

### AccuLoad II to III-S Hardware

This worksheet is being provided to ensure that the AccuLoad II to III-S hardware contains enough I/O for the application. The AccuLoad II to III-S hardware is capable of controlling up to two arms in straight arm loading applications, two arms with sequential blending with 6 products per arm, and two arms with ratio blending with two products per arm. If one arm is used with ratio blending it can blend up to four products. Contact your local FMC Technologies representative if you have any questions about this worksheet.

<b>Pulse Inputs</b>	<b>Circle Number Required</b>				
Product Meter Pulses	1	2	3	4	(For dual pulse meters, 2 per meter. For xmit integrity, 3 per meter)
	5	6			
Density	1	2	3		
Additive Meter	1	2	3	4	
Flow Controlled Additive Meter	1	2	3	4	(For dual pulse meters, 2 per meter)
<b>Total</b>	6 or less				

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

<b>Analog Inputs</b>	<b>Circle Number Required</b>					
RTD (Temperature)	1	2	3	4	5	6
4-20 mA (Temperature, Density, Pressure, General)	1	2	3	4	5	6
1-5 Vdc (Temperature, Density, Pressure, General)	1	2	3	4	5	6
<b>Analog Outputs</b>						
4-20 mA (Valve Control, Flow Rate, General)	1	2	3	4	5	6
1-5 Vdc (Valve Control, Flow Rate, General)	1	2	3	4	5	6
<b>Total Analog Inputs and Outputs</b>	6 or less					

<b>AC Digital Inputs</b>	<b>Circle Number Required</b>
Security	1 2
Arm Permissive (Maximum 2 per arm)	1 2 3 4
Second High Flow Rate (1 per arm)	1 2
Remote Start Arm	1 2
Remote Stop	1
Remote Stop Arm	1 2
Transaction Reset (1 per arm)	1 2
General Purpose	1 2 3 4 5
Print Tray Switch	1 2
Block Valve Feedback	1 2 3 4 5
Piston Injector Feedback	1 2 3 4 5
System Permissive	1 2 3
Swing Arm Side A	1 2
Swing Arm Side B	1 2
DE Head Stop Flow	1 2
DE Head Low Flow	1 2
DE Head High Flow	1 2
Bay A Permissive	1 2
Bay B Permissive	1 2
Meter Injector Prove	1
<b>Total</b>	5 or less

<b>DC Digital Inputs</b>	<b>Circle Number Required</b>															
Security	1	2														
Arm Permissive (Maximum 2 per arm)	1	2	3	4												
Second High Flow Rate (1 per arm)	1	2														
Remote Start Arm	1	2														
Remote Stop	1															
Remote Stop Arm	1	2														
Transaction Reset (1 per arm)	1	2														
General Purpose	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Print Tray Switch (1 per arm)	1	2														
Block Valve Feedback	1	2	3	4	5	6	7	8	9	10	11	12				
Piston Injector Feedback <sup>1</sup>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
System Permissive	1	2	3													
Swing Arm Side A	1	2														
Swing Arm Side B	1	2														
DE Head Stop Flow	1	2														
DE Head Low Flow	1	2														
DE Head High Flow	1	2														
Bay A Permissive	1	2														
Bay B Permissive	1	2														
Meter Injector Prove	1															
<b>Total</b>	6 or less Standard 16 or less with optional AICB board															

**Note:** <sup>1</sup> AICB DC Inputs not recommended for Piston Injector feedback.

<b>AC Digital Outputs</b>	<b>Circle Number Required</b>													
Product Pumps (Sequential Blending, 1 per arm)	1	2												
Upstream Solenoids <sup>2</sup>	1	2	3	4										
Downstream Solenoids <sup>2</sup>	1	2	3	4										
Alarm Relay	1	2												
General Purpose	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	15	16	17	18	19	20	21	22	23	24	25	26	27	28
	29	30	31											
Block Valve	1	2	3	4	5	6	7	8	9	10	11	12		
Stop Relay (1 per arm)	1	2												
Additive Pumps <sup>1</sup>	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	15	16	17	18	19	20	21	22	23	24				
Piston Injectors	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	15	16	17	18	19	20	21	22	23	24				
Metered Injectors (Solenoids) <sup>1</sup>	1	2	3	4										
Shared Additive Solenoids	1	2	3	4	5	6	7	8	9					
Shared Additive Flush	1	2	3	4										
Flow Controlled Additive Upstream Solenoid	1	2	3	4										
Flow Controlled Additive Downstream Solenoid <sup>2</sup>	1	2	3	4										
<b>Total</b>	11 or less Standard 31 or less with optional AICB board													

*1 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.*

*2 Upstream and downstream solenoids should be programmed and wired on EAAI AccuLoad board.*

<b>DC Digital Outputs</b>	<b>Circle Number Required</b>		
Product Pumps (Sequential Blending, 1 per arm)	1	2	3
Alarm Relay	1	2	
General Purpose	1	2	3
Block Valve	1	2	3
Stop Relay (1 per arm)	1	2	
Additive Pumps	1	2	3
Piston Injectors	1	2	3
Shared Additive Flush	1	2	3
<b>Total</b>	3 or less		

### **AccuLoad II to III-Q Hardware**

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

<b>Pulse Inputs</b>	<b>Circle Number Required</b>								
Product Meter Pulses (Maximum six meters)	1	2	3	4	5	6	7	8	(For dual pulse meters, 2 per meter) (for xmit integrity, 3 per meter)
	9	10	11	12					
Density	1	2	3	4					
Additive Meter	1	2	3	4					
Flow Controlled Addi- tive Meter	1	2	3	4	5	6	7	8	(For dual pulse meters, 2 per meter)
<b>Total</b>	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. A second AICB board adds 10 more additive meter inputs, for a total of 20 additional additive meters. Flow Controlled Additives must be wired to the PIB Board.

