

ENCLOSURE SPECIFIC DATA AVL Mount "U8"

Revision: 8 December 2011

1.0 INTRODUCTION

1.1 Appendix Organization

This appendix is provided as a supplement to the baseline RC4000 User's Manual which describes the PCB board stack that is common to all systems. Section 2 describes the mechanical aspects of the controller, while section 3 describes the electrical connections.

2.0 MECHANICAL

2.1 RC4000 Antenna Controller Chassis and Lid

The ACU is mechanized as an embedded controller. The PCB board stacks are located inside a weatherproof enclosure. Figure 1 shows the ACU.



Figure 1

The chassis of the RC4000 provides provisions to mount the enclosure that include #10-32 hardware on the bottom of the enclosure, as well as the sides. Figure 2 shows the enclosure drawings.

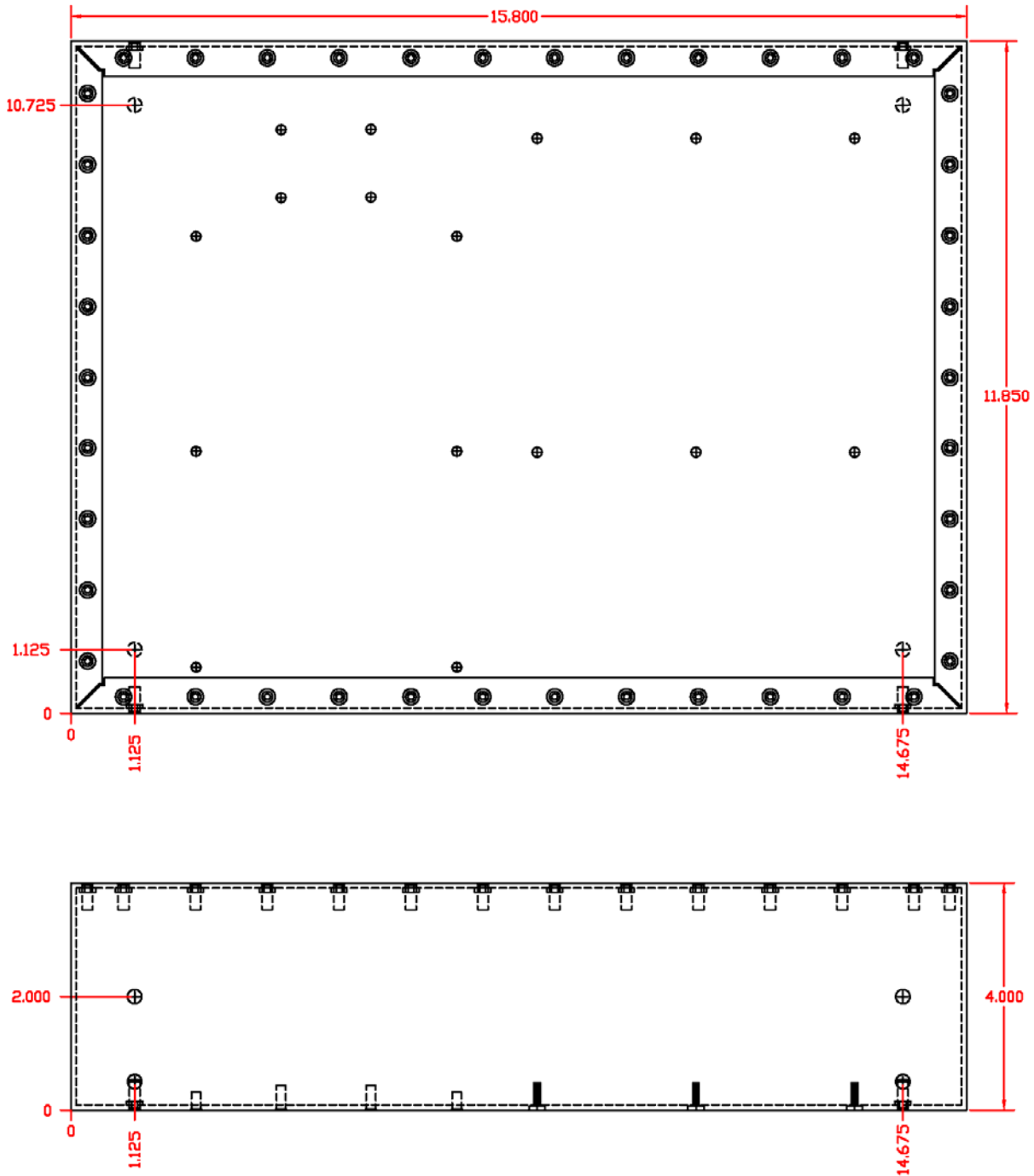


Figure 2

Figure 3 shows the lid of the enclosure.

