

# INNOVEC

## CONTROLS PTY LTD

### INNOVEC IA6 ADDITIVE INJECTION CONTROLLER



The **IAI Additive Injection Controller** is a universally powered (85-265VAC) or 10-40VDC powered injection controller for liquids incorporating a Mono graphics LCD display of 128 x 64 pixels, an advanced processor, selectable open collector or turbine input for main flow, six relay outputs and 1 x analogue input for temperature compensation.

**The controller** combines with an additive injection manifold to provide a compact additive injection system. The system is configured by push buttons on a four buttons Infra-Red remote control or RS485 communication from a host.

#### FEATURES

- Simple touch switch set up with English statement prompts by approved IR
- Low cost - High performance
- Single pulse train with Dip switch selection for turbine, reed, & open collector for main flow
- Current total and background total for main flow and additive flow
- Main flow and additive flow rate display
- Sensor supply that can be adjusted from 8 to 20VDC
- 85 to 265VAC 47-63 Hz universal supply or factory fitted 10 to 40VDC isolated supply

The controller can operate in:

#### **Pace mode**

Injection rate on the main flow throughput & a user programmed algorithm.

#### **Permissive Pace Mode**

Injection rate on the main flow throughput & a user algorithm and enabled by a permissive input.

#### **Slave Mode**

Inject additive enabled by the squirt button or remotely wired to the permissive input.

#### **Control Mode**

Start injection from first received main flow pulse and IAI algorithm and stop at programmed batch size.

#### **Remote mode**

Algorithm and start signal from communication link

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## TECHNICAL SPECIFICATIONS

### Input Details

- The IA6 accepts a single channel input from 0 to 2KHZ and main flows are dip switch selectable for open collector, reed, Hall and turbine signals (from 20mV peak to peak).
- **External squirt button included on IR remote control and squirt input on control PCB**

Controller accuracy +/- 0.5% with a repeatability of +/- 0.25%

### Display

The IA6 incorporates a 64 dot high x 128 dot wide Mono Graphics LCD graphics module with RGB backlight

### Infra Red remote

Four button IR remote is potted in epoxy and complies with AS/NZS 60079.18: 2005

### Analogue Output

The IAI has one 4-20mA outputs for controlling one modulating valves or pumps. Proportional and Integral control is used to control for both flowrates either independently or in ratio.

### Temperature Compensation Input

1 x 4-20mA with for use of a 2 wire PT100 2 wire transmitter for temperature compensation to API tables

### RS 485 Communication

Half duplex with up to 256 nodes from 2400 to 9600 Baud

### Environmental Parameters

- -20 to 50 degrees Celsius and Humidity 5-95%
- Protection class to IP66.

### Electrical Parameters Main Board

4 of voltage free inputs 24VDC tolerant 1 dedicated squirt input, 1 of dedicated alarm reset

2 of PD / turbine input for main flow

6 of single train input for additive flow

1 of low flow alarm, 1 of pulse output as 1 PPL; 10 PPL, 100 PPL or 1000PPL

6 of relay outputs 240VAC tolerant SSR@ 2Ampere OR

6 of mechanical relay with changeover contacts rated @ 2 Amperes resistive

1 of 4-20mA output that can drive 500 Ohms with PI algorithm control with a 50:1 turn down ratio

1 of temperature input

Communications: 2 wire RS485

### Electrical Parameters Permissive Board

6-off Pacing Signal Inputs (DC)

6-off Permissive Inputs (AC)

6-off Injector Feed-Back signals (DC)

6-off Injector SOV Outputs (AC)

6-off Pump Start Signals AC

### Power Supply

- 85 to 265VAC 47-63 Hz or DC to DC converter isolator from 10 to 40VDC. An adjustable transducer power supply of 8 to 20VDC at 50mA is incorporated.

### Mounting Details

- Surface mounting EXD Cast Aluminium enclosure of case dimensions 210 mm wide by 210 mm high by 175 mm deep with fixing centres of 187mm wide x 187mm high by M8 screws with IECEX and ATEX Approval (Approval to IECEX EX 11B T6 IP66) weight is 8Kg.
- 4 of M20 cable entries available for user connection

### Ordering information

Model/input/display/power supply/options.

- Sample part # IA6/6xB/0-99999999/VAC
- CE Conformity (pending)



