



## Automatic Additive Dosers

### Technical Specifications

#### FULLY AUTOMATIC

**Fill and Forget Technology!** Once installed and programmed, the AAD is designed to fill and forget. A combination of complex algorithms and fuel level sensor inputs determine when you have refueled, and how much additive to dose into your new fuel load. Once programmed, simply keep the AAD full of your preferred fuel additive.

#### NO DRIVER INPUT REQUIRED

#### ACCURATE DOSING

#### DURABLE CONSTRUCTION

Polyethylene or Stainless Steel additive reservoir, baked on powder coat finish mounting cradle and industrial quality components, makes the FAA able to withstand harsh operating environments.

#### EASY INSTALLATION

The AAD can mount anywhere and only requires 12 or 24 volt DC power supply, plus access to the fuel level sensor and possibly the fuel tank vent. Installation generally takes only 4 hours by an experienced technician.

#### CAN J1939 NETWORK

Can be connected to the vehicle or machine CAN Network for the fuel level signal and vehicle speed.

#### TELEMATICS CAPABLE

The AAD can support telematics solutions - satellite or cellular based. Some interface development would be needed.

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ADDITIVE RESERVOIR	
Material	HDPE (Polyethylene) VX562 which complies with EU TUV regulation ECE R34, Part 1, Annex 5 EU Directive 70/221/EEC for Diesel tank applications, or 1.5mm to 2mm Stainless Steel 316 Marine Grade, or 3mm Aluminium Marine Grade 5052
Recess	Electronics are separated from the wet side components
External Dimensions—mm	Maxi: L 450 x D 440 x H 440, Mini: L 300 x D 260 x H 260
Vibration Isolation	High density foam strips on mounting cradle & straps
Reservoir Volume	20 litres or 5 litres
Environmental Seal	NEMA Type 4 / IP65
MOUNTING CRADLE	
Material	Mild steel, or Stainless Steel 316 Marine Grade
Exterior Finish	Baked-on black powder coat
Cradle Straps	Stainless steel
Mounting Method	4xM8 Maxi or M6 Mini bolts to chassis or other suitable surface
ELECTRICS & ELECTRONICS	
Power Requirements	12 or 24 VDC 10 amp fuse (15 amp for Bulk Storage or Fuel Flow )
User Input/Output	Keypad display unit with membrane keypad & LCD screen RS232 serial data port
External Connections	+ve 12 or 24 VDC, -ve ground, +ve fuel level sender signal
Electronic Control Board	Towai Technologies custom designed PC boards - either Atmel 8-bit with 26 IO connections, or AVR 32-bit with 66 IO connections.
External Connections	Waterproof flexiglands and Narva bullet connectors
EXTERNAL INDICATORS	
Additive Reservoir Level	LED low level indicator
Injection State	LED indicator for stationary, fuelling & injecting
Fail-Safe Error	LED indicator
PLUMBING	
Additive Delivery Hose	6mm WAM Marine Fuel Line SAE-J1527-A1 USCG-Type A1
Fittings	Oetiker 1 ear hose clamps
Tank Filler Cap & Vent	Camlock cap & GT Dev Tank Vent 131.9
OPERATIONAL ENVELOPE	
Temperature	-20 degC to +70 degC for LCD display, -40 degC to +80 degC for all other components.
Humidity	90+% - electronics are conformally coated with HPA meeting US MIL-1-46058C
Additive	Operating temperature depends on the specific additive. Optional heater can extend additive operating temperature range.
INDUSTRY COMPLIANCE	
EMC (Electromagnetic Compatibility) Compliance	Electronic Control Board has passed FCC Part 15, Subpart B (class A), ICES-003 (class A), CISPR 22 (class A) and CISPR 25 (class A)
WOSL Approval	Wiri Oil Services Ltd (WOSL), a collective of the four major New Zealand oil companies, has approved Towai's FAA, including wiring and pipework, for installation on fuel delivery tankers.