

# AccuPlus™ Additive Injectors

Bulletin SS05001E Issue/Rev. 0.2 (3/19)

AccuPlus™ is an additive injector used to accurately measure additives into a mainstream product such as gasoline, diesel, and heating oil. The flexible configuration allows single or multiple additives to be measured through a common meter using a manifold platform. The AccuPlus™ is a positive displacement meter designed with high resolution electronics that provide dependable injections over a wide range of PPM rates. Some applications may include injection of fuel performance additives, markers and dyes, cold flow enhancers and liquid fertilizers, etc.



## Features

- **High accuracy flowmeter** – more accurate injections
- **Low pressure drop design** – energy efficient and less wear
- **Easy installation** – lower initial cost
- **Configurable design with single or multiple additives per meter** – more application flexibility
- **Modular assembly with calibration ports** – mechanical simplicity and easy service
- **High resolution encoder** – increased injection precision at low ppm rates

## Specifications

- Nominal k-factor – 10,000 pulses/liter (10 pulses/mL)
- Maximum viscosity – 300 cSt (kinematic / for others, consult factory)

## Operating Specifications

Flow Range LPM (GPM)	Flow Turndown	Repeatability	Linearity
0.48 to 12 (0.13 to 3.17)	25:1	0.10%	± 0.50%

### Electrical Inputs

DC Power Range: 10 to 30 Vdc

Input Current: Quiescent Current (No Load):  
27 mA @ 10 Vdc,  
20 mA @ 24 Vdc, 20 mA @ 30 Vdc.

Power

Consumption: ≤ 650 mW plus load

### Output Signal

#### 10 Vdc Input

Power Supply: No Load  $9.7 \pm 0.3 V_{p-p}$  square wave  
270  $\Omega$  Load:  $7.6 \pm 0.3 V_{p-p}$  square wave (minimum)

#### 24 Vdc Input

Power Supply: No Load  $23.7 \pm 0.3 V_{p-p}$  square wave  
270  $\Omega$  Load:  $16 \pm 0.3 V_{p-p}$  square wave (minimum)

#### 30 Vdc Input

Power Supply: No Load  $29.7 \pm 0.3 V_{p-p}$  square wave  
270  $\Omega$  Load:  $21 \pm 0.3 V_{p-p}$  square wave (minimum)

### Output Source Current

70 mA @ Vdc, 130 mA @ 24 Vdc, 160 mA @ 30 Vdc

### Output Current per Channel (A & B)

Maximum Sink Current: 300 mA @ 30 Vdc

Maximum Source Current: 80 mA @ 30 Vdc

### Signal Cable

Three-wire shielded for single-channel transmission.

Sizes:	Distance:
# 20 AWG (0,75 mm <sup>2</sup> )	Up to 2,000 ft. (610 m)
# 18 AWG (1,00 mm <sup>2</sup> )	Up to 3,000 ft. (915 m)
# 16 AWG (1,50 mm <sup>2</sup> )	Up to 5,000 ft. (1,525 m)

### Environmental

Temperature: -40°F to 140°F (-40°C to 60°C)

Humidity: 5% to 95% Non-Condensing

### Electrical Safety

Approvals: FTZÚ 10 ATEX 0180 X  
II 2G Ex d IIB T6 Gb  
IECEX FTZU 13.0007X  
Ex d IIB T6 Gb  
GOST Certificate POCC  
DE.ГБ05.B04154  
1 Ex d IIB T6 Gb

Protection Class: IP66

### AccuPlus Mechanical Ratings

Maximum

Pressure: 0 - 300 psig (25 bar)

Manifold Outlet

Connection: M18 x 1.5 Male Thread

Coax Inlet

Connections: M18 x 1.5 Male Thread

Calibration

Connection: M22 x 1.5 Female Thread  
(Calibration Kit Available)

### Materials of Construction

Wetted

Materials: 300 Series Stainless Steel  
400 Series Stainless Steel  
Carbon  
PTFE  
Viton

Non-Wetted

Materials: Aluminum  
Carbon Steel

### Coax Valve

Manufacturer: CO-AX

Type: MK 10 NC Ex

Approximate

Unit Weight: 3.5 lbs (1,5 kg)

Line Size: 0-300 psig (10 mm)

Line Port: Thread DIN ISO 228, G 3/8"

Operating

Pressure: 0 – 25 Bar

Actuation: Direct-Current Magnet with  
Integrated Rectifier

Operating Mode: Normally Closed

Maximum

Switching Cycles: 1/min 200

Switching Time: mS Opening 80 Closing 140

Electrical

Connection: Molded Terminal Box with 3 m Flying  
Leads

Ingress

Protection: IP68

Supply Voltage: 230 V 40-60 Hz AC, Fused, for Hazardous  
Zone Details, refer to actual Valve  
Manufacturer Documentation.

