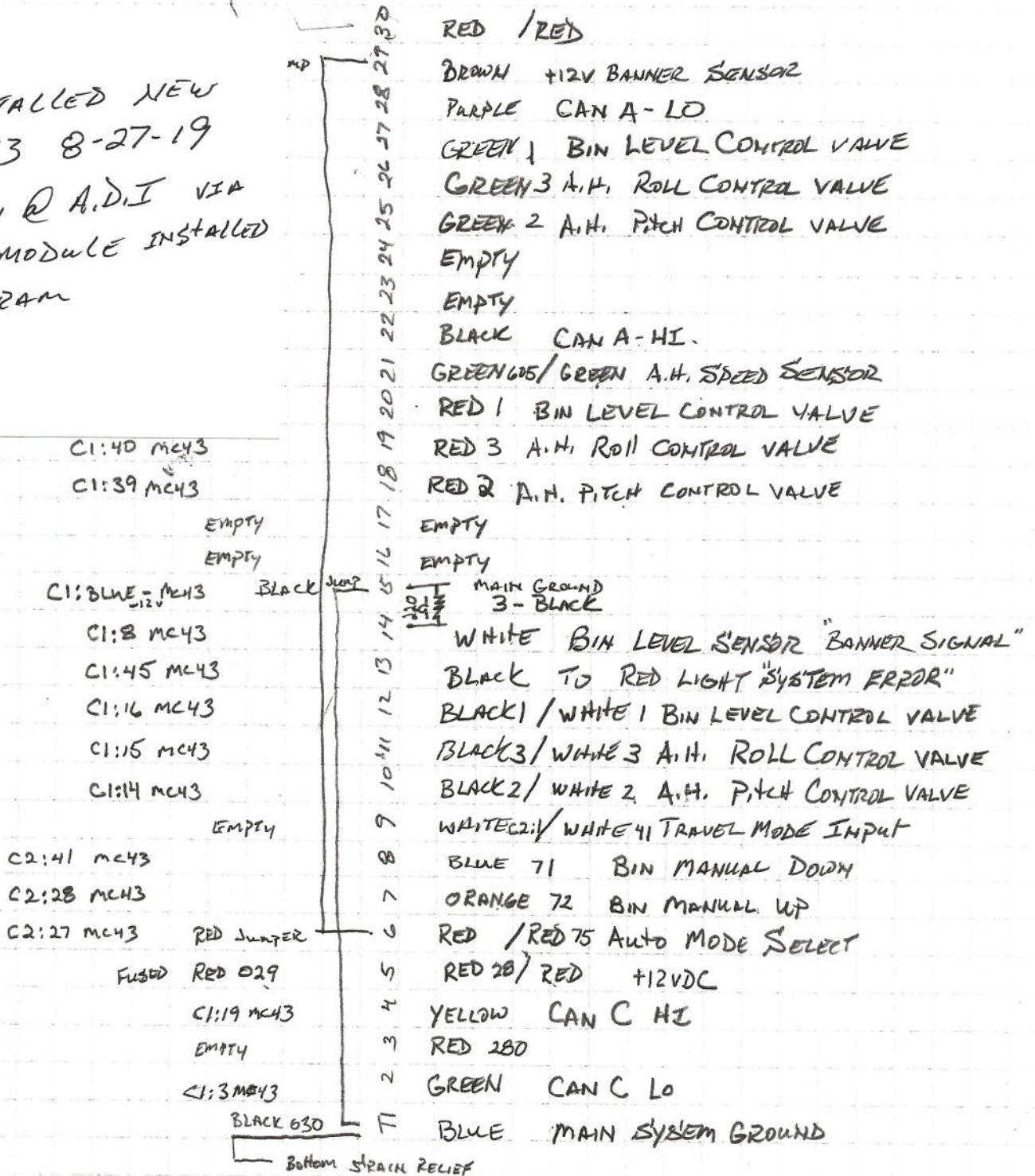


17083

Heartland

1 of 2

INSTALLED NEW
MC 43 8-27-19
KEVIN @ A.D.I VIA
G11 MODULE INSTALLED
PROGRAM



	MD3 C1:	
RED 28 75	12	1 BLACK GROUND T15
C1:17 BLACK T22	11	2 PURPLE T28
C1:3 MC43	10	3 C1:2 MC43
CAN HI YELLOW TH1	9	4 GREEN CAN LO C1:17 MC43
-	8	5 -
T30 RED 7	7	6 -

	MD3 C2:	
	12	1 WHITE 41 T9
	11	2
	10	3
	9	4 RED T6
	8	5 Black
	GREEN 7	6 WHITE

HEARTLAND 2017

AFE IQAN Controller w/Ground Drive

AFE Harvester Bin Level, Air Head Level, Ground Drive, Cross & Side

Version: 1.0

Author: Kevin R. Garnett/MK

Comment: Initial Layout; MD3 module and MC43 Dual Master system

Last changed: 4/27/2017 2:05:17 PM

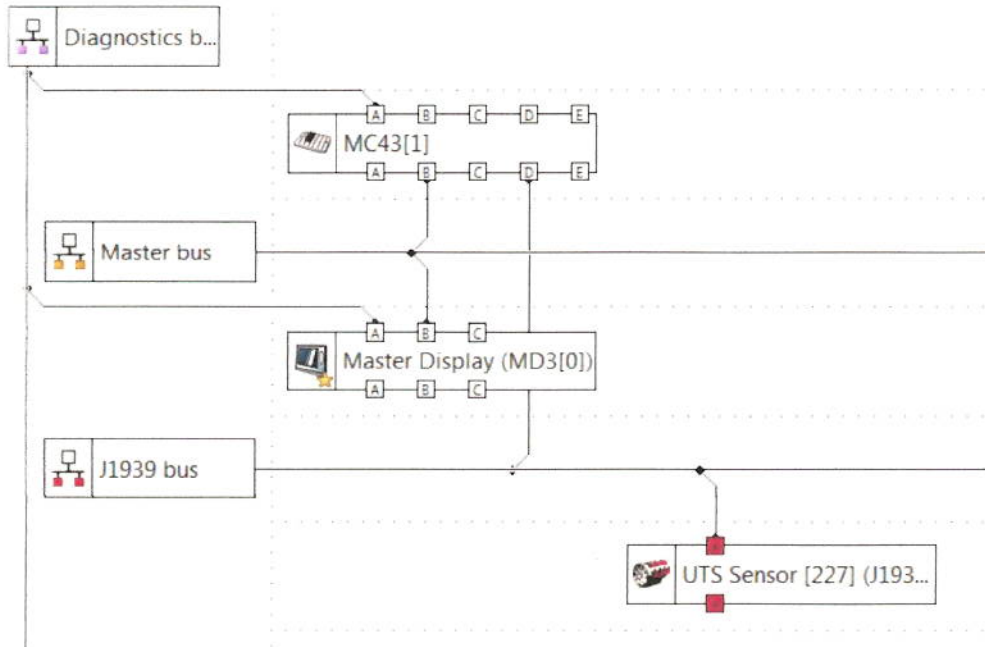
Last changed by: Mark Kettel, ADIFP

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1. System



1.1. Master Display

Module type: MD3
Module address: 0

Voltage in		Digital out	
A	C2:1	C2:12	A
B	C2:2		
C	C2:3		
D	C2:4		
E	C2:9		
F	C2:10		
G	C2:11		
Digital in		Diagnostic	
Travel Mode Input	A C2:1	Status	Status:MD3[0]
	B C2:2	S/N	S/N:MD3[0]
	C C2:3	Temp	Temp:MD3[0] [°C]
	D C2:4	+BAT	+BAT:MD3[0] [V]
	E C2:9	VREF	VREF:MD3[0] [V]
	F C2:10		
	G C2:11		

