

We lead the way...



Technical Specifications

Electrical Power Supply

8V to 36V DC, 150 Watts (complete system)

Digital Inputs

7 FLEx iO DC Inputs
2 High Speed FLEx iO Inputs with a
15kHz. Maximum count rate

Type:

Dry contact closure (TTL compatible)
Max. Open circuit voltage 36V
Max. Short circuit current 1 mA

Digital Outputs

6 High Speed FLEx iO Digital Outputs
Type:
5 - High Side Switch, Short Circuit and Load
Protected. Thermally Protected. Maximum
load 36V DC, 5Amps.
1 -Solid State Relay Output. Maximum Load
60V DC, 2Amps.

Motor Control

Brushless DC motor controller

Colour Sensor

BLENDTECH Spectrum™ Colour Verification
System - In line configuration.

Communications

- 2 - Serial Communication Ports, RS-485
RS-232 selectable with lightning / surge protection
- Baud Rate: Selectable 1200 to 19200
- Compatible with TAS system such as Lectro-
Count
- MODBUS ACSII System
- Report Printer Supported.

Event Log

Up to 200 entries or transactions

Display

20-character, 2-line graphic VFD

Environment

Unit suitable for indoor or outdoor use with ap-
propriate enclosure mounted on a mobile unit
(i.e. truck).

Safety

All solid state design
No open electrical contacts
Brushless DC Motor

Hazardous Areas (optional)

System UL and CSA Approved for Class I,
Group D, Division 1 Hazardous Areas with
enclosure shown. (Pending)

Materials of Construction

Flowmeter

303 stainless steel body
303 stainless steel gears

Pump

304 stainless steel body. Teflon seals

Process Piping and Valve

304 stainless steel

Additive Tank (Storage)

304 stainless steel

Operating Information

Flowmeter

Accuracy: 0.5% of rate
Flow Rate: 0 to 3 lpm

Pump

Pressure: 85 psi maximum
Flow Rate: 0 to 4000 cc per minute

Operating Pressures

85 psi maximum

Additive Tank (Storage)

15 litres maximum volume liters

Product Bulletin

Truck Mounted Additive • Dye Injection System

Document Number: ECM_TMIS-001



Product Description

The BLENDTECH ECM Truck Mounted SMART INJECTION system is a modern electronic microprocessor based “completely” self contained package designed specifically for dye (colourant) and additive injection. The unit is designed to be mounted on a truck to facilitate the accurate injection and verification of dyes and additives.

Features

The Electronic Control Module (ECM) Truck Mounted Injection System (TMIS) processes and displays the data required for accurate control of dye or additive injections. The ECM Truck Mounted unit normally operates as an intelligent slave to a main product delivery. The ECM can also be configured to function as a completely stand-alone unit operating as a preset unit.

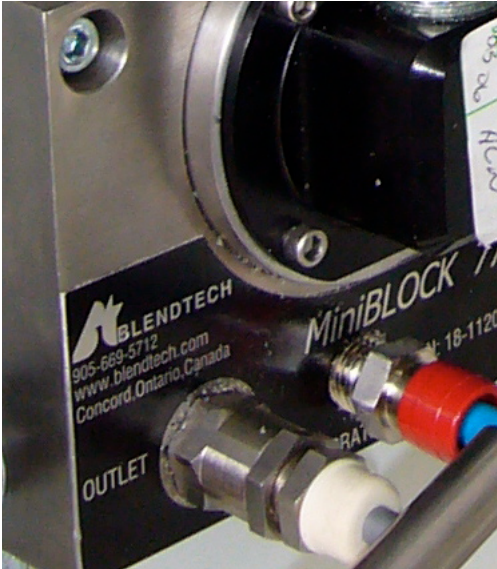
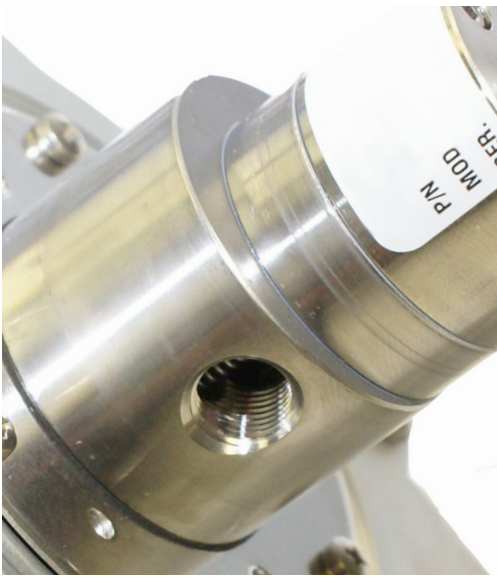
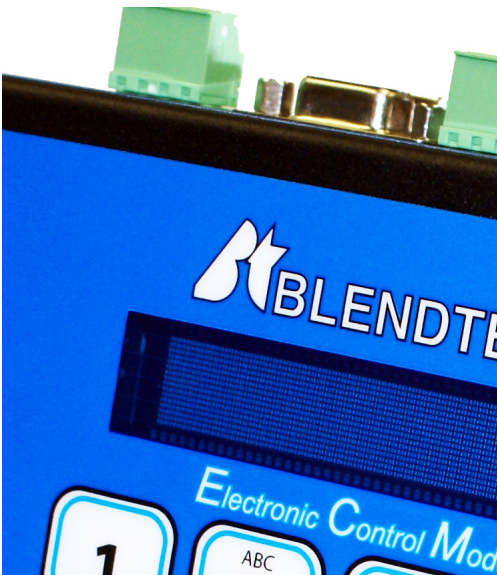
The ECM TMIS is a completely self contained addition system. The unit includes all hardware required to perform the addition of dye or additive. The complete injection system includes the ECM controller, interface to a TAS system, driver interface (HMI), additive tank inventory (tank level) system, integrated additive pump, optical colour verification system, BlendCOMM Management and Reporting Software, additive flow meter and optional transaction printer. The system has been designed as a complete “out of the box” solution, all components have been integrated into a seamless “user-friendly” mobile injection solution.

