The Smith Meter® AccuLoad® III-S is a microprocessor-based electronic instrument that can be programmed to be either a single arm or dual arm device depending on the firmware package that is installed in the unit. The single arm unit is capable of loading a straight product, up to four products as a sequential blender, or two products as a ratio blender. The dual arm unit is capable of loading two straight products, up to four products as a sequential blender, and a straight product or two, four-product sequential blends, depending on I/O usage.

Features

- One or Two Arm Operation
- Straight Product and/or Sequential Blending or Ratio Blending
- Up to 50 Recipes
- User Configurable Inputs and Outputs
- Block Valve Control and Feedback (Sequential Blending)
- Controls Additive Systems (Either via Pulse or Communications)
- Four Communication Ports
- Programmable Pulse Outputs
- Configurable Load Ticket/BOL Emulation Printing
- Continuous Monitoring of Critical Functions
- Two-Way Data Communication; Built-in Communication Analyzer
- Automatic Temperature and Pressure Compensation and Density Correction
- Meter Factor Calculation
- Five Levels of Security
- Automatic Adjustment of Final Trip Point
- Automatic Flow Control with Recovery
- API Tables From LPG to Crude Oil
- GPA Tables TP-15 and TP-16
- Explosion-Proof
- Programmable Languages/Messages
- LCD Graphics Display with Backlight
- Turbine Meter Diagnostics
- Boolean/Algebraic Processing
- Event Logging
- Stand-Alone Operation
- Grounding and Overfill Protection (Optional)

Applications

Applications include batch loading of alcohols, gasolines, antifreeze, lube oils, fuel oils, solvents, fertilizers, LPGs, LNGs, and chemicals. The system is ideal for truck, barge, or rail car loading at loading racks, bulk plants, shipping docks, processing installations, and tank farms where straight products, as well as blended products, must be loaded.

Standard Features

Straight Product (ALS1 or ALD1 Firmware)
The AccuLoad III is designed to handle either single arm, straight product loading (ALS1) or dual arm, straight product loading (ALD1). Using the ALD1 dual arm firmware, both products can be loaded simultaneously.

Sequential Blending (ALS1 or ALD1 Firmware)
The AccuLoad III is designed to sequentially control the loading of up to four petroleum or chemical products through a single loading arm (ALS1) or through two loading arms (ALD1). The single arm software package (ALS1) controls the loading of up to four products sequentially through a single metering system and loading arm. The dual arm software package (ALD1) controls the loading of up to four products sequentially through a single metering system and a straight product through a second metering system and loading arm. Another option using the ALD1 firmware is to have two, two product sequential blending load arms each with up to four products flowing through a metering position and loading arm.
Ratio Blending (ALS1 Firmware)

The AccuLoad III is designed to control the blending of two petroleum or chemical products through a single loading arm (ALS1) simultaneously. Both products flow through a metering system, are co-mingled downstream of the metering system and flow through a single loading arm into a transport.

Temperature Compensation

The temperature compensation option provides the customer with the capability of compensating for the variance in temperature from a reference temperature. This option is used with an RTD input or a temperature transducer and, excluding the accuracy of the fluid temperature measurement, will exactly match the proper volume correction factor of ASTM-D-1250 (Sept. 1980) over the fluid temperature range of -40°F to 572°F (-40°C to 300°C). The following API tables can be programmed in the AccuLoad II: 5A, 5B, 5D, 6A, 6B, 6C, 6D, 23A, 23B, 23D, 24, 24A, 24B, 24D, 53A, 53B, 53D, 54, 54A, 54B, 54C, and 54D.

Pressure Compensation

The pressure compensation option provides the customer with the capability of compensating the volume of product delivered at varying pressures per API Tables 11.2.1 and 11.2.2, using a 4-20 mA pressure transducer input per preset position. This option also contains real-time control functions for maintaining system pressures at the meter to a minimally-acceptable, user-definable level (pressure transducer not included). This option is particularly useful for light products, such as LPG, where the compressibility factor varies a great deal with different pressures.

Density Correction

The density correction option provides the customer with the capability of correcting the volume of product delivered at varying densities. This can be either a frequency input or a 4-20 mA input.

Metered Injectors, Piston Injectors and Smart Additives

AccuLoad III has been designed to provide maximum flexibility when it comes to additive control. The unit is capable of handling metered injectors, piston injectors and smart additives simultaneously.

