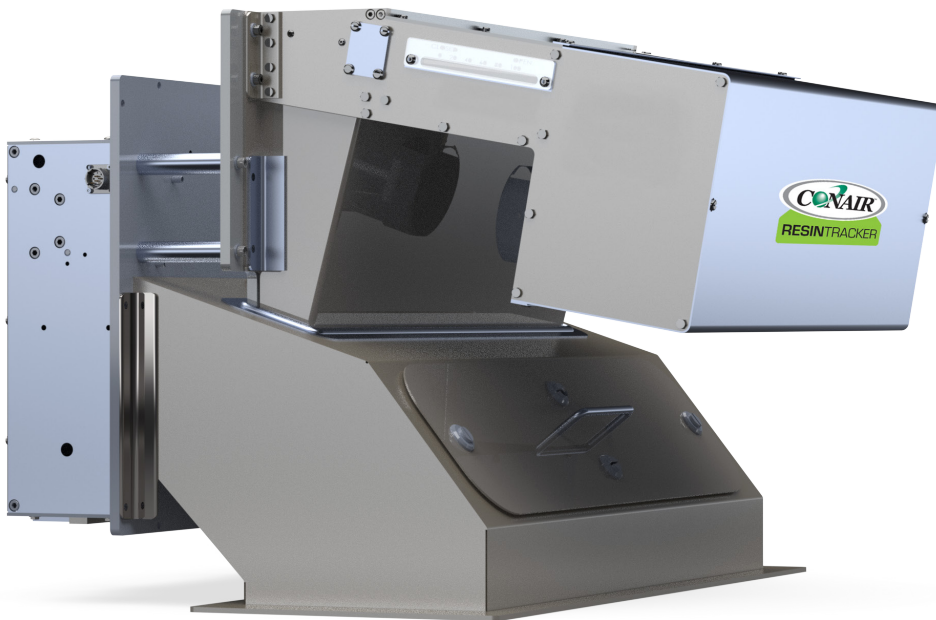


USER GUIDE
UGC056-0616

ResinTracker™

**Models RT-3CF-L, RT-6CF, RT-6CF-L, RT-60F,
RT-12CF, RT-120F, RT-24CF, RT-240F, RT-36CF,
RT-48CF, RT-6CV, RT-12CV, RT-24CV**



Please record your equipment's model and serial number(s) and the date you received it in the spaces provided.

It's a good idea to record the model and serial number(s) of your equipment and the date you received it in the User Guide. Our service department uses this information, along with the manual number, to provide help for the specific equipment you installed.

Please keep this User Guide and all manuals, engineering prints, and parts lists together for documentation of your equipment.

Date:

Manual Number: UGC056-0616

Serial Number(s):

Model Number(s):

DISCLAIMER: Conair shall not be liable for errors contained in this User Guide or for incidental, consequential damages in connection with the furnishing, performance or use of this information. Conair makes no warranty of any kind with regard to this information, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

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Purpose of the User Guide

This User Guide describes the Conair ResinTracker™ and explains step-by-step how to install and operate this equipment.

Before installing this product, please take a few moments to read the User Guide and review the diagrams and safety information in the instruction packet. You also should review manuals covering associated equipment in your system. This review won't take long, and it could save you valuable installation and operating time later.

How the Guide is Organized

Symbols have been used to help organize the User Guide and call your attention to important information regarding safe installation and operation.



Symbols within triangles warn of conditions that could be hazardous to users or could damage equipment. Read and take precautions before proceeding.



Numbers indicate tasks or steps to be performed by the user.



A diamond indicates the equipment's response to an action performed by the user or a situation.



An open box marks items in a checklist.



A circle marks items in a list.



Indicates a tip. A tip is used to provide you with a suggestion that will help you with the maintenance and the operation of this equipment.



Indicates a note. A note is used to provide additional information about the steps you are following throughout the manual.

Your Responsibility as a User

You must be familiar with all safety procedures concerning installation, operation, and maintenance of this equipment. Responsible safety procedures include:

- Thorough view of this User Guide, paying particular attention to hazard warnings, appendices, and related diagrams.
- Thorough review of the equipment itself, with careful attention to voltage sources, intended use, and warning labels.
- Thorough review of instruction manuals for associated equipment.
- Step-by-step adherence to instructions outlined in this User Guide.

ATTENTION: Read This So No One Gets Hurt

We design equipment with the user's safety in mind. You can avoid the potential hazards identified on this machine by following the procedures outlined below and elsewhere in the User Guide.



WARNING: Improper installation, operation, or servicing may result in equipment damage or personal injury.



This equipment should be installed, adjusted, and serviced by qualified technical personnel who are familiar with the construction, operation, and potential hazards of this type of machine.

All wiring, disconnects, and fuses should be installed by qualified electrical technicians in accordance with electrical codes in your region. Always maintain a safe ground. Do not operate the equipment at power levels other than what is specified on the machine serial tag and data plate.



WARNING: Voltage hazard



This equipment is powered by electrical current, as specified on the machine serial tag and data plate.

A properly sized conductive ground wire from the incoming power supply must be connected to the chassis ground terminal inside the electrical enclosure. Improper grounding can result in severe personal injury and erratic machine operation.

Always disconnect and lock out the incoming main power source before opening the electrical enclosure or performing non-standard operating procedures, such as routine maintenance. Only qualified personnel should perform troubleshooting procedures that require access to the electrical enclosure while power is on.



WARNING: Compressed air hazard

If you use compressed air, you must wear eye protection and observe all OSHA and other safety regulations pertaining to the use of compressed air. Bleed off pressure before servicing equipment.

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What is the ResinTracker™?

The Conair ResinTracker™ is designed to measure the weight of resin and regrind as it flows freely through the unit.

Typical Applications

Conair ResinTracker™s can measure resin or regrind as it passes through the compact housing.

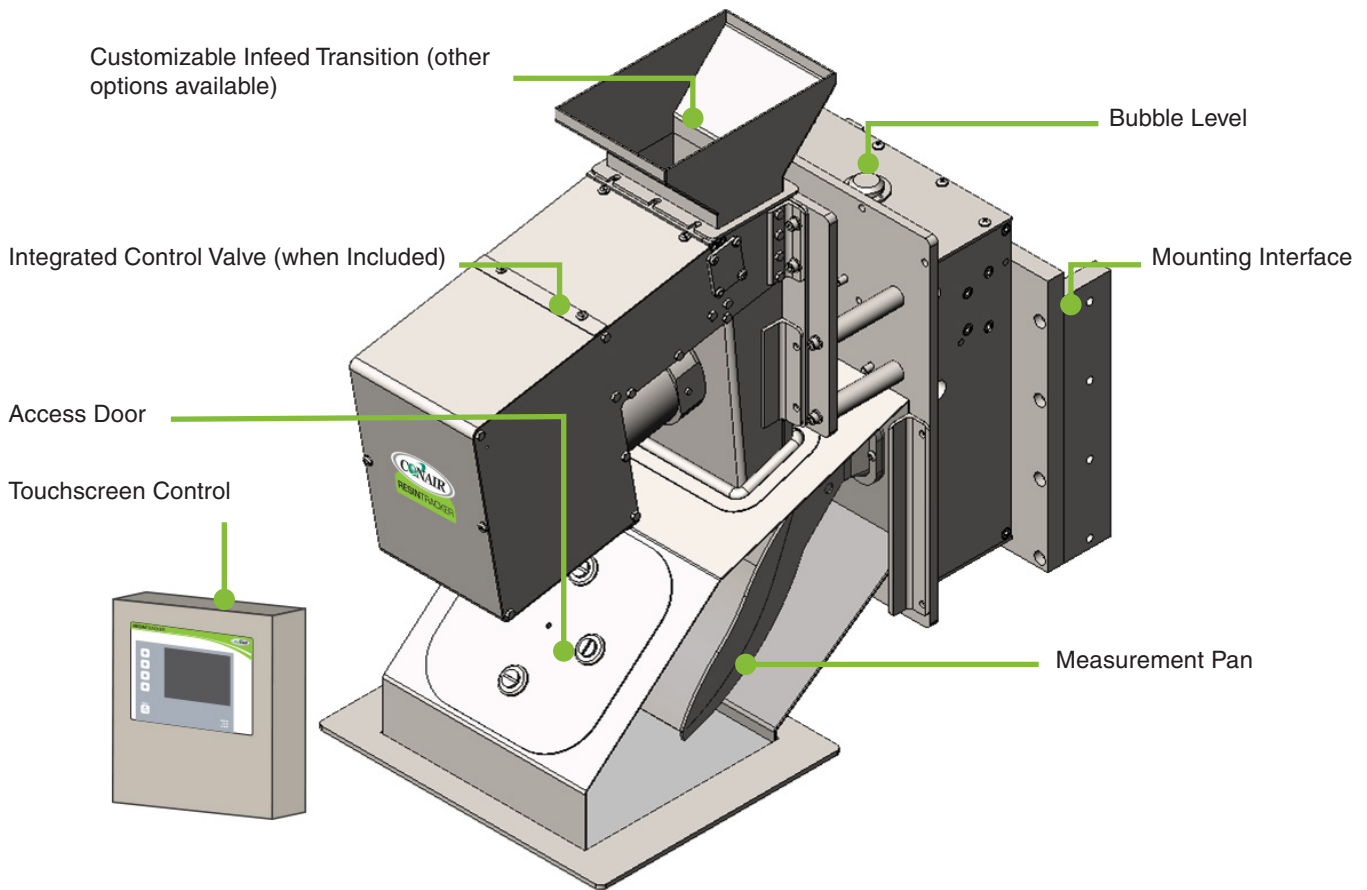
With the ICU Control Valve:

- The ResinTracker™ can integrate with a servo-driven control valve that will stop the material flow when a desired weight has been achieved.
- Labor intensive and often inaccurate hand-filling of molds is replaced with fast, accurate dispensing of granular resin into molds with a ResinTracker™ installed on a filling station frame. The Integrated Control Valve in the ResinTracker™ shuts off flow when a pre-programmed dispense quantity is delivered. Different resin quantities are easily programmed and selected by the operator.
- The operator sets a target weight on the remote control for a quantity of resin to be delivered into a gaylord box. Vacuum loaded resin is first collected in a JIT holding hopper where it readily flows into the ResinTracker™ that measures its weight as it passes into the gaylord box below. The servo-driven Integrated Control Valve, built into the ResinTracker™, responds to the approaching target set point and closes, to precisely meet the target weight in record time.

Without the ICU Control Valve:

- Reground and/or shredded material quantities are accurately tracked with no interruption of flow by passing the flow through a ResinTracker™. Output can be delivered by conveyor or by cyclone, vacuum, or compressed air unloading from the granulator or shredder. The ResinTracker™ ignores the variations in bulk densities that can be common to size reduction for accurate record keeping of reclaim by weight. Gaylord box, or any reclaim vessel quantity can be recorded for inventory tracking.

How the ResinTracker™ Works



How the ResinTracker™ Works (continued)

The Conair ResinTracker™ is designed for measuring the weight of resin and/or regrind and adjusting output based on the user's settings.

Touch Screen Control

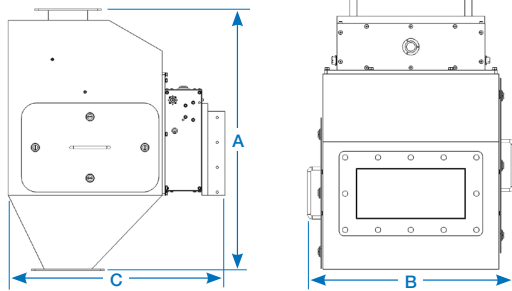
The remote, touch screen control provides operators with a simplified, intuitive interface for collecting weight data as resin flows across the ResinTracker™'s movement pan. The control can also provide intuitive, easy inputting of target weights for filling operations.

The NEMA 4 rated control includes a 7-inch {17.8-cm}, full color, touch screen display panel that the user can select to default to flow rate or totalization operations. User data storage is provided via a 2 GB compact flash card and calibration data is easily stored for multiple types of flow.

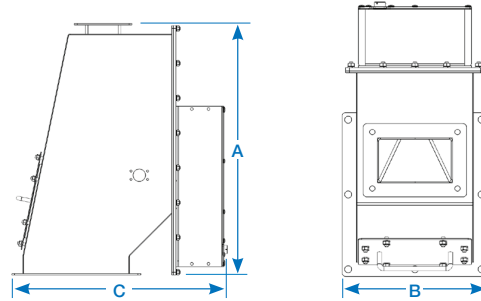


Specifications

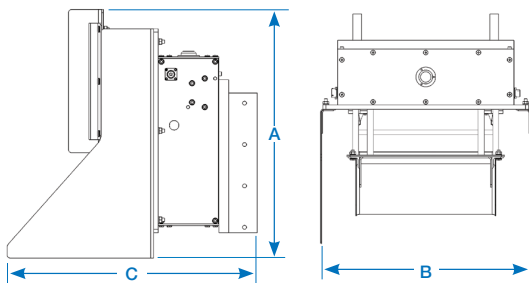
Models RT-3CF, RT-6CF, RT-12CF, and RT-12CF



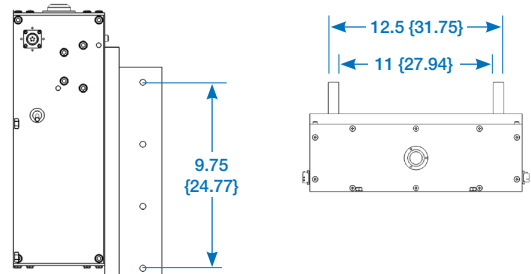
Models RT-3CF-L and RT-6CF-L



Models RT-60F, RT-120F, and RT-240F



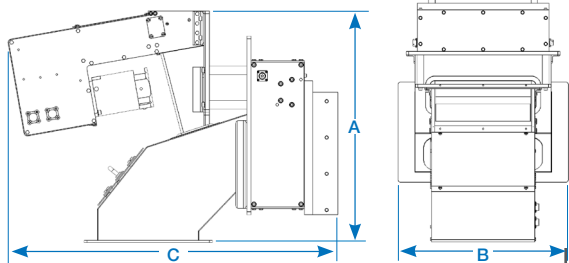
Mounting Interface - All Models in {cm}



Free Flow (F) Models	RT-3CF-L	RT-6CF	RT-6CF-L	RT-60F	RT-12CF	RT-120F	RT-24CF	RT-240F	RT-36CF	RT-48CF
Supply Voltage	85 to 264 volts AC									
Control Voltage	24 VDC									
Remote Control Cable Length	25 ft {7.6 m}									
Weigh Pan Width	3	6	6	6	12	12	24	24	36	48
Housing	Closed	Closed	Closed	Open	Closed	Open	Closed	Open	Closed	Closed
Dimensions inches {cm}										
A - Height	22.70 {57.65}	34.19 {86.84}	22.70 {57.65}	19.50 {49.53}	34.19 {86.84}	19.50 {49.53}	34.19 {86.84}	19.50 {49.53}	34.19 {86.84}	34.19 {86.84}
B - Width	10.00 {25.40}	12.00 {30.48}	10.00 {25.40}	12.00 {30.48}	18.00 {45.72}	18.00 {45.72}	30.00 {76.20}	30.00 {76.20}	42.00 {106.68}	54.00 {137.16}
C - Depth	19.40 {49.28}	28.19 {71.60}	19.40 {49.28}	28.19 {71.60}	28.19 {71.60}	19.66 {49.94}	28.19 {71.60}	19.66 {49.94}	28.19 {71.60}	28.19 {71.60}
Flowrate Capacity										
Maximum Flowrate Capacity lb/min {kg/min}*	75.0 {34}	405.0 {183.7}	202.0 {91.6}	405.0 {183.7}	900.0 {408.2}	900.0 {408.2}	1800.0 {816.5}	1800.0 {816.5}	2700.0 {815.1}	3600.0 {1630.0}

Integrated Control Valve (V) Models	RT-6CV	RT-12CV	RT-24CV
Supply Voltage	85 to 264 volts AC		
Control Voltage	24 VDC		
Remote Control Cable Length	25 ft {7.6 m}		
Weigh Pan Width	6	12	24
Housing	Closed		
Dimensions inches {cm}			
A - Height	20.75 {52.71}	20.75 {52.71}	20.75 {52.71}
B - Width	13.50 {34.29}	19.50 {49.53}	31.50 {80.01}
C - Depth	29.61 {75.21}	29.61 {75.21}	29.61 {75.21}
Flowrate Capacity			
Maximum Flowrate Capacity lb/min {kg/min}*	405.0 {183.7}	900.0 {408.2}	1800.0 {816.5}

Models RT-6CV, RT-12CV, and RT-24CV



Specification Notes

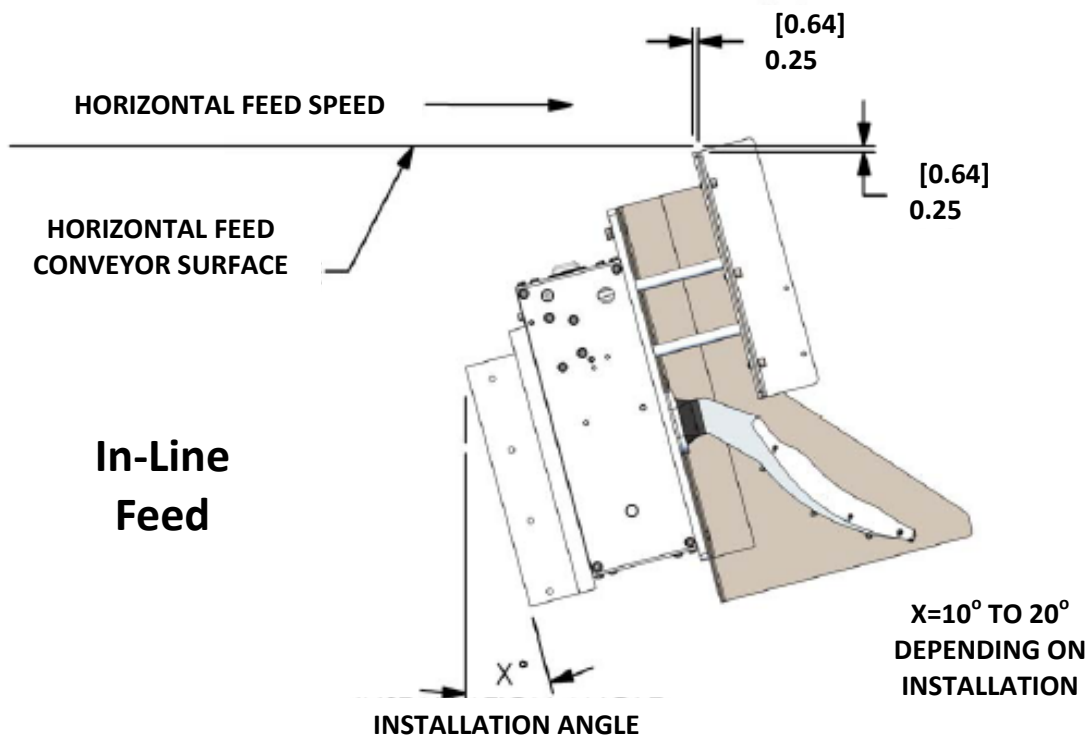
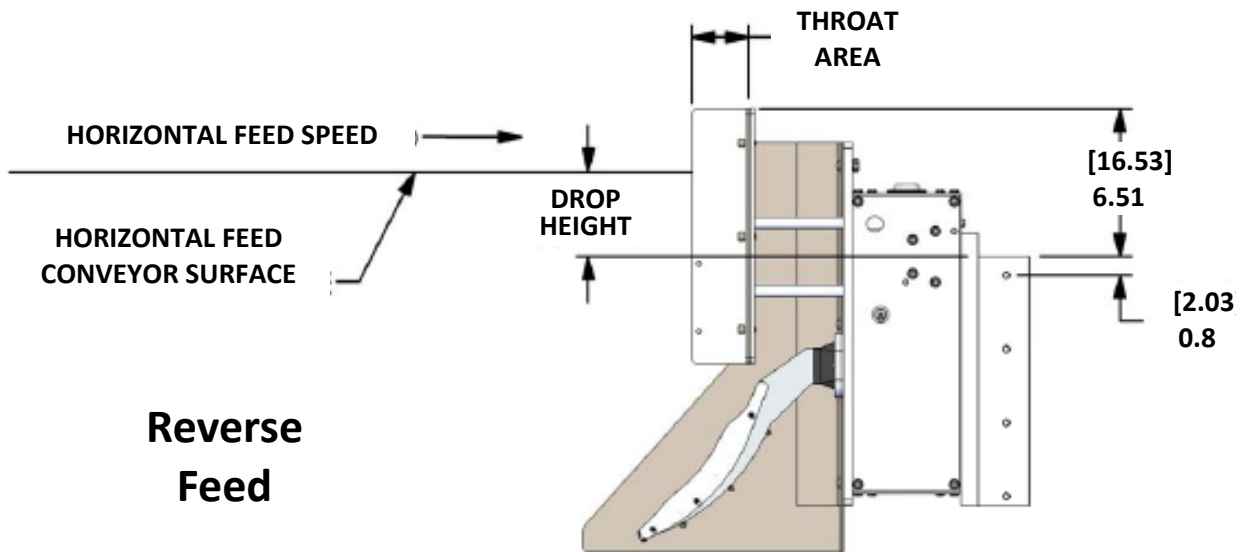
* With materials having a bulk density of 30 lbs/ft³ {480 kg/m³}.

† All models excluding RT-3CF-L and RT-6CF-L.

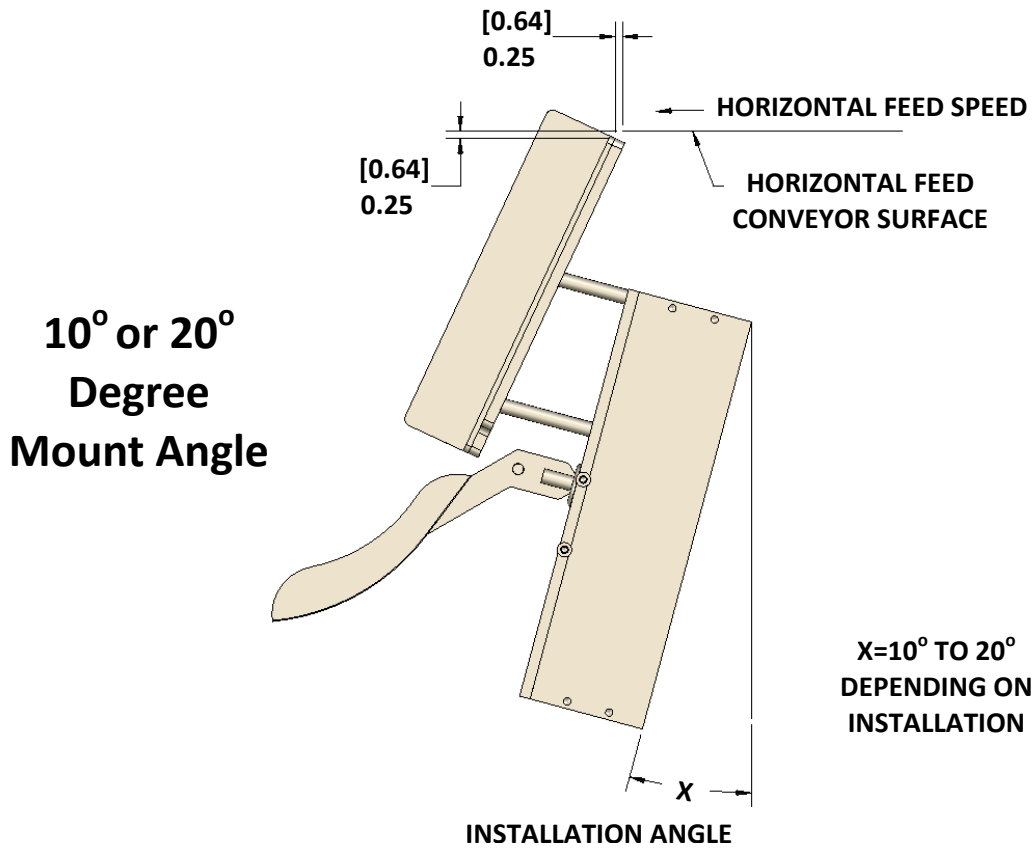
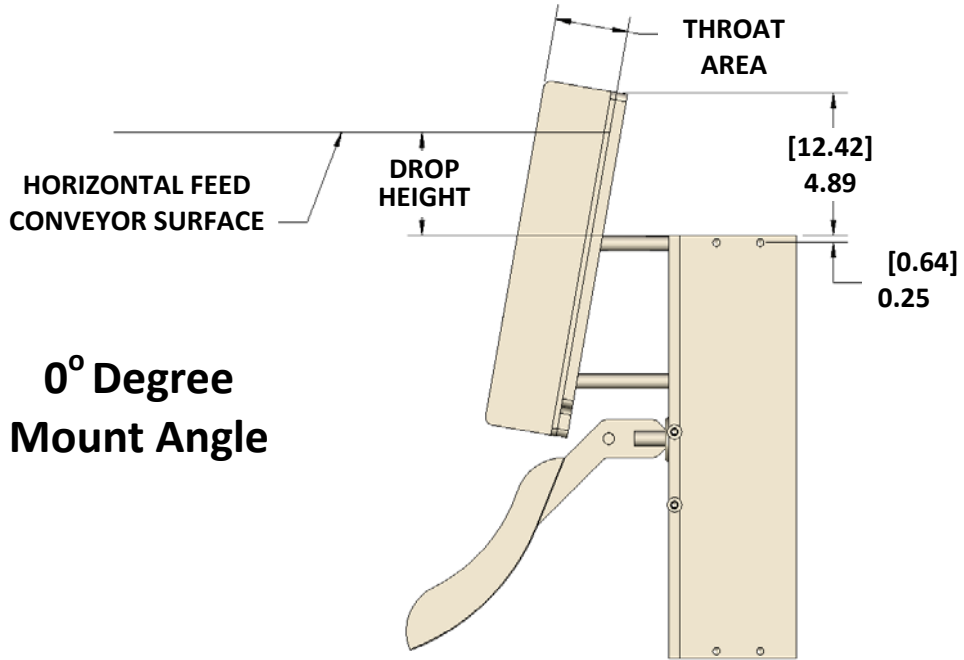
Specifications may change without notice. Consult with a Conair representative for the most current information.