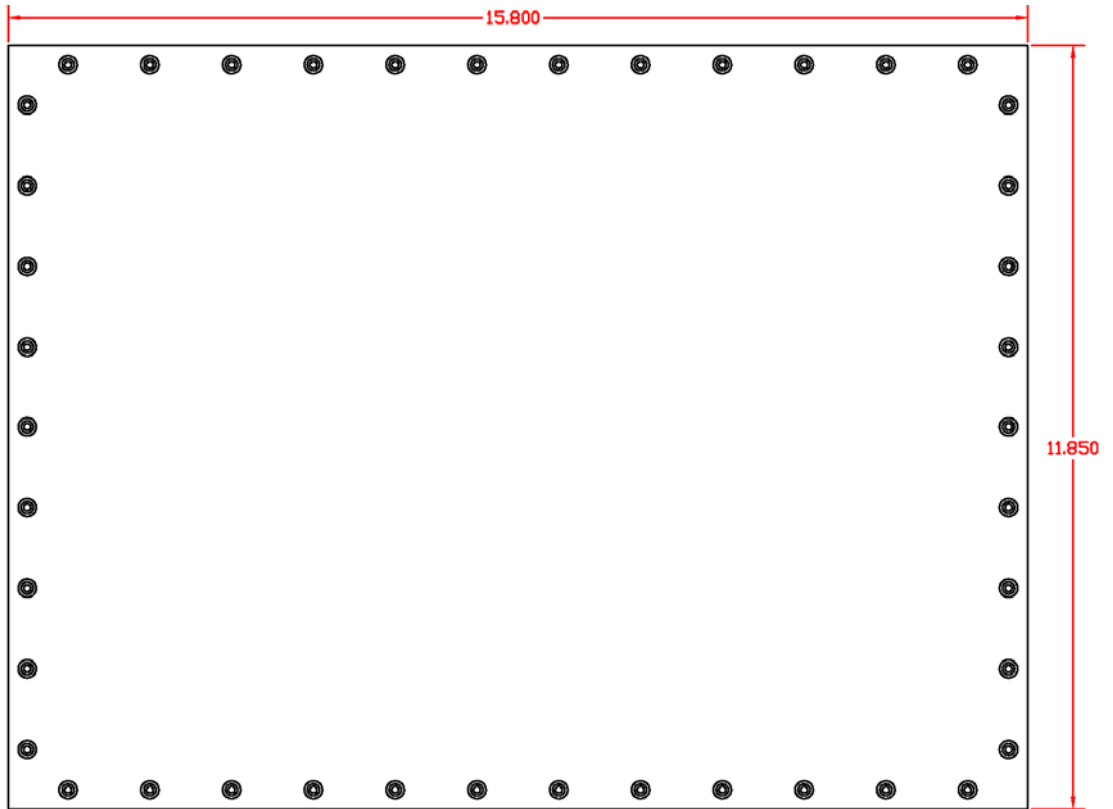


Figure 3

2.2 RC4000 End Panels

The RC4000 end panels are where the connectors are located. The User Interface end panel contains connectors that the user may need to frequently have access to. The other end is the Antenna Interface end panel, which includes connectors that primarily go to the antenna itself. Figure 4 shows both end panels, with the Antenna Interface on top and the User Interface on bottom.