The AccuLoad is capable of controlling two additive injector metered systems. (See Hardware Options for additional injector systems.) The AccuLoad controls the additive solenoids to precisely inject the additive into the main product. It monitors the pulses of the additive meter and controls the amount of additive, based on the incoming pulses from the additive meter and the main product meter.

Additive monitoring and smart additives provide the capability for the AccuLoad to monitor the feedback from the piston injectors of the additive products. The AccuLoad monitors the injector feedback switches for a change of state and counts the errors and alarms if no change is detected within the cycle or a period of cycle. The totalized volume will print on the emulated load ticket printed on the shared printer output.

For Smart additives, the firmware has also been designed with a Master/Slave type of communications, with the AccuLoad being the master and the Additive Injector System being the slave. The AccuLoad constantly interrogates the Additive Injector System for a change in status. The AccuLoad can be operated with communications control over the Smart Additive Injector System or with communication/pulse control. When the AccuLoad has communication control over the Additive System, it will constantly monitor the Additive System for its status, poll the additive totals, and signal the system when to inject the additive - all through the communications line.

The AccuLoad communications package has also been designed with a pass-through communications mode. In this mode of operation the supervisory computer can talk to the Additive Injector System through the communications lines that have been run to the AccuLoad and from the AccuLoad to the Additive Injector System(s).

Dual Pulse Security

This option provides continuous monitoring, error indication alarm, and correction of the pulse transmission for each preset position per API Petroleum Measurement Standard, Chapter 5.5, Level A, and Institute of Petroleum Standard, IP 252/76, Part XIII, Section 1, Level A (PPS High-Security Pulse Transmitter is not included). The PPS High-Security Transmitter provides four signals: “A,” “A inverted,” “B,” and “B inverted.” The “A” and “B” signals are 90 electrical degrees out-of-phase and used for dual-pulse security. The “A” and “A inverted,” and “B” and “B inverted” signals are 180 electrical degrees out-of-phase and are used for transmitter power sensing. If power sensing is not required, only “A” and “B” are used for dual-pulse security.

Automated Proving Mode

The AccuLoad III firmware provides an automated proving mode of operation. When the automated proving mode is activated the AccuLoad will calculate the meter factor for a proving run based on information that is obtained during the prove. The operator can select the flow rate and meter factor that is being proved through the keypad of the AccuLoad. After the prove is complete the operator enters the prover volume and prover temperature and the AccuLoad will calculate the new meter factor. The operator enters the prover volume and prover temperature and the AccuLoad will calculate the new meter factor over a maximum of six proves. This feature allows the operator to prove the meter on all four products, and four meter factors and associated flow rates for each product without having to enter the program mode for each product and meter factor.

Boolean and Algebraic Processing

The AccuLoad III provides the customer the flexibility to set up inputs and outputs for tasks that are not standard in the unit. Through Boolean processing, relays can be
Stability: 0.1°F (0.06°C)/year.
Flow Totalizing: Within one pulse of input frequency.

**Electrical Inputs**

**AC Instrument Power:**
Universal input 100 to 240 Vac, 58W maximum, 48 to 63 Hz. The AC circuitry is fuse-protected.
Surge Current: 28A maximum for less than 0.1 seconds.
Power Interruption Tolerance: Interruption of power greater than .05 seconds (typical) will cause an orderly shut-down of the AccuLoad and the control valve will be immediately signaled to close.

*Note:* A constant voltage transformer (CVT) is recommended if the available ac power is suspected not to comply with these specifications.

**Pulse Input:**
Type: High-speed, edge-triggered, optically isolated pulse transmitter input. The input pulse must rise above V (high min.) for a period of time and then fall below V (low) to be recognized as a pulse by AccuLoad II.
V (High): 5 Vdc minimum to 8 Vdc maximum.
V (Low): 1 Vdc maximum.
Input Impedance: 1.8 KΩ.
Pulse Resolution: 1 pulse/unit minimum, 9,999 pulses/unit maximum.
Frequency Range: 0 to 10.0 kHz.
Response: Within one pulse to a step change in flow rate.
Mode: Single, dual, dual with power sensing, den...
Duty Cycle: 35/65 to 65/35 (on/off).