### Connection Details Permissive Board

Terminal 52: Pacing Input 1 DC +	Terminal 82: Pump Start Signal 4 AC +
Terminal 53: Pacing Input 1 DC -	Terminal 83: Pump Start Signal 4 AC -
Terminal 54: Pacing Input 2 DC +	Terminal 84: Pump Start Signal 5 AC +
Terminal 55: Pacing Input 2 DC -	Terminal 85: Pump Start Signal 5 AC -
Terminal 56: Pacing Input 3 DC +	Terminal 86: Pump Start Signal 6 AC +
Terminal 57: Pacing Input 3 DC -	Terminal 87: Pump Start Signal 6 AC -
Terminal 58: Pacing Input 4 DC +	Terminal 88: Injector SOV Output AC 1+
Terminal 59: Pacing Input 4 DC -	Terminal 89: Injector SOV Output AC 1-
Terminal 60: Pacing Input 5 DC +	Terminal 90: Injector SOV Output AC 2+
Terminal 61: Pacing Input 5 DC -	Terminal 91: Injector SOV Output AC 2-
Terminal 62: Pacing Input 6 DC +	Terminal 92: Injector SOV Output AC 3+
Terminal 63: Pacing Input 6 DC -	Terminal 93: Injector SOV Output AC 3-
Terminal 64: Permissive Input 1 AC +	Terminal 94: Injector SOV Output AC 4+
Terminal 65: Permissive Input 1 AC -	Terminal 95: Injector SOV Output AC 4-
Terminal 66: Permissive Input 2 AC +	Terminal 96: Injector SOV Output AC 5+
Terminal 67: Permissive Input 2 AC -	Terminal 97: Injector SOV Output AC 5-
Terminal 68: Permissive Input 3 AC +	Terminal 96: Injector SOV Output AC 6+
Terminal 69: Permissive Input 3 AC -	Terminal 97: Injector SOV Output AC 6-
Terminal 70: Permissive Input 4 AC +	Terminal 98: Injector Feedback DC 1+
Terminal 71: Permissive Input 4 AC -	Terminal 99: Injector Feedback DC 1-
Terminal 72: Permissive Input 5 AC +	Terminal 100: Injector Feedback DC 2+
Terminal 73: Permissive Input 5 AC -	Terminal 101: Injector Feedback DC 2-
Terminal 74: Permissive Input 6 AC +	Terminal 102: Injector Feedback DC 3+
Terminal 75: Permissive Input 6 AC -	Terminal 103: Injector Feedback DC 3-
Terminal 76: Pump Start Signal 1 AC +	Terminal 104: Injector Feedback DC 4+
Terminal 77: Pump Start Signal 1 AC -	Terminal 105: Injector Feedback DC 4-
Terminal 78: Pump Start Signal 2 AC +	Terminal 106: Injector Feedback DC 5+
Terminal 79: Pump Start Signal 2 AC -	Terminal 107: Injector Feedback DC 5-
Terminal 80: Pump Start Signal 3 AC +	Terminal 108: Injector Feedback DC 6+
Terminal 81: Pump Start Signal 3 AC -	Terminal 109: Injector Feedback DC 6-

### Connection Details Main Board

Terminal 1: Reset Input	Terminal 27: 85 t0 265VAC Active Supply
Terminal 2: 0VDC	Terminal 28: 85 t0 265VAC Active Supply
Terminal 3: Squirt Input	Terminal 29: Ground Supply & 5mm Earth Screw
Terminal 4: 0VDC	Terminal 30: Relay Outputs Active (Fuse Protected)
Terminal 5: Permissive input DC 1	Terminal 31: Relay Six Normally open contact
Terminal 6: 0VDC	Terminal 32: Relay Six Neutral/0VDC
Terminal 7: Permissive input DC 2	Terminal 33: Relay Five Normally Open Contact
Terminal 8: 0VDC	Terminal 34: Relay Five Neutral / 0VDC
Terminal 9: Main Flow Input + Channel 1	Terminal 35: Relay Four Normally Open Contact
Terminal 10: Main Flow Input - Channel 1	Terminal 36: Relay Four Neutral /0VDC
Terminal 11: Main Flow Input + Channel 2	Terminal 37: Relay Three Normally Open Contact
Terminal 12: Main Flow Input - Channel 2	Terminal 38: Relay Three Neutral / 0VDC
Terminal 13: Adjustable 8 to 22VDC active supply:	Terminal 39: Relay Two Normally open contact
Terminal 14: 0VDC	Terminal 40: Relay Two Neutral /0VDC
Terminal 15: Additive input + Channel 1	Terminal 41: Relay One Normally Open contact
Terminal 16: Additive input - Channel 1	Terminal 42: Relay One Neutral / 0VDC
Terminal 17: Additive input + Channel 2	Terminal 43: Low Flow Alarm (Open Collector)
Terminal 18: Additive input - Channel 2	Terminal 44: Low Flow Alarm (Open Collector)
Terminal 19: Additive input + Channel 3	Terminal 45: Low Flow/ Pulse output per Litre + 24VDC
Terminal 20: Additive input - Channel 3	Terminal 46: Pulse output per Litre – (1PPL), (10PPL), (100PPL)
Terminal 21: Additive input + Channel 4	Terminal 47: RS485 A
Terminal 22: Additive input - Channel 4	Terminal 48: RS485 B
Terminal 23: Additive input + Channel 5	Terminal 49: Temperature input -
Terminal 24: Additive input - Channel 5	Terminal 50: Temperature input +
Terminal 25: Additive input + Channel 6	
Terminal 26: Additive input - Channel 6	