

APPENDIX B - MOUNT SPECIFIC DATA For

AVL 2.4 m. Mount with Wing Flaps

Revision: 14 November 2011 Software Version: 1.60

1.2 Mount Models

This appendix describes the RC3000 variation built for use by the AVL 2.4 m. SNG Mount with wing flaps. This model will be referred to as "UH".

1.3.2 System Interface Requirements

The UH mount follows the standard RC3000 interface requirements with the following notable variations:
- additional control of wing flaps

2.1.4 Inclinometer Orientation

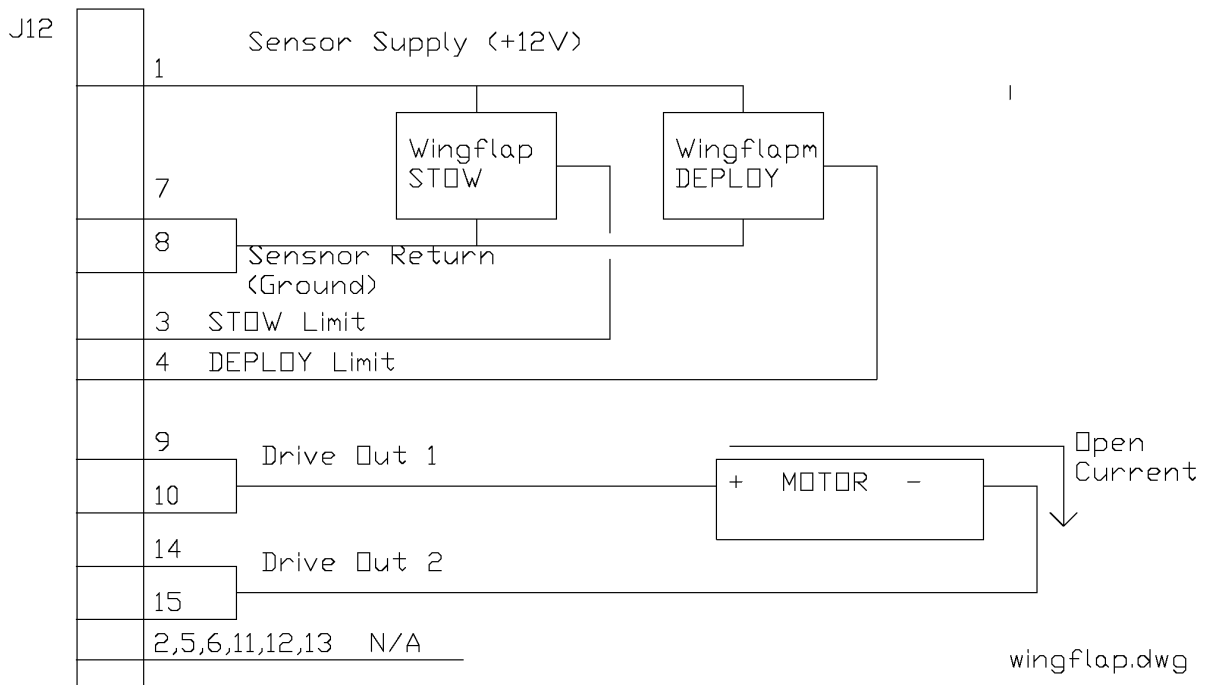
The inclinometer should be rigged with the face of the reflector vertical.

2.3.2 Elevation Reference Position

MODEL	VOLTAGE	OFFSET ANGLE
UH	1.69	22.3

2.2.12 Wingflap Control

The RC3000 connects to the wingflap system via the J12 connector on the back of the RC3000. The following diagram shows the J12 pinout.



