

Alidade wire harnessing	Enclosure								
Reference ELMCOOverview.vsd									
30-Nov-05									
STATUS/NOTES									
AWE1		Input power wires through pedestal							
	Wires	1	#12 white	120VAC	65 strand wire Beldon				
		2	#12 black	Return	8527				
		3	#14 green	Ground	Beldon 8520				
find 1	Ends	A	bare wire	screw terminal block behind pie-plate					
		B	MlxB3	terminal on Alidade Relay Board					
AWE2		Transformer							
	Wires	1	#14 white	120VAC	These wires except Ground are all on the toroid, we provide connector				
		2	#14 black	Return					
		3	NC?						
		4	#14 red	100VAC					
		5	#14 red	Return					
find 3	End	A	MlxB5	connector on alidade relay card					
AWE3		Power to motors							
Length = 48"	Wires	1	#14 black	110VAC	Use standard power cord and chop off plug	#16 rt angle???			
		2	#14 white	Return					
		3	#14 green	Ground					
find 2	Ends	A	MlxB4	connector on alidade relay board					
find 20 or 21		B	IEC-320	right angle plug on drive box					
AWE4		Power for control box							
	Wires	1	#18 white	120VAC	Use standard power cord and chop off plug				
		2	#18 black	Return					
		3	#18 green	Ground					
find 1	Ends	A	MlxB3	connector on alidade relay board					
find 20		B	IEC-320	right angle plug on control box (may not exist in rt angle?)					
AWE5		Power for rim power box							
	ires	1	#14 black	120VAC	wire				
		2	#14 white	Return					

		3	#14 green	Ground					
find 1	Ends	A	MlxB3	connector on alidade relay board					
		B	ParlBlade U Gnd	connector in rim power box					
AWE6 15-wire cable from alidade relay board to drive box									
	Wires/pins	1	az brakes +24V	1&9 are controlled with the main drives transformer power					
		2	Ground						
		3	24V aux						
		4	Ground						
		5	drive enable +	5&13 are connected through relay contacts which are closed					
		6	Ground	when the main drives transformer power relay is latched					
		7	Az cw limit	7&15 are connected to 8 via NC switches					
		8	Az limit common						
		9	el brakes +24V						
		10	Ground	Belden 9947					
		11	24V aux						
		12	Ground						
		13	drive enable -						
		14	Ground						
		15	Az ccw limit						
Find 36 Assmby	Ends	A	D15P	Dsub on alidade relay board					
		B	D15S	Dsub on drive box					
AWE7 25-wire cable from alidade relay board to control box									
	es/pins	1	brakes +24V	1,3,5,11,14,16,18, 24 are power and control signals from the					
		2	Ground	control box					
		3	24V aux						
		4	Ground						
		5	5V sensor +						
		6	Ground						
		7	float in	7,8,9,10,12,13,20,21,22,23,25 are logic and sensor signals					
		8	T input1 -	returning to the control box					
		9	T input2 -						
		10	Az brake sense						
		11	Latch	main drives transformer power is latched by holding 24 logic high					
		12	Pot 1	while pulsing 11 logic low-high-low					
		13	Pot wiper	wrap pot is wired to relay board such that resistance between 13					

	Wires	14	brakes +24V		and 25 increases when azimuth rotates cw				
		15	Ground						
		16	24V aux						
		17	Ground						
		18	5V sensor -						
		19	Ground		Belden 9879				
		20	T input1 +						
		21	T input2 +						
		22	electronics reset						
		23	EI brake sense						
		24	Unlatch						
		25	Pot 2						
Assembly find 34	Ends	A	D25P	Dsub on alidade relay board					
		B	D25S	Dsub on EE-box					
AWE8 motor power and brakes for azimuth									
	Wires/pins	1	U1	W	#14 purple		1	W1	
		2	U2				2	W2	
		14	U3				3	N/C	
		15	U4				4	V1	
		3	N/C			5	V2		
		16	N/C			6	N/C		
		4	V1	V	#14 brown		7	U1	
		5	V2				8	U2	
		17	V3				9	N/C	
		18	V4				10	G1	
		6	N/C			11	G2		
		19	N/C			12	BP		
		7	W1	U	#14 blue		13	BM	
		8	W2				14	W3	
		20	W3				15	W4	
		21	W4				16	N/C	
		9	N/C			17	V3		
		22	N/C			18	V4		
		10	G1	Ground	#14 green		19	N/C	
		11	G2				20	U3	
		23	G3				21	U4	