Continuous Injection

Unique to BLENDTECH, the TMIS unit operates as a continuous injector. This new-patented concept offers a number of benefits when compared to “traditional” methods of injection. The ECM uses a dynamic injection routine constantly computing the optimum injection size and interval maintaining the desired treatment rate as closely as possible for the entire load. This method of additive injection will increase product quality and reduce cost of ownership.

Spectrum™ - Colour Verification System

For taxation dye or colourant programs the presence or absence of dye is a growing concern. Using the ECM and the optional Spectrum™ colour sensor the system constantly monitors the addition of dye (colourant) to ensure proper operation. The Spectrum™ colour verification system can detect the presence of dye in clear fuel or the absence of dye in coloured fuel. This allows the system to ensure fuel is being dyed when it should be or prevents the colouring of already dyed fuel. The Spectrum™ colour sensor uses a complex method of colour analysis where the entire visible light spectrum is considered. The unit does not look at the product as a single absolute colour but as a colour made up of a complete spectrum (spectrum-analysis). This allows the colour sensor to target a specific wavelength of light absorbed by the dye marker. Unlike other systems which are effected by the “quality” of clear fuel, this method provides a true colour analysis of the product being produced.



Specifications subject to change without prior notification

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The Total Solution Company

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Inventory and Security

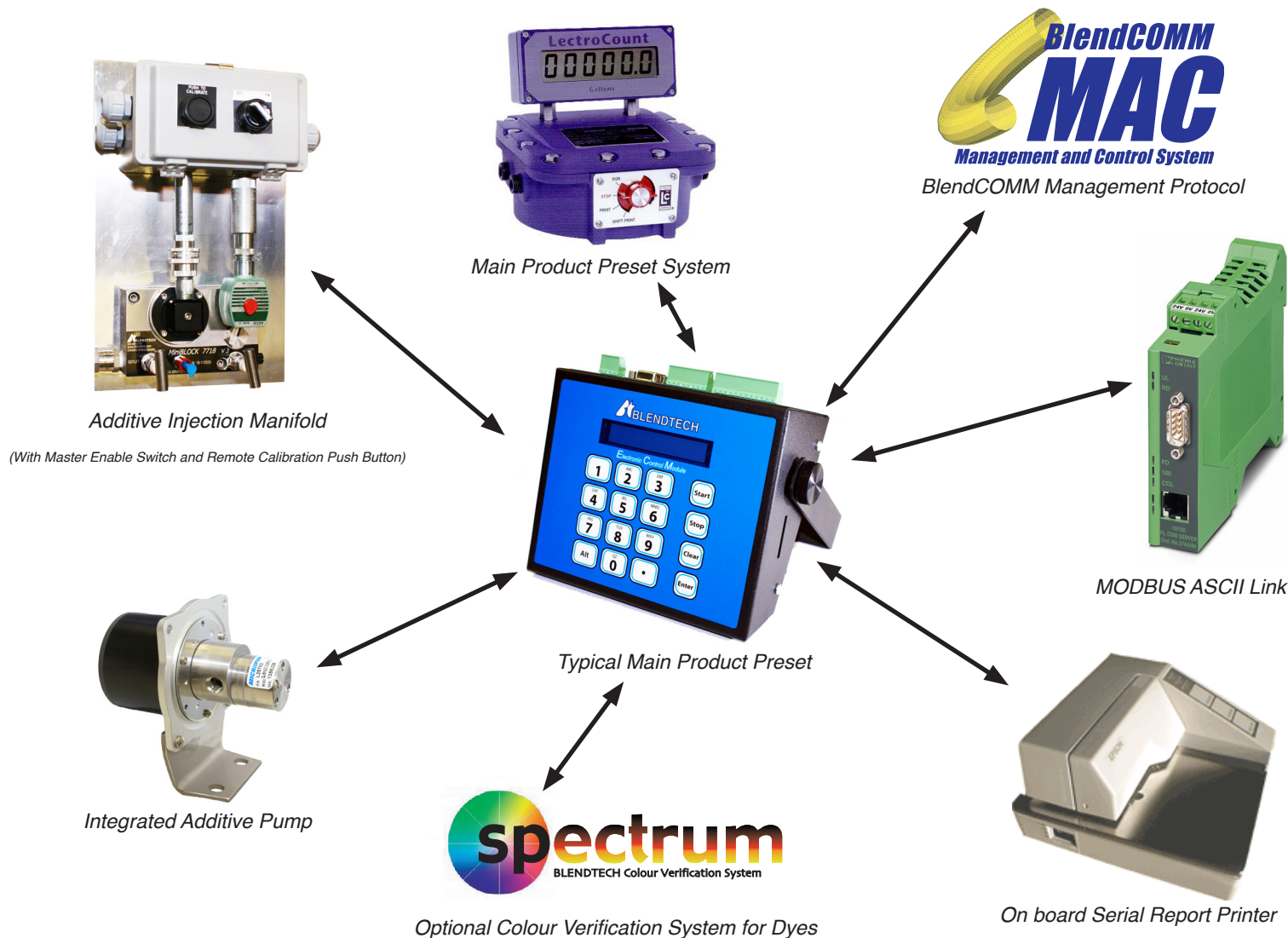
The ECM controller and integrated additive tank level sensor provides the operator with a complete picture of the additive inventory. The ECM can be configured to prevent the transfer of a product if there is not enough additive to complete the desired preset. The inventory system also allows the ECM to monitor the addition or removal of product to the additive storage tank. All additions to the tank can be monitored and recorded in the system transaction log. The optional interlock to the fill cap prevents and monitors unauthorized access to the additive inventory.

General Operation

The TMIS package can be set up to operate as either a slave to the main product stream or as a stand-alone preset for systems without main product flow meters. The ECM TMIS package can also be programmed to prompt, store and maintain information such as; delivery data (destination number, driver number), product selection, security (lock out based on operator PIN) and preset data.