Energized Duty

(ED) Rating: ED 100%, for Hazardous Zone Details,  
refer to actual Valve Manufacturer  
Documentation.

Insulation

Rating: H 356°F (180°C), for Hazardous Zone  
Details, refer to actual Valve  
Manufacturer Documentation.

Ambient

Temperature: -40°F up to +140°F (-40°C up to +60°C)  
with restricted ED for Hazardous Zone  
Details, 104°F (+40°C) with no restricted  
ED, refer to actual Valve Manufacturer  
Documentation.

Explosion Proof: PTB 03 ATEX 2045 X  
II 2 G Ex mb II T4  
II 2 D Este A21 IP68 T130°C  
IECEX TPS 14.0002X  
Ex mb llc T4 Gb  
Fx ID A21 IP68 T130°C Gc  
GOST Certificate POCC  
DE.ГБ05.B03801  
2 Ex m II T4 X

**For Hazardous Zone Details, refer to actual Valve  
Manufacturer Documentations and Declarations.**

## Modeling

LEA - C - 1 - C - 1 - A - N - 0 - 0

### Block Type

LEA – AccuPlus

### Meter Piston Material

C – Carbon

### Number of Additive Valves

1 – 1 Valve  
 2 – 2 Valves (includes 1 Manifold)  
 3 – 3 Valves (includes 2 Manifolds)  
 4 – 4 Valves (includes 2 Manifolds)  
 5 – 5 Valves (includes 3 Manifolds)  
 6 – 6 Valves (includes 3 Manifolds)  
 7 – 7 Valves (includes 4 Manifolds)  
 8 – 8 Valves (includes 4 Manifolds)

### Valve Type

C – Coax

### Power

1 – 120 VAC/60 Hz  
 2 – 230 VAC/50 Hz

### Proportional Valve

0 – No Valve  
 1 – Proportional Valve  
 (Requires min. 1 Manifold mounted)

### Number of Manifolds for Multiple Inlet Valves \* \*\*

0 – No Manifold mounted (Max. 1 Inlet Valve)  
 1 – 1 Manifold mounted (Max. 2 Inlet Valves)  
 2 – 2 Manifolds mounted (Max. 4 Inlet Valves)  
 3 – 3 Manifolds mounted (Max. 6 Inlet Valves)  
 4 – 4 Manifolds mounted (Max. 8 Inlet Valves)

#### Notes:

\* Spare Ports are closed with Blind Covers

\*\* Total Number of Inlet Valve Ports must be equal or more than mounted Inlet Valves

### Mounting Options

N – None  
 U – U-Bar  
 X – Other (Specify, Consult Factory)