Pin	Name	Channel	Description
C1:1	-BAT		
C1:2	CAN-A-L		
C1:3	CAN-B-L		
C1:4	CAN-C-L		
C1:5	RS232-DATA IN		
C1:6	ADDR-L		
C1:7	+RTC		
C1:8	RS232-DATA-OUT		
C1:9	CAN-C-H		
C1:10	CAN-B-H		
C1:11	CAN-A-H		
C1:12	+BAT		
C2:1	DIN-A	Travel Mode Input	
C2:2	-		
C2:3	-		
C2:4	-		
C2:5	-VREF		
C2:6	USB-D-		
C2:7	USB-D+		
C2:8	+VREF		
C2:9	-		
C2:10	-		
C2:11	-		
C2:12	-		

1.2. MC43[1]

Module type: MC43

Module address: 1

Voltage in		Current out	
Bin Level Sensor #1 [A]	C1:8	C1:14/39/55	A
Bin Level Sensor #2 [B]	C1:9	C1:15/40/56	B
% Command [C]	C1:10	C1:16/41/57	C
Idle Command Roll [D]	C1:24	C1:30/42/58	D Motor Stop Control
Cross Contour Path [E]	C1:25	C1:31/43/59	E Pump Stop Control
Motor Control Pressure [F]	C1:26	C1:32/44/60	F
A Port Pressure [psi] [G]	C1:36	C2:47/13/29	G
B Port Pressure [psi] [H]	C1:52	C2:48/14/30	H
I	C2:1	C2:67/15/91	I
J	C2:4	C2:68/16/92	J
K	C2:5		
L	C2:6		
M	C2:18	C1:45	A System Error Lamp
N	C2:20	C1:46	B RWD On
O	C2:21	C1:47	C
P	C2:22	C1:48	D
Q	C2:34	C2:49	F
R	C2:35	C2:50	F
S	C2:36	C2:51	G
T	C2:37	C2:52	H
U	C2:38	C1:45/39	A 0V0+1.0
V	C2:54	C1:45/55	J 0V0+1.0
W	C2:55	C1:45/40	A 0V0+1.0
X	C2:56	C1:45/56	A 0V0+1.0
Y	C2:57	C1:46/41	B 0V0+1.0
Z	C2:58	C1:46/57	B 0V0+1.0
		C1:46/42	D 0V0+1.0
		C1:46/58	D 0V0+1.0
		C1:47/49	B 0V0+1.0
		C1:47/59	B 0V0+1.0
		C1:47/44	A 0V0+1.0
		C1:47/60	F 0V0+1.0
		C2:49/13	J 0V0+1.0
		C2:49/29	F 0V0+1.0
		C2:49/14	W (HS+LS)
		C2:49/30	X (HS+LS)

Pin Manual Down

C241	C250/15	Y (HS+LS)
C242	C250/31	Z (HS+LS)
C261	C250/16	AA (HS+LS)
C262	C250/32	AB (HS+LS)
C18	C243	AC (LS)
C19	C263	AD (LS)
C110	C244	AE (LS)
C124	C264	AF (LS)
C125	C245	AG (LS)
C126	C265	AH (LS)
C136	C246	AI (LS)
C152	C266	AJ (LS)
C23		
C24		
C25		
C26		
C219		
C220		
C221		
C222		
C234		
C235		
C236		
C237		
C238		
C194		
C255		
C256		
C257		
C258		
C111		
C112		
C113		
C127		
C128		
C129		

Frequency In

Airhead Speed Sensor	A	C111
Drive Speed (mph)	B	C112
	C	C113
	D	C127
	E	C128
	F	C129

Directional freq. in

	A	C111/12
	B	C113/27
	C	C128/29

Pulse count

	A	C111
	B	C112
	C	C113
	D	C127
	E	C128
	F	C129

Dir. pulse count

	A	C111/12
	B	C113/27
	C	C128/29

PWM In

	A	C111
	B	C112
	C	C113
	D	C127
	E	C128
	F	C129

Current-loop in

	A	C137
	B	C153
	C	C233
	D	C253

High voltage in

	A	C138
	B	C194

PWM out

C14/39/55	A	Airhead Pitch Control
C13/40/56	B	Airhead Roll Control
C136/41/57	C	Bin Level Control [%]
C130/42/58	D	
C131/43/59	E	
C132/44/60	F	Side Conveyor Contr.
C247/23/29	G	Cross Conveyor Contr.
C248/14/30	H	
C267/15/31	I	
C268/16/32	J	
C145	K	
C146	L	
C147	M	
C148	N	
C249	O	
C250	P	
C251	Q	
C252	R	

Diagnostic

Status	Status:MC4[1]
S/N	S/N:MC4[1]
Temp	Temp:MC4[1] [°C]
Address	Address:MC4[1]
+BAT	+BAT:MC4[1] [V]
VREF A	VREF-A:MC4[1] [V]
VREF B	VREF-B:MC4[1] [V]

Pin	Name	Channel	Description
C1:1	CAN-A-L		
C1:2	CAN-B-L		
C1:3	CAN-C-L		
C1:4	ADDR-L		
C1:5	-		
C1:6	-		
C1:7	+VREF-A		
C1:8	VIN-A	Bin Level Sensor #1 [in]	
C1:9	VIN-B	Bin Level Sensor #2 [in]	
C1:10	VIN-C	JS Command [%]	
C1:11	FIN-A	Airhead Speed Sensor [rpm]	
C1:12	FIN-B	Drive Speed [mph]	
C1:13	-		