		24	G4				22	N/C	
		12	BP	Brake +	#16 blue		23	G3	
		13	BM	Brake -	#16 blue		24	G4	
		25	SHIELD	shield	shield		25	SHIELD	
find 53 or find	Ends	A	D25P	filtered D25S on board					
find 7 & 8		B	MlxS6a	M connector on motor					
find 6 & 8		C	MlxS2a	wires part of brake					
AWE9 encoders and hall's for azimuth									
	Wires/pins	1	N/C	GND on board					
		2	brown	U					
		3	gray	V					
		4	white	W					
		5	black	ground					
		6	purple	X					
		7	green	B					
		8	blue	A					
		9	orange	thermal sensor			GPIN5		
		10	orang/white	GND thermal sensor			GND		
		11	Vcc (+5)	red					
		12	N/C	GND on board					
		13	purple/blk	/X					
		14	green/blk	/B					
		15	blue/blk	/A					
find 29 & 32	Ends	A	D15P	filtered D15S on board					
y required if extension is needed		B	M	M connector on motor					
AWE10 motor power and brakes for elevation									
Extension may be required		1	U1	W	#14 purple		1	W1	
Elevation motor is mounted		2	U2				2	W2	
Outside of alidade		14	U3				3	N/C	
		15	U4				4	V1	
		3	N/C	V	#14 brown		5	V2	
		16	N/C				6	N/C	
		4	V1				7	U1	
		5	V2				8	U2	
		17	V3				9	N/C	

	Wires/pins	18	V4				10	G1	
		6	N/C				11	G2	
		19	N/C				12	BP	
		7	W1	U	#14 blue	0036157	13	BM	
		8	W2				14	W3	
		20	W3				15	W4	
		21	W4				16	N/C	
		9	N/C				17	V3	
		22	N/C				18	V4	
		10	G1	Ground	#14 green		19	N/C	
		11	G2				20	U3	
		23	G3				21	U4	
		24	G4				22	N/C	
		12	BP	Brake +	#16 blue		23	G3	
		13	BM	Brake -	#16 blue		24	G4	
		25	SHIELD	shield	shield		25	SHIELD	
find 53	Ends	A	D25P	filtered D25S on board					
find 7 & 8		B	MlxS6a	M connector on motor					
find 6 & 8		C	MlxS2a	wires part of brake					
AWE11 encoders and hall's for elevation									
Extension may be required	Wires/pins	1	N/C	GND on board					
Elevation motor is mounted		2	brown	U					
Outside of alidade		3	gray	V					
		4	white	W					
		5	black	ground		Belden 3007A or 1817R			
		6	purple	X					
		7	green	B					
		8	blue	A					
		9	orange	thermal sensor			GPIN5		
		10	orange/white	GND thermal sensor			GND		
		11	Vcc (+5)	red					
		12	N/C	GND on board					
		13	purple/blk	/X					
		14	green/blk	/B					
		15	blue/blk	/A					
find 29 & 32	ds	A	D15P	filtered D15S on board					

find 29 & 32	Er	B	D15P	D 15p on motor					
AWE12 encoder for azimuth									
Internal to alidade	Wires/pins	1	yellow	A	LIR276A3T3600005P151A				
		2	green	B					
		3	blue	IND					
		4	shield	N/C					
		5	red	+V					
		6	brown	/A					
		7	orange	/B					
		8	white	/IND					
		9	black	COMMON					
find 28 & 32	Ends	A	D9P	Dsub on control box					
		B	--	cable part of encoder					
AWE13 encoder for elevation									
external to alidade	Wires/pins	1	yellow	A	9220S03600D5L10D99SP04EA				
		2	green	B					
		3	blue	IND					
		4	shield	N/C					
		5	red	+V					
		6	brown	/A					
		7	orange	/B					
		8	white	/IND					
		9	black	COMMON					
find 28 & 32	Ends	A	D9P	Dsub on control box					
If required find 2 & 32		B	--	cable part of encoder					
AWE14 battery for ee-box									
	Wires/pins	1	#16? Red	Battery +					
		2	#16? Red	Battery +					
		3							
		4							
		5							
		6							
		7							
		8	#16? Black	Battery -					

		9 #16? Black	Battery -					
find 22 & 25	Ends	A D9S						
		B Spade?						
AWE15 Signal from relay board to pie-plate								
Twists	Wires	1 #24 black 1						
		2 #24 black 2	LappUSA (Olflex) 900P Cable, 3 conductor #24, 811442					
		3 #24 green/yellow						
find 5 & ?	Ends	A MlxT3	on alidade relay board					
		B bare	behind pie plate					
AWE16 signal from oil float								
	Wire	1						
		2						
find 4 & ?	Ends	A MlxT2	on alidade relay board					
		B Crimps?						
AWE17-1 Signal from temperature sensor to relay board								
	Wires	1	Lm-35 Device in TO-220					
		2						
		3						
find 5 & ?	Ends	A MlxT3	to alidade relay board					
		B ?	temperature sensor					
AWE17-2 Signal from temperature sensor to relay board								
	Wires	1	Lm-35 Device in TO-220					
		2						
		3						
find 5 & ?	Ends	A MlxT3	to alidade relay board					
		B ?	temperature sensor					
AWE17-3 Signal from temperature sensor to relay board								
	Wires	1	Lm-35 Device in TO-220					
		2						
		3						
find 5 & ?	Ends	A MlxT3	to alidade relay board					