### Approval

A – ATEX / IEC Ex

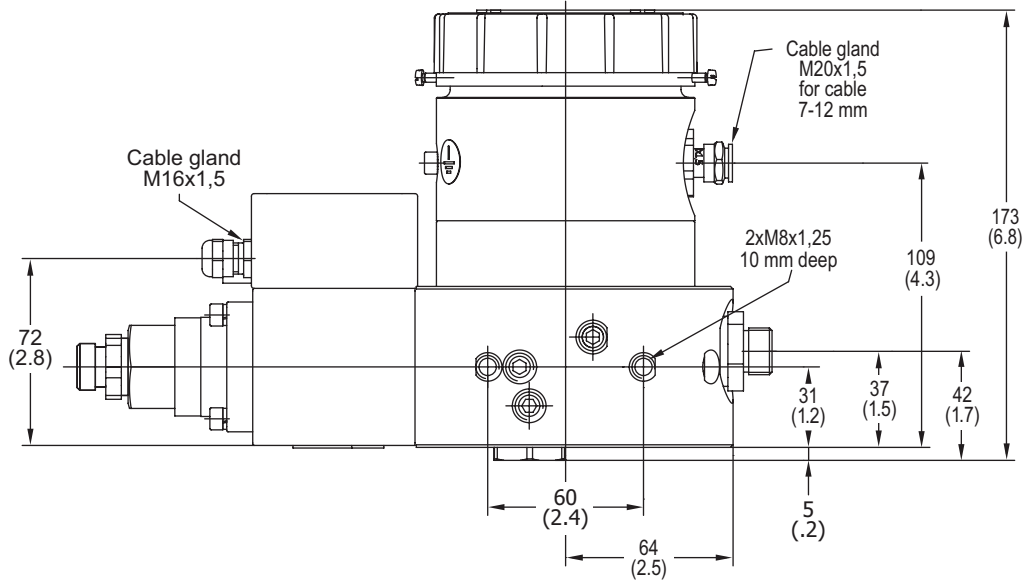
## Terminal Connections: CN1

Terminal 1	+10 to +30 Vdc
Terminal 2	“A” Signal (Leading)
Terminal 3	“B” Signal (Lagging)
Terminal 4	Logic Common (Ground)
Terminal 5	
Terminal 6	No electrical connection on circuit board. These can be used for wiring connections or tie-ins (ex. RTD junction, etc.)
Terminal 7	
Terminal 8	

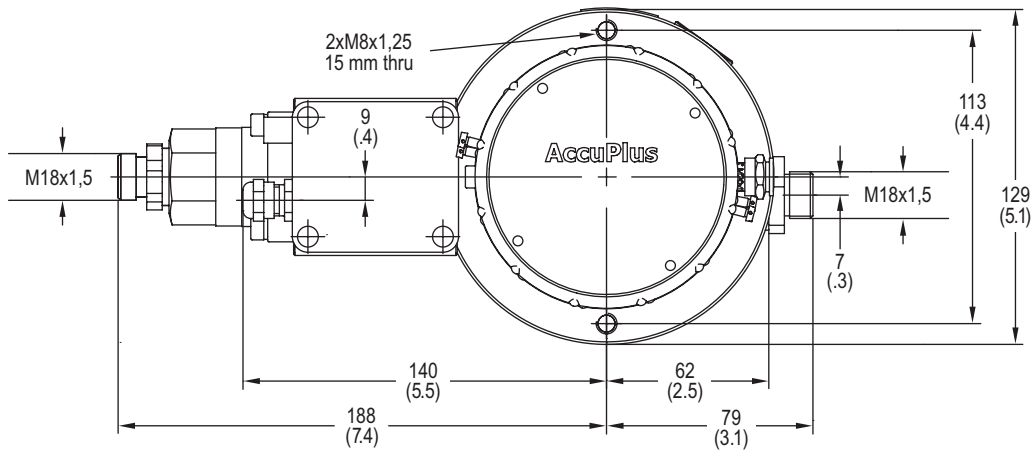
# Dimensions (AccuPlus – Shown with a single additive valve)

mm (Inches)