Pin	Name	Channel	Description
C1:14	PWM-A	Airhead Pitch Control [%]	
C1:15	PWM-B	Airhead Roll Control [%]	
C1:16	PWM-C	Bin Level Control [%]	
C1:17	CAN-A-H		
C1:18	CAN-B-H		
C1:19	CAN-C-H		
C1:20	ADDR-H		
C1:21	-		
C1:22	-		
C1:23	-VREF		
C1:24	VIN-D	Side Conveyor Roll [%]	
C1:25	VIN-E	Cross Conveyor Pitch [%]	
C1:26	VIN-F	Motor Control Pressure [psi]	
C1:27	-		
C1:28	-		
C1:29	-		
C1:30	COUT-D	Motor Disp Control [mA]	
C1:31	COUT-E	Pump Disp Control [mA]	
C1:32	PWM-F	Side Conveyor Control [%]	
C1:33	ETHRD-		
C1:34	ETHTD-		
C1:35	-VREF		
C1:36	VIN-G	A-Port Pressure [psi]	
C1:37	-		
C1:38	-		
C1:39	PWM-A RET+	Airhead Pitch Control [%]	
C1:40	PWM-B RET+	Airhead Roll Control [%]	
C1:41	PWM-C RET+	Bin Level Control [%]	
C1:42	COUT-D RET+	Motor Disp Control [mA]	
C1:43	COUT-E RET+	Pump Disp Control [mA]	
C1:44	PWM-F RET+	Side Conveyor Control [%]	
C1:45	DOUT-A	System Error Lamp	
C1:46	DOUT-B	4WD On	
C1:47	-		
C1:48	-		
C1:49	ETHRD+		
C1:50	ETHTD+		
C1:51	+VREF-B		
C1:52	VIN-H	B-Port Pressure [psi]	
C1:53	-		
C1:54	-		
C1:55	PWM-A RET-	Airhead Pitch Control [%]	
C1:56	PWM-B RET-	Airhead Roll Control [%]	
C1:57	PWM-C RET-	Bin Level Control [%]	
C1:58	COUT-D RET-	Motor Disp Control [mA]	
C1:59	COUT-E RET-	Pump Disp Control [mA]	
C1:60	PWM-F RET-	Side Conveyor Control [%]	
C1:61	-		

Pin	Name	Channel	Description
C1:62	-		
C1:63	-		
C1:64	-		
C1:65	+BAT		
C1:66	-BAT		
C2:1	CAN-D-L		
C2:2	CAN-E-L		
C2:3	-		
C2:4	-		
C2:5	-		
C2:6	-		
C2:7	+VREF-A		
C2:8	+VREF-A		
C2:9	DIN-A	JS FWD	
C2:10	DIN-B	JS REV	
C2:11	DIN-C	Drive Press Switch	
C2:12	DIN-D	Hi/Lo Disp Select	
C2:13	PWM-G RET+	Cross Conveyor Control [%]	
C2:14	-		
C2:15	-	(A.H. Pin?)	
C2:16	-		
C2:17	CAN-D-H		
C2:18	CAN-E-H		
C2:19	-		
C2:20	-		
C2:21	-		
C2:22	-		
C2:23	-VREF		
C2:24	-VREF		
C2:25	DIN-E	4WD Select	
C2:26	DIN-F	Charge Filter Indicator	
C2:27	DIN-G	Auto Mode Select	
C2:28	DIN-H	Bin Manual Up	
C2:29	PWM-G RET-	Cross Conveyor Control [%]	
C2:30	-		
C2:31	-	(A.H. Pin?)	
C2:32	-		
C2:33	-		
C2:34	-		
C2:35	-		
C2:36	-		
C2:37	-		
C2:38	-		
C2:39	-VREF		
C2:40	-VREF		
C2:41	DIN-I	Bin Manual Down	
C2:42	-		
C2:43	-		

Pin	Name	Channel	Description
C2:44	-		
C2:45	-		
C2:46	-		
C2:47	PWM-G	Cross Conveyor Control [%]	
C2:48	-		
C2:49	-		
C2:50	-		
C2:51	-		
C2:52	-		
C2:53	-		
C2:54	-		
C2:55	-		
C2:56	-		
C2:57	-		
C2:58	-		
C2:59	+VREF-B		
C2:60	+VREF-B		
C2:61	-		
C2:62	-		
C2:63	-		
C2:64	-		
C2:65	-		
C2:66	-		
C2:67	-		
C2:68	-		
C2:69	-		
C2:70	-		
C2:71	-		
C2:72	-		
C2:73	+BAT		

1.3. UTS Sensor [227]

Module type: J1939

Module address: 0

Pin	Name	Channel	Description
	JFIN-A	UTS Data	

2. Function groups

2.1. Applications

MC43[1] application
«MC43[1]»

- FGI: Travel Mode Input
- Airhead Roll Select
- Airhead Pitch Select
- DEC: Airhead Pitch/Roll ...
- INC: Airhead Pitch/Roll ...
- Bin Level Select
- INC: Bin/Discharge Adju...
- DEC: Bin/Discharge Adj...
- FGI: Travel Mode Input
- Travel Mode Input
- Slide Level Select
- Cross Level Select
- INC: Cross/Side Adjust
- DEC: Cross/Side Adjust
- Travel Mode Input
- Slide Level Select
- Cross Level Select

2.2. AFE IQAN Controller w/Ground Drive

Out

<input type="checkbox"/> VREF:MD3[0] [V]				
<input type="checkbox"/> Travel Mode Input	Bin Level Select	<input type="checkbox"/>		
	INC: Bin/Discharge Adju...	<input type="checkbox"/>	ff	⊕
	DEC: Bin/Discharge Adj...	<input type="checkbox"/>	ff	⊕
	Travel Mode Input	<input type="checkbox"/>	ff	⊕
	Airhead Pitch Select	<input type="checkbox"/>	ff	⊕
	Airhead Roll Select	<input type="checkbox"/>	ff	⊕
	INC: Airhead Pitch/Roll ...	<input type="checkbox"/>	ff	⊕
	DEC: Airhead Pitch/Roll ...	<input type="checkbox"/>	ff	⊕

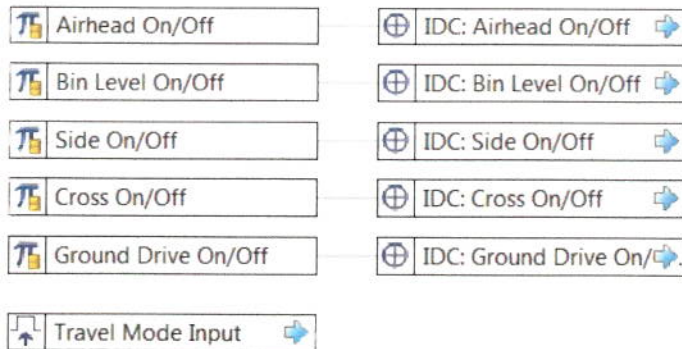
2.2.1. Internal channels

Channel	Description
Status:MD3[0]	
S/N:MD3[0]	
Temp:MD3[0] [°C]	
+BAT:MD3[0] [V]	
VREF:MD3[0] [V]	

2.3. Function Selector

2.3.1. Interface description

Outputs IDC: Airhead On/Off
 IDC: Bin Level On/Off
 IDC: Side On/Off
 Travel Mode Input
 IDC: Cross On/Off
 IDC: Ground Drive On/Off



