9 pin female D-sub
Labeled J4 on chassis

TB1 on Glassman remote

2	Black	Common	X1-1
4	Brown	→ V MON (0-10V = 0-450kV)	X1-2
5	Red	← V PROG (0-10V is 0-450KV)	X1-3 N$VPROG
7	Orange	→ I MON (0-10V = 0-3mA)	X1-4
8	Yellow	← I PROG (0-10V is 0-3mA)	X1-5 N$IPROG
		No connection	X1-6
3	Blue	← HV ENABLE	X1-7
12	White	→ HV STATUS	X1-8
10	Green	→ HV READY	X1-9

"HV ready" is the 10V reference that comes out of this terminal when the Glassman has power (PSS made up and breaker closed)

"HV Status" means power supply is on or off (High when on) It is TTL 5V, so we must level shift from 5V TTl to 24V logic for DIO card.

X2 — Glassman V monitor to Keithley DVM

X3 — Glassman I monitor to Keithley DVM

J1
GOF10-4SNE on chassis
X9 1 A=+24
2 B= com

INTERLOCKS TO START AND RUN HV

K1 Epics HV enable — K2 SF6 Pressure OK — K3 Dipole Mag ON — K4 Global Intlk OK — K5 Spare Intlk OK — K6 PSS A OK — K7 PSS B OK — +24V

Direct cable connect to power up and
get signals from Glassman SF6 gas sensors.

X4 — From Pressure Switch and Pressure Transmitter

1	A	QPSH-AP-42 output 1
2	B	QPSH-AP-42 +24V
3	C	QPSH-AP-42 Analog Out
4	D	QPSH-AP-42 common
5	E	QPSH-AP-42 output 2
6	F	Ashcroft pressure switch common
7	G	Ashcroft pressure switch N.O. (Closed when SF6 > 50psig
8		Ashcroft pressure switch N.C.

GOB12-8PNE
J5 ON REAR PANEL

IC1 7812TV (VO, VI, GND) — C2 10uf

K2 EC2-24NU

K1 EC2-24NU

15 pin female D-sub
Labeled J3 on chassis
To EPICS cards

X5-1	EPICS OUTPUT +24V DIO (HV Enable)
X5-2	EPICS Digital input (HV status)
X5-3	EPICS Digital input SF6 Intlk OK
X5-4	EPICS Digital input Dipole Intlk OK
X5-5	EPICS Digital input Global Intlk OK
X5-6	EPICS Digital input Spare Intlk OK
X5-7	EPICS Digital input PSS A OK
X5-8	EPICS Digital input PSS B OK
X5-9	EPICS Digital input "Glassman Ready"
X5-10	EPICS ADC (Glassman SF6 pressure)
X5-11	EPICS DAC OUTPUT (V program) 16 bit 0-10V
X5-12	EPICS DAC OUPUT (I program) 16 bit 0-10V
X5-13	
X5-14	EPICS DAC common
X5-15	EPICS DIO common

Front Panel LED Status

JP1 Epics HV enable — JP2 SF6 Pressure OK — JP3 Dipole Mag ON — JP4 Global Intlk OK — JP5 Spare Intlk OK — JP6 PSS A OK — JP7 PSS B OK — JP8 PANEL LED FOR LOW SF6 pressure (Less than 55 PSI)

R1–R7 2k

Q1 BSS123 — Q2 BSS123 — R8 10k — R9 10k — R10 10k

D1 — D2 — R11 10k — R12 10k

Prevents any potential to back feed relays K6 and K7

Not used.

Found a 12V Piezo alarm that also has LED warning so this will be connected to X8

X8 — 12VDC Piezo Siren (loss of SF6)

K3 Dipole Mag ON EC2-24NU — K4 Global Intlk OK EC2-24NU — K5 Spare Intlk OK EC2-24NU — K6 PSS A OK EC2-24NU — K7 PSS B OK EC2-24NU