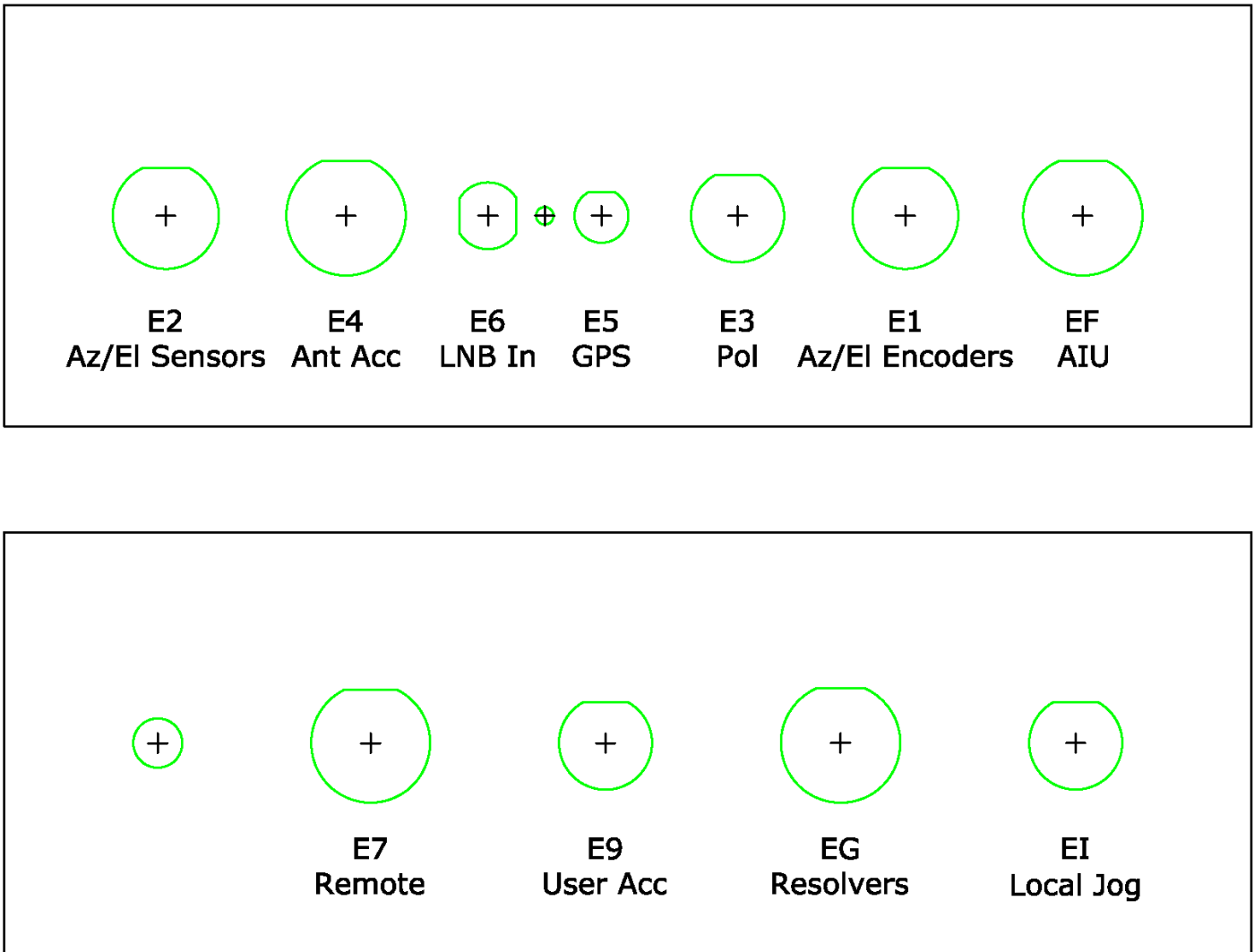


Figure 4

2.3 CONNECTORS

Table 1 provides a list of the external connectors on the enclosure end panels.

Ref Des	Part Number	Description
E1	Amphenol MS-3124E14-19P	** Not Used **
E2	Amphenol MS-3124E14-19S	Az/EI Sensors
E3	Amphenol MS-3124E12-10S	Pol Motor / Sensors
E4	Amphenol MS-3124E16-26P	Antenna Accessory
E5	Amphenol 122192	GPS In (TNC)
E6	Amphenol 172129	LNB In (N)
E7	Tyco 2008615-1	IP ** Must use environmentally sealed mating connector **
E9	Amphenol MS-3124E12-10P	User Accessory
EF	Amphenol MS-3124E16-26S	ACU to AIU Link
EG	Amphenol MS3124E16-26P	Az & EI Resolvers
EI	Amphenol MS3124E12-10S	Local Jog

Table 1

3.0 ELECTRICAL

3.1.0 System Interface

Please refer to the main RC4000 User Manual to become familiar with specific capabilities and functionality of the RC4000 PCB board stack.

Figures 5 and 6 in Section 3.1.1 are provided to assist in interfacing to the RC4000. These diagrams list common equipment and how it connects to each connector on the enclosure.

Section 3.1.2 further describes the enclosure connectors and their respective pin-outs in a tabular form.