**Temperature Probe:**
Type: four-wire, 100 Ω Platinum Resistance Temperature Detector (PRTD).
Temperature Coefficient: @ 32°F: 0.00214 Ω/Ω°F (0.00385 Ω/Ω°C).
Temperature Range: -148°F to 572°F (-100°C to 300°C).
Offset: Temperature probe offset is program-adjustable through the AccuLoad keypad in ±0.1 degree increments in the unit of temperature measurement used.
Self calibrating: Lead length compensation that requires no resistance balancing of leads.

**Analog (4-20 mA):**
Type: Two-wire, 4-20 mA current loop receiver, isolated from ground, programmable as to function.
Span Adjustment: Program-adjustable through the AccuLoad keypad or communication in tenths of the unit used.
Input Burden: 50 Ω.
Accuracy: ±0.025% of range.
Resolution: One part in 65,536.
Voltage Drop: 2 Volts maximum.
Sampling Rate: One sample/300 mSec minimum.
Analog (1-5 Vdc):
Type: Two-wire, 1-5 Vdc voltage loop receiver, isolated from ground, programmable as to function.
Span Adjustment: Program-adjustable through the AccuLoad keypad or communications in tenths of the unit used.
Input Burden: 1 mΩ.
Accuracy: ±0.025% of range
Resolution: One part in 65,536.
Sampling Rate: One sample/300 mSec minimum.

AC Inputs:
Type: Optically-isolated, solid-state voltage sensor.
Input Voltage Range: 90 to 280 Vac.
Pickup Voltage: 90 Vac minimum.
Drop-out Voltage: 30 Vac maximum.
Current at Maximum Voltage: 20 mA maximum.
Input Resistance: 44,000 Ω typical.

DC Inputs:
Type: Optically-isolated solid state voltage sensors
Input Voltage Range: 5 to 28 Vdc.
Pickup Voltage: 5 Vdc minimum.
Drop-out Voltage: Less than 1 volt.
Current at Maximum Voltage: 20 mA maximum.
Input Level Duration: 120 mSec minimum.

Keypad:
Type: Metal encapsulated, one-piece, sealed, no moving parts, piezoelectric design. Protected against the environment.

Display:
The Graphics Display is a 240 by 64 pixel graphic Liquid Crystal Display (LCD) modules with LED backlighting.

Electrical Outputs
DC Power:
24 Vdc ±10%, 1 A maximum, short circuit protected.

AC Outputs:
Type: Optically-isolated, AC, solid-state relays. User-programmable as to function.
Load Voltage Range: 90 to 280 Vac (rms), 48 to 63 Hz.
Steady-State Load Current Range: 0.05A (rms) minimum to 1.0A (rms) maximum into an inductive load.
Leakage Current at Maximum Voltage Rating: 5.2 mA (rms) maximum @ 240 Vac.
On-State Voltage Drop: 2 Vac at maximum load.

DC Outputs:
Type: Optically-isolated solid state output. User-programmable as to function.
Polarity: Programmable (normally open or normally closed).
Switch Blocking Voltage: 30 Vdc maximum.
Load Current: 150 mA maximum with 0.6 volt drop.

Note: *Power-down normally open.

Analog (4-20 mA):
Type: Two-wire, 4-20 mA current loop transmitter, isolated from ground, programmable as to function.
Span Adjustment: Program adjustable through the AccuLoad keypad or through communications.
Accuracy: ±0.025% of range.
Resolution: One part in 65,536.
Voltage Burden: 4 volts maximum.

Analog (1-5 Vdc):
Type: Two-wire, 1-5 Vdc voltage loop transmitter, isolated from ground, programmable as to function.
Span Adjustment: Program-adjustable through the AccuLoad keypad or through communications.
Accuracy: ±0.025% of range.
Resolution: One part in 65,536.

Pulse Output:
Type: Optically-isolated solid state output. Pulser output units are program-selectable through the AccuLoad keypad or communications.
Polarity: Programmable (normally open or normally closed).
Switch Blocking Voltage (Switch Off): 30 Vdc maximum.
Load Current (Switch On): 10 mA with 0.6 volts drop.
Frequency Range: 0 to 3000 Hz.
Duty Cycle: 50/50 (on/off).

