Smith Meter® AccuLoad® IV-ST and N4 Hardware Worksheet

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This worksheet is being provided to ensure that the AccuLoad IV-ST or N4 hardware contains enough I/O for the application. This sheet should be filled out for every application. The AccuLoad IV-ST and N4 hardware is capable of controlling one or two arms in straight arm loading applications, and up to six products per arm blending applications. When configured for ratio blending, the AccuLoad IV-ST and N4 are capable of controlling six product streams. Contact your local Smith Meter® representative if you have any questions about this worksheet.

Pulse Inputs	**Circle Number Required**								
Product Meter Pulses (Maximum six meters)	1	2	3	4	5	6	7	8	(For dual pulse meters, 2 per meter)
Density	1	2	3	4	5	6			
Additive Meter	1	2	3	4					
Flow Controlled Additive Meter (Maximum 4 meters)	1	2	3	4	5	6	7	8	(For dual pulse meters, 2 per meter)
Total	**8 or less**								

Note: *A4I boards can be added to provide additional pulse inputs for additive meters. The A4I board adds 10 additional additive meter inputs. For the AccuLoad IV-N4 hardware, the A4I board must be mounted in a remote housing. Flow Controlled Additives must be wired to the A4M board.*

Analog Inputs	**Circle Number Required**					
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
Analog Outputs						
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
Total Analog Inputs and Outputs	**6 or less**					

AC Digital Inputs	Circle Number Required
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
Total	**5 or less**

DC Digital Inputs	Circle Number Required
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 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
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
Total	**6 or less Standard** **16 or less with one optional A4I board** **(AccuLoad IV-N4 A4I board must be mounted in a remote housing)**

AC Digital Outputs	Circle Number Required												
Product Pumps (Sequential Blending, 1 per arm)	1	2	3	4	5	6							
Upstream Solenoids[2]	1	2	3	4	5	6							
Downstream Solenoids[2]	1	2	3	4	5	6							
Arm Relay	1	2											
General Purpose	1	2	3	4	5	6	7	8	9	10		→	51
Block Valve	1	2	3	4	5	6	7	8	9	10	11	12	
Stop Relay (1 per arm)	1	2											
Additive Pumps[1]	1	2	3	4	5	6	7	8	9	10		→	24
Piston Injectors	1	2	3	4	5	6	7	8	9	10		→	24
Metered Injectors (Solenoids)[1]	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 [2]	1	2	3	4									
Flow Controlled Additive Downstream Solenoid [2]	1	2	3	4									
Total	**11 or less standard** **31 or less with one optional A4I board** **51 or less with optional second A4I boards** **(AccuLoad IV-N4 A4I board must be mounted in a remote housing)**												

1 Additive pumps and solenoid outputs are fixed on the A4I when more than 4 metered additives are programmed. It is recommended that if the A4I board is required for additional metered additives, that all additives be connected to the A4I board.

2 Upstream and downstream solenoids should be programmed and wired on A4M AccuLoad board sets (must be the same board as associated meter pulse input).

DC Digital Outputs	Circle Number Required		
Product Pumps (Sequential Blending, 1 per arm)	1	2	3
Upstream Solenoids[2]	1	2	3
Downstream Solenoids[2]	1	2	3
Alarm Relay	1	2	
General Purpose	1	2	3
Block Valve	1	2	3
Stop Relay (1 per arm)	1	2	3
Additive Pumps[3]	1	2	3
Piston Injectors	1	2	3
Metered Injectors (Solenoids)[3]	1	2	3
Shared Additive Solenoids	1	2	3
Shared Additive Flush	1	2	3
Flow Controlled Additive Upstream Solenoid[2]	1	2	3
Flow Controlled Additive Downstream Solenoid[2]	1	2	3
Total	**3 or less**		

2 Upstream and downstream solenoids should be programmed and wired on A4M AccuLoad board sets (must be the same board as associated meter pulse input).

3 Additive pumps and solenoid outputs are fixed on the A4I when more than 4 metered additives are programmed.

AccuLoad IV-ST Model Number (Refer to Specification Sheet SS06200)

ALIV-ST-XP –	_____	– A XXXXX	– X
	ARM1	Digit 1: # of RTDs	Digit 1: # of A4I Boards (0-1)
	ARM2	Digit 2: # of 4-20 mA inputs	
		Digit 3: # of 4-20 mA outputs	
		Digit 4: # of 1-5 Vdc inputs	
		Digit 5: # of 1-5 Vdc outputs	

The optional A4I can be mounted inside the AccuLoad IV-ST or in a remote enclosure. It is recommended that it be mounted at or near the additive injector panel to save on wiring costs. All that is needed back to the AccuLoad IV is +24 Vdc power and a communication cable. Consideration should be given to mounting the A4I in the remote housing any time the additive panel is a considerable distance away from the AccuLoad. The cost of running +24 Vdc power and one communication wire versus the remote housing and all the additive wiring should be considered.

AccuLoad IV-N4 Model Number (Refer to Specification Sheet SS06200)

ALIV-N4 –	_____	– ___	– ___	– 0	– ____	– A XXXXX	– _____
	ARM1	0	0	0***	0	Digit 1: # of RTDs	0 - 10 (fuse holders)
	ARM2	1*	1**		1*****	Digit 2: # of 4-20 mA inputs	
					2	Digit 3: # of 4-20 mA outputs	
						Digit 4: # of 1-5 Vdc inputs	
						Digit 5: # of 1-5 Vdc outputs	

** Stop Button. 0 = None; 1 = 120/240 Volts AC*
*** Indicator Lights. 0 = None; 1 = 120 Volts AC*
****Hardware Options. 0 = None*
******Card Reader Options: 0 = None; 1 = Card Reader; 2 = Captive Card Reader*

The AccuLoad IV-N4 hardware can be used in conjunction with the A4I board, but these additional boards must be mounted in remote housing and +24 Vdc power and a communication wire run between the AccuLoad and the remote boards.

If your application exceeds the number of I/O points available on the AccuLoad IV-ST or N4 hardware, refer to the worksheet for the AccuLoad IV-QT hardware (AB06213). It may be a better fit for your application.

Editorial change made to AB06214 rev 0.0 (4/17) - Page 6, Arm 3 corrected to outputs. - JP - Februrary 2019.

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