3.1.1 System Interface (Graphical)

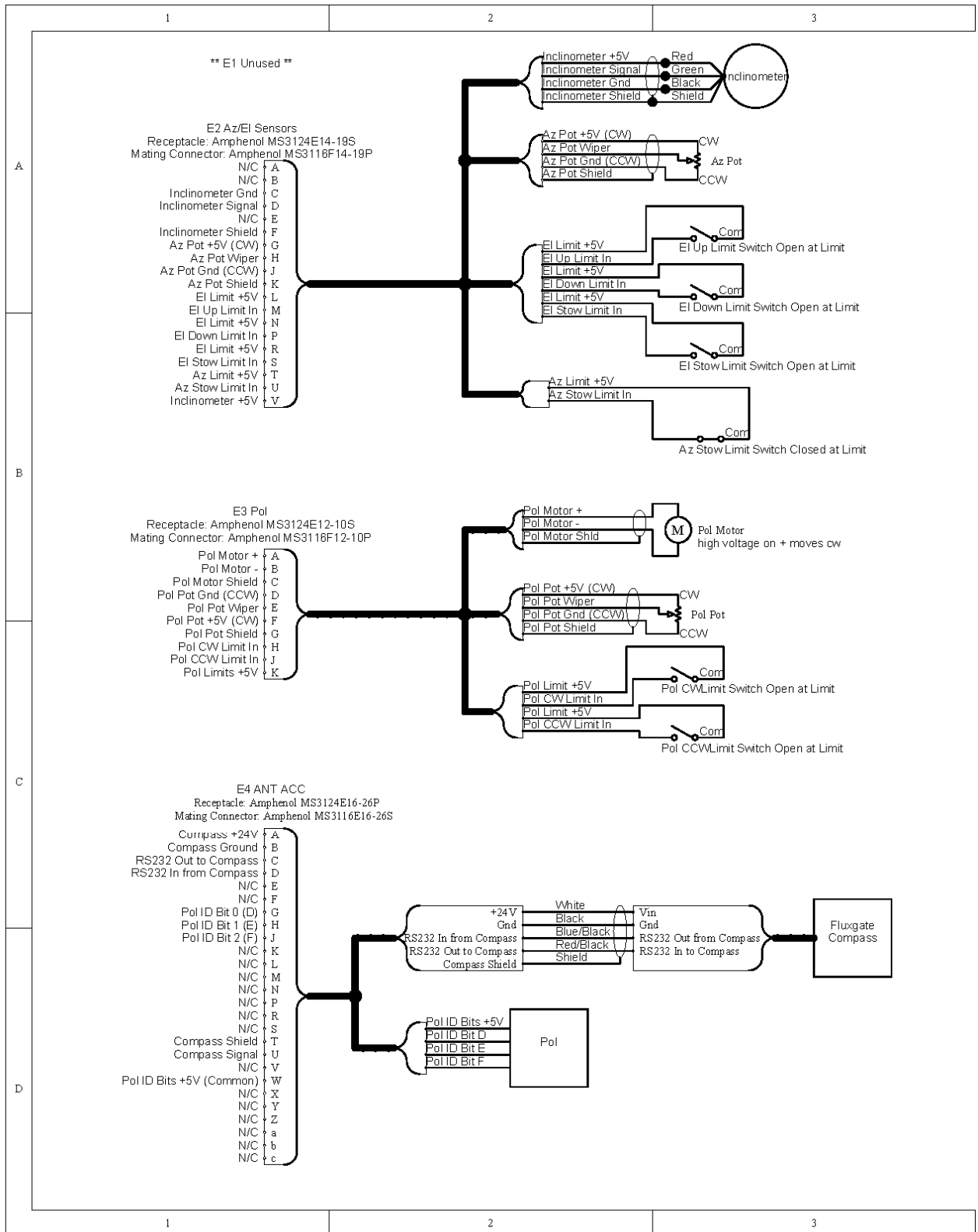


Figure 5

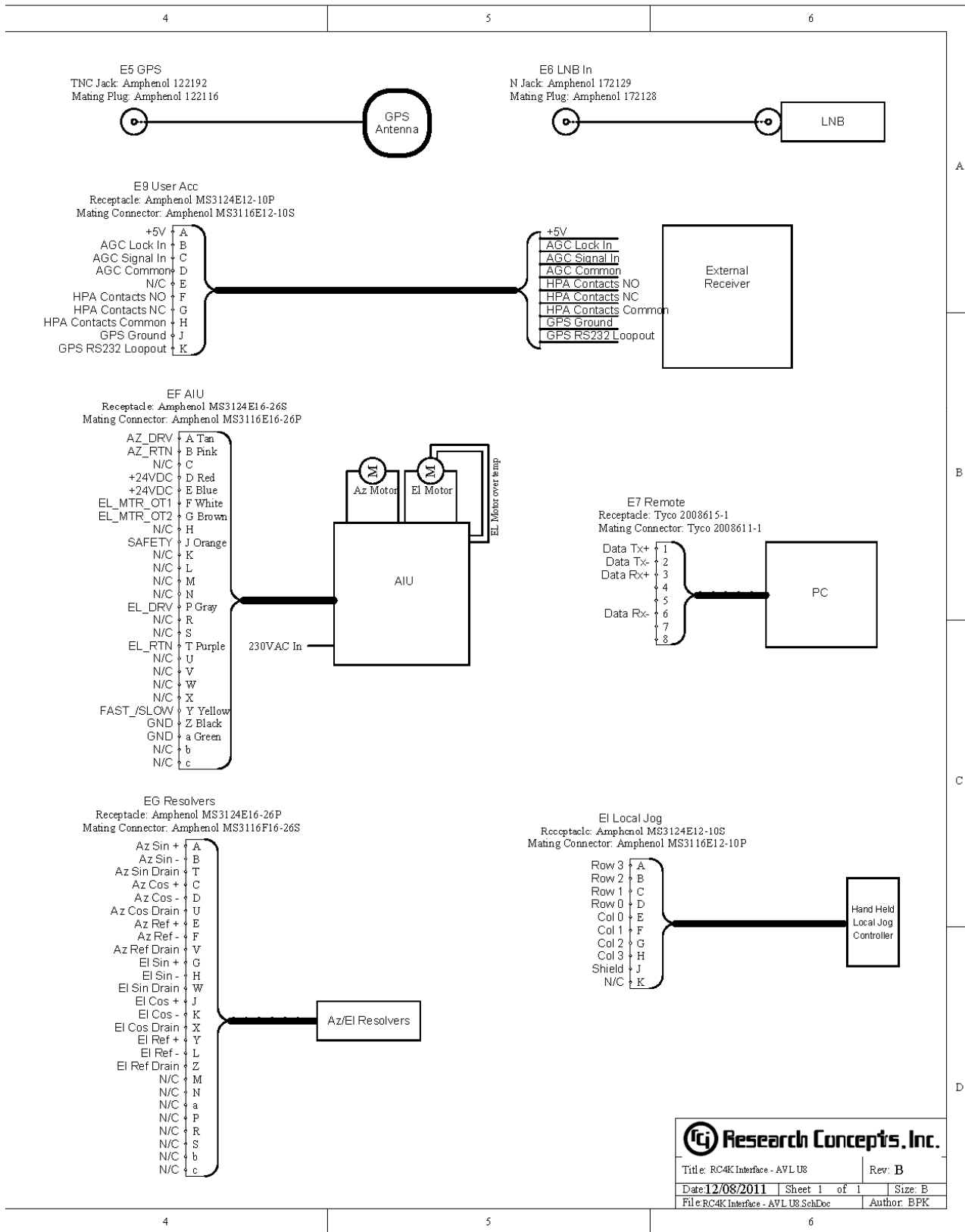
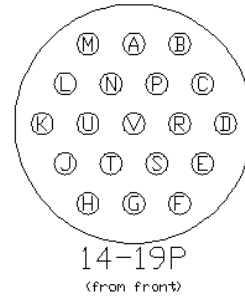