Environment
Ambient Operating Temperature
-40°F to 140°F (-40°C to 60°C).
Humidity:
5 to 95% with condensation.
Enclosure:
Explosion-proof (NEMA 7, Class I, Groups C and D) and watertight (NEMA 4X), IP65.

Approvals
UL/CUL
Class I, Division 1, Groups C & D; Class II, Groups E, F & G, UNL-UL Enclosure 4X, CNL-CSA Enclosure 4.
Class I, Zone 1, Group IIB, IP65.
Class I, Zone 1, AEx d IIB T6, IP65.
UL/CUL File E23545 (N).

CENELEC
Exd IIB T6, IP65.

Notes:
AccuLoad III does not contain intrinsically-safe circuitry; therefore, all peripheral equipment must be suitable for the area in which it is installed.
When supplied with the optional Civacon Overfill and Grounding Board the AccuLoad III contains intrinsically safe circuitry. Only the equipment connected to the circuit is intrinsically safe.

Weight: 50 lb (22.7 kg).
**Electromagnetic Compatibility**

Designed to meet the requirements of EMC directive 89/336/EEC.

- EN 55022: Conducted (Class B)
- EN 55022: Radiated (Class B).
- IEC 61000-3-2: Limits for Harmonic Current Emissions.
- IEC 61000-3-3: Limits of Voltage Fluctuations and Flicker in L-V Supply Systems (Pending).
- EN 550: Conducted (Class B)
- EN 550: Radiated (Class B).
- IEC 61000-3-: Limits for Harmonic Current Emissions.
- IEC 61000-3-3: Limits of Voltage Fluctuations and Flicker in L-V Supply Systems (Pending).
- EN 550: Conducted (Class B)
- EN 550: Radiated (Class B).
- IEC 61000-3-: Limits for Harmonic Current Emissions.
- IEC 61000-3-3: Limits of Voltage Fluctuations and Flicker in L-V Supply Systems (Pending).
- EN 550: Conducted (Class B)
- EN 550: Radiated (Class B).
- IEC 61000-3-: Limits for Harmonic Current Emissions.
- IEC 61000-3-3: Limits of Voltage Fluctuations and Flicker in L-V Supply Systems (Pending).

**Communications**

**General**

Number of Ports: Four.

Configuration: Multi-drop network. Up to 32 AccuLoad IIIs can be connected onto the same transmit and receive data lines.

Data Rate: Keypad-selectable to asynchronous data rates of 1,200, 2,400, 3,600, 4,800, 7,200, 9,600, 19,200, or 38,400 bps.

Data Format: Programmable one start bit, programmable seven or eight data bits - even, odd, or no parity, one stop bit.


Data Structure: ASCII character-oriented, modeled after ISO Standard 1155.


AccuLoad II Style: Terminal Mode, Minicomputer Mode.

**EIA-232 (1 dedicated, 2 programmable)**

Type: Interfaceable with EIA-232 data communication standards. Data transmitters are tri-state design.

Typical Applications: Product receipt ticket printing (used with a stand-alone ASCII printer or as a backup in the standby mode with automation for BOL emulation) or communications with Product Management Automation Systems. Up to 16 AccuLoads can be connected onto the same transmit and receive data lines.

**EIA-485 (1 dedicated, 2 programmable)**

Type: Interfaceable with EIA-485 data communication standards.

Typical Application: Communications with Product Management Automation Systems.

Number of Units per Communication Line: Up to 32 AccuLoads can be connected onto the same transmit and receive data lines.

**Specifications (AICB Board - Optional)**

**Electrical Inputs**

**DC Instrument Power:**

24 Vdc ±10%, 1 watt maximum

**Pulse Input:**

Type: High-speed, edge-triggered, optically isolated, compatible with contact closure, open collector or voltage sink/source pulse transmitter input. The input pulse must rise above V (high min.) for a period of time and then fall below V (low) to be recognized as a pulse.

- V (High): 10 Vdc minimum to 24 Vdc maximum.
- V (Low): 8 Vdc maximum.

Pulse Resolution: 1 pulse/unit minimum, 9,999 pulses/unit maximum.

Frequency Range: 0 to 5 kHz.

Response: Within one pulse to a step change in flow rate.

Minimum Pulse Width: 50 uS.

**Electrical Outputs**

**AC Outputs:**

Type: Optically-isolated, AC, solid-state relays. User-programmable by the host as to function.