Configurations

Open Configuration

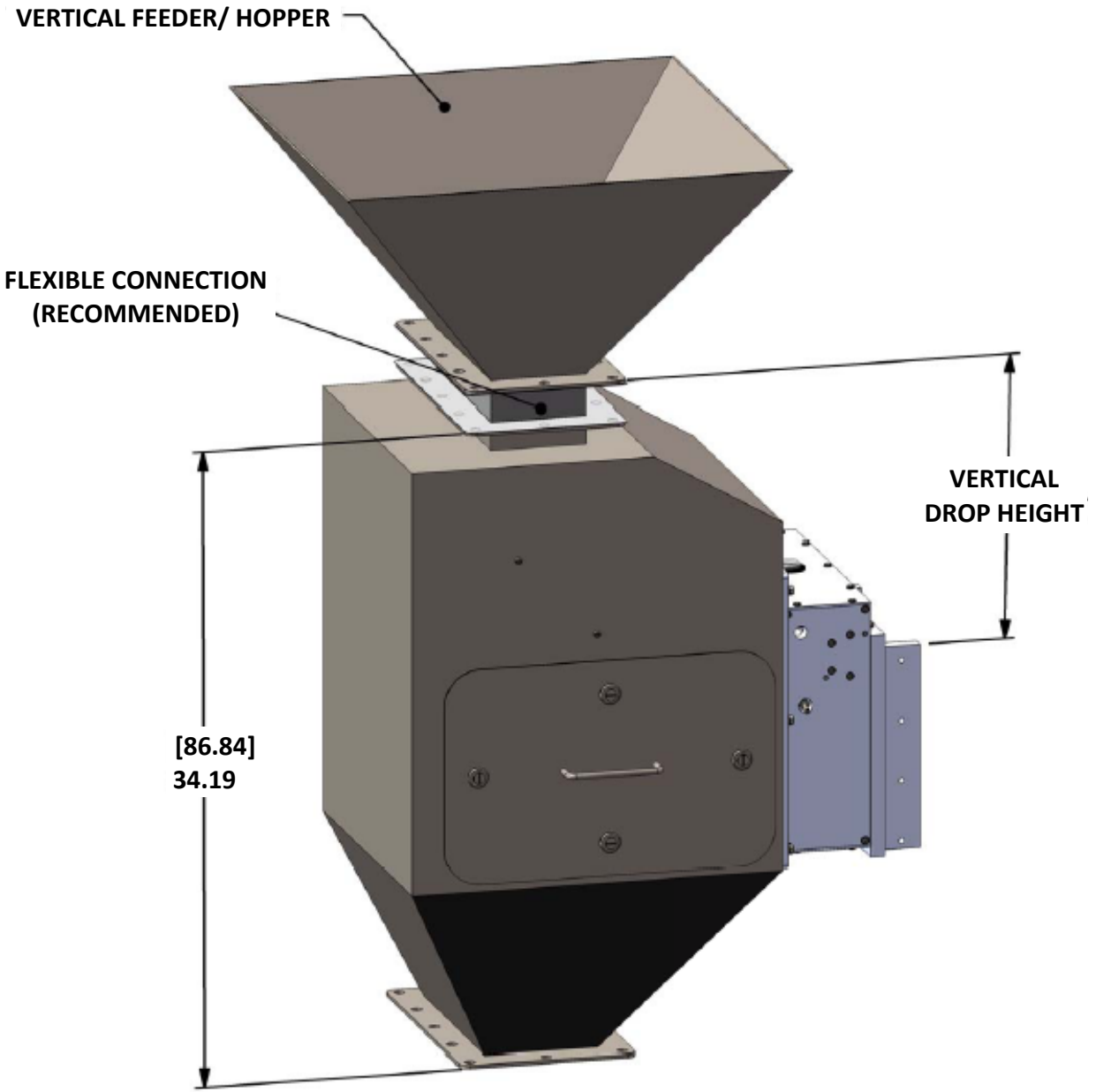


Configurations (continued)

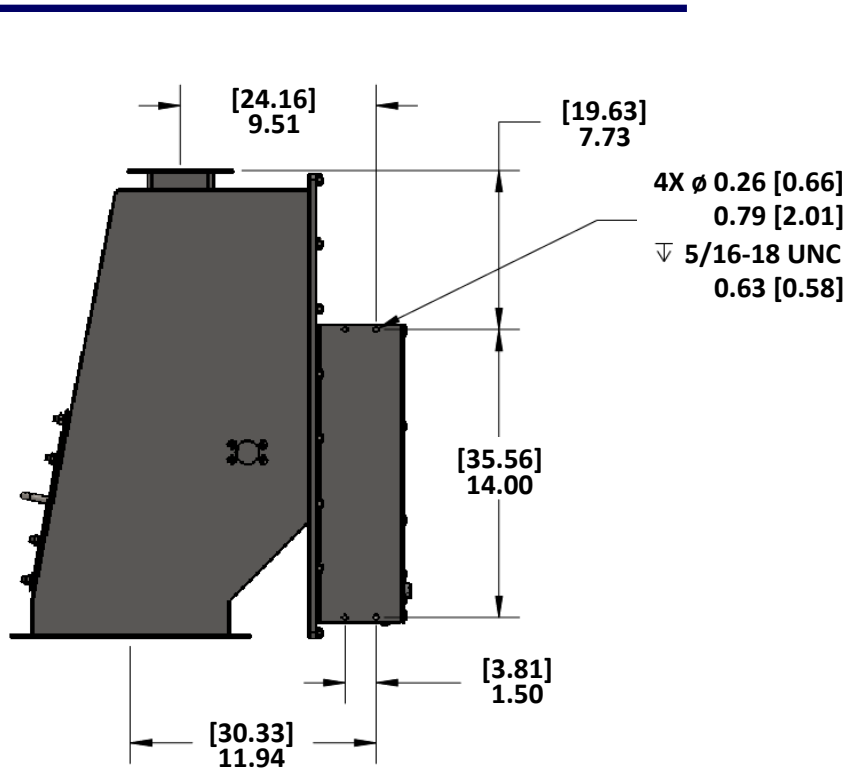
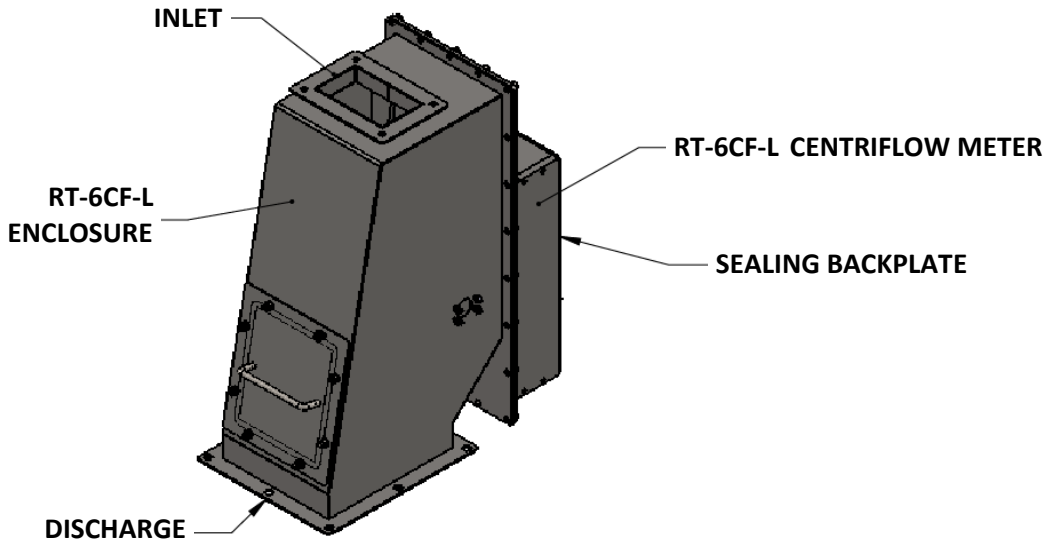


Configurations (continued)

Closed Configuration



Configurations (continued)

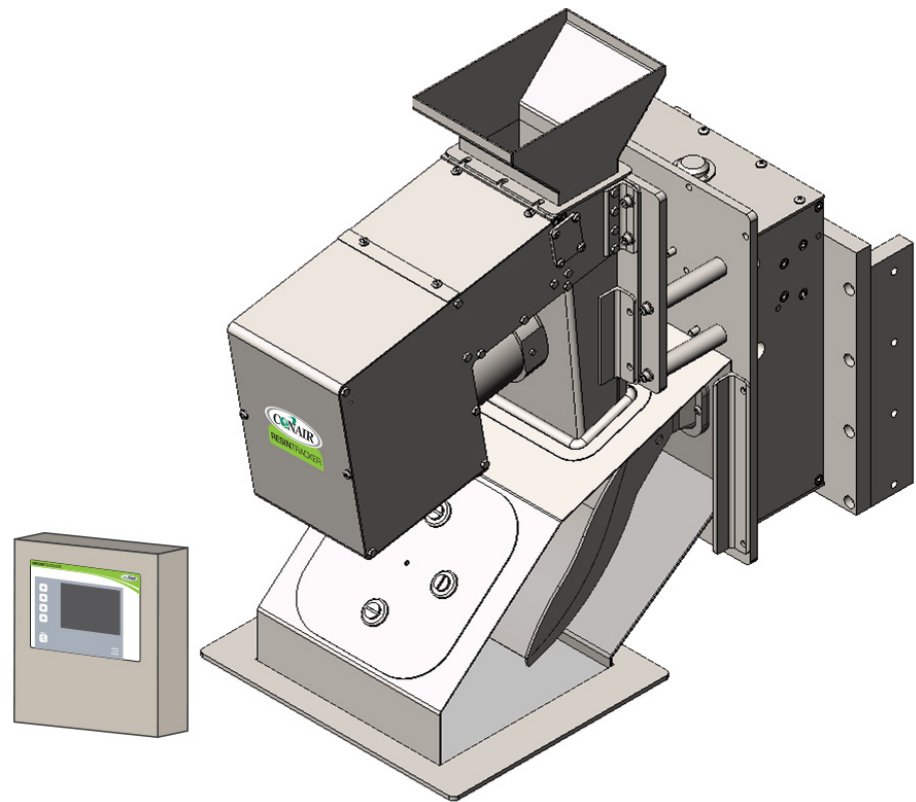


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Unpacking the Boxes

The ResinTracker™ typically comes on a single crate.



CAUTION: Lifting

To avoid personal injury or damage to the ResinTracker™, lift the unit using a forklift or hoist with straps that have been positioned at the center of gravity.

- 1 Carefully remove the ResinTracker™** and components from their shipping containers.
- 2 Remove all packing material**, protective paper, tape, and plastic. Compare contents to the shipping papers to ensure that you have all the parts.
- 3 Carefully inspect all components** to make sure no damage occurred during shipping. Check all wire terminal connections, bolts, and any other electrical connections, which may have come loose during shipping.
- 4 Record serial numbers and specifications** in the blanks provided on the back of the User Guide's title page. This information will be helpful if you ever need service or parts.
- 5 Use a screwdriver to open the access door on the cabinet.** Inside the cabinet you should locate a box.
- 6 Open the box.** Inside the box, locate the User Guide, and tooling including bushings, clamps, blades, and blade holders as ordered for your application.
- 7 You are now ready to begin installation.** *See Installation Section entitled, Preparing for Installation.*

Preparing for Installation

Plan the location. Make sure the area where the ResinTracker™ is installed has the following:

- A grounded power source. Check the ResinTracker™'s serial tag for the correct amps, voltage, phase, and cycles. All wiring should be completed by qualified personnel and should comply with your region's electrical codes.
- Clearance for safe operation and maintenance. Make sure there is enough clearance around the ResinTracker™ for maintenance and servicing.

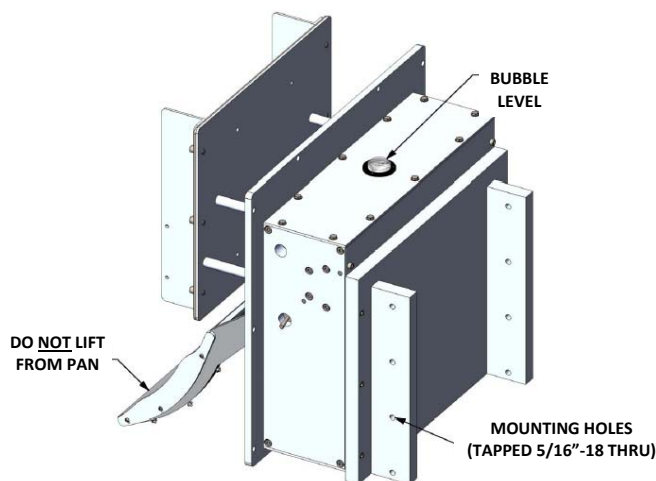
⚠ WARNING: Improper installation, operation, or servicing may result in equipment damage or personal injury.

This equipment should only be installed, adjusted, and serviced by qualified technical personnel who are familiar with the construction, operation, and potential hazards of this type of machine.

All wiring, disconnects, and fuses should be installed by qualified electrical technicians in accordance with electrical codes in your region. Always maintain a safe ground. Do not operate the equipment at power levels other than what is specified on the machine serial tag and data plate.

Mounting the ResinTracker™ Meter

When installing the ResinTracker™ Meter, great care should be taken as to not damage the Pan Section of the Module. This is the measurement section of the meter and should be handled with care. The Pan Section, although structurally strong, will not be able to withstand a direct side impact. Scratches or dents on the Pan's surface can cause the meter to function improperly or not at all by allowing the Pan to buildup with product, resulting in output error.



Mounting the ResinTracker™ Meter

(continued)

When mounting the ResinTracker™ meter it is important that the meter should be held by means of the Mounting Holes located on the back of the Meter Module, as shown in the illustration above. These are a series of four 5/16"-18 tapped holes located on two 3/4" thick Mount Sides that are centered on the width of the meter and spaced 11" apart from inside to inside. The mounting of the meter should be vibration free and as sturdy as possible to eliminate the possibility of misinterpreting any vibration as actual meter measurement. Eliminating vibration is particularly important when flow rates are low.

Open Configuration

Using an Open Configuration, it is important that the conveyor/feed device not be in direct contact with the ResinTracker™ Meter. Contact could add vibration, which could be misinterpreted as actual meter measurement. Also, it is suggested that there be minimal, if not zero, air disturbance around the Pan Section of the meter. Due to the sensitivity of the measurement, air disturbance could, again, be misinterpreted as actual meter measurement.

Enclosed Configuration

When using an Enclosed Configuration, the Enclosure surrounding the ResinTracker™ Meter Module should not be used as a means of support or mount for the meter. Again, the Mount Sides attached to the back of the meter should hold the meter in place and support the entire weight of the meter and the enclosure. The Discharge Flange on the bottom of the enclosure should not be used to support the weight of any structure used to capture the product discharging from the meter. On the Intake, or top, of the enclosure, there is an optional Intake Flange that enables the Intake to be connected to the Feed System. It is recommended that it be connected with a flexible Boot or Flap. This will help to keep vibration minimized. There are also Access Doors that need to be kept clear when mounting the enclosure. These Access Doors are located on the side of the Enclosure. The Access Doors are used to gain access to the Meter Module for cleaning, calibration, and maintenance.

When mounting the meter, it is important to mount it with the Mount Sides provided on the back of the meter. These Mount Sides provide four (4) 5/16" - 18 threaded holes for mounting. The meter should be mounted to a sturdy, non-moving structure to prevent it from moving and swaying. When considering vibration in the plant, it should be noted that the meter is counterbalanced when manufactured and is not affected by typical plant vibrations. However, if at all possible, isolation from vibration is always a good practice. If the meter is configured with a vibrator, the mounting structure should be substantial/heavy enough to prevent the vibration that is created with the Vibrator from being transferred out into the mount. This will optimize the effectiveness of the Vibrator and allow it to do the maximum job.

(Continued)

Mounting the ResinTracker™ Meter

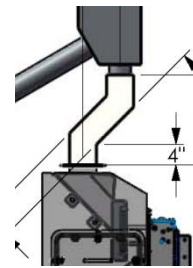
(continued)

Connections:

When connecting to the meter or coupling to the meter, it is important to note that transitions and other equipment should not be directly mounted to the enclosed housing/enclosure. This prevents surrounding equipment from applying a load to the enclosure. This Enclosed housing/enclosure, unless specifically designed to be, is not a weight/load bearing device. It is merely a housing around the meter to enclose the meter. Isolation gaskets or flexible couplings can be used to ensure that the other equipment will not load the enclosure.

Consistent Drop Point:

In order to attain the most accurate and repeatable measurement, ensuring that the meter receives the product flow from a consistent drop point is essential. To get a consistent drop point, the distance from the discharge of the feed device (see specific recommendations below) should be minimized. Also, transitions between these devices and the intake of the meter should be such that they don't unnecessarily deflect product or change its direction. The drop from the feed device should be a keeping the transition short and symmetrical will get the best results. When installing under a screw, it is important to ensure that the device below the meter takes away the product faster than the screw feeds the product, and that if this device stops, the screw stops. This is so that the product will not pack into the meter and damage the meter. The screw conveyor, unlike the rotary valve, will continue to force product into the meter if the product does not discharge out.



Slide Gate:

Installing the meter under a slide gate is typically the simplest of the feed devices. Typically the product being measured is free-flowing and the slide gate provides a smooth, non-pulsating flow stream. When installing the meter under a slide gate, the drop from the gate becomes the drop point to the meter. There will most likely be a transition from the discharge of the gate to the intake of the meter, so keeping the transition short and symmetrical will get the best results. One thing to keep in mind is that if the silo/hopper above the gate empties completely, the gate should be closed to allow a small amount of head to be created. This is so that when the silo/hopper is being filled, the product does not fall directly through the open gate, causing a variance on the drop point.

Rotary Valve:

When installing the meter under a rotary valve/rotary airlock, it is important to ensure that the meter will not have air pressure forced into the intake. There will most likely be a transition from the discharge of the valve to the intake of the meter, so keeping the transition short and symmetrical will get the best results. Here the drop from the rotary valve/rotary airlock becomes the drop point and will give consistency even as the flow pulsates from the valve. Sizing is important because the valve should not be so large that the rotation is so slow that large slugs drop through the meter with periods of no flow. This will not give an “average” flow reading. The best scenario is when the pulsations from the valve do not drop down to “zero” instantaneously.