2.3.2. Internal channels

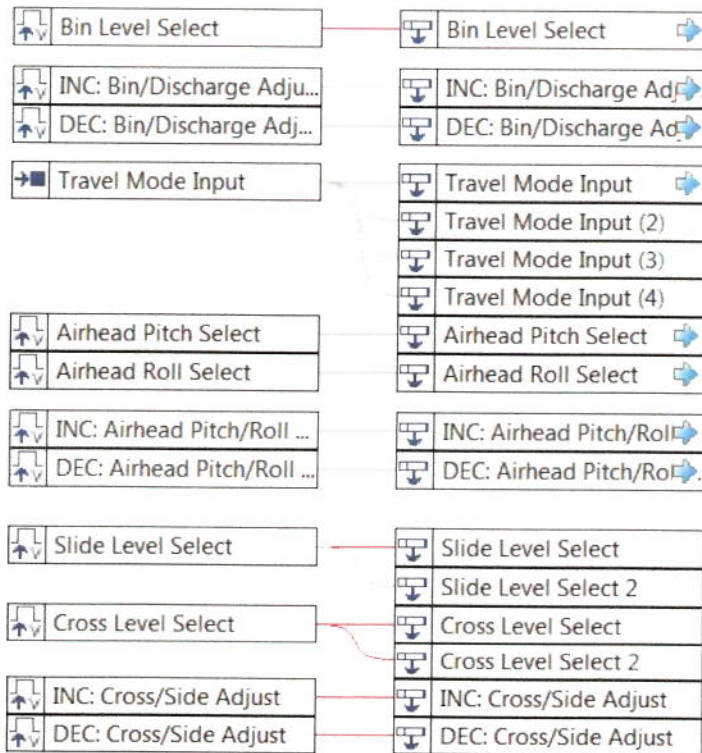
Channel	Description
Airhead On/Off	
IDC: Airhead On/Off	
Bin Level On/Off	
IDC: Bin Level On/Off	
Side On/Off	
IDC: Side On/Off	
Travel Mode Input	
Cross On/Off	
IDC: Cross On/Off	
Ground Drive On/Off	
IDC: Ground Drive On/Off	

2.4. App In-Out

2.4.1. Interface description

Inputs Travel Mode Input Digital

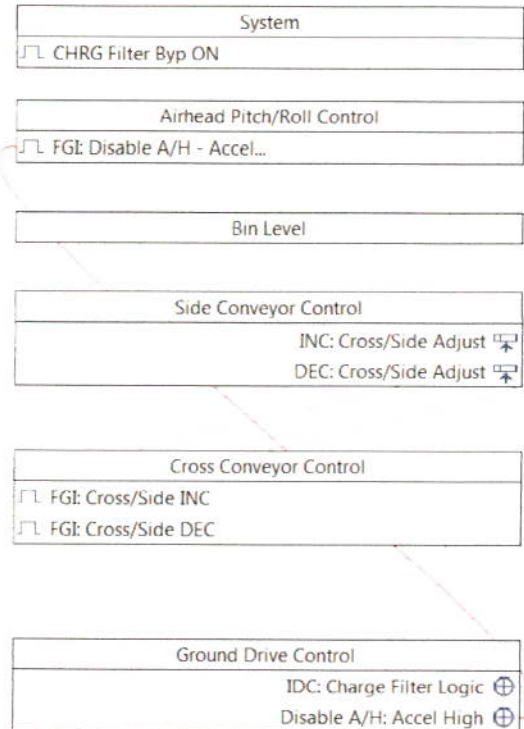
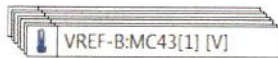
Outputs Bin Level Select
DEC: Bin/Discharge Adjust
INC: Bin/Discharge Adjust
Travel Mode Input
Airhead Pitch Select
Airhead Roll Select
INC: Airhead Pitch/Roll Adjust
DEC: Airhead Pitch/Roll Adjust



2.4.2. Internal channels

Channel	Description
Bin Level Select	
Bin Level Select	
DEC: Bin/Discharge Adjust	
INC: Bin/Discharge Adjust	
DEC: Bin/Discharge Adjust	
INC: Bin/Discharge Adjust	
Travel Mode Input	
Travel Mode Input	
Airhead Pitch Select	
Airhead Roll Select	
Airhead Pitch Select	
Airhead Roll Select	
INC: Airhead Pitch/Roll Adjust	
DEC: Airhead Pitch/Roll Adjust	
INC: Airhead Pitch/Roll Adjust	
DEC: Airhead Pitch/Roll Adjust	
Travel Mode Input (2)	
Slide Level Select	
Slide Level Select	
Cross Level Select	
Cross Level Select 2	
Cross Level Select	
Slide Level Select 2	
Travel Mode Input (3)	
Travel Mode Input (4)	
DEC: Cross/Side Adjust	
INC: Cross/Side Adjust	
DEC: Cross/Side Adjust	
INC: Cross/Side Adjust	

