AIS - Additive Injection System

The **Banksia**Controls AIS-100 Additive Injection System combines a single Additive Injection Manifold (AIM) with the Additive Injection Controller (AIC-100) to provide a compact designed Additive System with superior performance and accuracy.

Features

AIC-100 (Additive Injection Controller)

The AIC is a sophisticated industrial controller specifically designed to provide accurate additive injection in the most demanding of situations.

The unit has been designed with flexibility in mind and can be programmed to perform in the following ways:

Pace Mode
Injection rate is based on the main flowmeter input and a pre-programmed internal recipe

Permissive Pace Mode
Injection rate is based on the main flowmeter input and a pre-programmed internal recipe, with injection enabled or disabled by separate permissive input

Slave Mode
Inject additive when Additive Start/Inject input is on. Close solenoid when signal is off. No control of additive injection, just additive pulse re-transmit

Control Mode
Start injection based on pre-programmed internal recipe when Additive Start/Inject input is given. Stop injection when injection volume is reached, and provide OC output when complete

Remote Mode
Recipe changed via comms. Injection controlled remotely via comms

Calibrate Mode
As per Control Mode except injection is activated via front panel switch input

Communication is by way of 2 wire RS485 using Modbus RTU protocol. The AIC-100 is equipped with 2x comms ports.

AIM (Additive Injection Manifold)

The AIM is a compact all stainless steel manifold assembly with integral isolating, flow regulating & check valves, fine mesh strainer, solenoid valve, and precision oval gear flowmeter. All assemblies are of modular design and can be quickly and easily changed in-situ.

The AIM is available in three flow range sizes, and can be trimmed in a range of materials to suit the project requirements. Please refer to our separate AIM data sheet for further details.

Technical Specifications:

Flow

Nominal K Factor:
Injector Size 4 (0.01 to 1.0 lpm):- 2890 pulses per litre
Injector Size 6 (0.03 to 1.66 lpm):- 2100 pulses per litre
Injector Size 8 (0.25 to 10.0 lpm):- 710 pulses per litre
Meter Accuracy: +/-0.05% of rate, or +/-0.5% over flow range stated
System Accuracy:+/-0.5%
Repeatability: +/-0.03%
Maximum Pressure: 20 bar

Environment

Temperature: -20C to +40C
Humidity: 5 to 95%
Temperature Class: T6, or T5, or T4, or T3
Protection Class: IP66
Approvals: IECEX/ATEX

Materials

AIM Back Plate: 316SS, 2mm thick with cutout and captive nuts for mounting block and panel.
Manifold: 303SS
Meter, Valves, Strainer: 316SS
Solenoid Seat: 3mm, Kalrez seat
Exd Enclosure: Cast Aluminium
Optional Stand: Galvanised carbon steel stand with plinth

Electrical

Voltage: 10 to 40VDC, 85 to 265 VAC 50/60Hz

Inputs

2x Permissive Inputs: Voltage free contact or DC input 12vDC
Additive Enable Input, Additive Start/Inject Input
1x Reset Alarms input: Voltage free contact or DC input 12vDC
3x Recipe Select Inputs: Voltage free contact (BCD Input)

Outputs

6x Relay Outputs: SSR (85 to 265VAC @ 1A) or EMR (12-28VDC, 85 to 265VAC @ 1A)
Solenoid Control, Pump Control, Error Alarm and 3x Programmable Alarm outputs

1x OC Outputs: 5 to 28VDC @ 200mA
End of Batch Signal
1x OC Outputs: 5 to 28VDC @ 200mA
Add. Flow copy O/P
3x OC Outputs: 5 to 28VDC @ 200mA
Injection Recipe Complete outputs (BCD)

Display: 2 line x 16 character backlit LCD English.
Other languages on request.
Communications: 2x RS485 2 wire using Modbus RTU protocol

Cable Entries: 6x M20 entries available for use
(Exd enclosure).

Mechanical

Manifold Connections (AIM Block): 3/8" NPT F
Dimensions:

Exd Enclosure: 30Wx20Hx23D cm
AIM Plate: 42Wx34H cm

Weight:

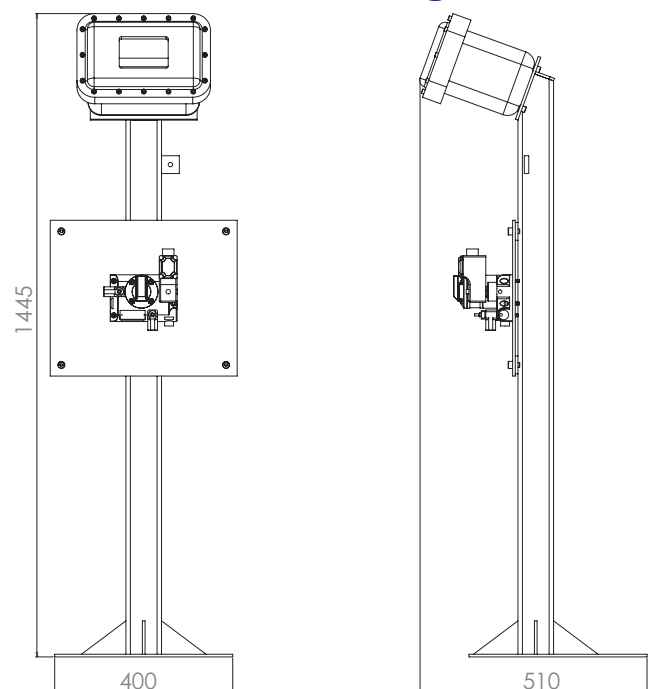Exd Enclosure: 15kg
AIM Plate: 12kg
Optional Stand: 20kg

AIS-100 Model Selection:

Model Coding

AIS-	1	8	S	3	1	3	1	0

Injector Block

0	AIC-100 Only - No Injectors
1	1 x AIM

Injector Size

0	No Injector
4	0.01 - 1.0 lpm
6	0.03 - 1.66 lpm
8	0.25 - 10 lpm

Injector Material

0	No Injector
S	Stainless Steel

Trim Material

0	No Injector
1	Viton
2	EPR
3	Teflon/Kalrez/Simrez
4	Buna N

Approval Type

0	No Approval
1	IECEX/ATEX
2	UL/CSA - *consult factory*
3	Other - *consult factory*

Supply Voltage

0	12VDC
1	24VDC
2	110VAC
3	220VAC

Communications Type

1	RS485 2 wire

Display Language

0	English
2	Other - *consult factory*

Dimensional drawing

1445
400
510

Part No. BCSXAIS0217