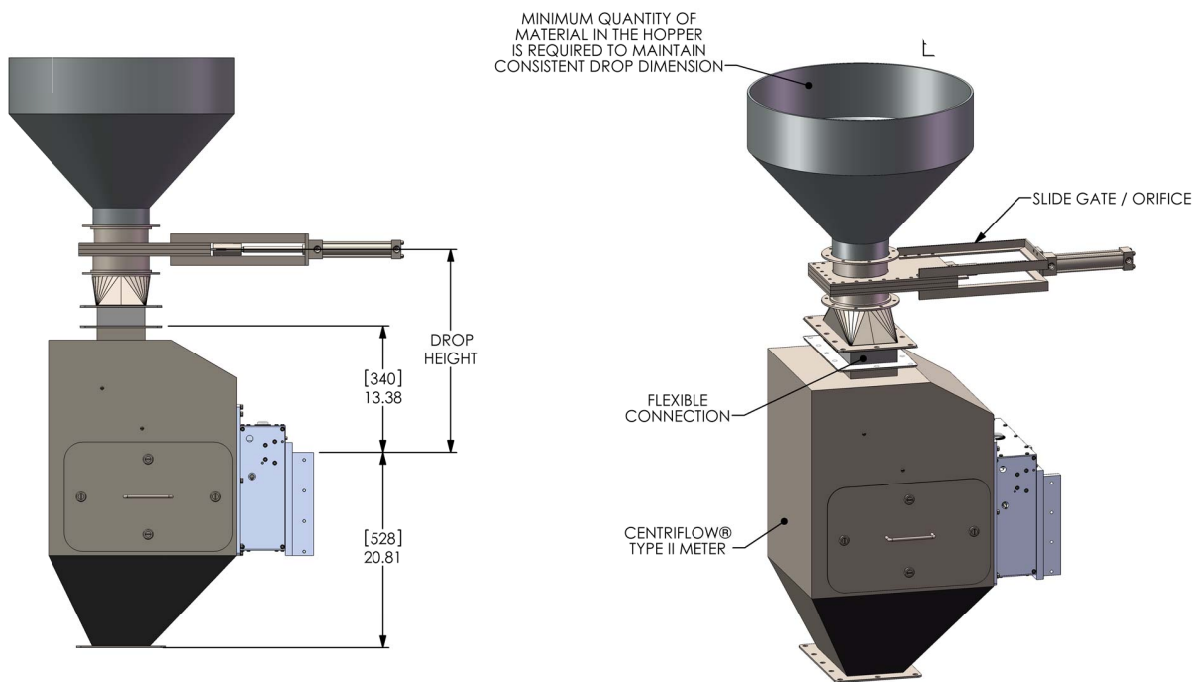
Mounting the ResinTracker™ Meter (continued)

Screw Conveyor

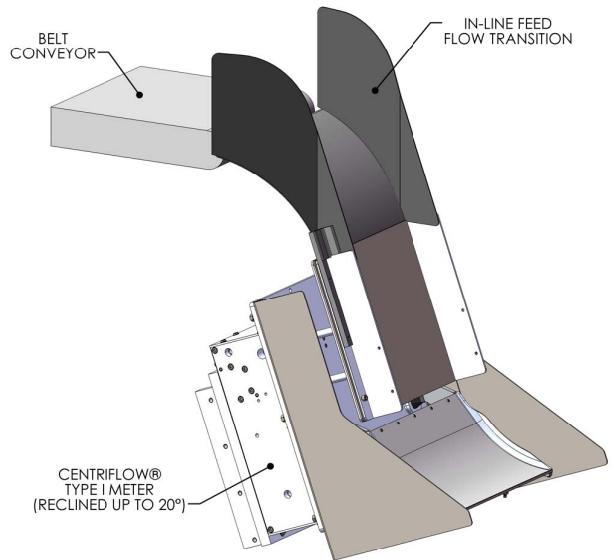
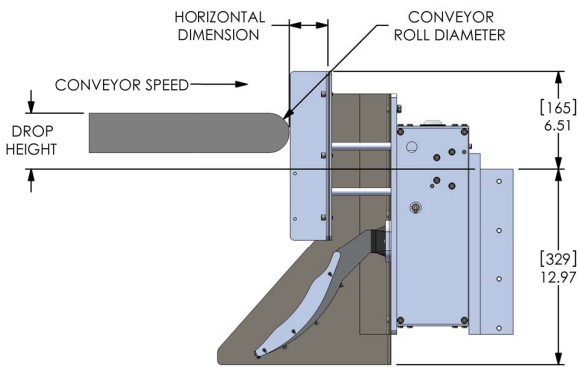
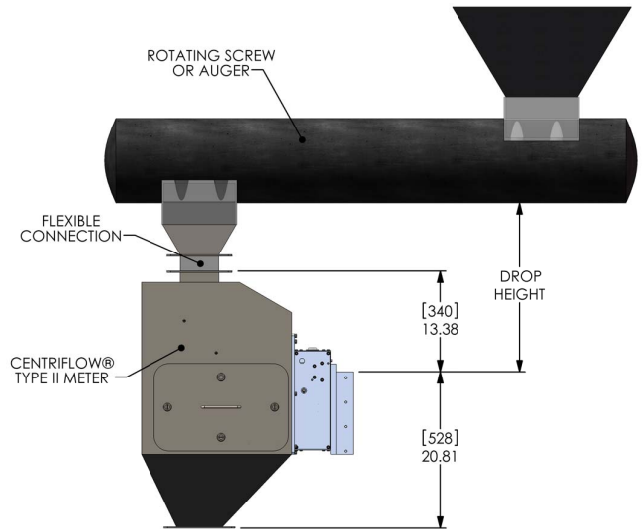
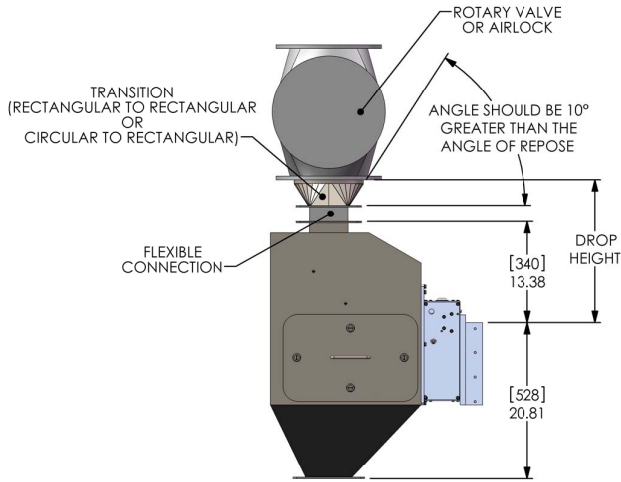
When installing the meter under a screw conveyor, the drop from the screw becomes the drop point to the meter. There will most likely be a transition from the discharge of the screw to the intake of the meter, so keeping the transition short and symmetrical will get the best results. When installing under a screw, it is important to ensure that the device below the meter takes away the product faster than the screw feeds the product, and that if this device stops, the screw stops. This is so that the product will not pack into the meter and damage the meter. The screw conveyor, unlike the rotary valve, will continue to force product into the meter if the product does not discharge out.

Bucket Elevator

When installing the meter at the discharge of a bucket elevator, all attempts should be made to allow the product to discharge from the bucket and transition to the meter, making the transition the drop point. This may have to be done with an offset transition. If the fill of the bucket is consistent and if the product drops from the bucket elevator, then a direct transition to the meter can be made, following the guidelines in the previous two sections.

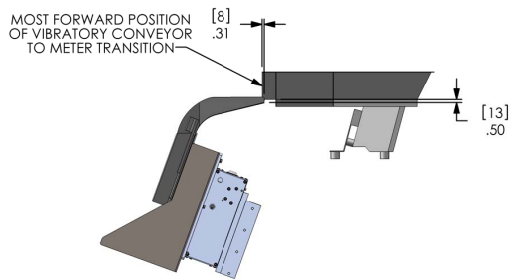
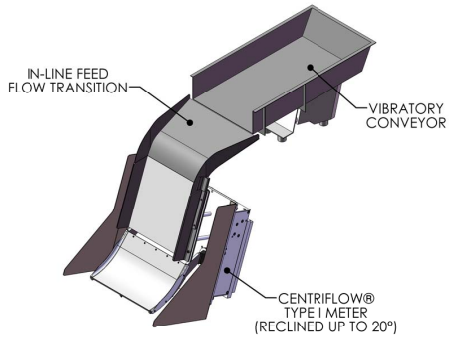


Mounting the ResinTracker™ Meter (continued)

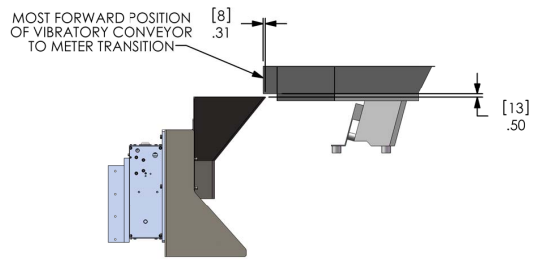
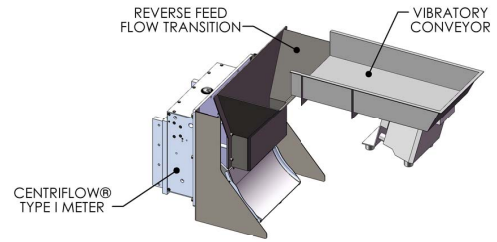


Mounting the ResinTracker™ Meter (continued)

IN-LINE FLOW



REVERSE DIRECTION FLOW



Connecting the Main Power Source

Before beginning, note the electrical specifications on the serial tag mounted to the side of the unit. The electrical connection must match these specifications with +/- 10% maximum voltage variance. An improper power supply could damage the unit as well as seriously injure an operator. The electrical connection should run through a fused disconnect sized for the amperage noted on the serial tag and last sheet of electrical print, and conforms to all local and national codes, including Article 250 of the National Electric Code.



WARNING: Electrical hazard



Before performing maintenance or repairs on this product, disconnect and lock out electrical power sources to prevent injury from unexpected energization or start-up. A lockable device must be used to isolate this product from potentially hazardous electricity.



WARNING: Improper installation, operation, or servicing may result in equipment damage or personal injury.



This equipment should only be installed, adjusted, and serviced by qualified technical personnel who are familiar with the construction, operation, and potential hazards of this type of machine.

All wiring, disconnects, and fuses should be installed by qualified electrical technicians in accordance with electrical codes in your region. Always maintain a safe ground. Do not operate the equipment at power levels other than what is specified on the machine serial tag and data plate.

- 1 Open the unit's electrical enclosure.**
- 2 Insert the main power wire** through the knockout in the bottom of the enclosure. Secure the wire with a rubber compression fitting or strain relief.
- 3 Connect the power wires to the terminals indicated on the wiring diagram** that came with your machine.
- 4 Check every terminal screw to make sure wires are secure.** Gently tug each wire. If a wire is loose, use a screwdriver or allen wrench to tighten the terminal.
- 5 Connect the ground wire to the grounding lug** shown in the wiring diagram shipped with your unit.

IMPORTANT: Always refer to the wiring diagrams that came with your ResinTracker before making electrical connections. The diagrams show the minimum size main power cable required for your unit, and the most accurate electrical component information.

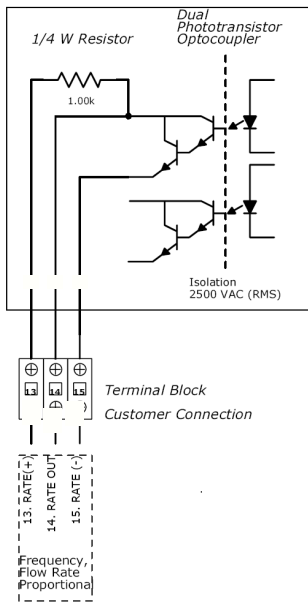
Preparing for Testing

- 1 Make sure all components are installed according to the assembly drawings. Make sure that all bolts on the ResinTracker™ have been tightened.
- 2 Check that all wiring conforms to electrical codes and all wiring covers are in place.
- 3 Connect the air supply if applicable (pulsed air option only).

Preparing the HMI Electrical Information

The Frequency and Flow Rate Proportional (Rate) DRE (Digital ResinTracker™ Electronics) digital signals are photo transistor outputs.

The Internal DRE Schematic to the right shows the Rate Output. However, all digital outputs are designed using the same circuit.



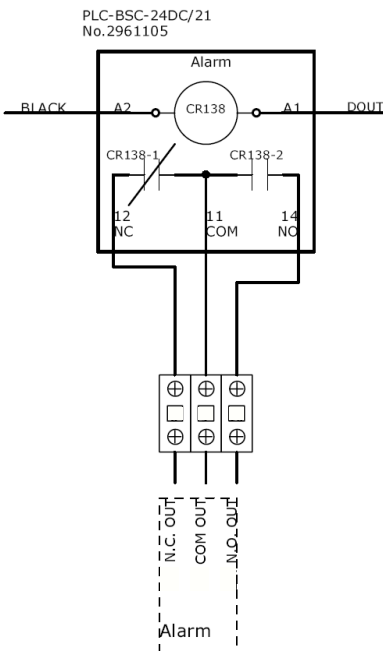
Digital Output	Function
DOUT1*	(Option)
DOUT2*	Alarm
DOUT3**	(Option)
DOUT4**	(Option)
RATE	Frequency, Flow Rate Proportional
COUNT	Weighted Count (Option)

* - Digital Output 1 and 2 share power and ground
 ** - Digital Output 3 and 4 share power and ground

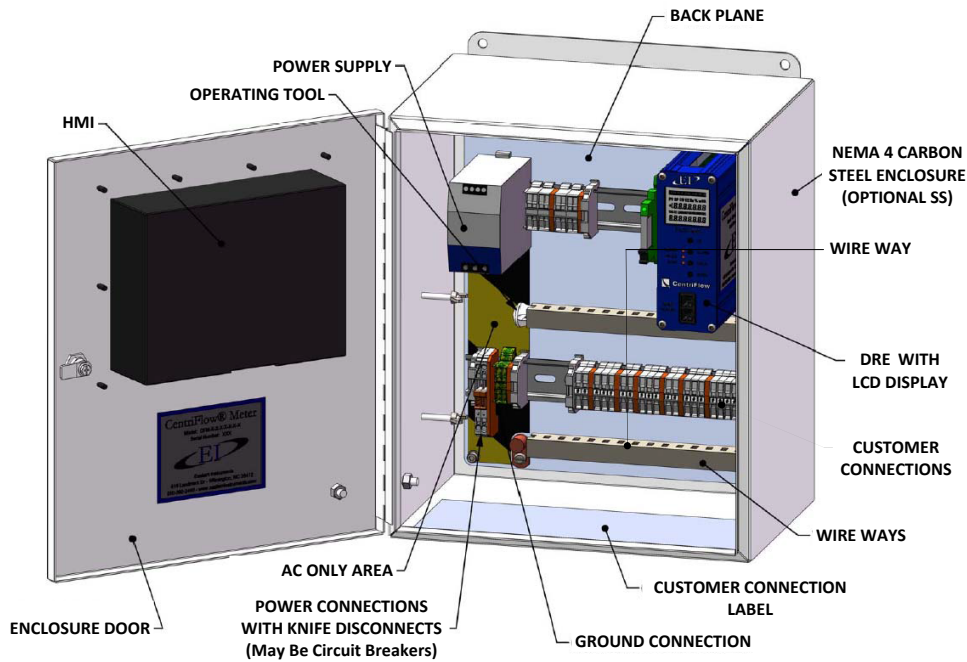
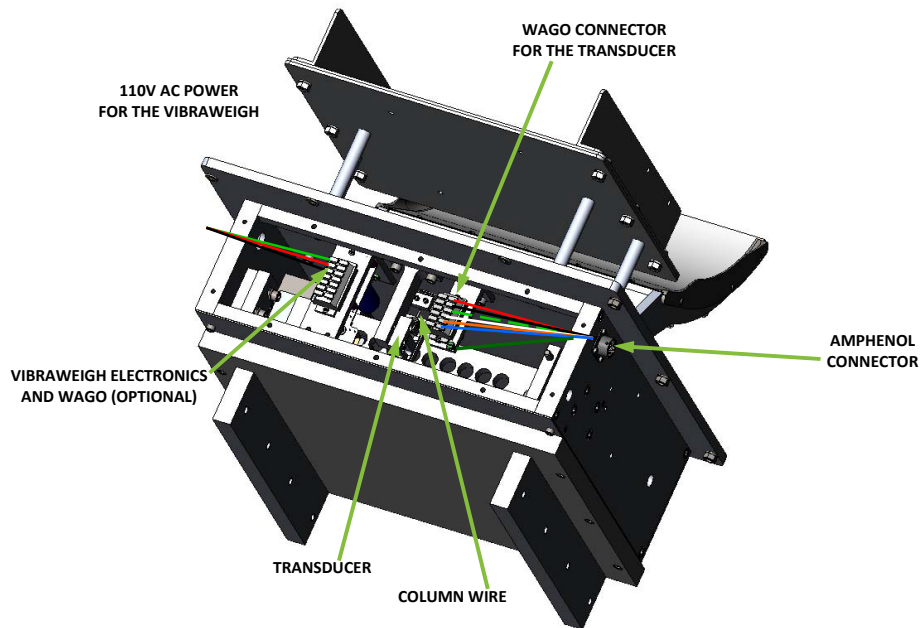
The Alarm and Weighted Count DRE digital signals are relay outputs.

The schematic to the left shows the Alarm Output. For convenience, the Alarm digital out (DOUT2) has been pre-wired to a DIN Rail mounted mechanical relay. Therefore, the Alarm transistor output is available by rewiring the Control Panel. (Please contact the factory for instructions if this option is desired.)

The Weighted Count option has also been pre-wired to a DIN rail mounted mechanical relay. Wiring for this option is the same as for wiring the Alarm option.





Identifying Your Components




The Digital Electronics Enclosure contains the HMI, the ResinTracker™ (DRE), Power Supply, Alarm Relay, Power Connections with Knife Disconnects, and the Customer Connections.

Wiring the Meter Module

 **Note:** Excess cable should never be coiled up and placed next to the machine.

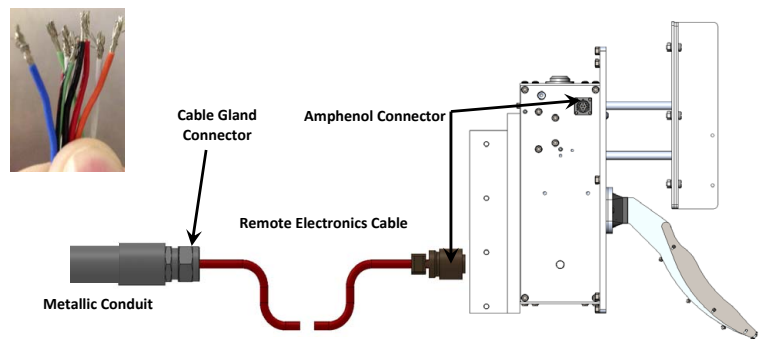
 **Note:** Your model may differ slightly than the images shown.

 **Note:** The Electronics Cable MUST be run through grounded metallic conduit. If your Electronics Cable has an Amphenol Connector on one end, we recommend leaving a short length of cable out of the conduit near the meter module and using a cable gland/wire grip type of connector on the end of the conduit. The Amphenol connector can be exposed without being inside the conduit.

The Remote Electronics Cable is a 4, 6 or 9 conductor cable (depending on the meter) with a shield that attaches the ResinTracker™ Meter Module to the Electronics Enclosure. It sends the measurement signal from the Transducer inside the Module to the Electronics Panel inside the Electronics Enclosure. The standard length is 25' long, but it should be cut to the exact length needed. If the distance from the ResinTracker™ Meter Module to the Electronics Enclosure is more than 25', a custom length cable which may be supplied with the meter, should also be cut to fit.


9 Conductor Cable

- 1** Connect the end of the Remote Electronics Cable that is affixed with a 10-pin Amphenol Connector to the Meter Module Casing.
- 2** Cut the other end of the cable to length.
- 3** Wire the cut end to the Electronics Enclosure as *shown in the Wiring the Digital Electronics part of this section.*




6 Conductor Cable

 **WARNING: Voltage hazard**

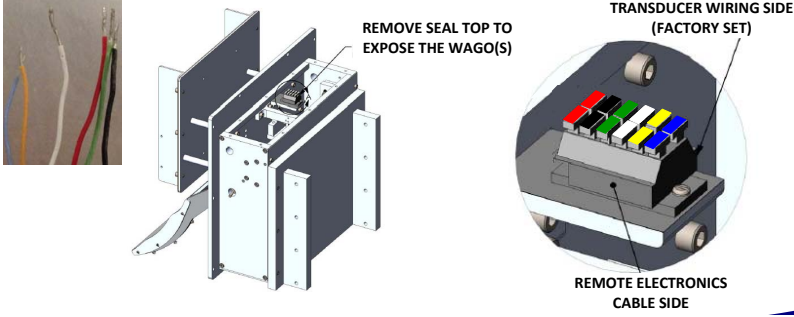
 Always disconnect and lock out the incoming main power source before opening the electrical enclosure or performing non-standard operating procedures, such as routine maintenance. Only qualified personnel should perform troubleshooting procedures that require access to the electrical enclosure while power is on.

- 1** **Remove the Seal Top.** The wago terminal will be seen mounted towards the conduit connection point.
- 2** **Connect all six conductors,** ensuring that the ground wire (which is supplied) is properly connected before connecting the Remote Electronics Cable to the customer connections. All connectors are designed so that when the push buttons are depressed, the wire crimp will open on the side.

 **Note:** Be sure that the supplied ground wire is properly connected to the Grounding Screw located on the Wago Connector for the Transducer inside the ResinTracker™ Meter Casing.

Wiring the Meter Module (continued)

3 Verify the connections are correct by looking at the labels underneath each connector. The colors should be matched to the label.

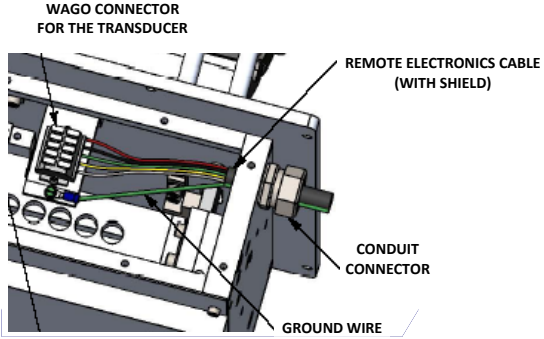


4 Conductor Cable

⚠ WARNING: Voltage hazard

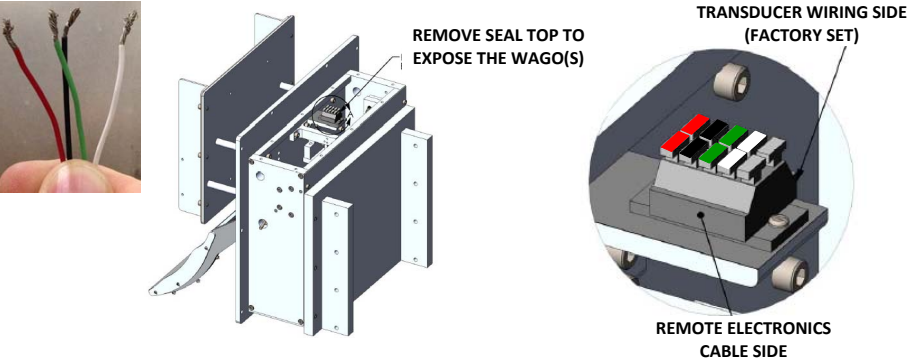
⚠ Always disconnect and lock out the incoming main power source before opening the electrical enclosure or performing non-standard operating procedures, such as routine maintenance. Only qualified personnel should perform troubleshooting procedures that require access to the electrical enclosure while power is on.

- 1** Remove the Seal Top. The wago terminal will be seen mounted towards the conduit connection point.
- 2** Connect all four conductors, ensuring that the ground wire (which is supplied) is properly connected before connecting the Remote Electronics Cable to the customer connections. All connectors are designed so that when the push buttons are depressed, the wire crimp will open on the side.



📎 Note: Be sure that the supplied ground wire is properly connected to the Grounding Screw located on the Wago Connector for the Transducer inside the ResinTracker™ Meter Casing.

3 Verify the connections are correct by looking at the labels underneath each connector. The colors should be matched to the label



Wiring the Digital Electronics

When wiring the Customer Connections and Remote Electronics Cable to your Digital Electronics Enclosure, it is important to know which type of electronics setup that you have. Below are the various setups of our digital electronics Customer Connections terminals. Please match the Customer Connections terminals inside your Digital Electronics to the pictures listed below and see the accompanying instructions for wiring your electronics properly. Please note that each setup is different and so particular attention should be paid to which setup you have. Descriptions of each input/output are included at the end of this section of your manual. All connections are made to the bottom of the Terminal Blocks.