2.5. MC43[1] application



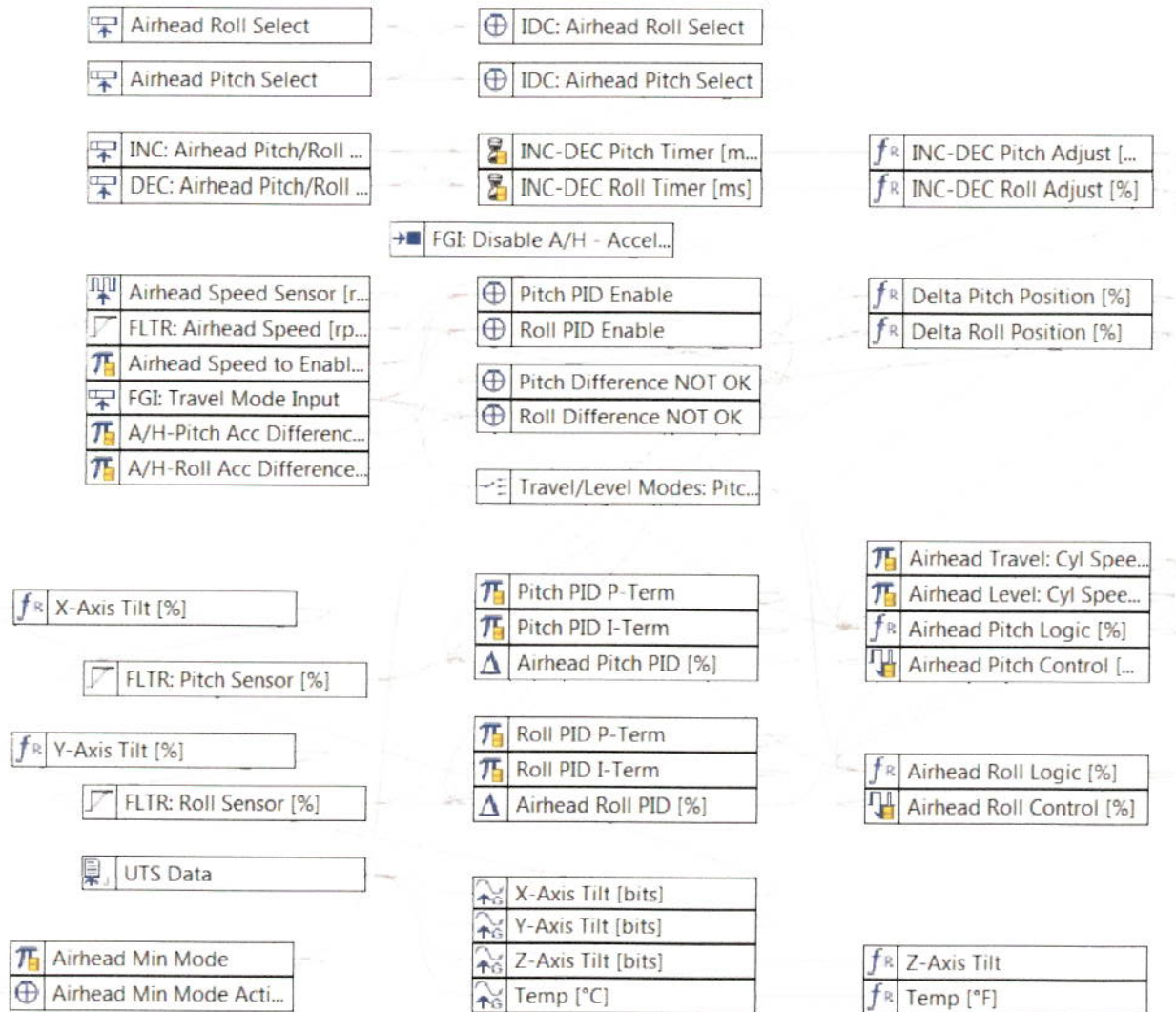
2.5.1. Internal channels

Channel	Description
Status:MC43[1]	
S/N:MC43[1]	
Temp:MC43[1] [°C]	
Address:MC43[1]	
+BAT:MC43[1] [V]	
VREF-A:MC43[1] [V]	
VREF-B:MC43[1] [V]	

2.6. Airhead Pitch/Roll Control

2.6.1. Interface description

Inputs FGI: Disable A/H - Accel High Digital

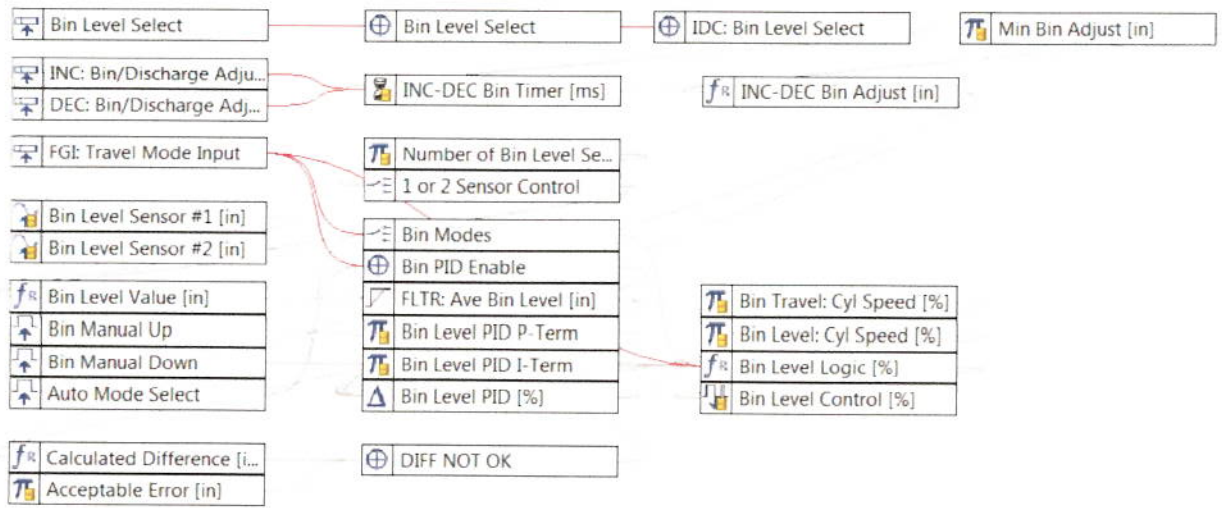


2.6.2. Internal channels

Channel	Description
Airhead Travel: Cyl Speed [%]	
Airhead Min Mode	
FGI: Travel Mode Input	
Travel/Level Modes: Pitch	
Airhead Level: Cyl Speed [%]	
Airhead Speed to Enable Leveling [rpm]	
Airhead Speed Sensor [rpm]	

Channel	Description
	FLTR: Airhead Speed [rpm]
	Airhead Roll Select
	Airhead Pitch Select
	IDC: Airhead Pitch Select
	DEC: Airhead Pitch/Roll Adjust
	INC: Airhead Pitch/Roll Adjust
	INC-DEC Pitch Timer [ms]
	INC-DEC Pitch Adjust [%]
	UTS Data
	X-Axis Tilt [bits]
	X-Axis Tilt [%]
	FLTR: Pitch Sensor [%]
	Delta Pitch Position [%]
	A/H-Pitch Acc Difference [%]
	A/H-Roll Acc Difference [%]
	IDC: Airhead Roll Select
	INC-DEC Roll Timer [ms]
	INC-DEC Roll Adjust [%]
	Y-Axis Tilt [bits]
	Y-Axis Tilt [%]
	FLTR: Roll Sensor [%]
	Delta Roll Position [%]
	Pitch Difference NOT OK
	FGI: Disable A/H - Accel High
	Pitch PID Enable
	Roll PID P-Term
	Roll PID I-Term
	Roll Difference NOT OK
	Roll PID Enable
	Airhead Roll PID [%]
	Airhead Roll Logic [%]
	Airhead Roll Control [%]
	Pitch PID P-Term
	Pitch PID I-Term
	Airhead Pitch PID [%]
	Airhead Pitch Logic [%]
	Airhead Pitch Control [%]
	Z-Axis Tilt [bits]
	Temp [°C]
	Z-Axis Tilt
	Temp [°F]
	Airhead Min Mode Active