### Side View Dimensions



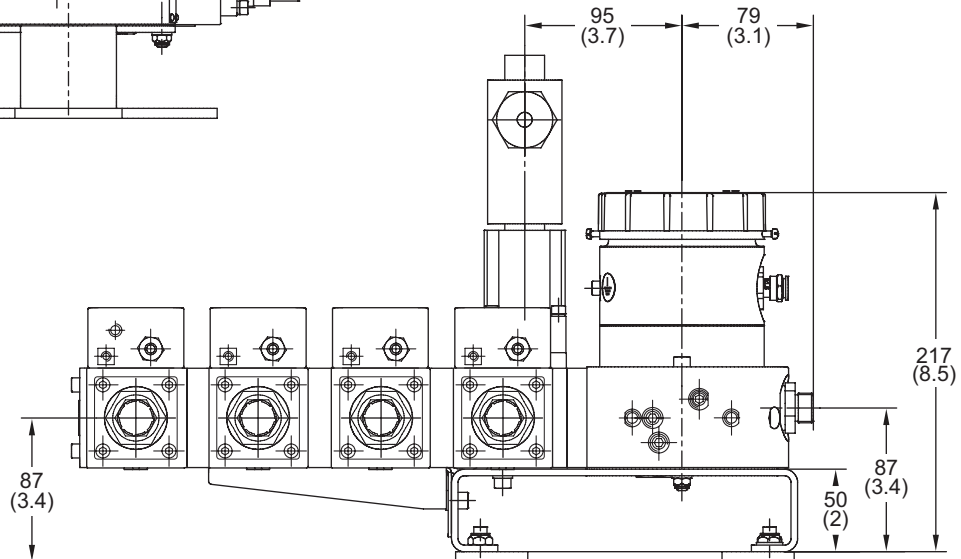
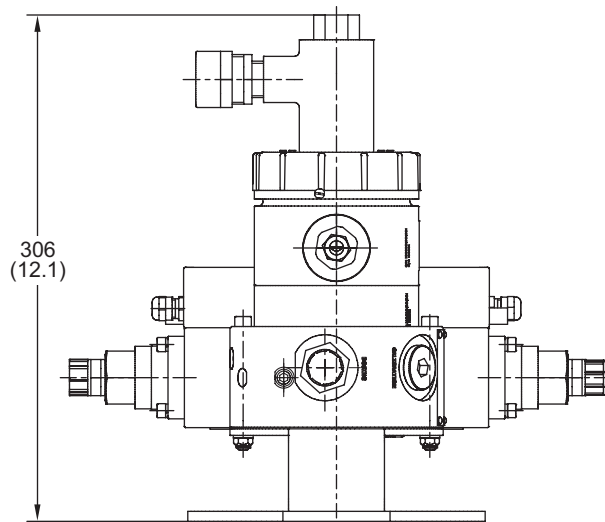
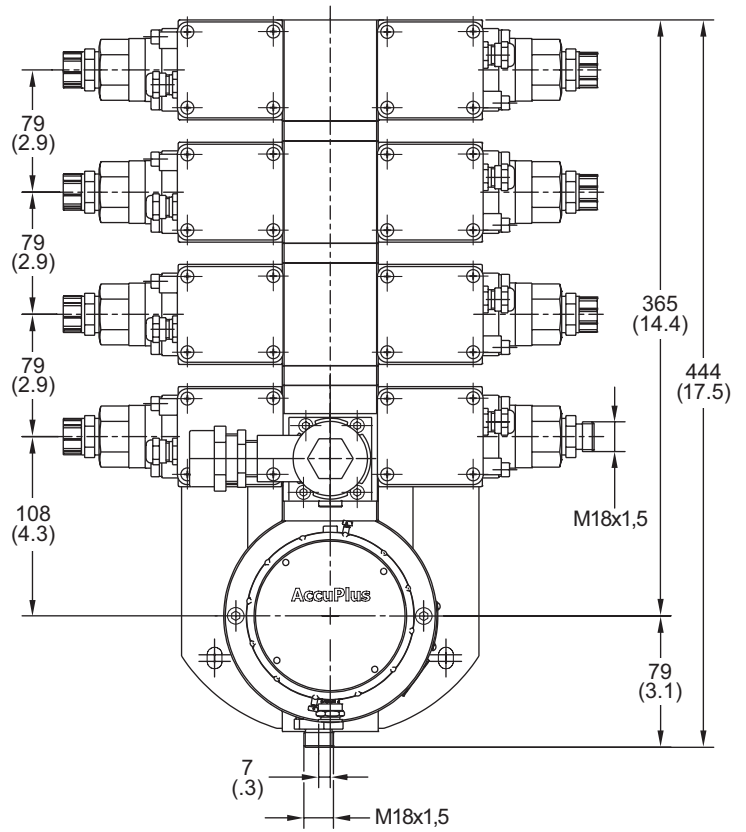
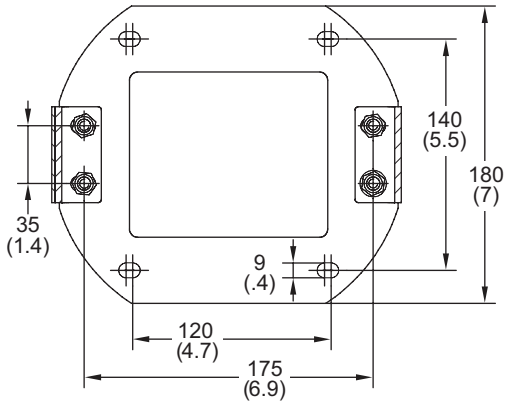
### Top View Dimensions



*Note: Dimensions – Millimetres to the nearest whole mm (inches to the nearest tenth), each independently dimensioned from respective engineering drawings.*

# Dimensions (AccuPlus – Shown with 8 additives and a proportioning valve)

mm (Inches)



**Revisions included in SS05001E Issue/Rev. 0.2 (3/19):**

Dimensions diagram updated on page 4.

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.