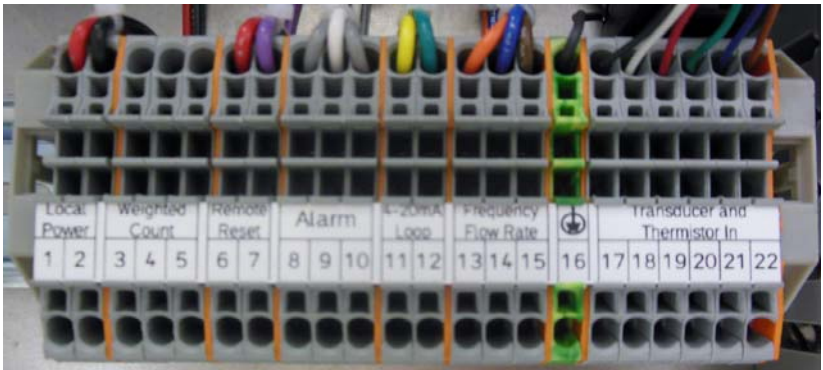
Version #1
Wago 264
Terminals



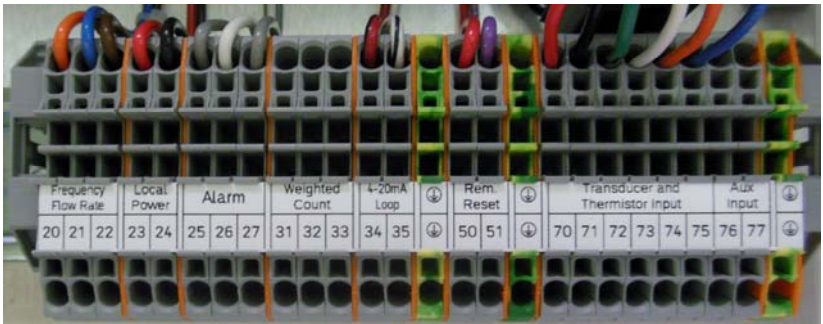
Version #2
Wago 264
Terminals



Version #3
Top Jobs
Terminals

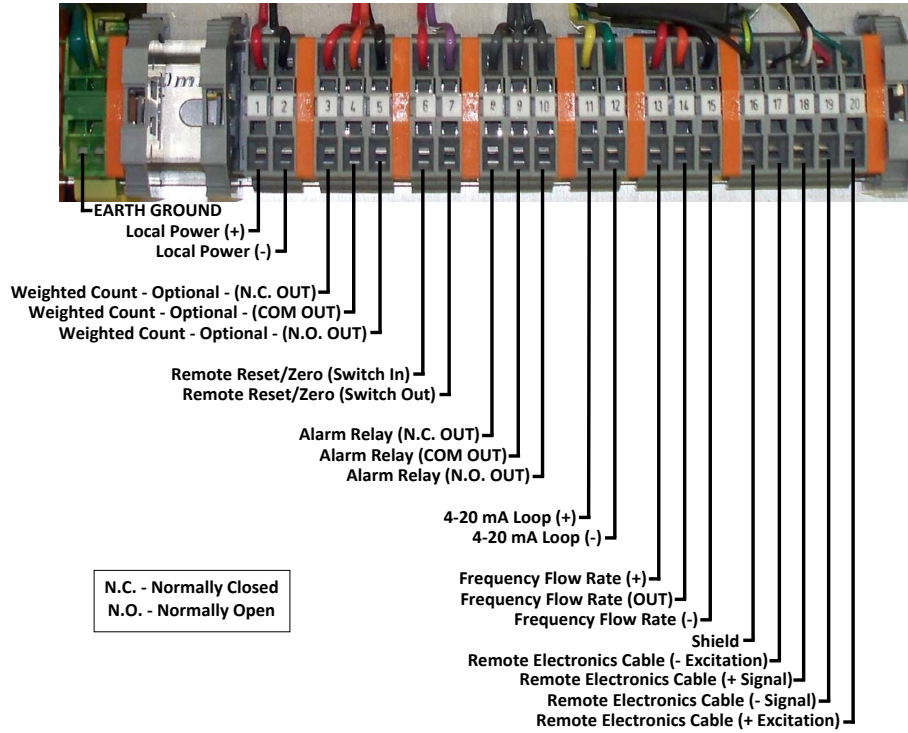


Version #4
Top Jobs
Terminals

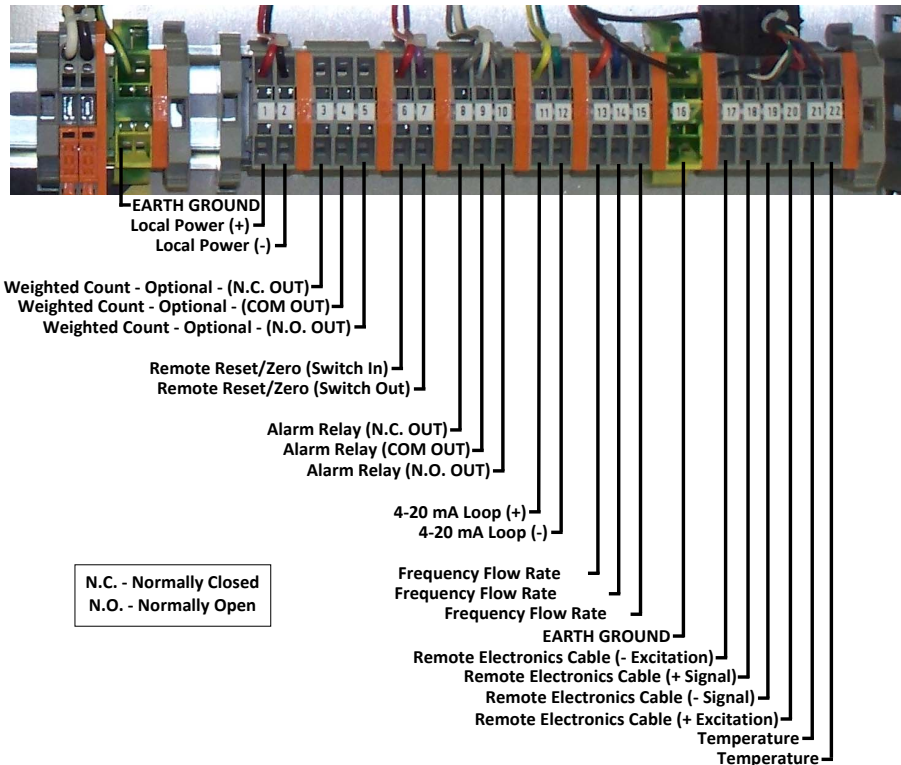


Wiring the Digital Electronics (continued)

VERSION #1
Wago 264 Terminals
Terminal Descriptors



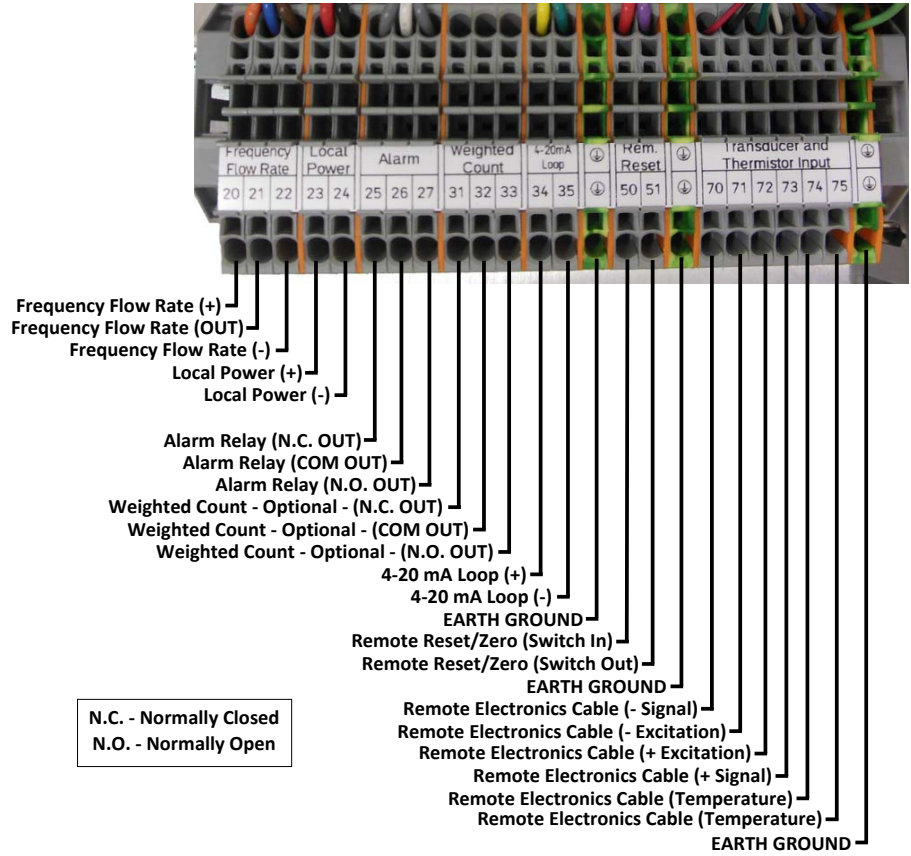
VERSION #2
Wago 264 Terminals
Terminal Descriptors



(Continued)

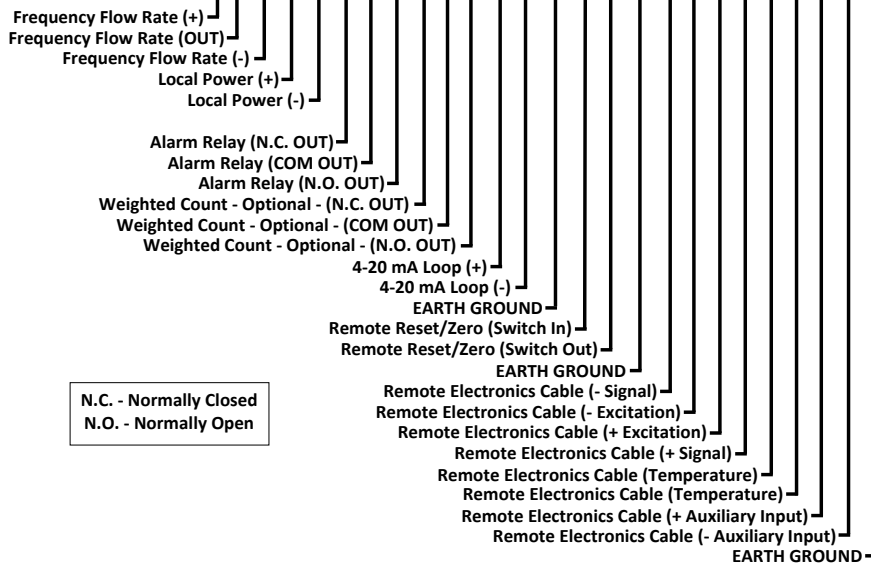
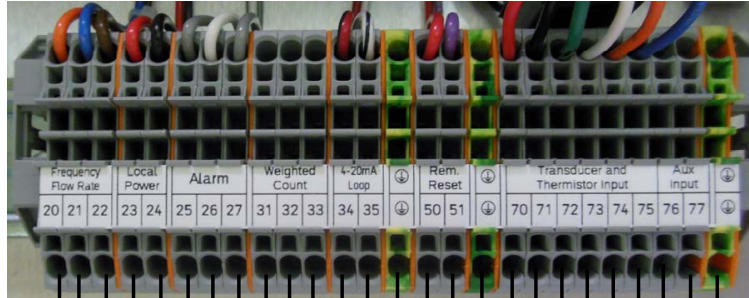
Wiring the Digital Electronics (continued)

VERSION #3
 Top Jobs Terminals
 Terminal Designators



Wiring the Digital Electronics (continued)

VERSION #4
Top Jobs Terminals
Terminal Designators



N.C. - Normally Closed
 N.O. - Normally Open

Connection Outputs

- **24V Local Power Output**

For your convenience a 24 Volt Local Power Output has been provided that can be used to power the various outputs as listed above. Install a Jumper Wire from the positive terminal of the Local Power Output to the positive terminal of the desired output and a Jumper Wire from the negative terminal of the Local Power Output to the negative terminal of the desired outputs to provide power to the output.

- **4-20 mA Output**

Analog Output (Sourced), Loop Power NOT Required, Maximum Load Resistance is 900 ohms

The ResinTracker™ Meter Electronics is capable of outputting an analog signal. This signal is a 4-20 mA instantaneous isolated signal. The signal output is proportional to the Electronic Full Scale Flow Rate. For example, if the Electronic Full Scale Flow Rate were calibrated to be 300 lb/min, then an output of 12 mA would correspond to a Flow Rate of $(12/4)/(20/4) \times 300 = 150$ lb./min or 50% of the Electronic Full Scale Flow Rate. Since this output is directly related to the Electronic Full Scale Flow Rate any change in Calibration to change the Electronic Full Scale Flow Rate would result in a change in the signal so as to retain the proportionality. Thus, if the Electronic Full Scale Flow Rate were changed from 300 lb./min to 500 lb./min, then a 20 mA output would correspond to the 500 lb/min flow rate. Connection to this output signal will be made according to the CUSTOMER CONNECTIONS diagram below. It is recommended that the wires for this signal be routed through the conduit housing the power connection. It is recommended that this analog output be used for Control purposes and not for Trending unless a signal filter is used. Please see the filtering section of this manual for more details on filtering.

- **Alarm Output**

Relay Output

The relay can be used to trigger alarms which warn the operator that a batch is complete or that the flow rate has exceeded a threshold. The output is programmable to be assigned for rate or count. When assigned to the count, the relay can have a user selectable on time (duration) or can be latched until reset.

- **Frequency, Flow Rate Proportional (Rate)**

Digital Output, Power Required

The ResinTracker™ Meter Electronics is capable of outputting a Totalizing Pulse Output signal. The Frequency, Flow Rate Proportional signal is a pulse signal and is labeled “Rate” at the CUSTOMER CONNECTION block. The frequency of the signal is 0 to 500 pulses per second. The Rate +, supplied by the customer can be between 12 and 24 Volts. The Rate - is connected to the Common or Power Supply Ground. By connecting the Rate + and Rate - with customer supplied power and ground, the Rate Out signal will be isolated from the Digital Electronics. Although the preferred method of supplying power to the Rate output is customer supplied power, +24V local power is also available. Using the local power, however, results in a loss of isolation.

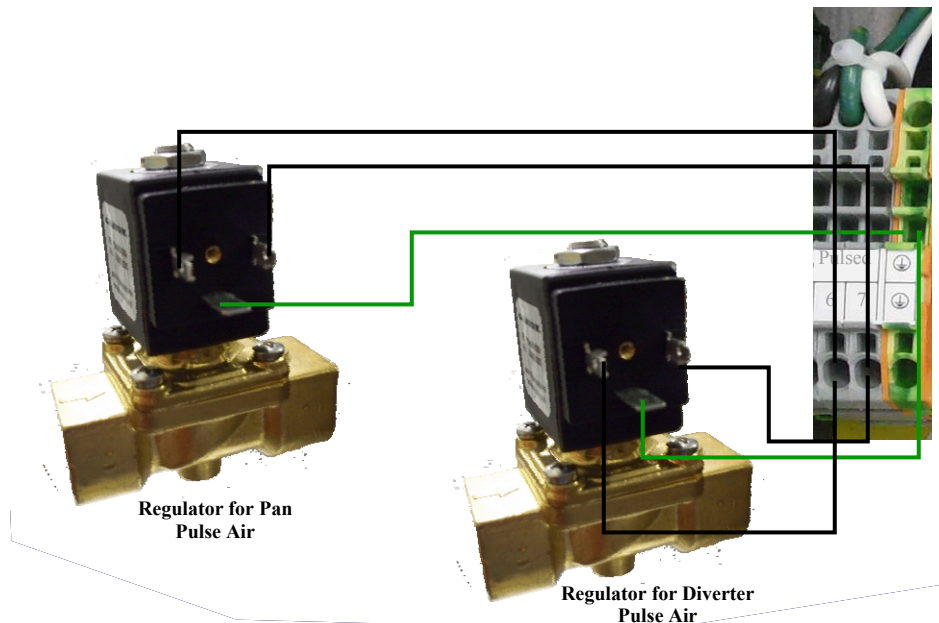
This Totalizing Pulse Output will output a Voltage Pulse that is related to the Electronic Full Scale Flow Rate. For example, if the Electronic Full Scale Flow Rate were calibrated to be 300 lb./min, then a flow rate of 150 lb./min would correspond to a pulse of 250, or 50% of Electronic Full Scale Flow Rate.

(Continued)

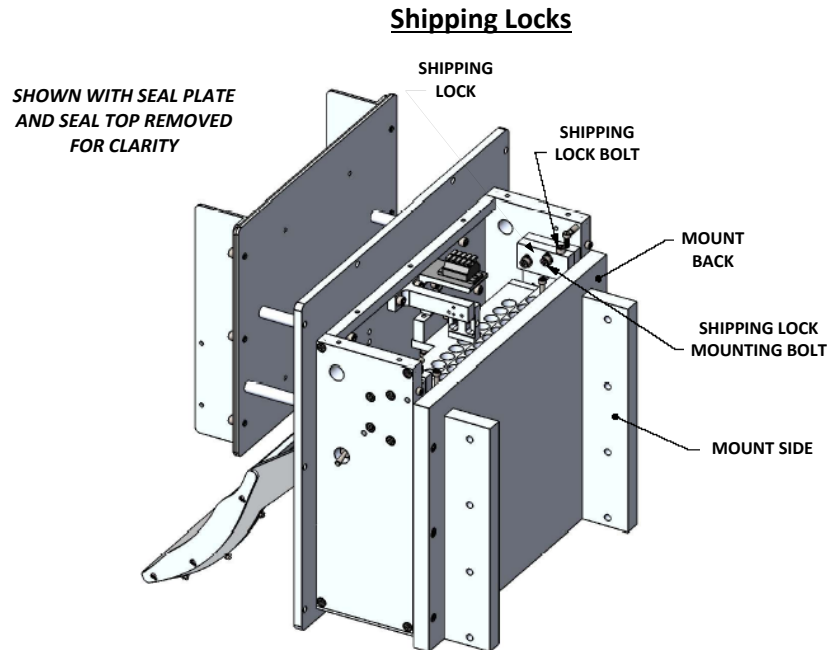
Connection Outputs (continued)

- Pulsed Air (Optional)

If your ResinTracker™ is equipped with a Pulsed Air System, you will need to supply power to the solenoid valve on the side of the meter. Using at least an 18 Gauge, 3 Conductor Cable (not provided) connect the solenoid to the ResinTracker™ Customer Connections as shown.

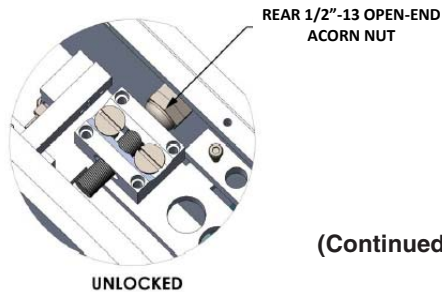
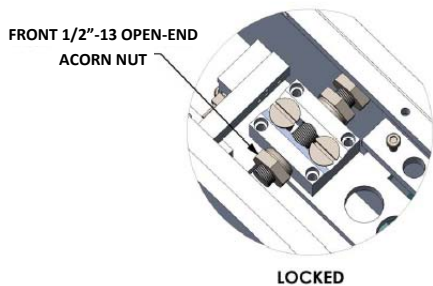
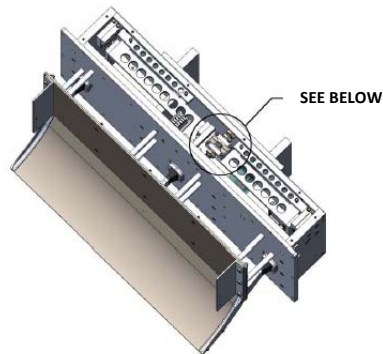
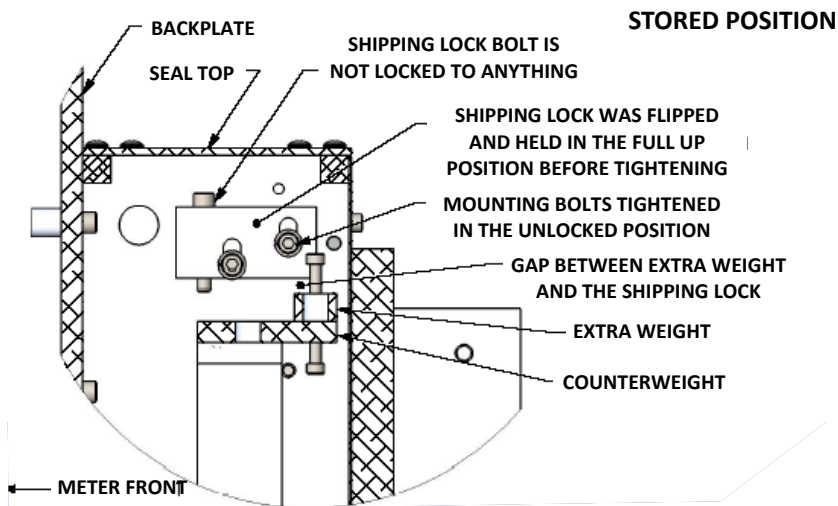
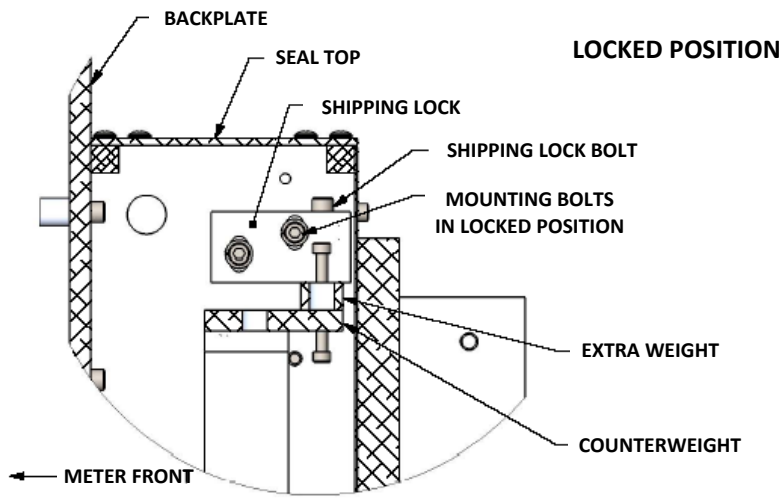


Shipping Locks



- 1** Remove the Seal Top.
- 2** Unscrew the Shipping Lock Bolt using a 3/16" hex key.
- 3** Loosen and remove the two Shipping Lock Mounting Bolts with a 7/16" wrench. Take care not to drop the bolts or the Shipping Lock.
- 4** Remove the Shipping Lock Bolt and rotate the Shipping Lock 180° before reattachment and storage. Please see illustration on next page.
- 5** Tighten the Shipping Lock Mounting Bolts while holding the Shipping Lock up. Make sure that the locks do not interfere with the Counterweight.
- 6** Drop the Shipping Lock Bolt into the hole in the top of the Shipping Lock. The Shipping Lock Bolt will not be attached to any part, but instead will just be stored here for future use.
- 7** Repeat for the opposite side.
- 8** If this unit is either a RT-24CF, RT-36CF, or RT-48CF continue on to the next step, if not, reinstall the Seal Top.
- 9** Remove the Front Acorn Nut and store for later use using a 3/4" wrench.
- 10** Loosen the Rear Acorn Nut and tighten it to the back nut closest to the rear of the meter. Make sure that it is tight so that vibration won't allow it to move back up to the Shipping Block. Use Loctite 242 (Blue).
- 11** Reinstall the Seal Top.

Shipping Locks (continued)



(Continued)

Shipping Locks (continued)

Reinstalling the Shipping Locks

The Additional Shipping Lock should be reinstalled before the standard Shipping Locks.

The ResinTracker™ Meter's additional Shipping Lock needs to be reinstalled very carefully so that the meter's Transducers are not damaged. If the Acorn Nuts aren't tightened evenly, they will push or pull on the Transducers. The leverage that the nuts could put onto the Transducers could cause the Transducers to fail or the Column Wires to break. Follow the directions below to ensure proper reinstallation.

- 1 Read the mV between the red and white wires using your voltmeter while the meter is powered.** Do this by removing the red and white wires that are connected to the Transducer cable from the Wago terminal inside the Meter Module Casing leaving the power (black and green) connected.
- 2 Insert your leads into the Wago terminal to read the mV.** The mV reading should be less than 2.00 mV from zero once the Acorn Nuts are tightened.
- 3 Loosely hand tighten the Rear Acorn Nut until you see the mV reading change.**
- 4 Reinstall the Front Acorn Nut and tighten until it is snug** without changing the mV reading out of the parameter.
- 5 Evenly tighten the Acorn Nuts using a 3/4" wrench.** Once they are tight and the mV reading is within 2.00 mV of zero, the standard Shipping Locks can be installed.

Installing the Standard Shipping Locks

- 1 Remove the Seal Top.**
- 2 Remove the Shipping Lock Bolt stored in the Shipping Lock.**
- 3 Loosen and remove the two Shipping Lock Mounting Bolts using a 3/16" hex key.** Take care not to drop the bolts or the Lock.
- 4 Rotate the Shipping Lock 180° and place the Shipping Lock Bolt in the hole from the top of the Shipping Lock.**
- 5 Start tightening the two Shipping Lock Mounting Bolts,** but do not tighten them completely.
- 6 Start the Shipping Lock Bolt and tighten securely.**
- 7 Tighten the two Shipping Lock Mounting Bolts securely.**
- 8 Reinstall the Seal Top.**

Grounding the ResinTracker™ Meter Module

A separate Earth Ground Wire (14 gauge) is required to be connected to the meter module. This ground wire is required for operator safety and for proper operation. This ground must be supplied from the main plant ground at the service entrance.