2.7. Bin Level



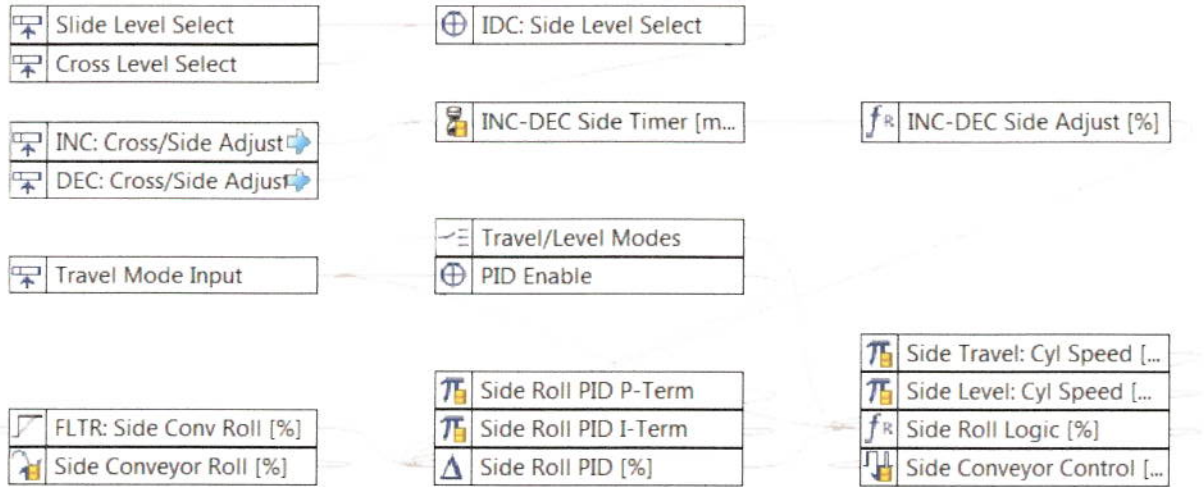
2.7.1. Internal channels

Channel	Description
Bin Manual Down	
Bin Manual Up	
Auto Mode Select	
Bin Modes	
IDC: Bin Level Select	
INC-DEC Bin Timer [ms]	
Min Bin Adjust [in]	
INC-DEC Bin Adjust [in]	
Bin Level PID P-Term	
Bin Level PID I-Term	
Bin Level Sensor #1 [in]	
Bin Level Sensor #2 [in]	
Number of Bin Level Sensors	
1 or 2 Sensor Control	
Bin Level Value [in]	
FLTR: Ave Bin Level [in]	
Calculated Difference [in]	
Acceptable Error [in]	
DIFF NOT OK	
Bin PID Enable	
Bin Level PID [%]	
Bin Travel: Cyl Speed [%]	
Bin Level: Cyl Speed [%]	
Bin Level Logic [%]	
Bin Level Control [%]	
Bin Level Select	
Bin Level Select	
INC: Bin/Discharge Adjust	
DEC: Bin/Discharge Adjust	
FGI: Travel Mode Input	

2.8. Side Conveyor Control

2.8.1. Interface description

Outputs INC: Cross/Side Adjust
 DEC: Cross/Side Adjust



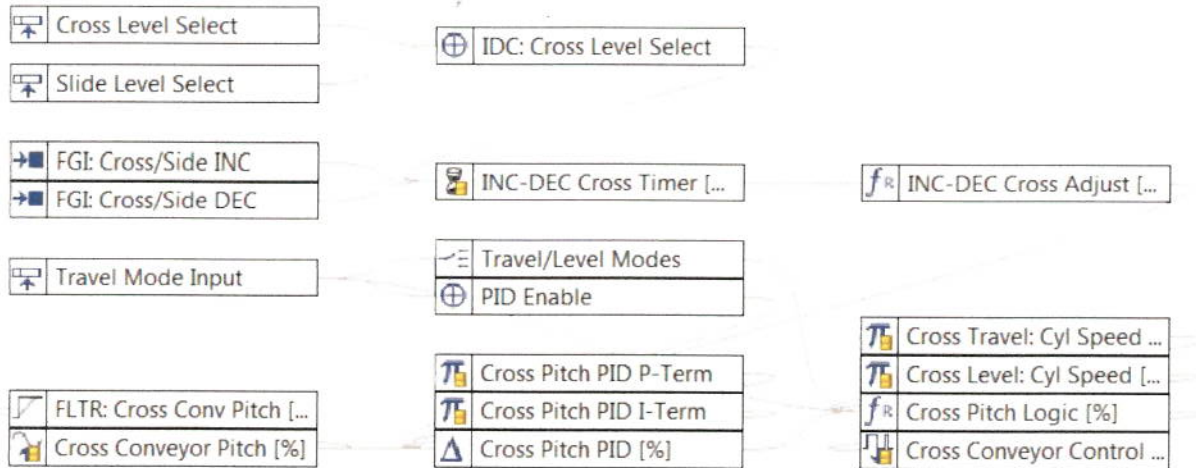
2.8.2. Internal channels

Channel	Description
Travel Mode Input	
Travel/Level Modes	
Side Travel: Cyl Speed [%]	
Side Level: Cyl Speed [%]	
Side Conveyor Roll [%]	
Slide Level Select	
Cross Level Select	
IDC: Side Level Select	
INC: Cross/Side Adjust	
DEC: Cross/Side Adjust	
INC-DEC Side Timer [ms]	
INC-DEC Side Adjust [%]	
PID Enable	
Side Roll PID P-Term	
Side Roll PID I-Term	
FLTR: Side Conv Roll [%]	
Side Roll PID [%]	
Side Roll Logic [%]	
Side Conveyor Control [%]	