Figure 6

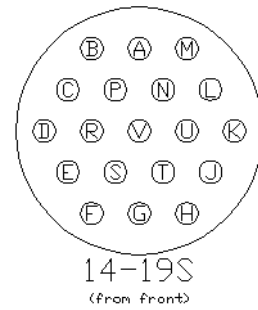
3.1.2 System Interface (Tabular)

Reference E1
Description Az/EI Encoders
RCI P/N CN-MS3124E14-19P
Manufacturer Amphenol Industrial
Manufacturer P/N MS3124E14-19P
Mating Connector MS3116F14-19S
 RCI p/n CN-MS311614-19S
Mating Conn. Cap MS3180-14CA
 RCI p/n CN-MS3180-14CA



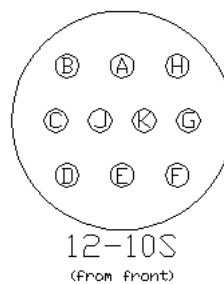
Pin	Description	Notes
A	N/C	Not used
B	N/C	Not used
C	N/C	Not used
D	N/C	Not used
E	N/C	Not used
F	N/C	Not used
G	N/C	Not used
H	N/C	Not used
J	N/C	Not used
K	N/C	Not used
L	N/C	Not used
M	N/C	Not used
N	N/C	Not used
P	N/C	Not used
R	N/C	Not used
S	N/C	Not used
T	N/C	Not used
U	N/C	Not used
V	N/C	Not used

Reference E2
Description Az/EI Position Sensors & Limits
RCI P/N CN-MS3124E14-19S
Manufacturer Amphenol Industrial
Manufacturer P/N MS3124E14-19S
Mating Connector MS3116F14-19P
 RCI p/n CN-MS311614-19P
Mating Conn. Cap MS3180-14-CA
 RCI p/n CN-MS3180-14CA



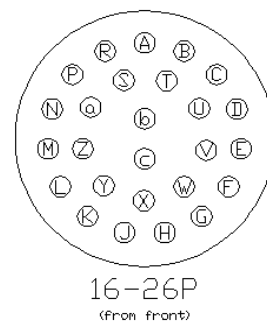
Pin	Description	Notes
A	N/C	
B	N/C	
C	Inclinometer Gnd	
D	Inclinometer Signal	
E	N/C	
F	Inclinometer Shield	
G	Az Pot +5V (CW)	
H	Az Pot Wiper	
J	Az Pot Gnd (CCW)	
K	Az Pot Shield	
L	EI Up Limit +5V	
M	EI Up Limit In	
N	EI Down Limit +5V	
P	EI Down Limit In	
R	EI Stow Limit +5V	
S	EI Stow Limit In	
T	Az Stow Limit +5V	
U	Az Stow Limit In	
V	Inclinometer +5V	

Reference E3
Description Pol Motor, Sensors, & Limits
RCI P/N CN-MS3124E12-10S
Manufacturer Amphenol Industrial
Manufacturer P/N MS3124E12-10S
Mating Connector MS3116F12-10P
 RCI p/n CN-MS311612-10P
Mating Conn. Cap MS3180-12CA
 RCI p/n CN-MS3180-12CA



Pin	Description	Notes
A	Pol Motor +	
B	Pol Motor -	
C	Pol Motor Shield	
D	Pol Pot Gnd (CCW)	
E	Pol Pot Wiper	
F	Pol Pot +5V (CW)	
G	Pol Pot Shield	
H	Pol CW Limit In	
J	Pol CCW Limit In	
K	Pol Limits +5V	

Reference E4
Description Compass, Accessories
RCI P/N CN-MS3124E16-26P
Manufacturer Amphenol Industrial
Manufacturer P/N MS3124E16-26P
Mating Connector MS3116F16-26S
 RCI p/n CN-MS311616-26S
Mating Conn. Cap MS3180-16CA
 RCI p/n CN-MS3180-16CA



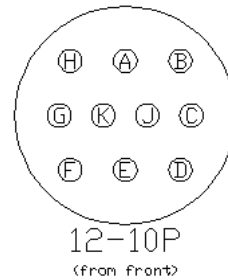
Pin	Description	Notes
A	Compass +24V	
B	Compass Gnd	
C	Compass RS232 In	
D	Compass RS232 Out	
E	N/C	
F	N/C	
G	Pol ID Bit 0 (D)	
H	Pol ID Bit 1 (E)	
J	Pol ID Bit 2 (F)	
K	N/C	
L	N/C	
M	N/C	
N	N/C	
P	N/C	
R	N/C	
S	N/C	
T	Compass Shield	
U	Compass Signal	
V	N/C	
W	POL ID Bit +5V (common)	
X	N/C	
Y	N/C	
Z	N/C	
a	N/C	
b	N/C	
c	N/C	

Reference E5
Description GPS Antenna, 50-Ohm TNC
RCI P/N CN-122192
Manufacturer Amphenol RF
Manufacturer P/N 122192

Reference E6
Description RF Input, 50 Ohm N-Type
RCI P/N CN-172129
Manufacturer Amphenol RF
Manufacturer P/N 172129

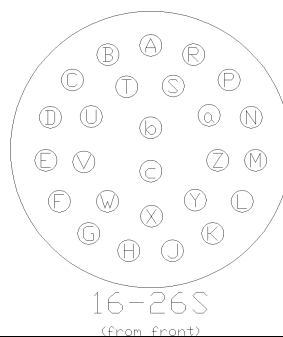
Reference E7
Description Ethernet Interface
RCI P/N CN-2008615-1
Manufacturer Tyco
Manufacturer P/N 2008615-1
Mating Connector Tyco 2008611-1
 RCI p/n CN-2008611-1