WARNING: Voltage hazard



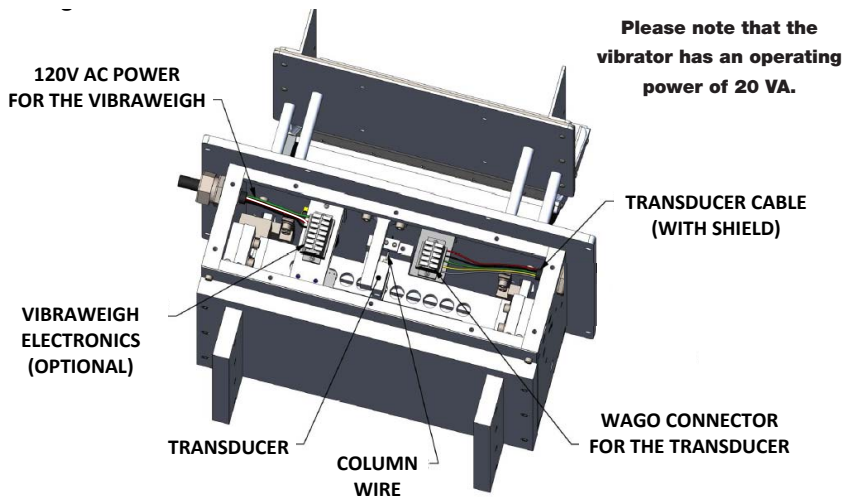
Always disconnect and lock out the incoming main power source before opening the electrical enclosure or performing non-standard operating procedures, such as routine maintenance. Only qualified personnel should perform troubleshooting procedures that require access to the electrical enclosure while power is on.

Testing the Installation

- 9** Program and save the recipe for the product size.
- 10** If you do not encounter any problems, *proceed to the Operation section.*

Vibrator Option

If the ResinTracker™ Meter was shipped with the vibrator option, please continue with the following directions.



Purpose

The vibrator was designed to gently vibrate the Measurement Pan in a direction that is not in the plane of the product flow. The use of the vibrator is intended to aid in the cleaning of the Measurement Pan. Its continuous vibration should reduce buildup and assist in the flow of product on the measurement surface without affecting measurement readings.


(Continued)

Vibrator Option (continued) Field Adjustment



CURRENT/RATE
POTENTIOMETER

FREQUENCY
POTENTIOMETER

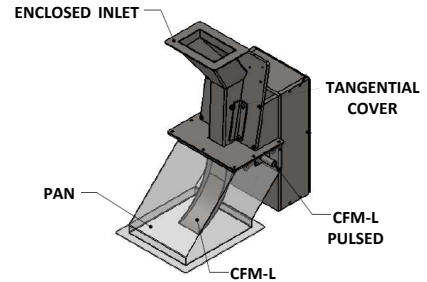
- 1** Access the vibrator by removing the Seal Top from the meter.
- 2** Adjust the Current/Rate Potentiometer clockwise to its maximum output. A click or pop from the Potentiometer will be felt or heard at its maximum output even though the Potentiometer will continue to turn after its maximum point has been reached).
- 3** Adjust the Frequency Potentiometer up or down while pouring a small amount of product onto the Measurement Pan so that the product moves away from the Pan Guides towards the middle of the Pan.
 **Note:** This step can NOT be performed with process flow across the meter and needs to be small amounts of product so that interactions between the product and Pan resonance can be viewed.
- 4** Adjust the Current/Rate Potentiometer counterclockwise two full turns while a good movement of the product is away from the Pan Guides. This will be your set point for the Vibrator.

Pulsed Air System Option

If the ResinTracker™ was shipped with the Pulsed Air option please continue with the following directions.

Purpose

The Pulsed Air System was designed to deliver a pulsed blast of air to the area in front of the Backplate and behind the Tangential Cover, as well as across the Measurement Pan. The use of this air is intended to aid in reducing product buildup on the Pan, Pan Arms and behind the Tangential Plate. The blast of dry air should reduce buildup and greatly reduce miscalculations caused by buildup on and around the Pan without adversely affecting measurement.



Requirements

Included Components:

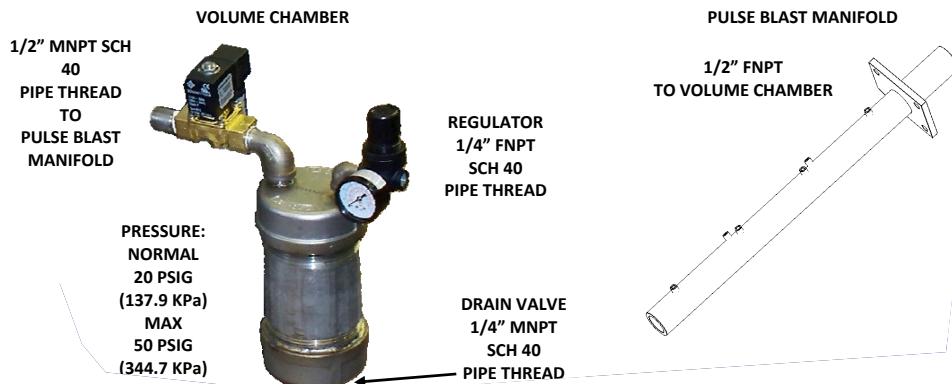
- Pulse Blast Manifold
- Pressure Regulator and Gauge
- Pulsed Blast Air Chamber

Not supplied:

- Air Tubing (Metal or Plastic)
- Air Fittings with 1/4" NPT thread
- Pipe Tape

Compressed Air Line Sizes

All tubing should be Stainless Steel 3/4" Schedule 40 NPT whenever possible.



(Continued)

Pulsed Air System Option (optional) **Installation**

- 1 Install the Pulsed Air Manifold into the ResinTracker™ Pan Cover so that the Flange on the Pulsed Air Manifold lines up with the Cut Out on the Pan Cover.**
If the meter was shipped with the Pulsed Air System, the Pulsed Air Manifold will already be installed.
- 2 Mount the Pulsed Air Volume Chamber to the Pulsed Air Manifold** by connecting the 1/2" Male Pipe Thread Connection on the Volume Chamber to the 1/2" Female Pipe Thread Connection on the Pulsed Air Manifold. If the meter was shipped with the Pulsed Air System, the Pulsed Air Volume Chamber will already be installed.
- 3 Connect an air supply to your Pulsed Air System** by tubing the regulator with clean dry instrument air of at least 20 psig (137.9 KPa). The inlet line can be 1/4" tubing.
- 4 Run a power cable between the solenoid valve and the ResinTracker™ Electronics.** The normal operation of the solenoid valve is 120 VAC at 15V, but it can be equipped with a 240 V coil for use in areas where 120 VAC is not available. The valve is powered by the ResinTracker™ Meter's electronics and does not need outside power, however a power cord to connect the solenoid valve to your digital electronics is required. The cord should be at least 18 Gauge, 3 Conductor Cable. Please see local requirements for whether Conduit or SO Cable is required. For normal use, do not exceed 250 ft of cable between the solenoid valve and your electronics enclosure.

Operation

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Using the Compact Flash.....	4-22
Changing the Ethernet/IP Address Option	4-27
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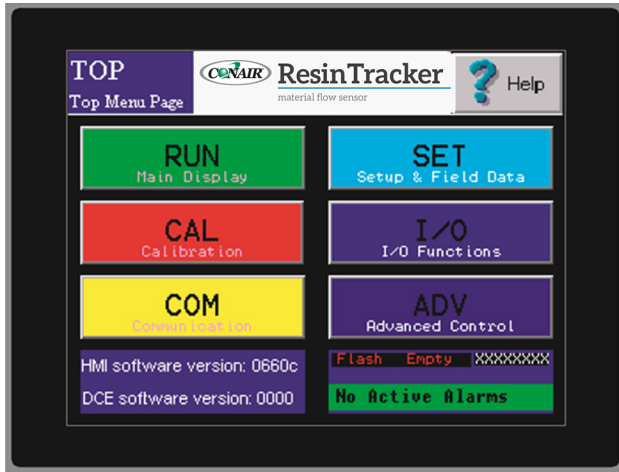
How to Navigate the Control Screens

The main components of your HMI Touch Screen will be the Touch Screen itself, the LED Display, the Menu Soft-Key, and Soft-Keys 1 thru 4. By pressing the Menu Soft-Key, you will be returned to the Main Menu, or TOP page. The LED Display will give you information on your process, the status of your Compact Flash Card and on the status of any alarms that have been activated. Below is a detailed description of the LED Display..



LED	Activity	Indication
RED (TOP)		
	FLASHING	Unit is in the boot loader, no valid configuration is loaded
	STEADY	Unit is powered and running an application
YELLOW (MIDDLE)		
	OFF	No Compact Flash is present
	STEADY	Valid Compact Flash card is present
	FLASHING RAPIDLY	Compact Flash card is being checked
	FLICKERING	Unit is writing to the Compact Flash, either because it is storing data, or because the PC connected via the USB port has locked the drive
	FLASHING SLOWLY	Incorrectly formatted Compact Flash card is present
GREEN (BOTTOM)		
	FLASHING	A tag is in an alarm state
	STEADY	Valid configuration is loaded and there is no alarm present

ResinTracker™ Operator Instructions - Main Screen



Note: Soft key functions change based on menus. Touch arrows to see flyout menu.

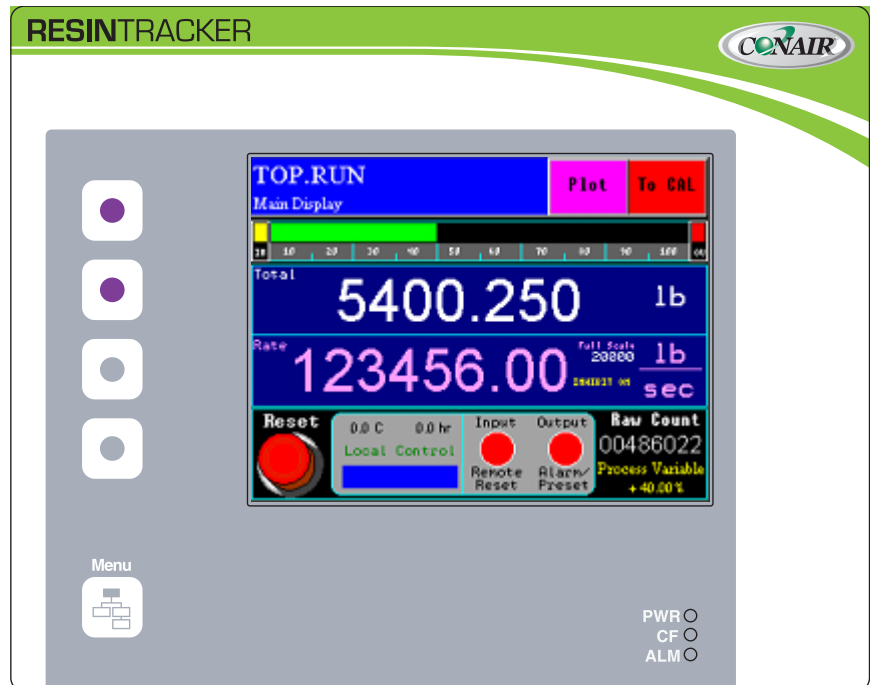
Note: One can navigate without the soft keys if it is preferred to use the Hit menu.

The main page is displayed automatically upon power up after the system is done initializing. The main page is where most machine control functions are performed. From here, the ResinTracker™ can be started and stopped.

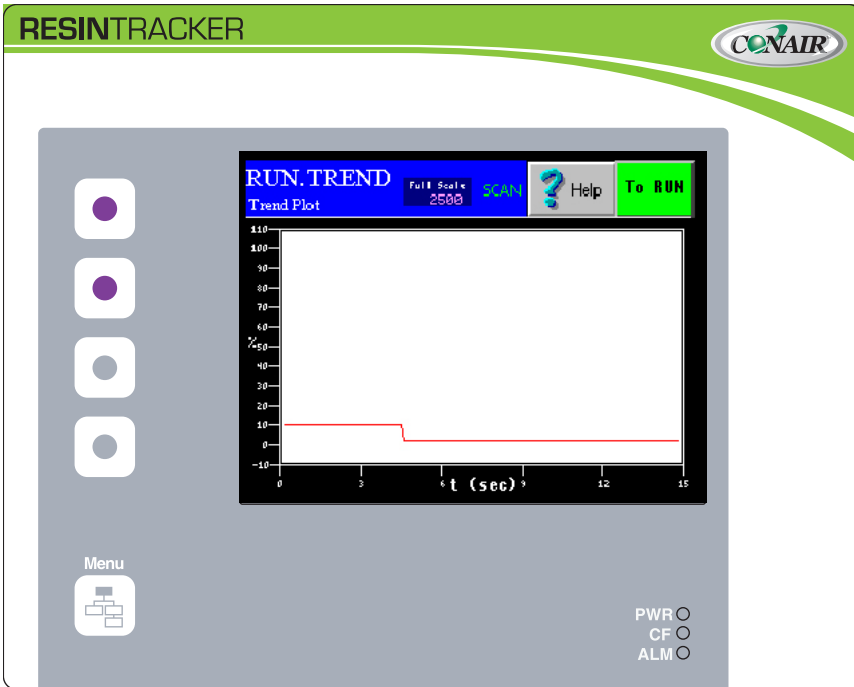
Upon startup, the HMI will display the Main Menu Screen, also called TOP, as shown below. In the lower right corner below the touch screen you will also notice the three LED display which indicates whether a Flash Card is installed and if you have any alarms currently activated.

If the menu page is left undisturbed for several minutes the page will automatically switch to the TOP.Run page

From the TOP.RUN page, the Plot Button can be pressed in order to access the Plot page which will display the standard trend plot screen, pictured below. Another plot screen called an oscilloscope plot can also be accessed.



Control Function Descriptions



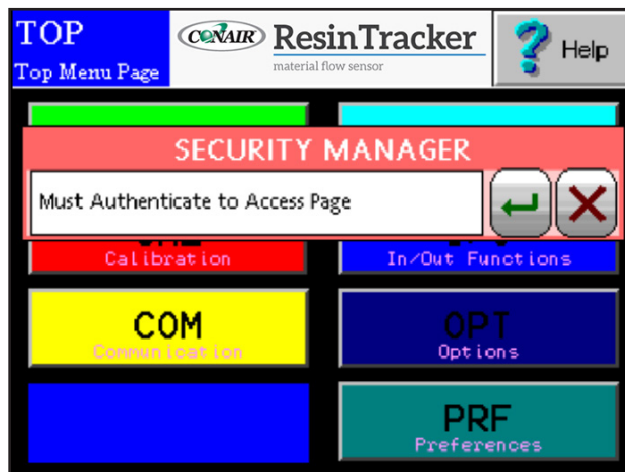
For more information on the Oscilloscope page, the TOP page and the TOP.RUN page please see the HMI Screen Guide within this manual. Before running product through the meter, it is recommended that a Static Calibration and a Dynamic (Product) Calibration be run. Please see the appropriate sections within this manual for each procedure as well.

Login

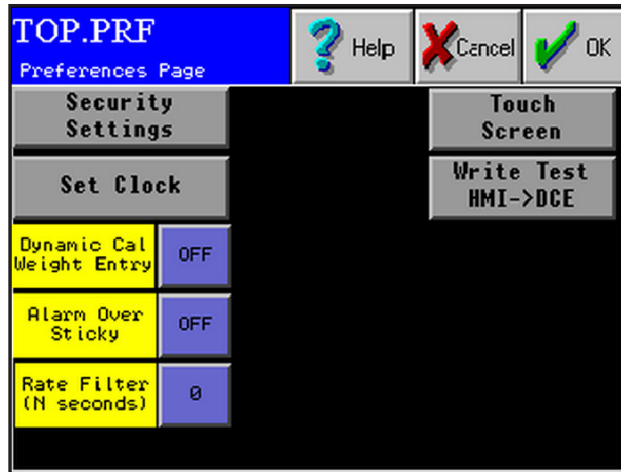
When accessing any page other than the three mentioned above, an orange “SECURE ACCESS CONTROL” dialog box will appear. Press the LOGON button to enter your username. Enter your username into the security dialog box, and press the Enter Button. You can then, enter your password into the security dialog box and press the Enter Button. Please note that a default username and password have been entered. The default username and password are listed below:

Username: admin
 Password: 345

After correctly entering your username and password, you will be logged on to the system. Please note that the HMI security system is configured to time out after 10 minutes of inactivity, at which time you will be required to login again. You will also be required to login any time the HMI unit is powered up.



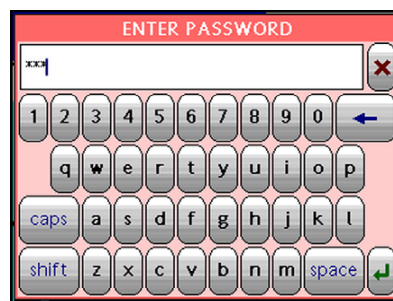
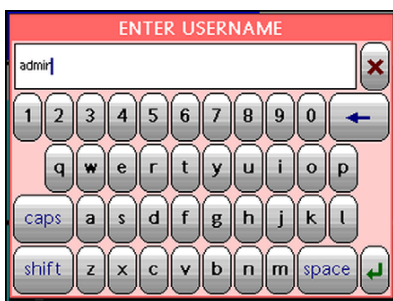
Control Function Descriptions (continued)



Changing the Password

The password-based security system of your HMI was designed to have a similar look and feel to computer-based security systems commonly encountered on a PC. It is recommended to change your password for security purposes, upon entering your system, however it is important to remember your password and to write it down and store it in a secure place, as once the password has been changed, the new password is required to operate the Resin-Tracker™ HMI.

From the Top Menu Page, Click the “Preferences” button. You will now be on the TOP.PRF (Preferences) page (seen on right). Click on the “Security Settings” button to go to the PRF.PASSWORD.SETUP page. Click “SET PASS” to change the Admin password. The “ENTER NEW PASSWORD” dialog box (shown below) will appear. You may now type in the new password. You will then be prompted to repeat the new password. The password should now be successfully changed.



(Continued)

Control Function Descriptions (continued)



Static Calibration (Static Cal.)

Static Calibration sets the Range of the Transducer in the ResinTracker™ Meter. This allows the meter to be versatile in a way such that it can be ranged up, known as Extended Static Calibration, or it can be ranged down, known as Reduced Static Calibration. The Static Calibration is a Factory Setting and should not need to be changed while the meter is in service, unless the Transducer has been replaced. Setting or checking the Static Calibration consists of two steps – Zero and Static Calibration. Note that readings are measured using two different units - %PV and % Volts. The difference between the two scales is the Dynamic CAL multiplier. The nominal value is five (5), this value equates to multiplying by one.

Before beginning the calibrations, make sure that there is no product on the Pan or around the Pan Arms.

The procedure for setting or checking the Static Calibration is as follows:

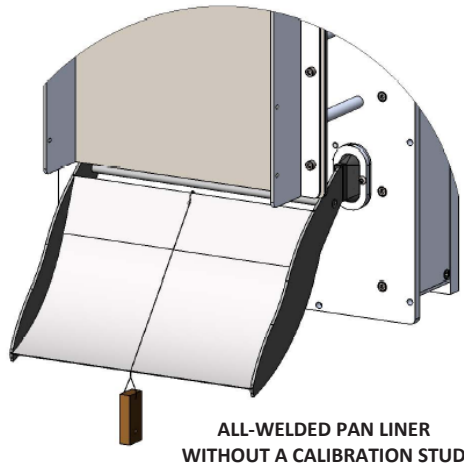
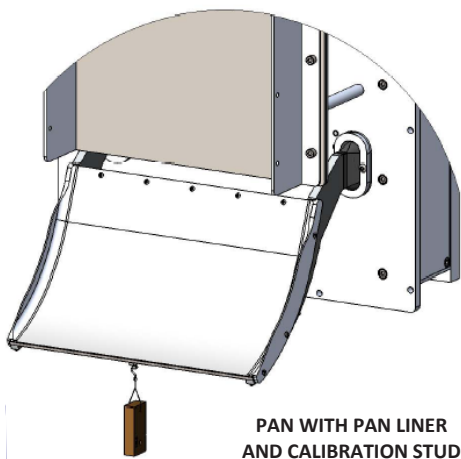
- 1 Click the CAL Button on the TOP Menu**, then click the ZERO Button. You should now be on the CAL.ZERO page as seen above.
- 2 Press the Zero Button.** Verify that the number displayed in the Diagnostic Window is 0.0 % Process Variable. The Zero portion of Static Calibration is complete.
- 3 Press the Red TO CAL Button** on the upper right of the screen in order to return to the TOP.CAL page.
- 4 Press the CALs Button.** You should now be on the CAL.CALs page as seen on the next page.
- 5 Hang the Test Weight provided with the Electronics Enclosure from the Calibration Stud located under the bottom edge of the Pan** as seen on the next page. For Pans that have more than one Calibration Stud, there should be a Test Weight for each. Some optional pans may not have a Stud. In these cases the wire will be long enough to hook onto the top edge of the pan and be draped over the front end of the pan as seen on the next page. Be sure that the Test Weight hangs freely from the Calibration Stud. It is also good practice to allow the Test Weight to become stable and movement free before proceeding.

Control Function Descriptions (continued)

- 6 Press the CALs Button located on the lower left side of the screen. Note the % Volts reading displayed in the Diagnostic Window. Verify the reading is correct for the selected range. For example, 25% is the correct value for the Standard Range setting. Please see the table below for the correct % Volts reading for each range.
- 7 Remove the Test Weight from the Calibration Stud. The voltage should return to 0.00% Volts.



Range	Extended	Standard	Reduced	Minimum
% Volts	12.5%	25.0%	50.0%	100.0%



Control Function Descriptions (continued)

SET.FIELD		? Help		To RUN	To SET
Field Data					
Run	CF Meter	Actual	A/M Ratio	% Error	
1	0.000	0.000	0.0000	+ 0.000	
2	0.000	0.000	0.0000	+ 0.000	
3	0.000	0.000	0.0000	+ 0.000	
4	0.000	0.000	0.0000	+ 0.000	
5	0.000	0.000	0.0000	+ 0.000	
Next Run	Enter Run	Clear Run	Prev Run	0.0000	Average
				0.00000	STD
				0.000	% STD

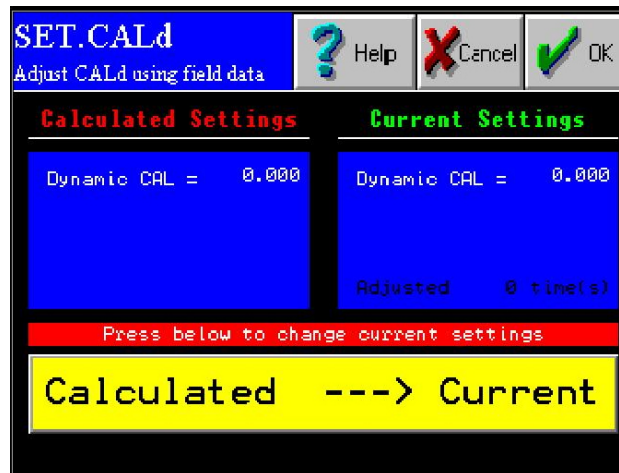
Site Calibration

When the ResinTracker™ Meter is sent from the Factory it is set with Default values for the Static Calibration and the Calibration Voltage, which were chosen for the particular material being measured with the meter. As described in the previous Section, the Static Calibration is an adjustment that ranges the Transducer, the Measurement Element of the meter. This Setting will not change unless the Electronic Full Scale is changed. The Calibration Voltage, however, is the adjustment that is made to Calibrate or Site Calibrate the Electronics to a particular application. Although the Factory setting may be quite accurate, it is likely due to differences in installation, feed systems, and material being measured, that an adjustment be made after the ResinTracker™ Meter is installed. This procedure is very simple and will require a means of capturing material that is run through the meter and weighing that material. Depending on the Configuration of the ResinTracker™ Meter, either Open or Enclosed, the method of capturing the material to be weighed will be different. For an Open Configuration the material can be captured after it leaves the Pan Section of the meter, if the installation allows, or at some other point in the flow path after it has been measured by the ResinTracker™ Meter. The closer the capture point is to the end of the Pan Section of the meter the less likely that there will be loss in the measurement sample and therefore less likely that there will be an error in the Calibration of the Electronics. It is important not to come in contact with the Pan Section when capturing the measurement sample so that the Electronics does not give incorrect results from measuring the contact. Always remember to fully secure the door back to the enclosure before resuming normal flow through the meter.