2.9. Cross Conveyor Control

2.9.1. Interface description

Inputs FGI: Cross/Side INC Digital
 FGI: Cross/Side DEC Digital



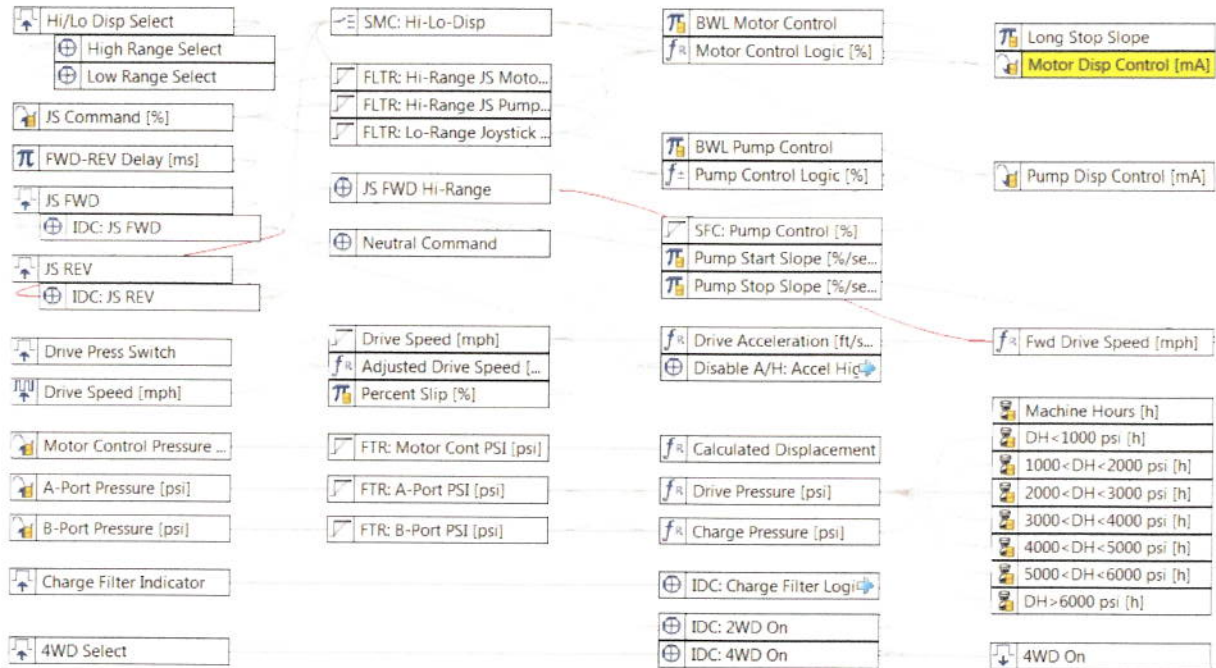
2.9.2. Internal channels

Channel	Description
Travel Mode Input	
Travel/Level Modes	
PID Enable	
Cross Travel: Cyl Speed [%]	
Slide Level Select	
Cross Level Select	
IDC: Cross Level Select	
FGI: Cross/Side INC	
FGI: Cross/Side DEC	
INC-DEC Cross Timer [ms]	
INC-DEC Cross Adjust [%]	
Cross Pitch PID P-Term	
Cross Pitch PID I-Term	
Cross Conveyor Pitch [%]	
FLTR: Cross Conv Pitch [%]	
Cross Pitch PID [%]	
Cross Level: Cyl Speed [%]	
Cross Pitch Logic [%]	
Cross Conveyor Control [%]	

2.10. Ground Drive Control

2.10.1. Interface description

Outputs IDC: Charge Filter Logic
Disable A/H: Accel High



2.10.2. Internal channels

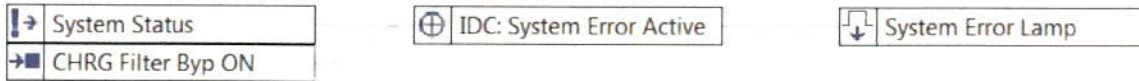
Channel	Description
JS Command [%]	
A-Port Pressure [psi]	
B-Port Pressure [psi]	
Motor Control Pressure [psi]	
Charge Filter Indicator	
4WD Select	
Drive Speed [mph]	
JS FWD	
JS REV	
Drive Press Switch	
FWD-REV Delay [ms]	
IDC: JS REV	
IDC: JS FWD	
Drive Speed [mph]	
Neutral Command	
IDC: 4WD On	
IDC: 2WD On	
Hi/Lo Disp Select	

Channel	Description
	High Range Select
	Low Range Select
	Fwd Drive Speed [mph]
	JS FWD Hi-Range
	SMC: Hi-Lo-Disp
	FLTR: Hi-Range JS Pump [%]
	FLTR: Lo-Range Joystick Command [%]
	Pump Control Logic [%]
	Pump Stop Slope [%/sec]
	Pump Start Slope [%/sec]
	SFC: Pump Control [%]
	BWL Pump Control
	Pump Disp Control [mA]
	BWL Motor Control
	FLTR: Hi-Range JS Motor [%]
	Motor Control Logic [%]
	Long Stop Slope
	Motor Disp Control [mA]
	IDC: Charge Filter Logic
	FTR: Motor Cont PSI [psi]
	FTR: A-Port PSI [psi]
	FTR: B-Port PSI [psi]
	Calculated Displacement
	Charge Pressure [psi]
	Drive Pressure [psi]
	Percent Slip [%]
	Adjusted Drive Speed [mph]
	Machine Hours [h]
	DH<1000 psi [h]
	2000<DH<3000 psi [h]
	3000<DH<4000 psi [h]
	4000<DH<5000 psi [h]
	5000<DH<6000 psi [h]
	1000<DH<2000 psi [h]
	DH>6000 psi [h]
	4WD On
	Drive Acceleration [ft/sec^2]
	Disable A/H: Accel High

2.11. System

2.11.1. Interface description

Inputs CHRNG Filter Byp ON Digital



2.11.2. Internal channels

Channel	Description
System Status	
CHRNG Filter Byp ON	
IDC: System Error Active	
System Error Lamp	

3. Diagnostics

3.1. Measure groups

Name	Description	Access level
Bin Level Control		Allow all
Airhead Pitch		Allow all
Airhead Roll		Allow all
Ground Drive		Allow all
JS vs Speed		Allow all

3.2. Adjust groups

Name	Description	Access level	
		View/adjust	Set factory default
Function Selector		Allow all	Allow all
Airhead On/Off			
Bin Level On/Off			
Side On/Off			
Cross On/Off			
Ground Drive On/Off			
Bin Level Adjust		Allow all	Allow all
Number of Bin Level Sensors			
Bin Level Sensor #1			
Bin Level Sensor #2			
Bin Level PID P-Term			
Bin Level PID I-Term			
Bin Travel: Cyl Speed			
Bin Level: Cyl Speed			
Bin Level Control			
Acceptable Error			
Min Bin Adjust			
Airhead Adjust		Allow all	Allow all
Airhead Pitch Control			
Pitch PID P-Term			
Pitch PID I-Term			
Airhead Roll Control			
Roll PID P-Term			
Roll PID I-Term			
Airhead Travel: Cyl Speed			
Airhead Level: Cyl Speed			
Airhead Speed to Enable Leveling			
A/H-Roll Acc Difference			
A/H-Pitch Acc Difference			
Airhead Min Mode			
Ground Drive Adjust		Allow all	Allow all
JS Command			
Motor Disp Control			
Motor Control Pressure			

Name	Description	Access level	
		View/adjust	Set factory default
BWL Motor Control			
Pump Disp Control			
Pump Start Slope			
Pump Stop Slope			
A-Port Pressure			
B-Port Pressure			
BWL Pump Control			
Percent Slip			
Long Stop Slope			
Cross Adjust		Allow all	Allow all
Cross Conveyor Pitch			
Cross Pitch PID P-Term			
Cross Pitch PID I-Term			
Cross Travel: Cyl Speed			
Cross Level: Cyl Speed			
Cross Conveyor Control			
Side Adjust		Allow all	Allow all
Side Conveyor Roll			
Side Roll PID P-Term			
Side Roll PID I-Term			
Side Travel: Cyl Speed			
Side Level: Cyl Speed			
Side Conveyor Control			

