

# Flow

## TISI Batch Controller



### **AN INTELLIGENT LOADING CONTROLLER FOR TERMINAL AUTOMATION SYSTEMS**

#### OVERVIEW

TISI is an intelligent microprocessor-based Batch Controller for Fluid Metering Installations. TISI can operate either in a "MANUAL" or "AUTO" mode. It has been designed to perform various batch loading applications, such as Tank Trucks, Rail Cars, Industrial Barrel Filling, Barge for Petroleum Liquids, Aviation Fuel, LPG, LNG, Lube Oils, Chemicals, etc. TISI communicates with Loading Rack Computer, Gauging Computer and if required, with other Peripheral / Host devices. TISI has an ex-proof and weatherproof housing.



#### SALIENT FEATURES

- Large 4-Line Liquid Crystal Display
- Latest Generation Microcomputer Design
- Dual Communication Ports
- Pulse Security Conforming to IP-252 / ISO-6551
- Menu Driven Operator Interface
- Multifunctional Alpha-Numeric Keyboard
- Host Communication Redundancy
- Data Storage up to 200 transactions (expandable)
- Field Programmable Options

#### DESIGN

TISI uses latest generation Microcomputer Technology. The TISI has been carefully designed to meet wide range of requirements. It offers modular design and provision made for addition of extensions. It complies with most International standards.

#### PRESENTATION

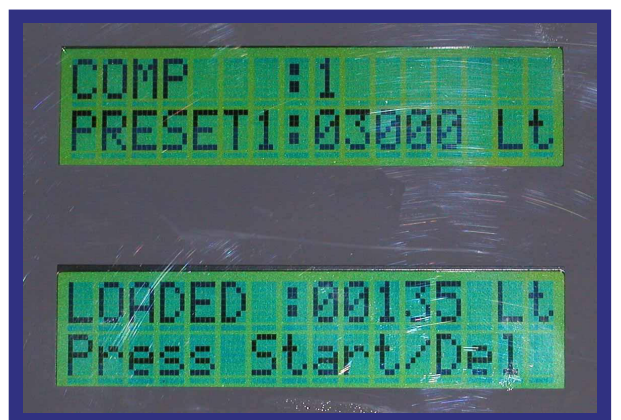
TISI is installed in an ex-proof (Exd) and weatherproof (IP-65) housing, the front of which includes:

- A window for the reading of the display unit
- The multi-functional key board

#### DISPLAY

TISI provides backlit LCD display with high contrast quality. This means perfect visibility under all operating conditions.

The menu driven, user configurable display ensures that all important parameters are displayed.



## KEYBOARD OPERATION

24 multi-functional keys are provided in the front, out of which 8 keys are dedicated for :

- Delivery
- Totaliser
- Flow rate
- Preset quantity
- Temperature
- Batch start
- Batch stop
- Operational Mode selection (Remote/Local)

Balance keys are dedicated for numeric and alphabet data entry.

## COMMUNICATION & PERIPHERALS

TISI has dual RS485 / RS232C communication ports and provides optional host communication redundancy. The TISI may be associated with various peripheral, and depending on the case, will perform as either master or slave operator unit.

TISI accepts analog inputs for RTD. Other than standard outputs, it provides connectivity to external devices such as Isolation Valves, Pumps, Alarms, Ticket Printer, etc.

## ADDITIVE INJECTION / BLEND

The TISI can handle proportional or sequential blending with pre or post blending. TISI is equipped with the necessary hardware and data can be programmed and stored. It can be configured to other devices like Blend meter & pump. The necessary authorization is made available on TISI.