Reference E9
Description User Accessory
RCI P/N CN-MS3124E12-10P
Manufacturer Amphenol Industrial
Manufacturer P/N MS3124E12-10P
Mating Connector MS3116F12-10S
 RCI p/n CN-MS3116F12-10S
Mating Conn. Cap MS3180-12CA
 RCI p/n CN-MS3180-12CA



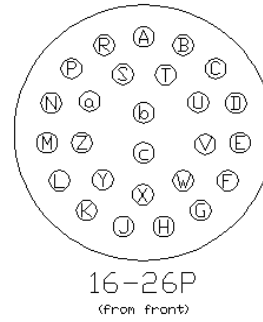
Pin	Description	Notes
A	+5v	Max 150 mA
B	AGC Lock In	
C	AGC Signal In	
D	AGC Common	
E	N/C	
F	HPA Contacts NO	
G	HPA Contacts NC	
H	HPA Contacts Common	
J	GPS Gnd	
K	GPS RS232 Loopout	

Reference EF
Description ACU to AIU Link
RCI P/N CN-MS3124E16-26S
Manufacturer Amphenol Industrial
Manufacturer P/N MS3124E16-26S
Mating Connector MS3116F16-26P
 RCI p/n CN-MS311616-26P
Mating Conn. Cap MS3180-16CA
 RCI p/n CN-MS3180-16CA



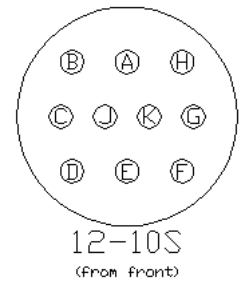
Pin	Description	Notes
A	AZ_DRV	Az Motor +
B	AZ_RTN	Az Motor -
C	N/C	
D	+24VDC	ACU source from AIU
E	+24VDC	ACU source from AIU
F	EL_MTR_OT1	EL Overtemp, NC open at Hot
G	EL_MTR_OT2	EL Overtemp, NC open at Hot
H	N/C	
J	SAFETY	
K	N/C	
L	N/C	
M	N/C	
N	N/C	
P	EL_DRV	EI Motor +
R	N/C	
S	N/C	
T	EL_RTN	EI Motor -
U	N/C	
V	N/C	
W	N/C	
X	N/C	
Y	FAST_/SLOW	
Z	GND	ACU Source from AIU
a	GND	ACU Source from AIU
b	N/C	
c	N/C	

Reference EG
Description Az and EI Resolver Inputs
RCI P/N CN-MS3124E16-26P
Manufacturer Amphenol Industrial
Manufacturer P/N MS3124E16-26P
Mating Connector MS3116F16-26S
 RCI p/n CN-MS311616-26S
Mating Conn. Cap MS3180-16CA
 RCI p/n CN-MS3180-16CA



Pin	Description	Notes
A	Az Sin +	
B	Az Sin -	
C	Az Cos +	
D	Az Cos -	
E	Az Ref +	
F	Az Ref -	
G	EI Sin +	
H	EI Sin -	
J	EI Cos +	
K	EI Cos -	
L	EI Ref -	
M	N/C	
N	N/C	
P	N/C	
R	N/C	
S	N/C	
T	Az Sin Drain	
U	Az Cos Drain	
V	Az Ref Drain	
W	EI Sin Drain	
X	EI Cos Drain	
Y	EI Ref +	
Z	EI Ref Drain	
a	N/C	
b	N/C	
c	N/C	

Reference EI
Description Local Jog
RCI P/N CN-MS3124E12-10S
Manufacturer Amphenol Industrial
Manufacturer P/N MS3124E12-10S
Mating Connector MS3116F12-10P
 RCI p/n CN-MS311612-10P
Mating Conn. Cap MS3180-12CA
 RCI p/n CN-MS3180-12CA



Pin	Description	Notes
A	Row 3	
B	Row 2	
C	Row 1	
D	Row 0	
E	Col 0	
F	Col 1	
G	Col 2	
H	Col 3	
J	Shield	
K	N/C	

3.2 Internal Wiring

Figures 7, 8, and 9 show the interconnections of the internal wiring of the enclosure.
 For a more detailed explanation of functions of individual pins, please refer to the main RC4000 User Manual.