When performing the Site Calibration, it is recommended that a minimum of five samples be taken before making any Adjustments to the Electronics. Also, it is recommended that the sample run be a minimum of 10 seconds long. This will allow a reasonable amount of material to be run through the ResinTracker™ Meter ensuring an accurate adjustment to the Calibration. The procedure is explained as follows:

- 1 Make sure that the TOP.RUN page is accessed to begin the procedure. Press the Reset Button on the Lower Left to reset your count to zero before running product through the meter.
- 2 Run product through the meter for a designated period of time, collecting the material in some manner after it has passed through the meter.

Control Function Descriptions (continued)



- 3** After product has stopped flowing through the meter, go to the SET.FIELD page located under the SET option on the MAIN MENU. Press the MENU soft key, then press SET, and finally, FIELD DATA.
- 4** Click on the “ENTER RUN” Button and you should see the GREEN value (CF Meter) change from “0.000” to a number signifying the weight that the electronics calculates passed through the meter.
- 5** Weigh the collected material on a static scale and record the weight in the YELLOW block (Actual) next to the value automatically entered in STEP 4. Press the YELLOW box to bring up a numeric keypad. After entering the value, press the NEXT RUN Button to prepare for the next run. It is important that the container holding the material not be included in the weight. The only weight that is important is the material that actually went through the meter.
- 6** Return to the TOP.RUN page and press the RED RESET Button on the bottom left.
- 7** Repeat Steps 2-6 four more times to complete the 5 Field Data runs.
- 8** Once all five runs are completed click on the RUN Number next to each set of data in order to select each data RUN. When selected the circles next to the numbers will become green as seen in the picture above.
- 9** Now return to the TOP.SET page by clicking on the TO SET shortcut key in the top right corner. Now press the FIELD CALd Button.
- 10** You should now be on the SET.CALd page. The newly calculated Dynamic Calibration can be seen on the left side of the page, while the current Dynamic calibration can be seen on the right side of the screen. If you would like to change your current settings with the settings that you calculated please move on to Step 11. If you would like to keep your current settings, please press the CANCEL Button.
- 11** To accept the new Dynamic Calibration press the YELLOW CALCULATED to CURRENT Button and press the OK Button. A pop up screen will appear, asking if you are sure you would like to accept this value. Press YES.

Setting the Alarm - Rate

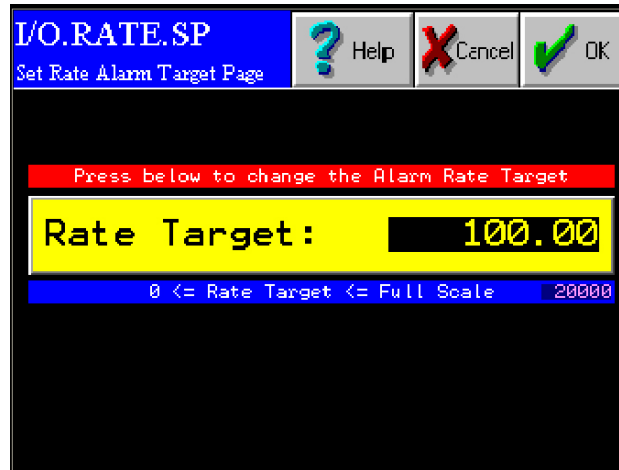
I/O.ALARM		? Help	To TOP	To I/O
Alarm (DOU2) Set-up Page				
Enable	Yes			
Type	Rate			
Logic	Positive			
Target	100.00 ton / hour			

To successfully utilize the alarm function of your Digital Electronics Package, please make sure that the alarm relay is wired according to the diagram in the Wiring Customer Connections-Alarm Outputs section of this manual. The relay can be used to trigger alarms which warn the operator that a batch is complete or that the rate has exceeded a set speed. The outputs are programmable to be assigned for rate or count. Below is a step by step procedure for setting a High Alarm for a Rate of 20 ton/hr.

I/O.ALARM.SP		? Help	To TOP	To Alarm
Alarm Target Page				
Weight Target	0.00 lb			
Weight Output	Latch			
Alarm Target type is Rate				
Rate Target	0.00 tonne / hour			

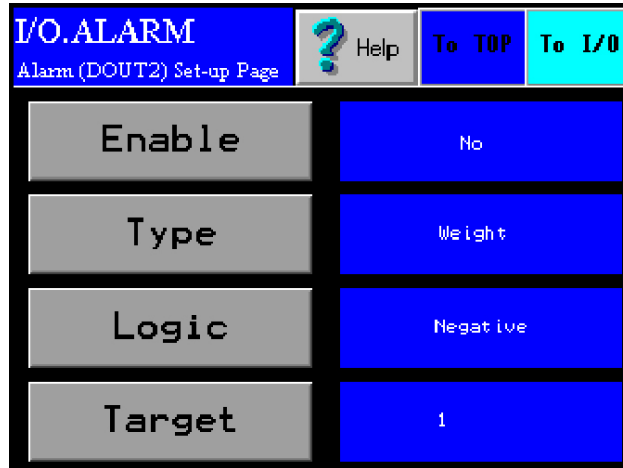
- 1 From the TOP.I/O page press the ALARM Button. Details of this page can be found in the HMI Screen Guide in this manual.
- 2 You will now be on the I/O.ALARM page. Details of this page can be found in the HMI Screen Guide in this manual.
- 3 Press the TYPE Button. Select 'Rate' from the pop up menu. Check the Blue display box to the right of the TYPE Button to make sure that "Rate" is displayed.
- 4 Based on your selection of "Type" the Target Value will either be in units of weight or units or rate. You have chosen to set the alarm based on Rate. Now you must select a target value that will trigger the alarm. Select a Target Value by first pressing the TARGET Button.

Setting the Alarm - Totalization

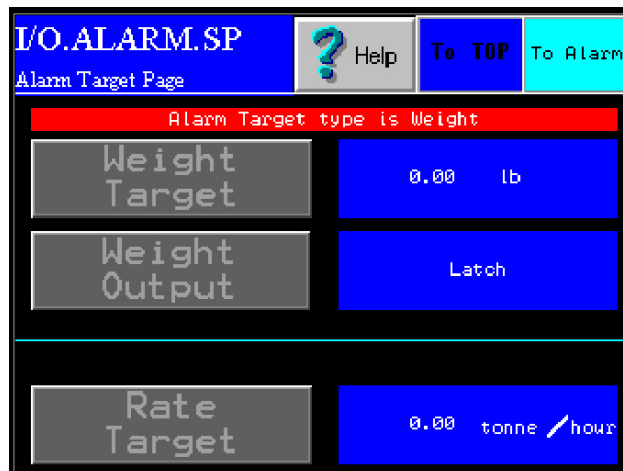


- 5** You should now be on the I/O.ALARM.SP page. Press the RATE TARGET Button. Details of this page can be found in the HMI Screen Guide in this manual.
- 6** You should now see the I/O.RATE.SP page. The Rate Target Button is highlighted in Yellow. You can change the Rate Target by pressing the current Rate Target value twice. The first press will outline the value in black, as shown. The second press will bring up a numeric keypad and the Target Rate can be changed. The maximum value that can be used is Full Scale, which is displayed in a dark Blue highlight.
- 7** Now return to the I/O.ALARM page. Make sure that the blue display box to the right of the LOGIC Button says Positive. If it does not, press the LOGIC Button until it does. Details on the LOGIC Button can be found in the HMI Screen Guide for the I/O ALARM PAGE.
- 8** Return to the I/O.ALARM page once more. To turn the alarm on, press the ENABLE Button until "YES" is displayed in the blue display box to the right of the ENABLE Button.

Setting the Alarm - Totalization (continued)

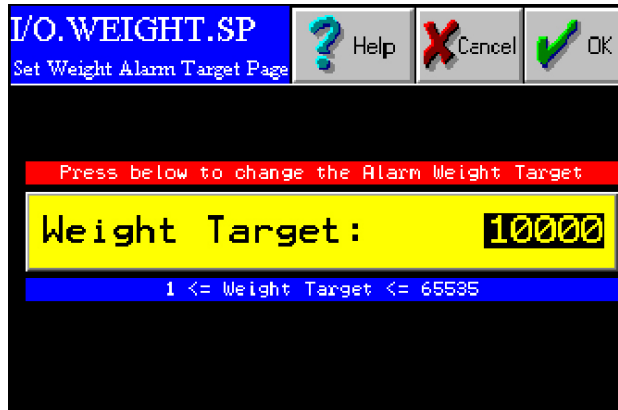


To successfully utilize the alarm function of your Digital Electronics Package, please make sure that the alarm relay is wired according to the diagram in the Wiring Customer Connections-Alarm Outputs section in Chapter 1 of this manual. The relay can be used to trigger alarms which will either hold for a period of time after a set Total has been reached, or will latch indefinitely until the Total is reset. Below is a step by step procedure for setting a Totalization Alarm.

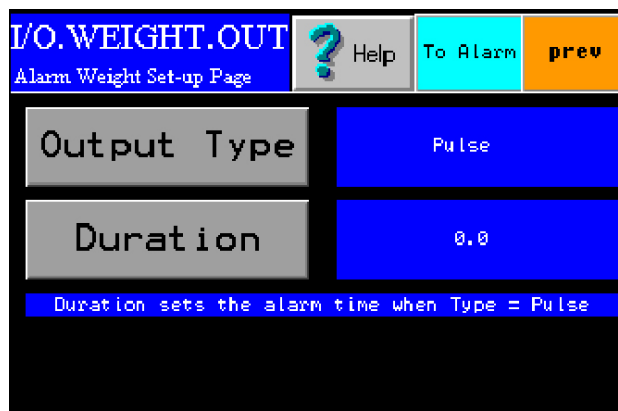


- 1** From the TOP.I/O page press the ALARM Button. Details of this page can be found in the HMI Screen Guide in this manual.
- 2** You will now be on the I/O.ALARM page. Details of this page can be found in the HMI Screen Guide in this manual.
- 3** Press the TYPE Button. Select 'WEIGHT' from the pop up menu. Check the Blue display box to the right of the TYPE Button to make sure that "Weight" is displayed.
- 4** You have chosen to set the alarm based on Weight, or Totalization. Now you must select a target value that will trigger the alarm. Select a Target Value by first pressing the TARGET Button.
- 5** You should now be on the I/O.ALARM.SP page. Press the WEIGHT TARGET Button. Details of this page can be found in the HMI Screen Guide in this manual.

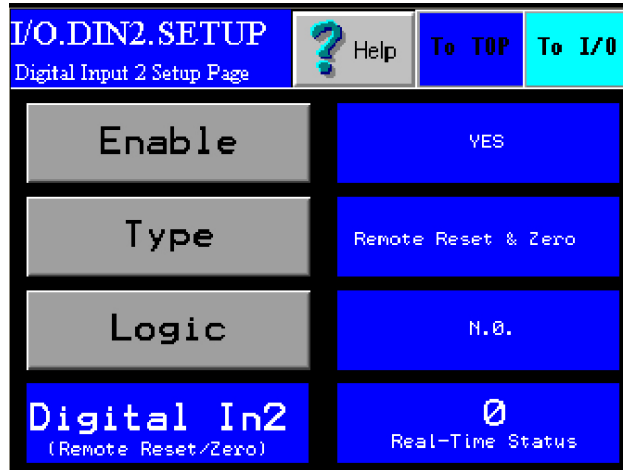
Setting the Alarm - Totalization (continued)



- 6 You should now see the I/O.WEIGHT.SP page. The WEIGHT TARGET Button is highlighted in Yellow. You can change the Weight Target by pressing the current Weight Target value twice. The first press will outline the value in black, as shown. The second press will bring up a numeric keypad and the Target Weight can be changed. The acceptable range for a Weight Target is displayed at the bottom of the WEIGHT TARGET Button.
- 7 Now return to the I/O.ALARM.SP page by pressing the OK Button in the upper right hand corner of the screen. You must now choose which type of Weight Output you would like to utilize. Press the WEIGHT OUTPUT Button for your options. You should now be on the I/O.WEIGHT.OUT page. More information on the two types of Weight Output, Pulse and Latch, can be found on the I/O.WEIGHT.OUT page in the Screen Guide section of the manual.
- 8 If a Pulsed Weight Output is chosen, you should enter a duration for the Pulsed Alarm. This is accomplished by pressing the DURATION Button, double clicking on the old duration value and entering your new duration value via the numeric keypad as before and press the OK Button.
- 9 Return to the I/O.ALARM page by pressing the TO ALARM Button on the upper right hand corner of the screen. You must now select your logic. Press the LOGIC Button and select your logic. Details on the LOGIC Button can be found in the HMI Screen Guide for the I/O ALARM PAGE.
- 10 Return to the I/O.ALARM page once more. To turn the alarm on, press the ENABLE Button until "YES" is displayed in the blue display box to the right of the ENABLE Button.



Remote Reset and Zero Capability



What is Remote Reset?

Remote Reset allows you to remotely trigger a reset of the Totalization on your Digital Electronics. This feature is similar to pressing the RESET Button from the TOP.RUN page. The Remote Reset can be utilized by installing a remote push button on/off switch (customer supplied). To properly wire the push button on/off switch for Remote Reset Capabilities, please see the Wiring Customer Connections section of Chapter 1.

When to Perform Zero

Zeroing should be performed after initial installation and after any mechanical procedures or replacement of parts, such as Loadcells or Measurement Pans. Once properly calibrated, the meter may be zeroed periodically if deemed necessary. Recommendations of whether to zero the meter or not and how often to zero the meter are application specific. Typically, zeroing is recommended in the case that zero drift contributes sufficient error to prevent the desired accuracy. Zero drift may occur due to product buildup on the pan, temperature changes, and other factors. Generally, this is not a problem since the user may zero the meter in order to remove the offset before the reintroduction of product flow through the meter.

Enabling the Remote Reset Capability

Once the switch is wired properly, you must enable the Remote Reset. To enable the Remote Reset Capability, access the I/O Menu from the TOP.MENU page and click on the REMOTE RESET Button. You should now see the page shown to the right. To enable Remote Reset, simply press the ENABLE BUTTON. If enabled, the word “Yes” will be displayed to the right of the button.

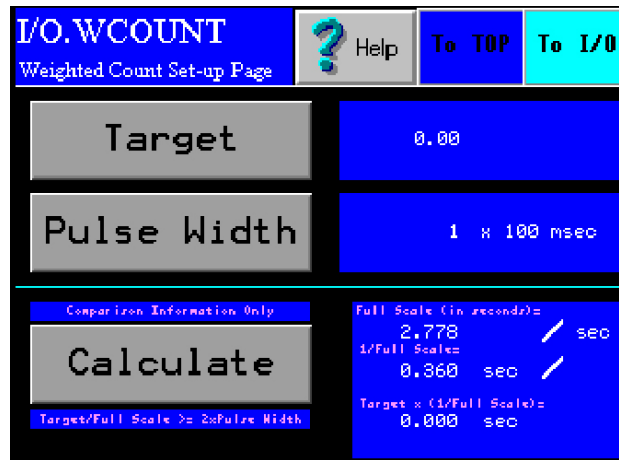
Selecting Remote Reset, Zero or Both

Pressing the TYPE Button will allow you to choose the function of pressing your Remote Push Button. It will either function as a Remote Reset, to Zero the meter, or can function as both simultaneously.

Logic

The logic of the Remote Reset Capability can also be manipulated. If the LOGIC Button is pressed, a dialog box will prompt you to choose from two options, “NC” or “NO”. The option “NC” is Normally Closed, while “NO” is Normally Open.

Weighted Count Output (Optional)



Weighted Count is an output option that will allow you to generate a count much slower than the 500 Hz Frequency, flow rate proportional signal. It is derived mathematically by dividing the totalization output by a scale factor. Once a target weight is selected, a pulsed output signal is generated by the electronics each time the target weight is reached. This signal can be used by a PLC or counter to digitally record the total weight based on the number of pulses. This option may eliminate the need for a costly High Speed Counter Card for your PLC.

- 1 Please ensure that the Weighted Count option is wired properly. Please see the appropriate section of the Wiring Customer Connections section of Chapter 1.
- 2 Once wired properly, you must enable the Weighted Count option. To enable the Weighted Count, access the I/O Menu from the TOP.MENU page and click on the WEIGHTED COUNT Button. You should now see the page shown to the right.
- 3 Press the TARGET Button. The current Target value for the Weighted Count option will be displayed. Double click on the value and a numeric keypad will appear. You can enter your value now. Press the OK Button in the Upper Right corner of your screen when finished.
- 4 You can also select the duration of the pulse sent after each time the target weight passes through the meter. To do so, press the PULSE WIDTH Button and select your desired value. Press the OK Button in the Upper Right corner of your screen when finished.
- 5 Please note that the values entered for Target and for Pulse Width take effect immediately and there is no need to press the CALCULATE Button. For more information on the CALCULATE Button and its function, please see the I/O.WCOUNT page in the Screen Guide in Chapter 4.

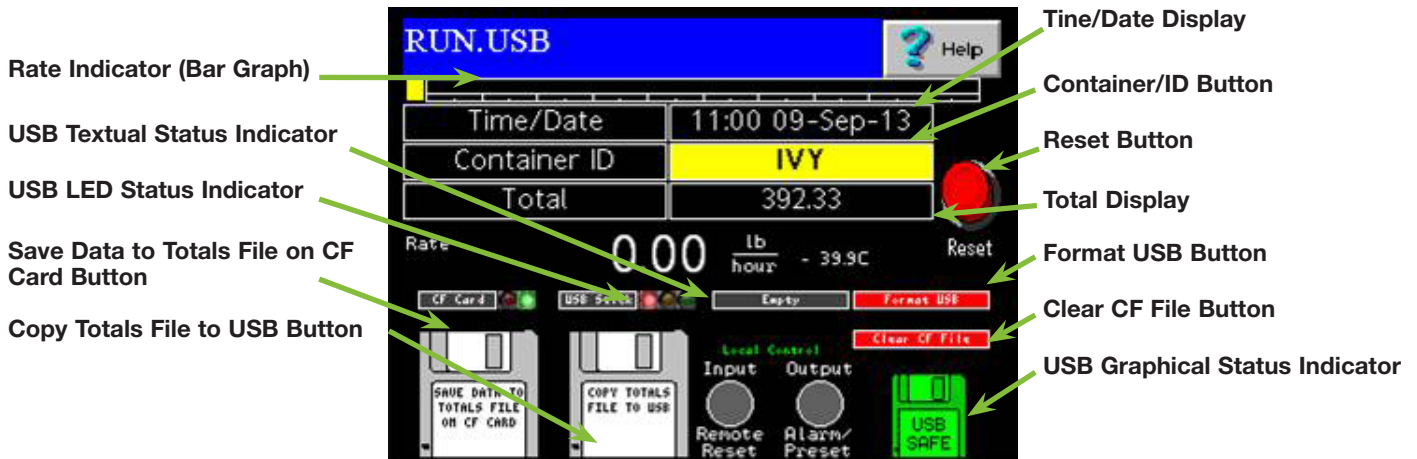
Pulsed Air System Option Operation

The Pulsed Air duration, or time that each blast of air lasts is a constant that is factory set at 100 ms and can not be changed. The Pulsed Air Frequency, or the duration of time between pulsed blasts of air can be changed, however.

The Lock Out Time, also found on the OPT.PULSEDAIR Page is also factory set and should typically not be modified in the field. If modification is required, please contact Conair.

Reduce the pressure on the regulator to the lowest pressure that will still ensure the proper cleaning of the measurement area. The lower the value of the pressure, the longer the life of the solenoid valve.

USB Option



The RUN.USB Page

The RUN.USB page is designed to be your fully functional RUN page. Values seen from this page (and written to the Compact Flash Card and USB) include Rate, Total, Date/Time and Container ID (Press the Yellow Container ID Button to input both letters and numbers). The status of various aspects of the compact flash card and USB stick can also be seen on this Run Page. Visual indicators in the bottom center of the page indicate the status of remote reset/ zero (by-wire), alarm and local/remote control as well.

After completing a batch, enter the identifying number/letter of the container that correlates to the batch and press the Save Data to Totals File on CF Card Button (Left most Disk icon). Once completed, the word "DONE" will appear in blue briefly to let you know the write occurred. At this point, you can reset the total by pressing the Reset Button.

USB Option (continued)


Each time batch data is written to the Compact Flash Card, a new line is written to a file called 'totals.csv'. This file contains Time, Date, Container ID and Total Weight. Copying files to the USB will leave the original file on the Compact Flash Card intact and creates a copy of it on the USB stick. If you wish to clear out the logs after copying to the USB stick, you can press the Clear CF File Button. Please note that writing files to a USB is not required after each run.

To copy files to a USB Stick, a properly formatted (FAT16) USB stick must be inserted into the receptacle located on the bottom of the enclosure. This will cause the USB LED Status Indicator to turn Red, indicating that the USB stick has been mounted by the system. **DO NOT REMOVE THE USB STICK WHILE THE INDICATOR IS RED OR YOU MAY LOSE DATA!**

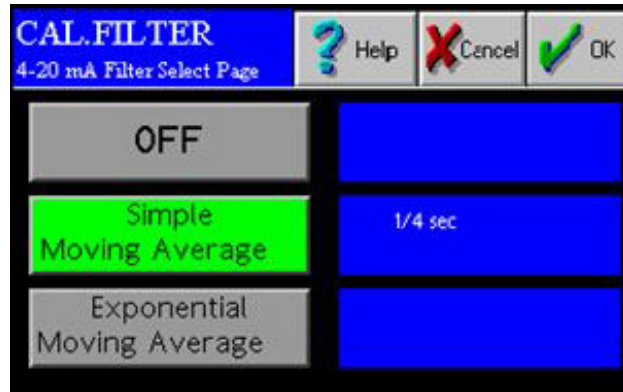
You can format a USB card directly from the RUN.USB page by inserting it, then pressing the Format USB Button. Several indicators of a properly formatted and mounted USB stick include that the USB LED Status Indicator is GREEN, "Mounted" is displayed in the USB Textual Status Indicator and the USB Graphical Status Indicator turns RED and reads "Eject USB". At this time, the USB is ready to receive the copied files. Press the Copy Totals File to USB Button to copy the file to the USB stick. The word "DONE" will appear in blue to let you know the copy was successful.

Now that you have copied your data to the USB stick, simply press the red disk labeled "Eject USB" to safely remove the storage disk. Once this icon turns green and reads "USB Safe" it is safe to remove the USB stick.

4-20mA Filtering

 **Note:** This control feature does not typically require changing. When the flow is pulsating, some of operators would rather use the 4-20mA filtering instead of doing the filtering in the PLC.

If you would like to filter the output, whether it is via the 4-20mA or over Ethernet, you may need to know this information. You can just enable the 4-20mA filter and select which type.



Filtering of the 4-20 mA signal allows smoothing of the otherwise instantaneous output delivered by the ResinTracker™ Meter's electronics. The 4-20 mA signal can be filtered from 1/4s up to 10s increments, however the mathematical method of filtering differs depending on the desired increment. For filtering under 3s, a simple moving average filter is used. For filtering of 3s or higher, an exponential moving average is utilized.

Simple Moving Average:

The formula for a simple moving average filter is shown below. Press one of the Filter Buttons to select the desired time increment for the filter. For example, a time increment of 1 second will filter (or average) 200 samples of the input signal to create the 4-20mA filtered output signal. This is because the transducer input sample rate is 200 samples per second. The 4-20mA output signal is updated at the same sample rate as the input signal. However, the output signal will be delayed by the selected time.