3.2.1 Manual Mode

Manual control of the wingflaps may be initiated via the MANUAL mode screen.

```

AZIM:  0.0 STOW   SIG: 50      MANUAL
ELEV: -67.5 STOW  SAT:TELSTAR 402
POL:   0.0      SPD:FAST  WING:ST  CST
<0-9>JOG<BKSP>WING <MODE>MENU  14:25:47
    
```

The WING: field shows the current state of the wingflap limit switches:

ST wingflap at STOW

DP wingflap at DEPLOY

-- no wingflap switches activated

** multiple wingflap switches activated (error condition)

Pressing the BKSP key puts the RC3000 into the WINGFLAP CONTROL screen.

```

                WINGFLAP CONTROL
                WING:STOW

<UP>DEPLOY
    
```

The WING field shows the current state of the wingflap system: STOW, DEPLOY, ----- (no switches active), OPENING or CLOSING.

If multiple switches are active, the abbreviations of the sensed switches are flashed. For example, if ST and DP are flashing, it means that the RC3000 senses that both the STOW and DEPLOY switches are currently activated. The message "ERROR – MULTIPLE SWITCHES" is placed on the bottom line indicating that an incorrect switch configuration exists.

The bottom line of the screen prompts the user for action to be taken or shows the current action in progress.

Actions that will deploy the wingflap are initiated by the UP key and actions that will stow the wingflap are initiated by the DN key. The following table shows the actions that may be initiated based on the current state of the limit switches.

FEED:	Message	<UP> action	<DN> action
STOW	<UP>DEPLOY	Deploys wingflap until the DEPLOY switch is activated	Closing wingflap further is not allowed from this position
DEPLOY	<DN>STOW	no further opening allowed	Close to STOW
----- (unknown position)	<UP>DEPLOY <DN>STOW	Open until DEPLOY	Close until STOW
ST DP (multiple switches)	ERROR – MULTIPLE SWITCHES	No movement allowed	No movement allowed
ELEV	ELEV MUST BE ABOVE DOWN	No movement allowed	No movement allowed

When the UP key is pushed, the WING: field will flash "OPENING" and the bottom line will display a message indicating what switch the controller is looking to see in order to stop the wingflap. The following screen shows how the display will appear after the UP key was pressed with the wingflap in the STOW position.

```
WINGFLAP CONTROL
WING: OPENING

MOVING TO DEPLOY <STOP>
```

Similarly during movements initiated by the DN key, the WING field will show “CLOSING”.

Note that any movement may be halted by pressing the STOP key. All stowing and deploying movements will also “time out” after approximately 17 seconds.

All wingflap movements are also disabled if the elevation down switch is activated. If the elevation down switch is active, the WING: field will display “ELEV” and the bottom line will show the message “ELEV MUST BE ABOVE DOWN”.

3.2.2.1 Deploy

Wingflap control will automatically attempt to open the wingflap to the DEPLOY position after the elevation is above the down position. The message “MOVING WING TO DEPLOYED POSITION” will be displayed.

If the deploy switch is not activated, the message “WING NOT AT DEPLOYED POSITION <MODE>EXIT” will be displayed.

Note that if the wingflap is at an unknown position (no switches activated), automatic movement of the wingflap will not be attempted.

3.2.2.2 Stow

Wingflap control will automatically attempt to close the wingflap before the normal STOW elevation sequence has occurred. During the wingflap movement, the message “MOVING WINGFLAP TO STOW POSITION” will be displayed. If the wingflap movement times out and the wingflap stow switch is not activated, the message “WING NOT AT STOW POSITION <MODE>EXIT” will be displayed.

The wingflap stow movement will not begin if the elevation is not above the down limit. The message “ELEV NOT ABOVE DOWN LIMIT <MODE>EXIT” will be displayed.

3.3.2.10 Shake

Wingflap control will open the wingflap to the DEPLOY position after SHAKE’s move #1 is accomplished. At the beginning of move #3, wingflap control will close the wingflap to the STOW position.

3.3.1.2 Reset Defaults

The following table supplies the default configuration item values for this model of the RC3000.

Space has also been provided to record installation specific changes to the configuration items. Note: recording of installation specific changes to defaults may prove valuable when trying to restore system configuration.