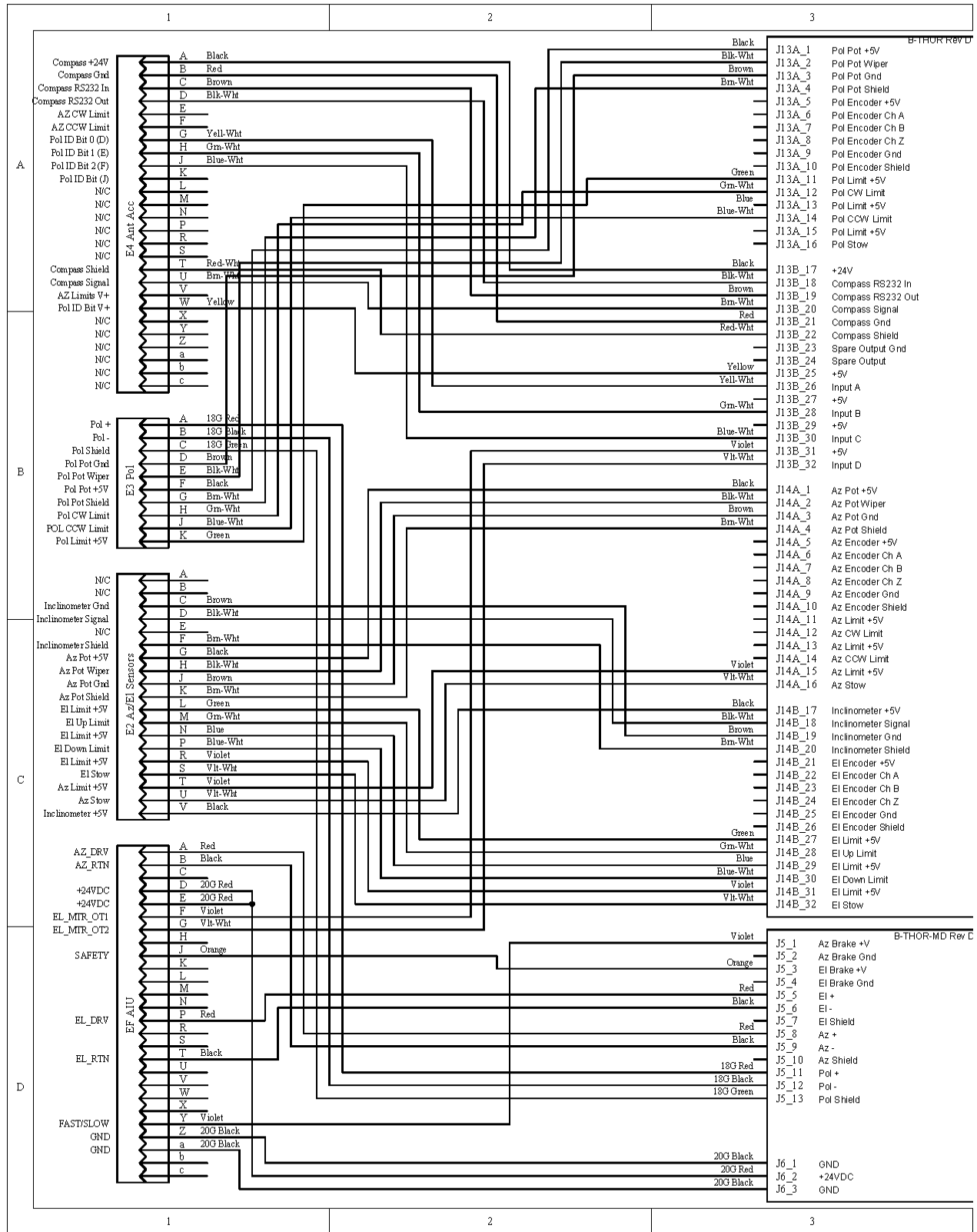


Figure 7

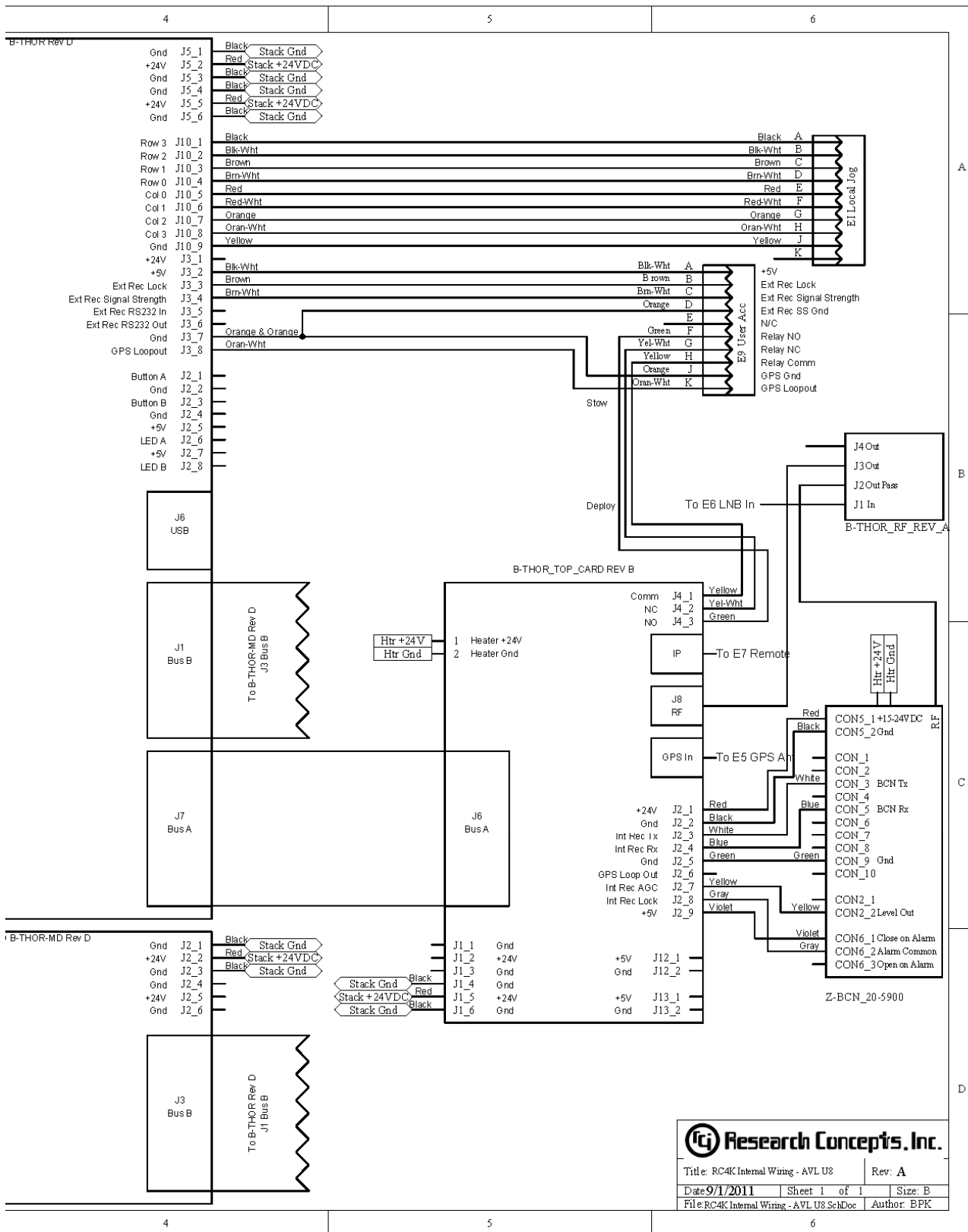