Exponential Moving Average:

The formula for an exponential moving average filter is shown below. The time increment selected determines the value of the smoothing coefficient constant as seen in the following formula.

$$y[i] = 1/M \sum_{j=0}^{M-1} x[i + j]$$

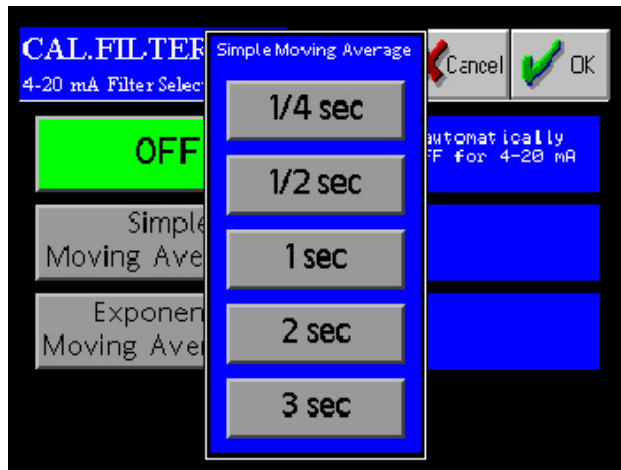
X[] = input signal
 Y[] = output signal
 M = number of points
 Filter = 1/4, 1/2, 1, 2, 3 s

$$S_t = \alpha \times Y_t + (1 - \alpha) \times S_{t-1}$$

S_t = Exponential Moving Average at time (t)
 α = Constant Smoothing Coefficient
 Y_t = Sample at time (t)
 Filter = 3, 4, 5, 6, 7, 8, 9, 10s

Note: Please note that the 4-20 mA filtering option will not be visible via the HMI plot screen. Any 4-20 mA filtering will also not function if transmitting data via Ethernet or another internet protocol.

4-20mA Filtering (continued)



Software Setup of the 4-20 mA Filter

The 4-20 mA filter allows local filtering of the 4-20 mA flow rate signal and can be filtered in 1/4s up to 10s increments. Please note that the 4-20 mA Filter can not be transmitted via Remote Communications Protocol. The settings for enabling your 4-20 mA filter are found on the CAL.FILTER page, accessed by first pressing the CAL Button from the Main Menu, and then pressing the FILTER Button from the TOP.CAL page. The procedure below describes how to set the 4-20 mA filter of the flow rate signal locally.

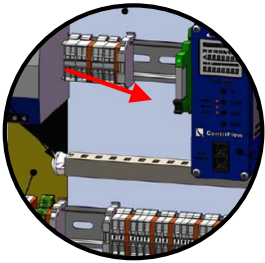
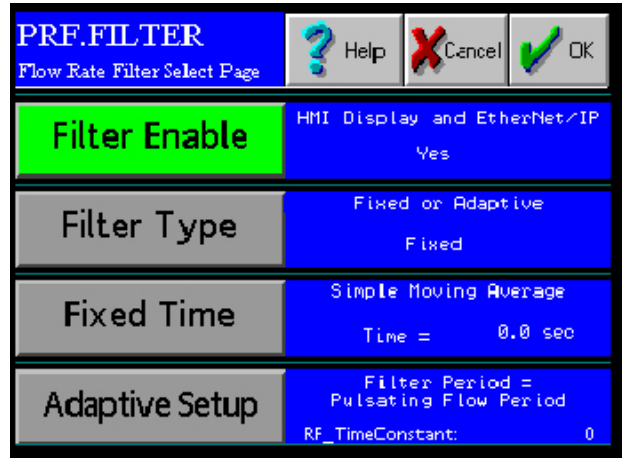
- 1** The 4-20 mA filter is automatically set to OFF. To enable the filter, you must select either the SIMPLE MOVING AVERAGE or the EXPONENTIAL AVERAGE filter for the appropriate filter.
- 2** The different options for filtering are listed below. Press the appropriate button and a popup menu as seen to the right, will be displayed.
- 3** Click the desired filtration increment.
- 4** Press the OK Button in the top right hand corner to accept this value.

Filter Options	
Simple Moving Average	Exponential Moving Average
1/4s	3s
1/2s	4s
1s	5s
2s	6s
3s	7s
	8s
	9s
	10s

Rate Filtering Option

Note: The 4-20mA filter affects only the analog output. If using Ethernet or some other protocol, the Rate Filter is used to filter that signal. The Rate Filter can also be used to smooth the display on the HMI run screen.

The use of the adaptive Rate Filter will require an additional piece of hardware.



Filtering of the rate, as seen on the TOP.RUN allows smoothing of the otherwise instantaneous output delivered by the ResinTracker™ Meter's electronics. The filtering method is similar to the 4 -20 mA Simple Moving Average filter with some specific differences. Whereas the 4-20 mA filter is a local filter only, the Rate Filter allows filtering of the output that is transmitted via Ethernet or any other Internet Protocol. The Rate filter can be implemented in two distinct ways. The Rate Filter can be fixed, filtering in anywhere from 0s to 10s at .1 second intervals. The Rate filter can also be adaptive so that it changes or adapts to changes in your process. The filter takes in information from your VFD as well as the 4-20 mA signal that instructs it and uses this data to adapt the time interval of the filter to the specific dynamic system.

Field Installation of the Adaptive (Rate) Filter

Installation of the Adaptive (Rate) Filter requires the purchase of the Adaptive (Rate) Filter option. Once purchased, successful installation requires both a mechanical installation as well as a software configuration.

Configuration of Fixed (Rate) Filter

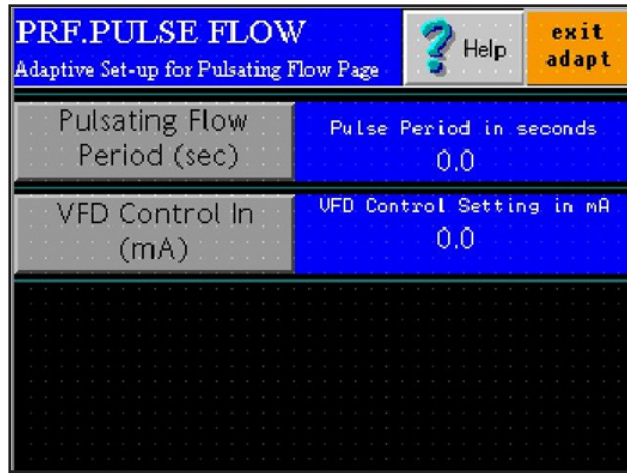
The Fixed Rate Filter must both be enabled and must also be configured by entering a time interval in the appropriate location. To enable the Fixed Rate Filter, please follow the below instructions from the PRF.FILTER page. The PRF.FILTER Button is found by pressing the PREFERENCES Button from the Main Menu.

- 1 Press the FILTER ENABLE Button so that “Yes” is displayed to the right of the button.
- 2 Press the FILTER TYPE Button and choose “Fixed” from the pop-up menu.

Now you must enter a fixed time interval for the Fixed Rate Filter. Begin this process by pressing the FIXED TIME Button. You can enter any value from 0s to 10s in .1s intervals. Once the time interval has been selected, press the OK Button in the top right hand corner.

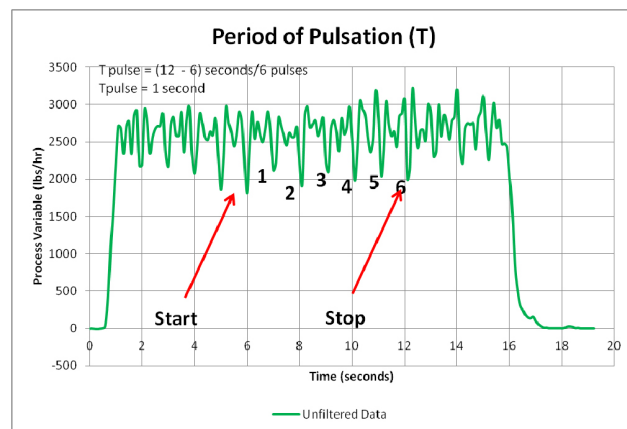
Please note that you will not need to enter any information under the ADAPTIVE SETUP if the Fixed Rate Filter is currently enabled.

Rate Filtering Option (continued)



The Adaptive Rate Filter must both be enabled and must also be configured to your specific installation. In order to do so, a single calibration point (the length of pulsations at a specified VFD output) must be entered. To enable the Adaptive Filter, please follow the below instructions from the PRF.FILTER page.

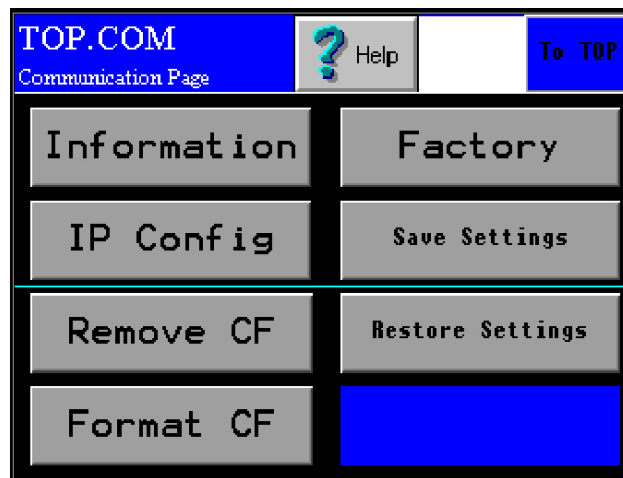
- 1** Press the FILTER ENABLE Button so that “Yes” is displayed to the right of the button.
- 2** Press the FILTER TYPE Button so that “Adaptive” is displayed to the right of the button.
- 3** Press the ADAPTIVE SETUP Button in order to begin configuration of the adaptive filter.



Rate Filtering Option (continued)

Pressing the ADAPTIVE SETUP Button will take you to the PRF.PULSE FLOW page (right). In order to use the adaptive filter feature it must be configured to the specific site installation using the calibration point mentioned above. The calibration point involves both the Pulsating Flow Period and the VFD Control In value, as seen on the PRF.PULSE FLOW page. One method to determine these values is to run your VFD at a known setting and measure the pulses on the RUN.SCOPE plot. The plot type is selected from the TOP.PRF page. The Scope plot has a fixed time of 20 seconds with gridlines at 2 seconds. Identify the pulse minimums (or maximums, whichever is more repeatable) and count how many pulses occur per a given time interval. Then calculate the filter period (TF) which is equal to the time divided by the number of minimums. An example of this can be seen (right). As 6 pulsations occur within a 6s timeframe, the pulse period of a single pulse will be 1s/ pulse. After pressing the PULSATING FLOW PERIOD Button, enter this value and press “OK”. Record your VFD’s Control In value after pressing the VFD CONTROL IN (mA) Button. And press “OK” once again.

Using the Compact Flash



Using the Compact Flash Card

A 2 Gigabyte Compact Flash card is pre-installed inside the Digital Electronics Enclosure and is located inside the enclosure on the reverse side of the HMI touch screen. Run data is stored on the Flash Drive but only when the TOP.RUN page is currently displayed. The internal data logger operates using two separate processes. The first samples each data point at the rate specified by the factory (1/second), and places the logged data into a buffer within the RAM of the panel. The second process executes every minute, and writes the data from RAM to the Compact Flash card. Note that because data is not committed to the Compact Flash for a minute, this amount of log data may be lost when the terminal is powered-down. Further, if the terminal is powered-down while a write is in progress, the Compact Flash card may be corrupted. Data is being written to the Compact Flash card when the middle yellow LED light on the front of the HMI panel is flashing. Do not turn the power off or remove the Compact Flash while the yellow LED is blinking!

Using the Compact Flash (continued)

Removing the Flash Card

The process for removing the Compact Flash card is called Hot Swapping. Hot Swapping is not the preferred method of transferring data from the flash card to an external source due to the possibility of data files being corrupted if the Flash card is removed improperly. Please remember that the Compact Flash card cannot be removed while data is being written to the Flash card, or when the yellow LED is flashing.

To Hot Swap, go to the TOP.COM page by pressing the COM button from the main menu.

You will now be on the COM.REMOVE page. Next, press the Remove CF button and finally, press the SAFELY REMOVE COMPACT FLASH button. When the 'Safe' prompt is indicated, you may safely remove the Compact Flash card.

Open the Electronics Enclosure and remove the Flash card from the back of the HMI panel in the door of the Electronics Enclosure.

Save Settings

You can also save your settings and configurations to your Flash Card and restore them if your settings have been unintentionally changed. To save your HMI settings to a Flash Card (provided you have one installed), press the COM Button from the TOP Menu to enter the TOP.COM page (seen on right). Now, press the Save Settings Button. You will be prompted with "Do you want to save the HMI configuration to flash?" Press "Yes" to save the configuration settings.

Restore Settings

This allows you to restore the saved configuration settings in the event that your settings have been changed on the HMI. From the TOP.MENU page, press the COM Button to enter the TOP.COM page. Press the Restore Settings Button. Again, you will be prompted with "Do you want to load the HMI configuration from flash?" Press "Yes" to load the settings from the flash card. This procedure will fail if no flash card is present, or previous HMI settings have not been saved to the Flash Card currently installed in the HMI. Please note that as data is saved on your Compact Flash Card and the Card reaches its data storage capacity, the HMI will begin overwriting the oldest data as the newest data is saved to the Compact Flash Card.

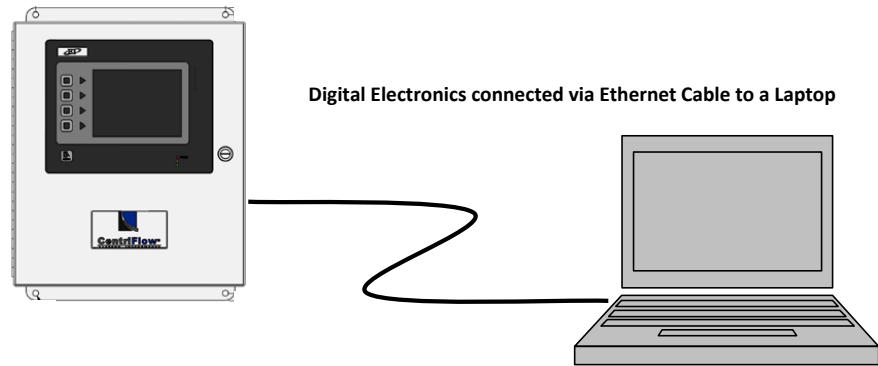
Format Flash Card

To format your Compact Flash Card ensure that your it is securely inserted into the HMI. Press the COM Button from the Main Menu and then press the FORMAT CF Button. Next, press the large Yellow FORMAT COMPACT FLASH CARD Button. Your Compact Flash Card should now be formatted. Please note that all data will be erased from the Compact Flash Card and so if you would like to preserve the data, you will need to save the data to another location.

Remote Ethernet Access Capabilities

The preferred method for transferring data from the Compact Flash card is to link the Digital Electronics to a PC or Laptop using an Ethernet Cable. The main advantage of the remote viewing capability is that run histories can be viewed and saved from the Electronics itself to a hard drive or other desired external storage device.

Using the Compact Flash (continued)



Establishing Communication

The IP address and Subnet Mask for the Digital Electronics has been factory set as:

IP Address: 192.168.1.90

Mask: 255.255.255.0

In order to enable communication, the Local Area Connection Properties of the PC/Laptop must be set appropriately.

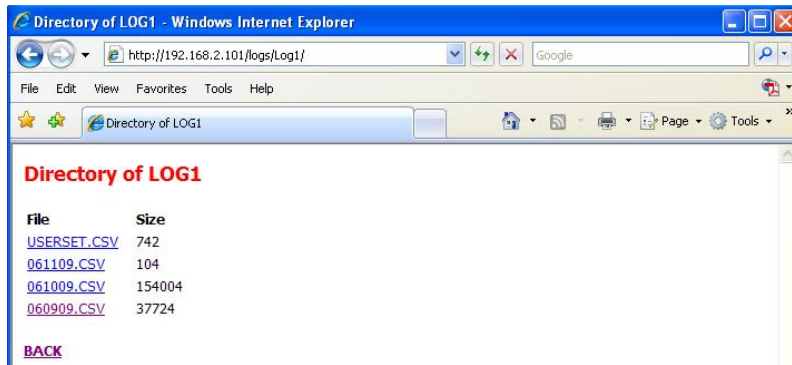
Entering the Digital Electronics IP Address will bring up a web page entitled “G3 Web Server”. This page will allow you access to three options, View Data, View Logs, and Remote View.



Remote View

Selecting the Remote View option will allow you to access the various pages of the HMI touch screen from a remote location. Upon clicking the Remote View link, a screen that looks identical to the HMI touch screen will appear in the Web Browser window. Clicking on the various options works similarly to using the touch screen on the Digital Electronics itself. In this way, all of the features of the HMI can be accessed and used remotely.

Using the Compact Flash (continued)




View Logs

Selecting the View Logs option allows access to the log files stored on the Compact Flash. Three files are created when the compact flash is formatted— MMDDYY.csv, UserSet.csv, and MTR.csv. They are all comma separated variable files. The MMDDYY file store the run data. One run data history file is created upon startup of the Digital Electronics and a new file is subsequently created every 24 hour period. The names of the files themselves indicate the date upon which the file was created and the data therein was collected. The UserSet file records a history of changes to the meter calibration. The MTR file records the site calibration data. MTR is an abbreviation for Material Test Report.

Clicking on any of the file names will open up the data file. These files are CSV files and typically open into an Excel spreadsheet. Once open, the spreadsheet can be saved to another location such as a hard drive. A typical entry would look like the file below.

TIME	RAW	ENGR	Volts	PV	RATE	ALARM
(HR:MIN:SEC)	(Count)	(Count)	(%)	(%)	(Mass/Time)	(Over)
14:55:30	50	0.27778	18.18	1817	1817	0
14:55:31	183	1.0167	27.46	2745	2745	0
14:55:32	318	1.7667	23.90	2390	2390	0
14:55:33	435	2.4167	25.52	2551	2551	0
14:55:34	560	3.1111	25.13	2512	2512	0
14:55:35	673	3.7389	24.97	2497	2497	0
14:55:36	823	4.5722	25.49	2548	2548	0
14:55:37	935	5.1944	24.98	2497	2497	0
14:55:38	1061	5.8944	25.13	2513	2513	0
14:55:39	1199	6.6611	25.41	2540	2540	0

The TIME column indicates the specific time, using a 24 hr clock, the count data was taken. The second column indicates the RAW COUNT, while the third column is the ENGINEERING COUNT. The RAW COUNT divided by the C/W RATIO equals the ENGINEERING COUNT. The next two columns are both measurements of the full scale, but shown in different units. The unit (% Volts) is used in the Static Calibration procedure. The units (% PV) or Process Variable, is the calibrated full scale measurement. The two units, (% Volts) and (% PV) are mathematically related by the CALd multiplier. The RATE column indicates the flow rate in the mass and time units chosen. The final column, ALARM, indicates whether or not the alarm has been triggered.

 **Note:** The (% PV) column is recorded as an integer with an implied decimal point. Divide the (% PV) column by 100 in order to get the correct real number.

(Continued)

Using the Compact Flash (continued)

The User Settings Log indicates each time that the user settings have been changed and what the new settings are. A typical Userset page can be seen below.

DATE	TIME	EVENT	ZERO	CALs	CALd	RANGE	INHIBIT	FILTER	CWratio	Full Scale
6/2/2009	14:47:54	Power On	7FEF	10D0	2710	4	2	14	180	10000
6/2/2009	14:49:08	zero	7FDC	10D0	2710	4	2	14	180	10000
6/2/2009	14:49:30	CALs	7FDC	10F2	2710	4	2	14	180	10000
6/2/2009	14:55:11	Power On	7FDC	10F2	2710	4	2	14	180	10000

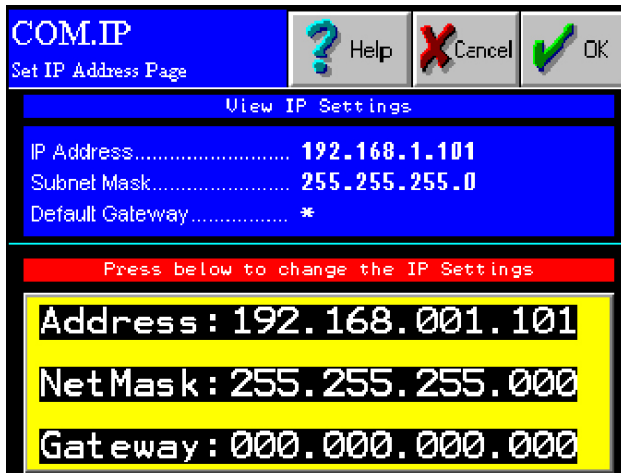
The MTR Setup Sheet allows data to be loaded to it and to calculate the Standard Deviation and the Percent Error of the Electronics' readings. This file is stores site calibration data to the compact flash from the SET.SAVE page. A standard MTR Setup Sheet can be seen below.

MM-DD-YY:	5/21/2009	TIME:	15:11:47		
Material:	rice shortcb				
Technician:	sjt				
Location:	wh				
Type:	Open	Reverse			
Model:	RT-12CV				
Feed:	Belt				
Full Scale:	1000				
Zero:	7F5C				
CALs:	0C5D				
CALd:	3198				
RUN	ACTIVE	METER WEIGHT	ACTUAL WEIGHT	ACTUAL/METER	%ERROR
1	1	30.267	30.46	1.0064	-0.63
2	1	30.567	30.72	1.005	-0.5
3	1	26.433	26.56	1.0048	-0.48
4	1	30.567	30.72	1.005	-0.5
5	1	28.233	28.42	1.0066	-0.66
			Average:	1.0056	
			STD:	0.0009	
			%STD:	0.0857	

View Data

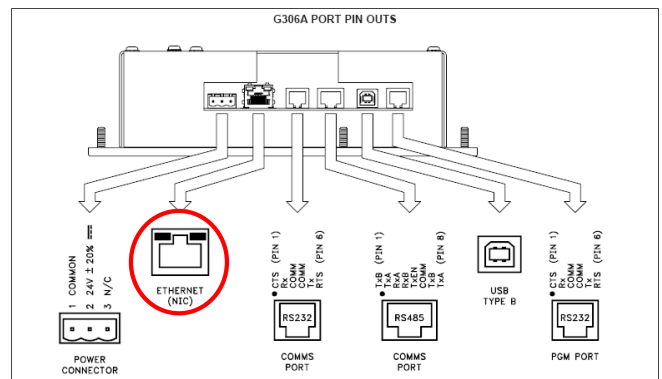
This option is not used.

Changing the Ethernet/IP Address Option



If you have purchased the Ethernet/IP Option read on for the procedure to set up your IP Address to communicate with your existing PLC. The Ethernet/IP option allows you to output both the flow rate and the totalization signals via an Ethernet connection, directly to your PLC. The main tasks involved to successfully enable this option are to physically connect your HMI to your PLC, to assign an appropriate IP Address to your HMI and then, to instruct your PLC to accept the signal through your Ethernet connection.

- 1 Install your Ethernet Cable into the RJ45 connection on the back of your HMI. To access the back of your HMI, simply open the door of your Digital Electronics Unit. The HMI is attached to the door itself. Please see the drawing (Below) for the location of the RJ45 Connection.
- 2 You must first Manually Configure the IP Address for your Digital Electronics. In order to accomplish this, you must first access the COM.IP page by pressing the COM Button on your TOP Menu and then, pressing the IP CONFIG Button. You should now see this screen (right).



- 3 Enter the IP Address for your HMI by double clicking on the Address section. To switch between numbers and letters, press the SYMBOL Button that is located next to the IP Address display.

Note: pressing the PREVIOUS and NEXT Arrow Keys will scroll between your Address, NetMask and Gateway Fields until you have begun entering your IP Address numerically. At that time, the PREVIOUS and NEXT Arrows will move the cursor back and forth to edit your IP Address.

- 4 After entering the IP Address for your HMI, press the ENTER key and then, press the OK Button located in the Upper Right hand corner. A pop up will prompt you to save the IP Address changes to your Flash. Pressing the YES Button will refresh the HMI and will implement the changes made.
- 5 You have now configured your HMI to communicate with your PLC. For proper communication with the PLC, however, you must also ensure that your PLC will receive the output from your HMI. The following section offers a specific example of PLC configuration using a ControlLogix PLC.

