2.4 System Interconnect

The GHW-25 / GHW-50 Genesis generator is available with four options for the analog interface and they are:

- No interface card
- 25-pin analog
- 37-pin Analog Emulation
- 9-pin Emulation for ENI's PL-2HF generator

In order to maintain EMC compliance, cables should be constructed using Alpha Supra-Shield or equivalent cable and metallized backshells providing 360° shield termination. Each of these options is described in detail below and the appropriate pin out table is also given.

2.4.1 Standard 25-pin Analog I/O Interface (ENI P/N: 1050-235)

The analog I/O Interface for the GHW-25 / GHW-50 Genesis generator provides

Pin	Name	Type	Description
1	Max. Power (E)	DO	Emitter side of isolated transistor switch. (See Note 1) Transistor ON - Indicates a max. reverse power or max. current fault. Transistor OFF - No fault.
2	Reflected power (+)	AO	A linear DC voltage that represents the reflected power output level. 0V = 0W and the max. value is adjustable between 0-12VDC. Typically calibrated to 10VDC = Maximum Reflected Power Limit.
3	Forward power (+)	AO	A linear DC voltage that represents the forward power output level. 0V = 0W and the max. value is adjustable between 0-12VDC. Typically calibrated to 10VDC = Maximum Rated Power.
4	RF ON/OFF Control (+)	DI	A voltage between this and pin 17 will turn RF power ON. Leaving it open or applying zero voltage will turn RF power OFF. The nominal voltage to turn RF ON is selectable between +5V and +24V via a jumper on the control board, however it should not exceed 30VDC.

DI = Digital Input DO = Digital Output AI = Analog Input AO = Analog Output

25-pin Analog I/O Interface Pin-outs

Table 2.4.1

Pin	Name	Type	Description
5	Power set point (+)	AI	A linear DC voltage to set the output power level. 0V = 0W and the max. value is adjustable between 0-12VDC. Input impedance is 100k ohms balanced differential to ground.
6	+28VDC		User voltage for interface purposes. Rated 50mA max.
7	RF ON (E)	DO	Emitter side of isolated transistor switch. (See Note 1) Transistor ON - RF ON. Transistor OFF - RF OFF.
8	Analog remote enable	DI	Ground referenced logic input. (See Note 2) LOW - Selects analog remote control mode. HIGH - Disables analog remote control mode. Leaving this pin disconnected will ensure a HIGH state. Note: If the generator is in digital remote mode, it cannot switch to analog remote mode until the digital remote mode is disabled. Therefore setting this pin low will have no effect until the digital remote mode is disabled.
9	Overheat (E)	DO	Emitter side of isolated transistor switch. (See Note 1) Transistor ON - Overheat fault. Transistor OFF - No fault.
10	Interlock		This pin should connect to Pin 23 to complete the interlock chain. If the interlock chain is broken the AC contactor will open. External circuit should be capable of switching 100mA at 24VAC.

DI = Digital Input DO = Digital Output AI = Analog Input AO = Analog Output

25-pin Analog I/O Interface Pin-outs (Cont'd.)

Table 2.4.1

Pin	Name	Type	Description
11	Leveling select	DI	Ground referenced logic input. (See Note 2) LOW - Selects forward-power leveling. HIGH - Selects an alternative power-leveling mode. Leaving this pin disconnected will ensure a LOW state. Note: The alternate power-leveling mode is selected via a software switch in a CALIBRATION menu. Either load-power leveling or an external source such as DC Bias may be selected. The default is Load Power Leveling
12	Load power (+)	AO	A linear DC voltage that represents the load power output level. 0V = 0W and the max. value is adjustable between 0-12VDC. Typically calibrated to 10VDC = Maximum Rated Power.
13	+15VDC		User voltage for interface purposes. Rated 10mA max.
14	Max. power (C)	DO	Collector side of isolated transistor switch for Pin 1
15	Reflected power return (-)	AO	Signal return for Pin 2
16	Forward power return (-)	AO	Signal return for Pin 3
17	RF ON/OFF Control (-)	DI	Signal return for Pin 4
18	Power set point return (-)	AI	Signal return for Pin 5
19	GND		Signal / Chassis ground.
20	RF ON (C)	DO	Collector side of isolated transistor switch for Pin 7
21	GND		Signal / Chassis ground.
22	Overheat (C)	DO	Collector side of isolated transistor switch for Pin 9

DI = Digital Input DO = Digital Output AI = Analog Input AO = Analog Output

Note 1: *For all isolated transistor outputs.*
Transistor OFF (switch open) - VCEmax = 40VDC (IC < 500uA)
Transistor ON (switch closed) - ICmax = 10mA (VCE < 1V)

Note 2: *For all ground referenced logic level inputs.*
HIGH = 2VDC min to 30VDC max.
LOW = -0.2VDC min to 1VDC max.

25-pin Analog I/O Interface Pin-outs (Cont'd.)

Table 2.4.1

Pin	Name	Type	Description
23	Interlock		This pin should connect to Pin 10 to complete the interlock chain. If the interlock chain is broken the AC contactor will open.
24	Option V		User voltage for interface purposes. This voltage is configurable for +5VDC or -15VDC via a jumper on the control board. Rated 10mA max.
25	Load power return (-)	AO	Signal return for Pin 12

DI = Digital Input DO = Digital Output AI = Analog Input AO = Analog Output

Note 1: *For all isolated transistor outputs.*
Transistor OFF (switch open) - VCEmax = 40VDC (IC < 500uA)
Transistor ON (switch closed) - ICmax = 10mA (VCE < 1V)

Note 2: *For all ground referenced logic level inputs.*
HIGH = 2VDC min to 30VDC max.
LOW = -0.2VDC min to 1VDC max.

25-pin Analog I/O Interface Pin-outs (Cont'd.)

Table 2.4.1