	Er	B ?	temperature sensor					
AWE18 Signal from az wrap potentiometer								
	Wires	1						
		2						
		3						
find 5 & ?	Ends	A	bare wire	posts on pot				
		B	MlxT3	on alidade relay board				
AWE19 Signal from elevation level sensor								
	Wires	1	red	+5V				
		2	green	signal				
		3	blue	ground				
	Ends	A	XXX connector	to alidade relay board				

Alidade wire harnessing	Control								
Reference ELMCOOverview.vsd									
30-Nov-05									
STATUS/NOTES									
	AWC1	Power from relay board							
	Wires	1							
		2							
		3							
	Ends	A	IEC-320						
		B	Leads						
	AWC2	25-wire cable from alidade relay board to control box							
	Wires/pins	1	brakes +24V		UPS board				
		2	Ground						
		3	24V aux						
		4	Ground						
		5	5V sensor +		microcontroller board				
		6	Ground						
		7	float in						
		8	T input1 -						
		9	T input2 -						
		10	Az brake sense						
		11	Latch						
		12	Pot 1						
		13	Pot wiper						
		14	brakes +24V		UPS board				
		15	Ground						
		16	24V aux						
		17	Ground						
		18	5V sensor -		microcontroller board				
		19	Ground						
		20	T input1 +						
		21	T input2 +						
		22	electronics reset						
		23	EI brake sense						
		24	Unlatch						

		25	Pot 2		E				
find 30 & 32	Ends	A	D25P	on top of control box					
		B	?	UPS board					
		C	?	microcontroller board					
AWC3 encoder for azimuth									
	Wires/pins	1	yellow	A	LIR276A3T3600005P151A				
		2	green	B					
		3	blue	IND					
		4	shield	N/C					
		5	red	+V					
		6	brown	/A					
		7	orange	/B					
		8	white	/IND					
		9	black	COMMON					
find 22 & 26	Ends	A	D9S	Dsub on control box					
		B	?	on microcontroller card					
AWC13 encoder for elevation									
	Wires/pins	1	yellow	A	9220S03600D5L10D99SP04EA				
		2	green	B					
		3	blue	IND					
		4	shield	N/C					
		5	red	+V					
		6	brown	/A					
		7	orange	/B					
		8	white	/IND					
		9	black	COMMON					
find 22 & 26	Ends	A	D9S	Dsub on control box					
		B	?	on microcontroller card					
AWC6									
		standard CAT5 cable	Rj-45						
AWC7 9V to media converter									

	Wires	1							
		2							
	Ends	A							
		B	Leads						
AWC8 24 V from power supply to UPS board									
	Wires	1							
		2							
	Ends	A							
		B							
AWC9 5V to SBC									
	Wires	1							
		2							
	Ends	A							
		B							
AWC10 5V to i/o board									
	Wires	1							
		2							
	Ends	A							
		B							

Alidade wire harnessing	drive-box								
Reference ELMCOOverview.vsd									
30-Nov-05									
STATUS/NOTES									
	AWD1	3-wire power cable from box lid to drive board							
	Wires	1	#14 white	100VAC					
		2	#14 black	Return					
		3	#14 green	Ground					
	Ends	A	bare wire	solder terminals on IEC-320					
		B	bare wire	screw terminals on drive board					
	AWD2	15-wire cable from drive-box top to daughter board							
	Wires/pins	1	az brakes +24V	1&9 are controlled with the main drives transformer power					
		2	Ground						
		3	24V aux						
		4	Ground						
		5	drive enable +	5&13 are connected through relay contacts which are closed					
		6	Ground	when the main drives transformer power relay is latched					
		7	Az cw limit	7&15 are connected to 8 via NC switches					
		8	Az limit common						
		9	el brakes +24V						
		10	Ground						
		11	24V aux						
		12	Ground						
		13	drive enable -						
		14	Ground						
		15	Az ccw limit						
find 29 & 32	Ends	A	D15P	Dsub on drive-box top					
		B	bare wire?	screw terminal on daughter card					
		C	bare wire?	screw terminal on drive board					