This worksheet is being provided to ensure that the AccuLoad III-SA hardware contains enough I/O for the application. This worksheet should be filled out for every application. The AccuLoad III-SA hardware is capable of controlling up to eighteen arms in straight arm loading applications, and up to six products per arm in sequential blending and/or ratio blending applications. When configured for ratio blending, the AccuLoad III-SA is capable of controlling six product streams per board set. Contact your local Smith representative if you have any questions about this worksheet.

	Board Sets																							
Frequency Inputs	***SAA***						***SAB***						***SAC***						***SAD***					
Product Meter Pulses	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
For dual pulse meters, two per meter	7	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12
Density	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Additive Meter	1	2	3	4			1	2	3	4			1	2	3	4			1	2	3	4		
Flow Controlled Additive Meter (Single Pulse)	1	2	3	4			1	2	3	4			1	2	3	4			1	2	3	4		
Flow Controlled Additive Meter (Dual Pulse)	5	6	7	8			5	6	7	8			5	6	7	8			5	6	7	8		
Total	12 or less						12 or less						12 or less						12 or less					

Note: *AICB boards can be added to provide additional pulse inputs for additive meters. One AICB board adds 10 additional additive meter inputs per board set. Flow Controlled Additives must be wired to the PIB boards in the FCM.*

	Board Sets																							
Analog I/O	***SAA***						***SAB***						***SAC***						***SAD***					
Inputs																								
RTD (Temp)	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
4-20 mA (Temp., Density, Pressure, General)	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
1-5 Vdc (Temp., Density, Pressure, General)	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Outputs																								
4-20 mA (Valve Control, Flow Rate, General)	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
1-5 Vdc (Valve Control, Flow Rate, General)	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Total	6 or less						6 or less						6 or less						6 or less					

	Board Sets																							
Digital Inputs	***SAA***						***SAB***						***SAC***						***SAD***					
AC																								
Security	1	2					1	2					1	2					1	2				
Arm Permissive (Max 2 per arm)	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
	7	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12
Second High Flow Rate (1 per arm)	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Remote Start Arm	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Remote Stop	1						1						1						1					
Remote Stop Arm	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Transaction Reset (1 per arm)	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
General Purpose	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
	7	8	9				7	8	9				7	8	9				7	8	9			
Print Tray Switch	1	2					1	2					1	2					1	2				
Block Valve Feedback	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
	7	8	9				7	8	9				7	8	9				7	8	9			
Piston Injector Feedback	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
	7	8	9				7	8	9				7	8	9				7	8	9			
System Permissive	1	2	3				1	2	3				1	2	3				1	2	3			
Swing Arm Side A	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Swing Arm Side B	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
DE Head Stop Flow	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
DE Head Low Flow	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
DE Head High Flow	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Bay A Permissive 1	1	2																						
Bay B Permissive 1	1	2																						
Meter Injector Prove	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Total	9 or less						9 or less						9 or less						9 or less					

	Board Sets																							
Digital Inputs	***SAA***						***SAB***						***SAC***						***SAD***					
DC																								
Security	1	2					1	2					1	2					1	2				
Arm Permissive (Max 2 per arm)	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
	7	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12
Second High Flow Rate (1 per arm)	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Remote Start Arm	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Remote Stop	1						1						1						1					
Remote Stop Arm	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Transaction Reset (1 per arm)	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
General Purpose	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
	7	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12
	13	14	15	16	17	18	13	14	15	16	17	18	13	14	15	16	17	18	13	14	15	16	17	18
	19	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	24
Print Tray Switch	1	2					1	2					1	2					1	2				
Block Valve Feedback	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
	7	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12
	13	14	15	16	17	18	13	14	15	16	17	18	13	14	15	16	17	18	13	14	15	16	17	18
	19	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	24
Piston Injector Feedback	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
	7	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12
	13	14	15	16	17	18	13	14	15	16	17	18	13	14	15	16	17	18	13	14	15	16	17	18
	19	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	24
System Permissive	1	2	3				1	2	3				1	2	3				1	2	3			
Swing Arm Side A	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Swing Arm Side B	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
DE Head Stop Flow	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
DE Head Low Flow	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
DE Head High Flow	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Bay A Permissive 1	1	2					1	2					1	2					1	2				

	Board Sets																							
Digital Inputs	***SAA***						***SAB***						***SAC***						***SAD***					
DC																								
Bay B Permissive 1	1	2					1	2					1	2					1	2				
Meter Injector Prove	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Total	14 or less, 24 or less with optional AIBC						14 or less, 24 or less with optional AIBC						14 or less, 24 or less with optional AIBC						14 or less, 24or less with optional AIBC					

Note: *Eight shared digital I/O points are programmable between DC digital inputs and DC digital outputs. The number indicated here is the maximum if all programmed as inputs or all programmed as outputs.*