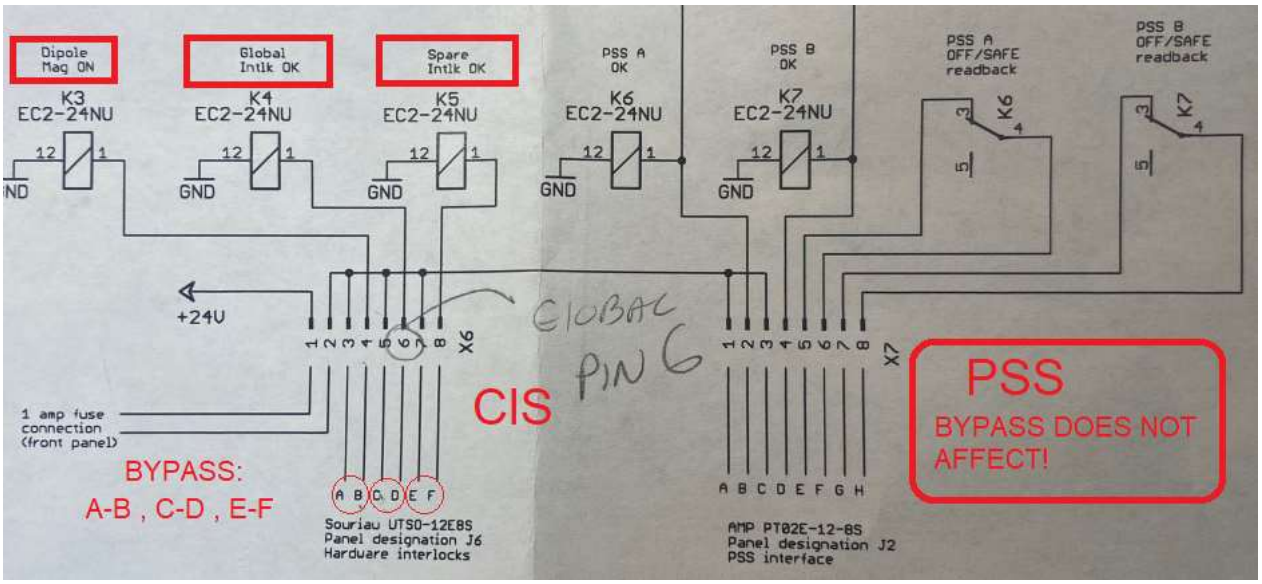
PSS A OFF/SAFE readback — PSS B OFF/SAFE readback

X6 — 1 amp fuse connection (front panel) — A B C D E F — Souriau UTSO-12E8S Panel designation J6 Hardware interlocks

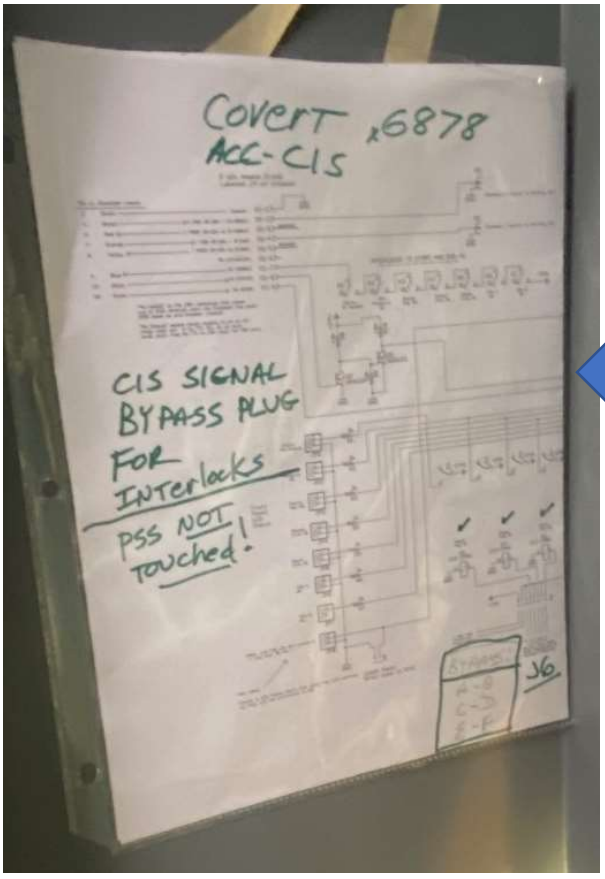
X7 — A B C D E F G H — AMP PT02E-12-8S Panel designation J2 PSS interface

CIS INTERLOCK RACK BYPASS

CIS has three relays that need to be in an active state to release beam: Dipole 15°, “Global” (vacuum) and a “SPARE”. You can see in the schematics below that +24V and a switch leg is provided for all three relays. The bypass simply connects the three switch legs to +24V.



Instructions posted in cabinet:



STORE THE BYPASS IN THE PLASTIC SLEEVE OF THE INSTRUCTION!

PLUG IN THE BYPASS, VERIFY ACC-CIS INTERLOCKS ARE SHOWING HEALTHY:

ALL GOOD!