Load Voltage Range: 90 to 275 Vac (rms), 48 to 63 Hz.

Steady-State Load Current Range: 0.05A (rms) minimum to 0.5A (rms) maximum into an inductive load.

Leakage Current at Maximum Voltage Rating: 0.1mA (rms) maximum at 40 Vac.

On-State Voltage Drop: 1.5 Vac at maximum load.

**Environment**

**Ambient Operating Temperature**

-40°F to 140°F (-40°C to 60°C).

**Humidity:**

5 to 95% with condensation.

**Remote Enclosure:**

Explosion-proof (NEMA 7, Class I, Groups C and D) and watertight (NEMA 4X), IP65

**Approvals**

**UL/CUL:**

Class I, Division 1, Groups C and D; Class II, Groups E, F and G, UNL-UL Enclosure 4X, CNL-CSA Enclosure 4.

Class I, Zone 1, AEx d IIB T6, IP65.

**CENELEC (DEMKO):**

EEEx d IIB T6, IP65

Class I, Zone 1, Ex d IIB T6.
Specifications
(Civacon Microrack® Monitor)

Electrical Inputs

**DC Instrument Power:**
24 Vdc ±10%, 36 W maximum

**Bypass Switch**
No contact, 12 Vdc 50mA

**Sensor Inputs**
Thermistor
200/2000 W
9 Vdc 1.8 W maximum

**Optic**
5-wire and 2-wire Quickstart®
9 Vdc 1.8 W maximum

Electric Outputs

**Overfill Relay Contact**
Type: 1 form C (SPDT)
Voltage: 20 Vac/24 Vdc
Current: 5A

**Ground Relay Contact**
Type: 1 form C (SPDT)
Voltage: 120 Vac/24 Vdc
Current: 5A

Ground Relay Bypass Switch
Type: No contact
Voltage: 120 Vac/24 Vdc
Current: 5A

Overfill Bypass Switch
Type: No contact
Voltage: 120 Vac/24 Vdc
Current: 5A

Environment

**Ambient Operating Temperature**
-40°F to 140°F (-40°C to 60°C)

**Humidity**
5 to 95% with condensation

**Remote Enclosure**
Explosion-proof (NEMA 7, Class I, Groups C and D) and watertight (NEMA 4X), IP65

**Approvals**
**UL/CUL (Pending):**
Class I, Division I, Groups C and D; Class II, Groups E, F, and G, UNL-UL Enclosure 4X, CNL-CSA Enclosure 4.

Class I, Zone I, AEx d [ia] IIB T6, IP65

**CENELEC (DEMKO) (Pending):**
EEx d [ia] IIB T6, IP65

Class I, Zone 1, Ex d [ia] IIB T6.
**Modeling (AccuLoad III)**

| Hardware Model Designation | ALIII - S |

| Housing | XP - UL/CUL, EEx d IIB, IP65 DEMKO A/S |

**Firmware**

| ALS1 | Single arm, straight product, sequential and ratio blending |
| ALD1 | Dual arm, straight product, sequential blending |

**Analog Modules**

| DIGIT 1 | # of RTDs |
| DIGIT 2 | # of 4-20 mA inputs |
| DIGIT 3 | # of 4-20 mA outputs |
| DIGIT 4 | # of 5 Vdc inputs |
| DIGIT 5 | # of 1-5 Vdc outputs |

**Hardware Option**

- Blank - None
- A - AICB Board
- C - Civacon Grounding Board

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**Modeling (AICB/Civacon Board Remote Mount)**

| Model Designation | REM - XP - A |

| Housing | XP - Explosion Proof |

**Hardware Option**

- A = AICB Board
- C = Civacon Board

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1. A complete model number is required when ordering the AccuLoad III.
This worksheet is provided to aid in determining the number of inputs and outputs required for a given application. Circle the number of inputs/outputs required, add the circled numbers together, and check the answer making sure that it does not exceed the totals listed below.