3.3. Adjust items

Name	Description	Min	Max
Side Conveyor Control			
Min MR + [%]		0	50
Max MR + [%]		0	100
Start slope + [ms]		0	1000
Stop slope + [ms]		0	1000
Min MR - [%]		0	50
Max MR - [%]		0	100
Start slope - [ms]		0	1000
Stop slope - [ms]		0	1000
Side Level: Cyl Speed			
Value [%]		10	100
Side Travel: Cyl Speed			
Value [%]		10	100
Side Roll PID I-Term			
Value		0	5
Side Roll PID P-Term			
Value		0	5
Side Conveyor Roll			
Min [mV]		0	5000

Name	Description	Min	Max
Max [mV]		0	5000
Cross Conveyor Control			
Min MR + [%]		0	50
Max MR + [%]		0	100
Start slope + [ms]		0	1000
Stop slope + [ms]		0	1000
Min MR - [%]		0	50
Max MR - [%]		0	100
Start slope - [ms]		0	1000
Stop slope - [ms]		0	1000
Cross Level: Cyl Speed			
Value [%]		10	100
Cross Travel: Cyl Speed			
Value [%]		10	100
Cross Pitch PID I-Term			
Value		0	5
Cross Pitch PID P-Term			
Value		0	5
Cross Conveyor Pitch			
Min [mV]		0	5000
Max [mV]		0	5000
Percent Slip			
Value [%]		0	10
BWL Pump Control			
Value		0	100
B-Port Pressure			
Min [mV]		250	750
Max [mV]		4250	4750
A-Port Pressure			
Min [mV]		250	750
Max [mV]		4250	4750
Pump Stop Slope			
Value [%/sec]		0	200
Pump Start Slope			
Value [%/sec]		0	200
Pump Disp Control			
Min + [mA]		0	1500
Max + [mA]		0	1500
Start + [ms]		0	20000
Stop + [ms]		0	20000
Min - [mA]		0	1500
Max - [mA]		0	1500
Start - [ms]		0	10000
Stop - [ms]		0	10000
BWL Motor Control			
Value		0	100
Motor Control Pressure			
Min [mV]		250	750

Name	Description	Min	Max
Max [mV]		4250	5000
Motor Disp Control			
Min [mA]		0	1500
Max [mA]		0	1500
Start [ms]		0	20000
Stop [ms]		0	30000
JS Command			
Min [mV]		0	5000
Max [mV]		0	5000
A/H-Roll Acc Difference			
Value [%]		0	5
A/H-Pitch Acc Difference			
Value [%]		0	5
Airhead Speed to Enable Leveling			
Value [rpm]		0	1000
Airhead Level: Cyl Speed			
Value [%]		10	100
Airhead Travel: Cyl Speed			
Value [%]		10	100
Roll PID I-Term			
Value		0	5
Roll PID P-Term			
Value		0	8
Airhead Roll Control			
Min MR + [%]		0	50
Max MR + [%]		0	100
Start slope + [ms]		0	1000
Stop slope + [ms]		0	1000
Min MR - [%]		0	50
Max MR - [%]		0	100
Start slope - [ms]		0	1000
Stop slope - [ms]		0	1000
Pitch PID I-Term			
Value		0	5
Pitch PID P-Term			
Value		0	5
Airhead Pitch Control			
Min MR + [%]		0	50
Max MR + [%]		0	100
Start slope + [ms]		0	1000
Stop slope + [ms]		0	1000
Min MR - [%]		0	50
Max MR - [%]		0	100
Start slope - [ms]		0	1000
Stop slope - [ms]		0	1000
Min Bin Adjust			
Value [in]		10	15
Acceptable Error			

Name	Description	Min	Max
Value [in]		0	3
Bin Level Control			
Min MR + [%]		0	50
Max MR + [%]		0	100
Start slope + [ms]		0	1000
Stop slope + [ms]		0	1000
Min MR - [%]		0	50
Max MR - [%]		0	100
Start slope - [ms]		0	1000
Stop slope - [ms]		0	1000
Bin Level: Cyl Speed			
Value [%]		10	100
Bin Travel: Cyl Speed			
Value [%]		10	100
Bin Level PID I-Term			
Value		0	3
Bin Level PID P-Term			
Value		0	10
Bin Level Sensor #2			
Min [mV]		0	5000
Max [mV]		0	5000
Bin Level Sensor #1			
Min [mV]		0	5000
Max [mV]		0	5000
Number of Bin Level Sensors			
Value		1	2
Ground Drive On/Off			
Value		0	1
Cross On/Off			
Value		0	1
Side On/Off			
Value		0	1
Bin Level On/Off			
Value		0	1
Airhead On/Off			
Value		0	1
Airhead Min Mode			
Value		0	1
Long Stop Slope			
Value		Unlimited	Unlimited

3.4. Logs

Name	Description	Access level	
		View	Clear
System log	Logs system events. Can not be removed.	Allow all	Allow all
MC43[1] log	Logs system events. Can not be removed.	Allow all	Allow all

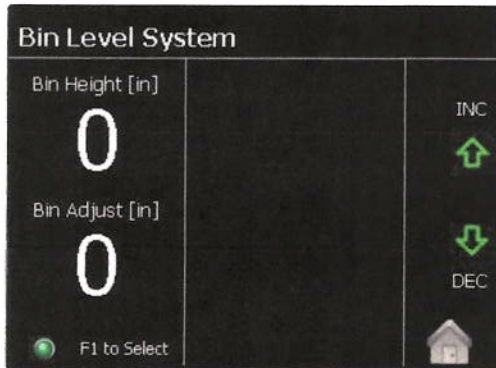
4. Display pages

4.1. Master Display

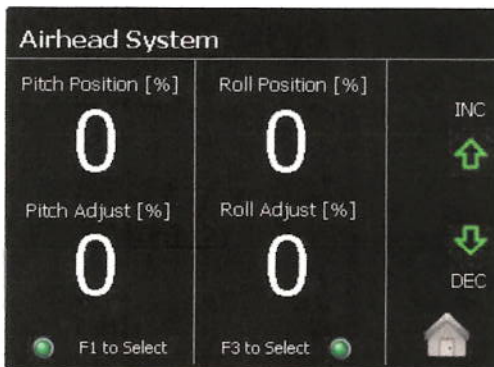
4.1.1. Home



4.1.2. Bin



4.1.3. Airhead



4.1.4. Ground Drive

Ground Drive System

Speed [mph] 0.0	Drive Mode 2WD	FWD
Drive [psi] 0	Hi/Lo Range HIGH	↑
	Motor Disp [psi] 0	NEU
	Charge [psi] 0	↓
		REV

4.1.5. Other

AFE ADVANCED FARM EQUIPMENT, LLC

Advanced Control Center



Engine Calibration Help

4.1.6. Cross/Side

Cross & Side Conveyor Systems

Cross Position [%] 0	Side Position [%] 0	INC
Cross Adjust [%] 0	Side Adjust [%] 0	↓
● F1 to Select	● F3 to Select	DEC

5. Security

5.1. Root

The highest access level possible. Can not be removed.

User name	Description	Administrator
Superuser		Yes