Figure 8

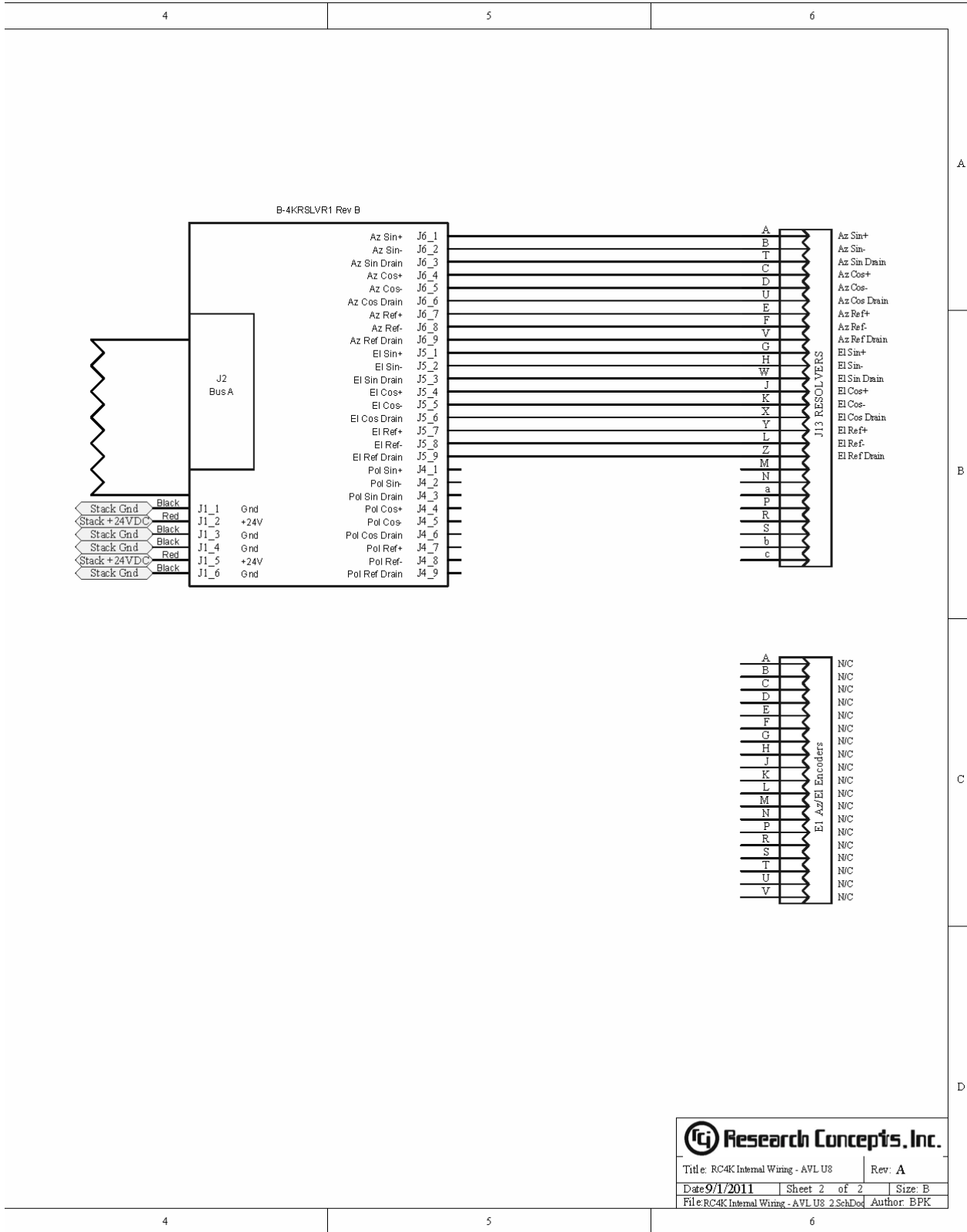


Figure 9