	Board Sets																							
Digital Outputs	***SAA***						***SAB***						***SAC***						***SAD***					
AC																								
Product Pumps (Seq. Blend 1 per arm)	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Upstream Solenoids	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Downstream Solenoids	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Alarm Relay	1	2					1	2					1	2					1	2				
General Purpose	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
	7	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12
	13	14	15	16	17	18	13	14	15	16	17	18	13	14	15	16	17	18	13	14	15	16	17	18
	19	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	24
	25	26	27				25	26	27				25	26	27				25	26	27			
Block Valve	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
	7	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12
	13	14	15	16	17	18	13	14	15	16	17	18	13	14	15	16	17	18	13	14	15	16	17	18
	19	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	24
	25	26	27				25	26	27				25	26	27				25	26	27			
Stop Relay (1 per arm)	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Additive Pumps	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
	7	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12
	13	14	15	16	17	18	13	14	15	16	17	18	13	14	15	16	17	18	13	14	15	16	17	18
	19	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	24
Piston Injectors	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
	7	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12
	13	14	15	16	17	18	13	14	15	16	17	18	13	14	15	16	17	18	13	14	15	16	17	18
	19	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	24
Metered Injectors (Solenoids)	1	2	3	4			1	2	3	4			1	2	3	4			1	2	3	4		

	Board Sets																							
Digital Outputs	***SAA***						***SAB***						***SAC***						***SAD***					
Shared Additive Solenoids	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
	7	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12
	13	14	15	16	17	18	13	14	15	16	17	18	13	14	15	16	17	18	13	14	15	16	17	18
	19	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	24
Shared Additive Flush	1	2	3	4			1	2	3	4			1	2	3	4			1	2	3	4		
Flow Controlled Additive Upstream Solenoids	1	2	3	4			1	2	3	4			1	2	3	4			1	2	3	4		
Flow Controlled Additive Downstream Solenoids	1	2	3	4			1	2	3	4			1	2	3	4			1	2	3	4		
Total	27 or less 47 or less with optional AIBC						27 or less 47 or less with optional AIBC						27 or less 47 or less with optional AIBC						27 or less 47 or less with optional AIBC					

Note: *Additive pumps and solenoid outputs are fixed on the AICB when more than 4 metered additives are programmed. It is recommended that if the AICB board is required for additional metered additives, that all additives be connected to the AICB board.*

	Board Sets																							
Digital Outputs	***SAA***						***SAB***						***SAC***						***SAD***					
DC																								
Product Pumps (Seq. Blend 1 per arm)	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Upstream Solenoids	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Downstream Solenoids	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Arm Relay	1	2					1	2					1	2					1	2				
General Purpose	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
	7	8	9	10	11		7	8	9	10	11		7	8	9	10	11		7	8	9	10	11	
Block Valve	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
	7	8	9	10	11		7	8	9	10	11		7	8	9	10	11		7	8	9	10	11	
Stop Relay (1 per arm)	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Additive Pumps	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
	7	8	9	10	11		7	8	9	10	11		7	8	9	10	11		7	8	9	10	11	
Piston Injectors	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
	7	8	9	10	11		7	8	9	10	11		7	8	9	10	11		7	8	9	10	11	
Metered Injectors (Solenoids)	1	2	3	4			1	2	3	4			1	2	3	4			1	2	3	4		
Shared Additive Solenoids	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
	7	8	9	10	11		7	8	9	10	11		7	8	9	10	11		7	8	9	10	11	
Shared Additive Flush	1	2	3	4			1	2	3	4			1	2	3	4			1	2	3	4		
Flow Controlled Additive Up-stream Solenoids	1	2	3	4			1	2	3	4			1	2	3	4			1	2	3	4		
Flow Controlled Additive Downstream Solenoids	1	2	3	4			1	2	3	4			1	2	3	4			1	2	3	4		
Total	11 or less						11 or less						11 or less						11 or less					

Note: *Additive pumps and solenoid outputs are fixed on the AICB when more than 4 metered additives are programmed.*

Note: *Eight shared digital I/O points are programmable between DC digital inputs and DC digital outputs. The number indicated here is the maximum if all programmed as inputs or all programmed as outputs.*

AccuLoad III-SA Model Number (Refer to Specification Sheet SS06039)

Man Machine Interface

ALIII – MMI - ALXM - __*__ - __**__ - ***

*	**
0	0
1	1

* Stop Button (0: None; 1: 120/240 volts AC)
**Indicator Lights (0: None; 1: 120 volts AC Red/Green, 2: 240 volts AC Red/Green,3: 120 volts AC Green/Green)
***Hardware Options (0: None, 1: Card Reader, 2: Captive Card Reader)

Flow Control Module

ALIII – FCM - __*__ - __**__ __***__

*	**	***
SA2	1	0 - 50
SA4	2	
SA6	3	
SA8	4	
SA10		
SA12		
SA14		
SA16		
SA18		

* Number of Loading Arms
** Number of Board Sets
*** Number of Fuse Holders

Board Set Modeling

SA __*__ - __**__ - ____A****____ - ____***____

*	**	A****	***
A	ALX1	RTDs	Blank
B	ALX2	4-20 mA In	A – AICB Board
C	ALX3	4-20 mA Out	
D	ALX4	1-5 Vdc In	
	ALX5	1-5 Vdc Out	
	ALX6		

* Board Set Designation
** Firmware
*** Analog Modules
****Hardware Options

When adding an AICB board to the assembly, it can either be mounted locally or remotely. It is recommended that the AICB be mounted at or near the additive injector panel to save on wiring costs. All that is needed back to the AccuLoad III is +24 Vdc and a communication cable. Consideration should be given to mounting the AICB in the remote housing any time the additive panel is a considerable distance away from the AccuLoad. The cost of running +24 Vdc and one communication wire versus the remote housing and all the additive wiring should be considered.

Revisions included in AB06048 Issue/Rev.0.1 (6/05):
Added updated features for meter prove and flow control additive.

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