### DC Inputs

<table>
<thead>
<tr>
<th></th>
<th>Circle Number Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block Valve Feedback</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>Permissives</td>
<td>0 1 2</td>
</tr>
<tr>
<td>Security</td>
<td>0 1 2</td>
</tr>
<tr>
<td>First/Second High Flow</td>
<td>0 1</td>
</tr>
<tr>
<td>Remote Start</td>
<td>0 1</td>
</tr>
<tr>
<td>Remote Stop</td>
<td>0 1</td>
</tr>
<tr>
<td>Transaction Reset</td>
<td>0 1</td>
</tr>
<tr>
<td>Piston Injector Feedback</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>General Purpose</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>6 or less</td>
</tr>
</tbody>
</table>

### AC Inputs

<table>
<thead>
<tr>
<th></th>
<th>Circle Number Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block Valve Feedback</td>
<td>0 1 2 3 4 5</td>
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<tr>
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</tr>
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</tr>
<tr>
<td>Remote Start</td>
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<td>Remote Stop</td>
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<tr>
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<td>0 1</td>
</tr>
<tr>
<td>Piston Injector Feedback</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>General Purpose</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>11 or less</td>
</tr>
</tbody>
</table>

### AC Outputs

<table>
<thead>
<tr>
<th></th>
<th>Circle Number Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block Valves</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Pump</td>
<td>0 1 2</td>
</tr>
<tr>
<td>Upstream Solenoid</td>
<td>0 1 2</td>
</tr>
<tr>
<td>Downstream Solenoid</td>
<td>0 1 2</td>
</tr>
<tr>
<td>Alarm Relay</td>
<td>0 1 2</td>
</tr>
<tr>
<td>Additive Pump</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Piston Injector</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Metered Injector Solenoid</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>General Purpose Output</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>11 or less</td>
</tr>
</tbody>
</table>

### Pulse Inputs

<table>
<thead>
<tr>
<th></th>
<th>Circle Number Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Meter</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Single Pulse</td>
<td>0 1 2</td>
</tr>
<tr>
<td>Dual Pulse/Power Sensing</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>Additive Meter</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td>Densitometer</td>
<td>0 1 2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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</tbody>
</table>

### DC Outputs

<table>
<thead>
<tr>
<th></th>
<th>Circle Number Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block Valves</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>Pump</td>
<td>0 1 2</td>
</tr>
<tr>
<td>Upstream Solenoid</td>
<td>0 1 2</td>
</tr>
<tr>
<td>Downstream Solenoid</td>
<td>0 1 2</td>
</tr>
<tr>
<td>Alarm Relay</td>
<td>0 1 2</td>
</tr>
<tr>
<td>Additive Pump</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>Piston Injector</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>Metered Injector Solenoid</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>General Purpose Output</td>
<td>0 1 2 3 4 5 6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>6 or less</td>
</tr>
</tbody>
</table>

### Analog Inputs/Outputs (Optional)

<table>
<thead>
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<th></th>
<th>Circle Number Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-20 mA Inputs</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>4-20 mA Output</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>1-5 Vdc Input</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>1-5 Vdc Output</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>RTD</td>
<td>0 1 2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>6 or less</td>
</tr>
</tbody>
</table>

### Communication Ports

<table>
<thead>
<tr>
<th></th>
<th>Circle Number Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS-232</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>RS-485</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>4 or less</td>
</tr>
</tbody>
</table>

### Optional - AICB Board

<table>
<thead>
<tr>
<th></th>
<th>Circle Number Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additive Meter</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td>Total</td>
<td>10 or less</td>
</tr>
<tr>
<td>Additive Pump</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td>Metered Injector Solenoid</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>20 or less</td>
</tr>
</tbody>
</table>

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3 This worksheet is provided to ensure the number of Inputs/Outputs required for the application are available. Totals indicate the number available in the AccuLoad III and are included except for the Analog Inputs/Outputs which are optional.
Figure 1 – Single Arm/Single Product

Figure 2 – Single Arm/Four Product Sequential Blender
Figure 3 – Single Arm/2 Product Ratio Blender

Figure 4 – Dual Arm/Dual Product
Figure 5 – Dual Arm/Three Product Sequential Blender, One Straight Product

Figure 6 – Dual Arm/Two Product Sequential Blender
Figure 7 — Explosion-Proof Housing

Back View

1 - 11.5" NPT
2 Places

0.375" - 16 UNC-2B x 0.56" Deep
Typical 8 Places
(Bottom and Back Mounting)

1.25" - 11.5" NPT for
Conduit Entrance
Typical 3 Places

Issue/Rev. 0.4 (11/00)
Figure 8 - Remote Housing (Optional AICB and Civacon)