt 100A/μs
- dv/dt 1000V/μs

(**Applications**)
Various rectifiers
AC/DC motor drives
Heater controls
Light dimmers
Static switches

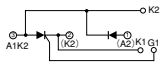
Internal Configurations



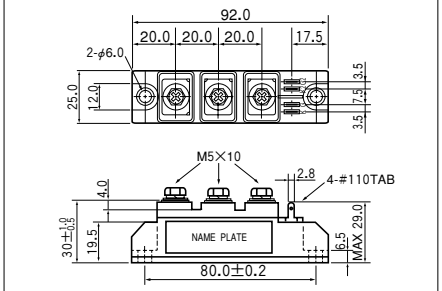
PK



PE



PD



Unit : mm

■Maximum Ratings

(Tj=25℃ unless otherwise specified)

Symbol	Item	Ratings				Unit
		PK55FG40 PD55FG40 PE55FG40	PK55FG80 PD55FG80 PE55FG80	PK55FG120 PD55FG120 PE55FG120	PK55FG160 PD55FG160 PE55FG160	
V_{RRM}	＊Repetitive Peak Reverse Voltage	400	800	1200	1600	V
V_{RSM}	＊Non-Repetitive Peak Reverse Voltage	480	960	1300	1700	V
V_{DRM}	＊Repetitive Peak off-state Voltage	400	800	1200	1600	V

Symbol	Item		Conditions	Ratings	Unit
$I_{T(AV)}$	＊Average On-state Current		Single phase, half wave, 180° conduction, Tc=81℃	55	A
$I_{T(RMS)}$	＊R.M.S. On-state Current		Single phase, half wave, 180° conduction, Tc=81℃	86	A
I_{TSM}	＊Surge On-state Current		½ Cycle, 50/60Hz, Peak Value, non-repetitive	1190/1300	A
I^2t	＊I^2t		Value for one cycle surge current	7040	A^2S
P_{GM}	Peak Gate Power Dissipation			10	W
$P_{G(AV)}$	Average Gate Power Dissipation			1	W
I_{FGM}	Peak Gate Current			3	A
V_{FGM}	Peak Gate Voltage (Forward)			10	V
V_{RGM}	Peak Gate Voltage (Reverse)			5	V
di/dt	Critical Rate of Rise of On-state Current		I_G=100mA, V_D=½V_{DRM}, di_G/dt=0.1A/μs	100	A/μs
V_{ISO}	＊Isolation Breakdown Voltage (R.M.S)		A.C. 1minute	2500	V
Tj	＊Operating Junction Temperature			−40 to +125	℃
Tstg	＊Storage Temperature			−40 to +125	℃
	Mounting Torque	Mounting (M5)	Recommended Value 1.5-2.5 (15-25)	2.7 (28)	N·m (kgf·cm)
		Terminal (M5)	Recommended Value 1.5-2.5 (15-25)	2.7 (28)	
	Mass		Typical Value	170	g

■Electrical Characteristics

Symbol	Item	Conditions	Ratings	Unit
I_{DRM}	Repetitive Peak off-state Current,max	Tj=125℃, V_D=V_{DRM}	15	mA
I_{RRM}	＊Repetitive Peak Reverse Current,max	Tj=125℃, V_D=V_{DRM}	15	mA
V_{TM}	＊On-state Voltage,max	I_T=165A	1.6	V
I_{GT}	Gate Trigger Current,max	V_D=6V, I_T=1A	50	mA
V_{GT}	Gate Trigger Voltage,max	V_D=6V, I_T=1A	3	V
V_{GD}	Gate Trigger Voltage,min	Tj=125℃, V_D=½V_{DRM}	0.25	V
dv/dt	Critical Rate of Rise of off-state Voltage,min	Tj=125℃, V_D=⅔V_{DRM}	1000	V/μs
Rth(j-c)	＊Thermal Impedance,max	Junction to case	0.5	℃/W

＊mark : Thyristor and Diode part. No mark : Thyristor part

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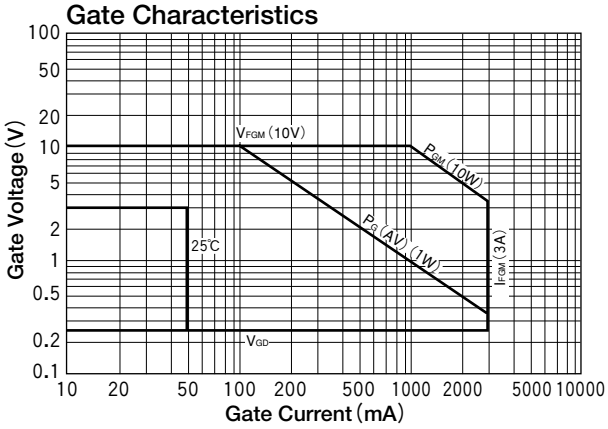
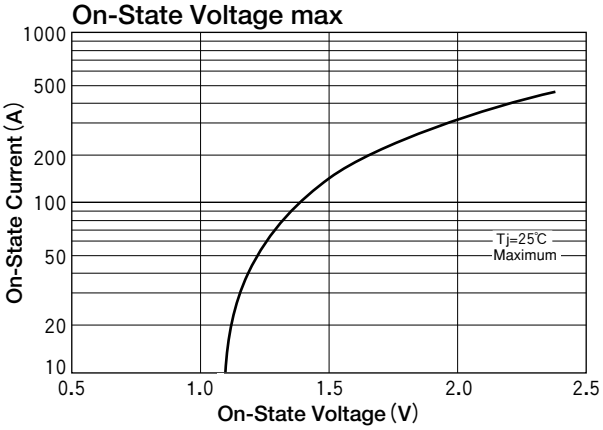
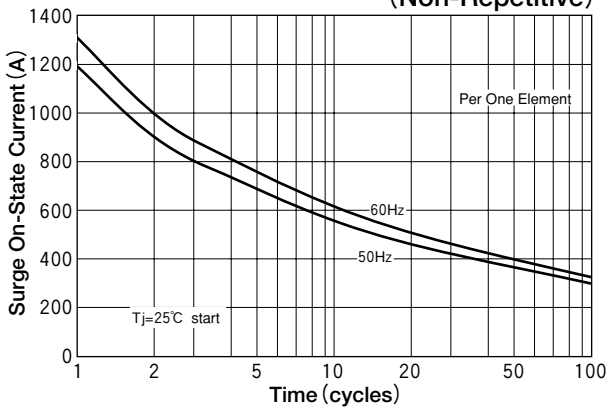
Gate Characteristics



On-State Voltage max



Surge On-State Current Rating (Non-Repetitive)



Transient Thermal Impedance