CONFIGURATION ITEM	UH				INSTALL VALUE
SYSTEM DEFINITION					
GPS	0				
COMPASS MOUNT	0				
COMPASS TYPE	0				
MODE	2				
antenna_size_cm	240				
Waveguide	0				
ELEVATION CALIBRATION					
Zero Voltage	1.69				
Elev_offset	0.0				
Up_elev_limit	90				
Down_elev_limit	0				
Elevation_Scale_Factor	50.00				
Elevation_look_configuration	1				
AZIMUTH CALIBRATION					
Reference Voltage	2.50				
ccw_azim_limit	200				
Cw_azim_limit	200				
Azimuth Scale Factor	83.33				
Compass Offset	0				
POLARIZATION CAL					
Zero Voltage	2.50				
Polarization_Offset	0.0				
CW Polarization Limit	95.0				
CCW Polarization Limit	95.0				
Pol_Scale_Factor	39.31				
Polarization_type	2				
H/V_Reference	1				
Default Horizontal Position	-45.0				
Default Vertical Position	45.0				
Pol_Automove_Enable	1				

CONFIGURATION ITEM	UH					INSTALL VALUE
SIGNAL PARAMETERS						
RF Lock Type	0					
RF Delay	0.1					
Channel 1 Polarity	1					
Channel 1 Threshold	100					
Channel 1 Delay	0.1					
Channel 1 Lock Type	0					
Channel 2 Polarity	1					
Channel 2 Threshold	100					
Channel 2 Delay	0.1					
Channel 2 Lock Type	0					
AUTOPEAK						
Autopeak Enabled	0					
Signal Source	1					
RF Band	1					
Spiral Search AZ Limit	3					
Spiral Search EL Limit	3					
Spiral Signal Threshold	200					
Scan Range Limit	8					
Scan Signal Threshold	200					
Tilt Compensation	0					

CONFIGURATION ITEM	UH					INSTALL VALUE
AZIMUTH POT DRIVE						
Fast/Slow Threshold	2.5					
Maximum Position Error	0.20					
Coast Threshold	0.1					
Maximum Retry Count	3					
AZIMUTH PULSE DRIVE						
Pulse Scale Factor	2406					
CW Pulse Limit	64000					
CCW Pulse Limit	100					
Fast/Slow Threshold	50					
Maximum Position Error	1					
Coast Threshold	1					
Maximum Retry Count	3					
AZIM DRIVE MONITORING						
Jam Slop	1					
Runaway Slop	200					
Fast Deadband	1000					
Slow Deadband	500					
ELEV POT DRIVE						
Fast/Slow Threshold	3.0					
Maximum Position Error	0.2					
Coast Threshold	0.4					
Maximum Retry Count	3					
ELEV PULSE DRIVE						
Pulse Scale Factor	1646					
UP Pulse Limit	64000					
Down Pulse Limit	100					
Fast/Slow Threshold	50					
Maximum Position Error	0					
Coast Threshold	3					
Maximum Retry Count	3					
ELEV DRIVE MONITORING						
Jam Slop	1					
Runaway Slop	200					
Fast Deadband	1000					
Slow Deadband	500					
POL POT DRIVE						
Fast/Slow Threshold	2.0					
Maximum Position Error	0.5					
Coast Threshold	0.3					
Maximum Retry Count	3					
POL DRIVE MONITORING						
Jam Slop	1					
Runaway Slop	200					
Fast Deadband	1000					
Slow Deadband	500					

CONFIGURATION ITEM	UH					INSTALL VALUE
TRACK						
Search Enable	0					
Max Track Error	3					
Search Width	4					
Peakup Holdoff Time	120					
Track Signal Source	2					
Signal Sample Time	2					
REMOTE CONTROL						
Remote Enabled	1					
Bus Address	50					
Baud Rate	6					
Jog Duration	20					
STOW / DEPLOY						
AZ STOW	0.0					
EL STOW	-67.5					
PL STOW	0.0					
AZ DEPLOY	0.0					
EL DEPLOY	22.3					
PL DEPLOY	0.0					
PL ENABLED	2					
EL_TIME	0					
SHAKE						
AZ1	-40.0					
EL1	30.0					
PL1	-10.0					
AZ2	50.0					
EL2	40.0					
PL2	10.0					
AZ3	0.0					
EL3	-67.5					
PL3	0.0					
CYCLES	5					
DELAY	1					