All operator input can be achieved with the ECM's integrated keypad typically mounted inside the truck's cab (pictured) and it's unique operator interface (available in multiple languages) or with a serial communications link without exposing the equipment to the "outside world". No special communication devices or hand held hardware is required.

System Overview



The ECM unit maintains it's own internal calibration factors for both the main and additive flow meters and all user changeable parameters in nonvolatile memory. System firmware is stored in "flash" memory allowing easy access to downloadable software upgrades. System parameters may be changed via the unit's front panel or through the unit's serial communications port.

The communications circuit permits monitoring and control of the ECM unit. The ECM unit is compatible with the BlendCOMM Management and Control Software Package which can provide advanced control features such as BOL generation, remote authorization and on-line inventory. All BlendCOMM functionality can be accessed via a standard Windows PC or industrial computer located in the cab of the truck. The Truck Mounted Injection System stores a large amount of process information including operating state, volumes and errors in the ECM's transaction log. Using one of the serial communication channels and an optional GPS (Global Positioning System) system, the ECM is also capable of recording location information.

This transaction log provides an operator with a complete time and date stamped snap shot of the performance of the unit over a period of time. The transaction log can be downloaded via the RS485 or RS232 communications link using the BlendCOMM Management software.



Key Features

- Additive Pretreatment
- Clean starts - no contamination
- Additive and Product totals
- Supports a variety of flow meters
- Accepts flow meter pulse rates up to 15kHz.
- Error checking and alarm generation
- Provides for calibration of each flow meter pulser
- Brushless DC Pump Motor and Control
- Additive Overtreat
- Flushing at end of load
- 20 character, 2 line vacuum fluorescent graphic display
- Integrated easy to use HMI
- RS-485 and RS-232 data communications and control
- Available Report Printer
- FLEx iO user defined inputs and outputs
- 8V - 36V DC operation
- Nonvolatile memory and Transaction Log
- Flash Based Software
- BlendCOMM Management and Control Compatible
- MODBUS ASCII Protocol available
- Integrated Additive Inventory System
- Spectrum™ Colour Verification System

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