<b>Analog Inputs</b>	<b>Circle Number Required</b>					
RTD (Temperature)	1	2	3	4	5	6
4-20 mA (Temperature, Density, Pressure, General)	1	2	3	4	5	6
1-5 Vdc (Temperature, Density, Pressure, General)	1	2	3	4	5	6
<b>Analog Outputs</b>						
4-20 mA (Valve Control, Flow Rate, General)	1	2	3	4	5	6
1-5 Vdc (Valve Control, Flow Rate, General)	1	2	3	4	5	6
<b>Total Analog Inputs and Outputs</b>	6 or less					

<b>AC Digital Inputs</b>	<b>Circle Number Required</b>								
Security	1	2							
Arm Permissive (Maximum 2 per arm)	1	2							
Second High Flow Rate (1 per arm)	1	2							
Remote Start Arm	1	2							
Remote Stop	1								
Remote Stop Arm	1	2							
Transaction Reset (1 per arm)	1	2							
General Purpose	1	2	3	4	5	6	7	8	9
Print Tray Switch	1	2							
Block Valve Feedback	1	2	3	4	5	6	7	8	9
Piston Injector Feedback	1	2	3	4	5	6	7	8	9
System Permissive	1	2	3						
Swing Arm Side A	1	2							
Swing Arm Side B	1	2							
DE Head Stop Flow	1	2							
DE Head Low Flow	1	2							
DE Head High Flow	1	2							
Bay A Permissive	1	2							
Bay B Permissive	1	2							
Meter Injector Prove	1								
<b>Total</b>	9 or less								

<b>DC Digital Inputs</b>	<b>Circle Number Required</b>
Security	1 2
Arm Permissive (Maximum 2 per arm)	1 2 3 4
Second High Flow Rate (1 per arm)	1 2
Remote Start Arm	1 2
Remote Stop	1
Remote Stop Arm	1 2
Transaction Reset (1 per arm)	1 2
General Purpose	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Print Tray Switch	1 2
Block Valve Feedback	1 2 3 4 5 6 7 8 9 10 11 12
Piston Injector Feedback	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
System Permissive	1 2 3
Swing Arm Side A	1 2
Swing Arm Side B	1 2
DE Head Stop Flow	1 2
DE Head Low Flow	1 2
DE Head High Flow	1 2
Bay A Permissive	1 2
Bay B Permissive	1 2
Meter Injector Prove	1
<b>Total</b>	14 or less Standard 24 or less with one optional AICB board 34 or less with two optional AICB boards

**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.

<b>AC Digital Outputs</b>	<b>Circle Number Required</b>
Product Pumps (Sequential Blending, 1 per arm)	1 2
Upstream Solenoids <sup>2</sup>	1 2 3 4
Downstream Solenoids <sup>2</sup>	1 2 3 4
Alarm Relay	1 2
General Purpose	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
Block Valve	1 2 3 4 5 6 7 8 9 10 11 12
Stop Relay (1 per arm)	1 2
Additive Pumps <sup>1</sup>	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Piston Injectors	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Metered Injectors (Solenoids) <sup>1</sup>	1 2 3 4
Shared Additive Solenoids	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Shared Additive Flush	1 2 3 4
Flow Controlled Additive Upstream Solenoid <sup>2</sup>	1 2 3 4
Flow Controlled Additive Downstream Solenoid <sup>2</sup>	1 2 3 4
<b>Total</b>	27 or less Standard 47 or less with one optional AICB board 67 or less with two optional AICB boards

*1 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.*

*2 Upstream and downstream solenoids should be programmed and wired on EAAI or BSE AccuLoad board.*

<b>DC Digital Outputs<sup>4</sup></b>	<b>Circle Number Required</b>										
Product Pumps (Sequential Blending, 1 per arm)	1	2									
Upstream Solenoids <sup>2</sup>	1	2	3	4							
Downstream Solenoids <sup>2</sup>	1	2	3	4							
Alarm Relay	1	2									
General Purpose	1	2	3	4	5	6	7	8	9	10	11
Block Valve	1	2	3	4	5	6	7	8	9	10	11
Stop Relay (1 per arm)	1	2									
Additive Pumps <sup>1</sup>	1	2	3	4	5	6	7	8	9	10	11
Piston Injectors	1	2	3	4	5	6	7	8	9	10	11
Metered Injectors (Solenoids) <sup>1</sup>	1	2	3	4							
Shared Additive Solenoids	1	2	3	4	5	6	7	8	9	10	11
Shared Additive Flush	1	2	3	4							
Flow Controlled Additive Upstream Solenoid <sup>2</sup>	1	2	3	4							
Flow Controlled Additive Downstream Solenoid <sup>2</sup>	1	2	3	4							
<b>Total</b>	11 or less										

*1 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.*

*2 Upstream and downstream solenoids should be programmed and wired on EAAI or BSE AccuLoad board.*

*4 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.*

Revisions included in AB06051 Issue/Rev.0.2 (2/08):

Page 1: Revised Pulse Inputs table

Page 3: Added numbers to DC Digital Inputs table

Page 4: Updated notes on the AC Digital Outputs table, revised numbers in both tables, omitted solenoids in DC Digital Outputs table

Page 5: Increased the possible number of Product Meter Pulses from 8 to 12 and increased the possible number of Flow Controlled Additive Meters from 6 to 8

Page 6-9: Omitted numbers

The specifications contained herein are subject to change without notice and any user of said specifications should verify from the manufacturer that the specifications are currently in effect. Otherwise, the manufacturer assumes no responsibility for the use of specifications which may have been changed and are no longer in effect.

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