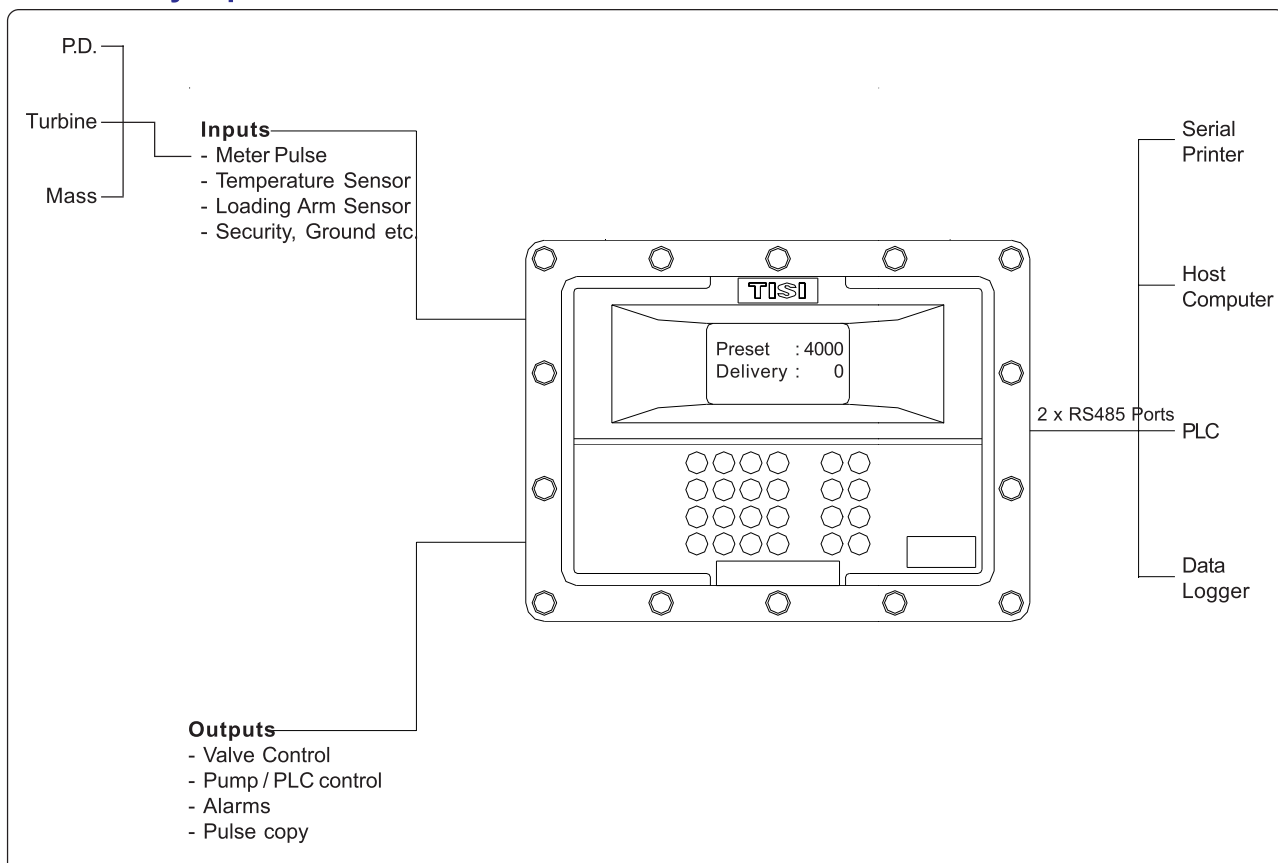
## CALIBRATION & COMPENSATION

The TISI provides multi-point meter accuracy curve linearisation. The meter calibration is provided through window at the rear (protected by Legal Metrology seal). The temperature compensation can be provided as per API tables. The display of compensated and uncompensated quantity can be programmed.

## COMPATIBILITY

TISI offers compatibility with any type of metering instrument. TISI adopts to any measuring factor (pulse ratio) and is electrically compatible with all types of pulse transmitters.

## General Synoptic



## TECHNICAL SPECIFICATIONS

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Power Supply : 110 VAC / 230 VAC, +/-10%

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Display : Alpha numeric 16x4 line display with backlit  
Maximum Preset : 99,999 (5 Digit)  
Maximum Totalizer : 99,999,999 (8 Digit)  
Data Entry : Multi-functional keys

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Digital Inputs : Pulse (Single or Dual) (open collector +12 VDC)  
Loading Arm Position Sensor  
Temperature Sensor RTD/PT100  
Earthing Sensor  
Overspill Sensor  
Remote Interaction Terminal

*(All inputs are opto-isolated 12 VDC operated)*

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Digital Outputs : Preset output  
Valve Control for Main Product (SSR O/P)  
Valve Control for Additive Dosing (SSR O/P)  
Valve Control for Ethanol Blending (SSR O/P)  
Pump Demand for Main Product (Potential-free O/P)  
Pump Demand for Additive Dosing (Potential-free O/P)  
Pump Demand for Ethanol Blending (Potential-free O/P)

*(SSR outputs are opto-isolated. Potential-free outputs, 1 C/O, 5A @ 230 VAC, resistive load)*

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Analog Inputs : Temperature 3 wire RTD sensor (4-20 mA I/P)

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Analog Outputs *(optional)* : 4-20 mA proportional to flow rate

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Diagnostics & Alarms Indication : Self-diagnostic  
Overflow / Underflow  
Interlock Failure  
Pulse Failure  
Emergency Shut Down

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Memory Capacity : 64 KB EEPROM  
Data Storage : Last 200 transactions (expandable)  
Pulse Security : Level A IP-252 / ISO-6551

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Communication Link : RS-485 Multidrop RTU MODBUS  
Communication Ports : 2  
Baud Rate : 9600

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Operating Temperature : Max. up to 60°C  
Humidity : 0 - 95% RH  
Enclosure : Exd IIA & II B, Ex-proof  
Weatherproof to IP-65  
Material : LM6  
Dimensions : 410 x 410 x 310 mm

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Specifications are subject to change without notice.

All dimensions are in mm unless otherwise specified.

Pub. No. 001  
Issue 1 Rev 0 08-2012

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