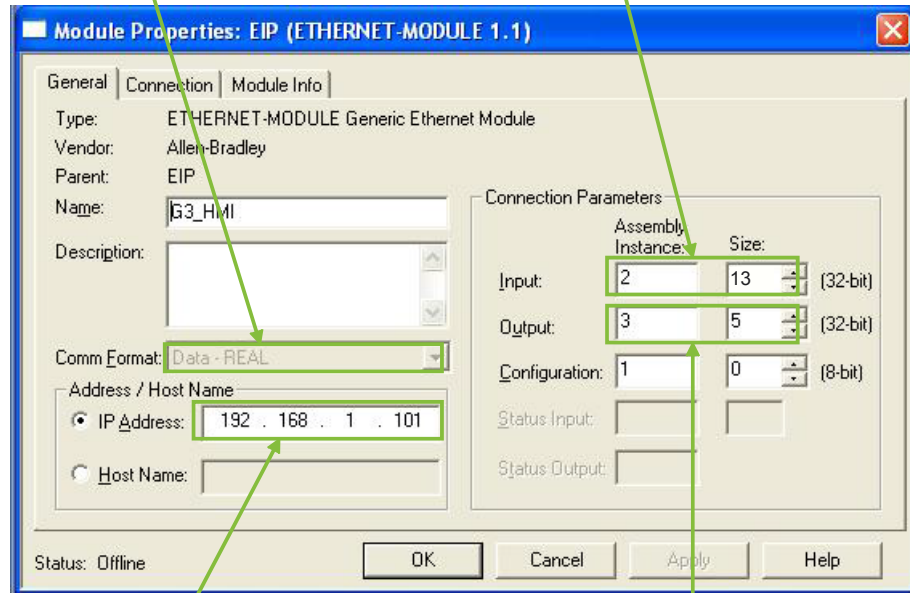
(Continued)

Changing the Ethernet/IP Address Option (continued)

Establishing Communication to PLC Unit

Set Comm Format to "Data-Real"

Input Assembly Instance must be set to 2.
Input Size must be set to 13.



The IP Address is the address of the HMI.
This must be the same as the address set in the HMI.

Output Assembly Instance must be set to 3.
Output Size must be set to 5.

The diagram above is a screen capture from RSLogix 5000 software. See Red Lion Technical Note TNOI17 for a description of the ControlLogix configuration steps. Note that the Module Properties as shown above and on page 3 of the technical note differ. Please set the Comm Format to Data-Real, Input Size to 6, and Output Size to 5, as shown above.

Set the Comm Format, IP Address, and Connection Parameters as shown in the diagram. Configuration data is not supported by the HMI. However, enter 1 for the Configuration Assembly Instance and 0 for the Configuration Size.

For more detailed instructions, please contact Eastern Instruments for Technical Note TNOI17.

Changing the Ethernet/IP Address

Option (continued) Tag Mapping

- G3_HEAVY:I.Data	{...}	{...}	Float	REAL[13]	
G3_HEAVY:I.Data[0]	??	??	Float	REAL	rate
G3_HEAVY:I.Data[1]	??	??	Float	REAL	total
G3_HEAVY:I.Data[2]	??	??	Float	REAL	0 readback
G3_HEAVY:I.Data[3]	??	??	Float	REAL	product
G3_HEAVY:I.Data[4]	??	??	Float	REAL	alarm target
G3_HEAVY:I.Data[5]	??	??	Float	REAL	temp
G3_HEAVY:I.Data[6]	??	??	Float	REAL	
G3_HEAVY:I.Data[7]	??	??	Float	REAL	
G3_HEAVY:I.Data[8]	??	??	Float	REAL	
G3_HEAVY:I.Data[9]	??	??	Float	REAL	
G3_HEAVY:I.Data[10]	??	??	Float	REAL	
G3_HEAVY:I.Data[11]	??	??	Float	REAL	dCAL readback
G3_HEAVY:I.Data[12]	??	??	Float	REAL	SNR
- G3_HEAVY:O.Data	{...}	{...}	Float	REAL[9]	
G3_HEAVY:O.Data[0]	??	??	Float	REAL	Reset
G3_HEAVY:O.Data[1]	??	??	Float	REAL	Zero
G3_HEAVY:O.Data[2]	??	??	Float	REAL	MCal Product Selection
G3_HEAVY:O.Data[3]	??	??	Float	REAL	dCal
G3_HEAVY:O.Data[4]	??	??	Float	REAL	Alarm Target

Data Received by PLC from HMI (Optional)


- I.Data[0]: Flow Rate
- I.Data[1]: Totalization
- I.Data[2]: Read back register for the Remote Zero command
- I.Data[3]: Read back for Remote Product (Number of Product: Multiple Cal. Option)
- I.Data[4]: Read back register for Remote Target
- I.Data[5]: Temperature of ResinTracker™ Meter near Transducer
- I.Data[10]: Auxiliary 4-20 mA Output
- I.Data[11]: Dynamic Cal. Value Readback (Value of dCal: Multiple Cal. Option)
- I.Data[12]: System Not Ready Status Bits


Commands Transmitted by the PLC to HMI (Optional)

- O.Data[0]: Remote Reset
- O.Data[1]: Remote Zero
- O.Data[2]: Remote Product (Number of Product: Multiple Cal. Option)
- O.Data[3]: Dynamic Cal. Value (Value of dCal: Multiple Cal. Option)
- O.Data[4]: Remote Target (Remote Alarm)

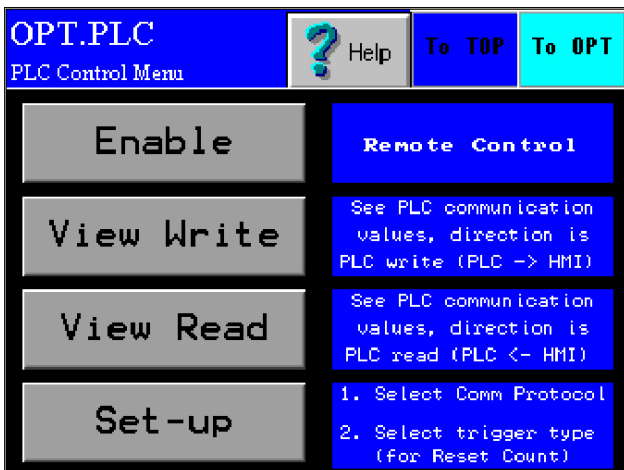
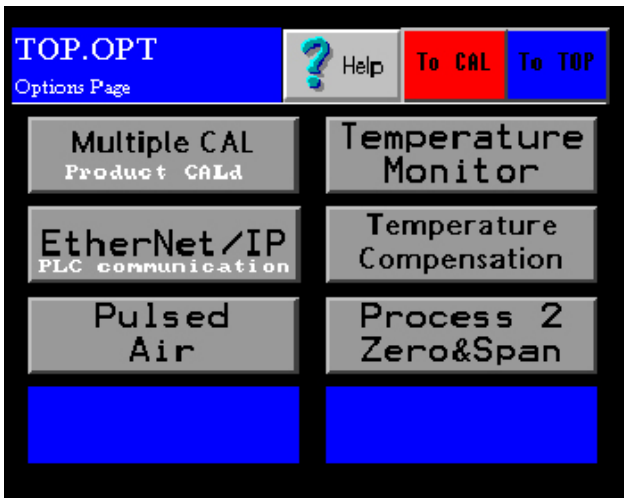
PLC Programming Note:

- RESET: Valid values (0 for normal operation); (1 to reset the total) Reset can be programmed for level or edge triggered from the HMI OPT.PLC page.
- REMOTE ZERO: Valid values (0 for None); (1 Success Normal Result); (2 Failure-Abnormal Result); (3 Prohibited-Local Zero not completed); (4 Abnormal Prohibited-Local Zero); (5 Prohibited-PV% greater than inhibit)
- REMOTE PRODUCT: Valid Values (1 through 8 which select products 1 thru 8 respectively); 0 = Remote dCal
- SYSTEM NOT READY: Bit 0 (0 while current PV is greater than the negative equivalent of current inhibit thresh old); Bit 1 (0 while current PV is less that the current inhibit threshold); Bit 2 (0 while HMI is on RUN page); Bit 3 (0 when Zero Cal. Successfully performed); Bit 4 (0 when Static Cal. Successfully performed); Bit 5 (0 when Modbus link between HMI and DCE is good); Bit 6 (0 when RB_ERROR_CODE and ERR_HMI_CODE are not met)

 Note: Reset output functions similarly to pressing the Reset Button on the TOP.RUN page, while the Multiple Cal output functions similarly to using the multiple calibration option detailed in the Setup of Multiple Calibration section of this manual.

 Note: A non-zero value for any of the Bits indicates that something may not be ready for operation. The Calibration Bits (3 and 4) will be reset to non-zero values upon power cycle.

Changing the Ethernet/IP Address Option (continued)



Once the option has been unlocked that allows data to be transmitted both from the HMI to the PLC and from the PLC to the HMI, the communication can be toggled from the PLC control page. This page can be accessed from the options page, TOP.OPT (right), accessed from the TOP page, or Main Menu. Press the PLC Button in order to access the OPT.PLC page (below) where the HMI/PLC Communication can be toggled between local control or Remote Control via the PLC.

Please note that if PLC Communication is enabled, data is only transmitted via Ethernet while on the Main Run screen or TOP.RUN page (bottom right). The TOP.RUN Screen is accessed, either by travelling to the page or by automatically being sent there after the standard timeout period (see the “Powering On” section of this manual). Please note that while the Ethernet Communication is on, you can not leave the TOP.RUN page without first entering a password. This security feature is included so that Ethernet Communication cannot be interrupted accidentally. The password for leaving the TOP.RUN menu while Ethernet Communication is can be entered by clicking on each of the 4 boxes. The password is below:

I II III IV

Setup of Multiple Calibration Screens (Optional) (continued)



1 The first step is to enter names and positions for each of your products. To do so, press the NAME Button. You should now see this screen (Right). Select the product you would like to name if none have been previously selected, select Product 1.

Selecting the product above will allow you to rename the selected product. Although this step is not necessary in order to continue it will help you differentiate your products and their calibration voltages in the future. Once a product is selected, you should see the screen (Right).



2 You can now assign the product calibration a name. Often, the name of the product itself is used, but any name can be used. Double click the presently entered value for Name and you will be prompted to enter your product's name. When finished, press the ENTER Button and then, press the OK Button in the Upper Right hand corner. Press the TO MCAL Button to return to the Multiple Calibrations page.

3 Now you should be able to enter your calibrations for each of the products that you have assigned with names. You should have been returned to the OPT.MCAL Menu. If not return there now and press the ASSIGN Button. You should now see this screen (Right).

If you have named your products, then you should see them listed on this page. Select the product that you would like to assign a calibration voltage and press the corresponding button. You should now see this page (Right). Your Digital Electronics' current Dynamic Calibration value is displayed in the Current Cal(d) table on the left hand side of the page. If this is the correct dynamic calibration for your particular product, press the CURRENT/PRODUCT Button (Yellow) and then, press OK. Please note that if more than one product will have the same Dynamic Calibration, they must be entered one at a time from the previous page.



4 If the current Dynamic Calibration is not correct for your particular product and you would like to change it, or none has been specified, you can either enter one manually or you can calculate another value by running a Site Calibration. To run a Site Calibration, please see the Site Calibration section of the Procedures section of this manual.

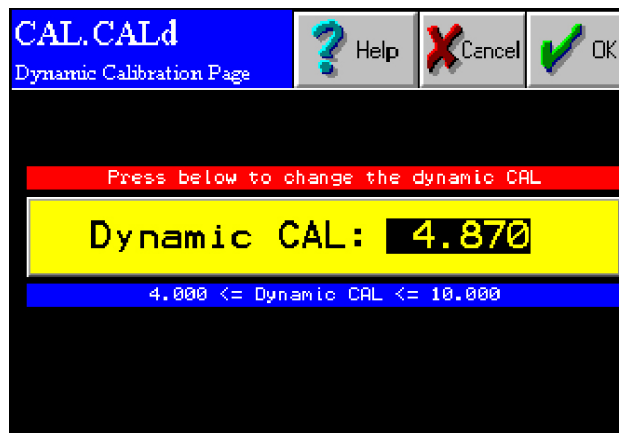
5 To manually enter a Dynamic Calibration, return to the main TOP Menu and press the CAL Button and then, press the CALd Button. You should now see this screen (Right). Double click the current value for Dynamic Calibration and enter your new value. Press the ENTER Button when finished and then, press the OK Button in the Upper Right hand corner.

(Continued)

Setup of Multiple Calibration Screens (Optional) (continued)

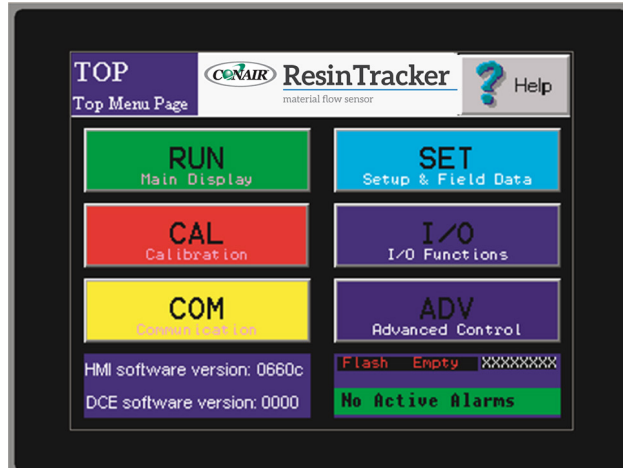


- 6 Once the value is entered return to the OPT.MCAL.SAVE page as described above and save the new current Dynamic Calibration to the selected product. Repeat this process for all of your products, up to 8.
- 7 To access any of your saved Dynamic Calibrations for running your process, simply click the SELECT Button from the OPT.MCAL page and chose the product that is currently running. Press the OK Button located in the Upper Right hand corner.



Screen Guide

Every HMI page has a unique name that includes the previous page name combined with a description of the current page. A period separates the names. When the DCE is first powered on, or when you press the soft-key labeled MENU, the TOP page is displayed.



TOP

TOP is the Main Menu Screen. There are seven buttons on the TOP page. They are RUN, CAL, COM, SET, I/O, OPT and PRF. Press the RUN button to go to the TOP.RUN page. This is the normal display mode. Press the CAL button to go to the TOP.CAL page. This is where the DCE calibration is performed (comparable to analog electronics Static Calibration). Press SET Button to go to the TOP.SETUP page. This is used to perform the DCE site calibration. Press the OPT Button to access various options. Press the PRF Button to go to the TOP.PRF page. This page allows the security settings clock and other features to be set to your desired preferences. In the upper right corner you can access a Help Menu.

TOP.RUN

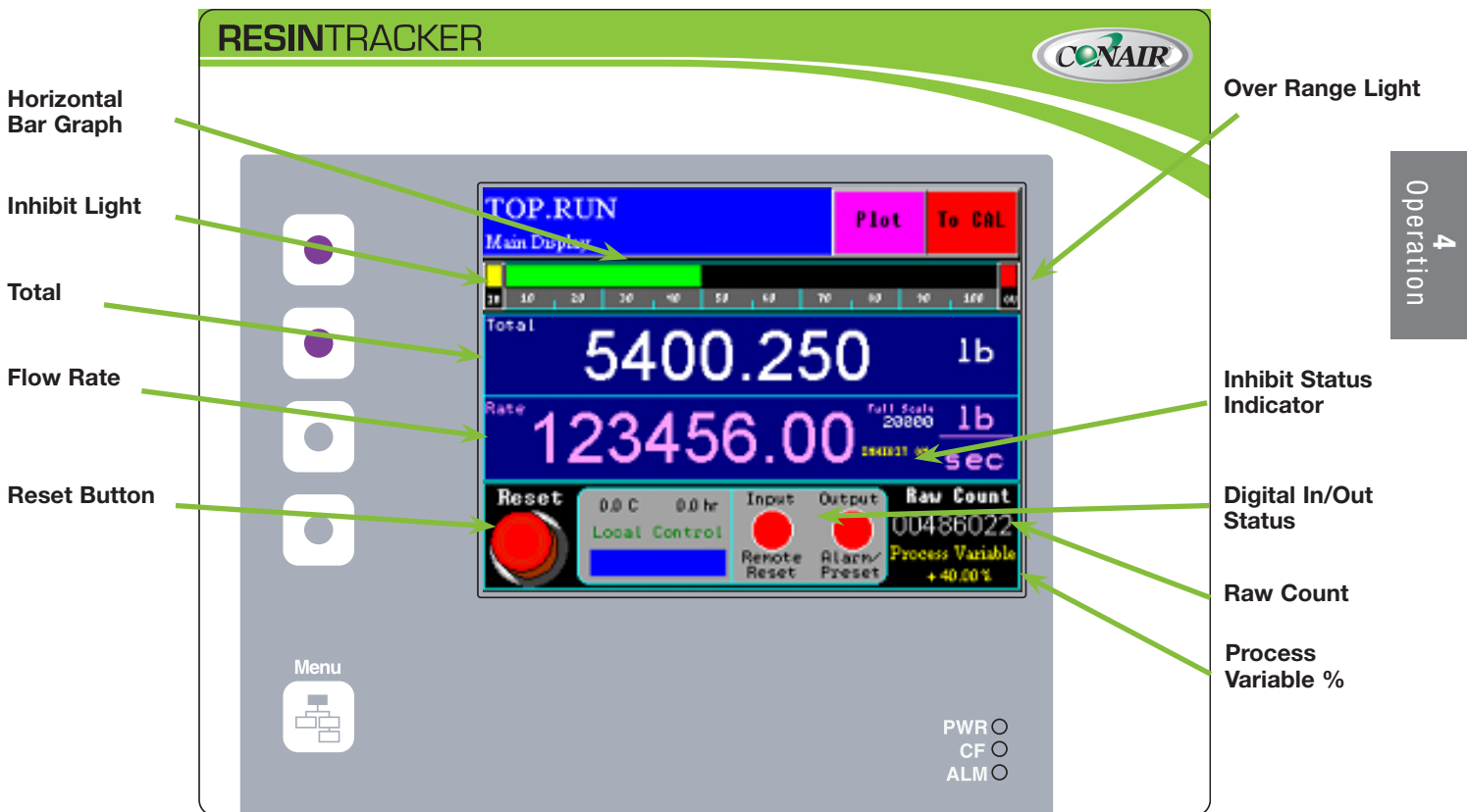
TOP.RUN is the main display mode. Access this screen by pressing the RUN Button from the TOP screen. A Horizontal Bar Graph is used for a graphical indication of flow rate. The length of the green colored horizontal bar is proportional to the flow rate. To determine the flow rate use the scale just below the horizontal bar. The scale units are percent (%) and the scale resolution is 10.

At either end of the bar graph array there is a color coded indicator. The indicator labeled IN is the inhibit light. It will turn on when the flow rate is less than the inhibit setting. The display color for the IN light is yellow. The Inhibit Status Indicator will indicate the ON/OFF status of the inhibit logic for the flow rate display and 4-20 mA output. The indicator labeled OV is the over range light. It will turn red when the flow rate is greater than full scale. Note that the Horizontal bar graph is only used for an approximate visual representation of the flow rate.

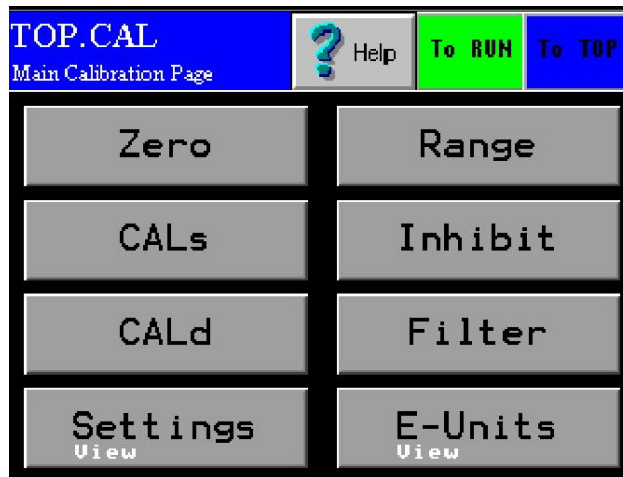
Under the Horizontal Bar Graph is a digital display of both the Flow Rate and the Total weight of product flowing through the meter. Pressing the Reset Button will reset the Total displayed to 0.00.

Screen Guide (continued)

The Input and Output Status indicators are tri-colored. The colors have the following meaning: grey equals not enabled, green equals enabled but not active (low), and red equals enabled and active (high). These indicators include the Remote Reset and Alarm/ Preset functions. Raw Count displays the number of counts that the Electronics is calibrated to display based on the Calibration Voltage. Its primary usage is during the Calibration of the Electronics so that the desired Electronic Full Scale Flow Rate is correct. The counter is set to display 500 counts per second. Thus, if the Electronic Full Scale Flow Rate is to be calibrated to 300 lb./min, then the counter should display 100 counts per lb. of product.



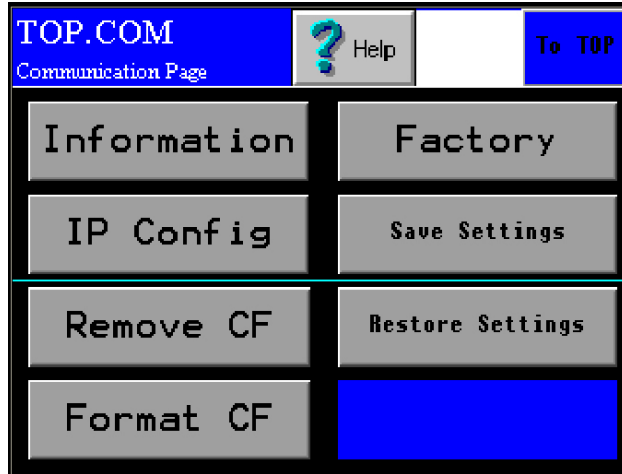
Screen Guide (continued)



TOP.CAL

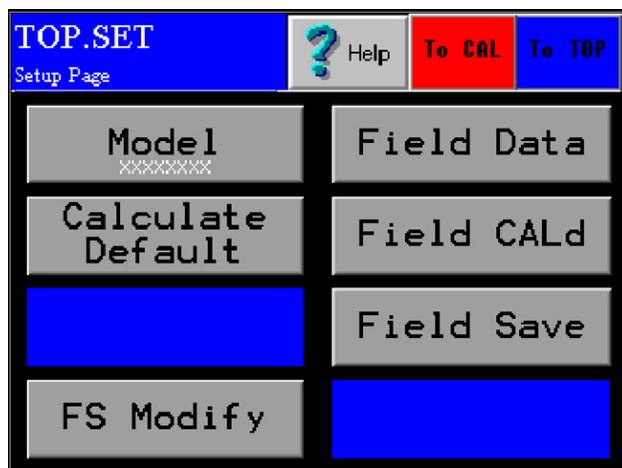
TOP.CAL is the Main Calibration Page. Access this screen by pressing the CAL Button from the TOP page. There are eight buttons on the TOP.CAL page. They are ZERO, CALs, CALd, SETTINGS, RANGE, INHIBIT, FILTER, and E-UNITS. Press the ZERO button to go to the CAL.ZERO page. This is where you can perform a Zero Calibration. Press the CALs Button to go to the CAL.CALs page. This is where you can perform Static Calibration. Press the CALd Button to go to the CAL.CALd page. This is where you can perform Dynamic Calibration. Press the SETTINGS Button to go to CAL.SETTINGS. This is where you can view your currently selected settings. Press the RANGE Button in order to go to the CAL.RANGE page. This is where you select the current range of your electronics. Press the INHIBIT Button to go to the CAL.INHIBIT page. This is where you can select a threshold below which the Electronics will not take a flow measurement. Press the FILTER Button in order to go to the CAL.FILTER page. This is where you can filter the output of your 4-20 mA signal from instantaneous to averaged. Press the EUnits Button to go to the CAL.EUNITS page. This is where you can view data such as your Full Scale and your Count to Weight Ratio.

Screen Guide (continued)



TOP.COM

TOP.COM is the Main Communication Page. Access this page by pressing the COM Button from the TOP page. There are five buttons on the TOP.COM page. They are INFORMATION, IP CONFIG, FACTORY, REMOVE CF and FORMAT CF. Press the INFORMATION Button to view information concerning your Software's version, your IP Address, whether you have a Compact Flash Card installed and how much Free Space your Compact Flash currently has. Press the IP CONFIG Button to edit your IP Settings. Press the FACTORY Button to be able to restore Factory Settings. Please note that pressing the FACTORY Button will send you to the COM.FACTORY page which will then further prompt you from there. Press the REMOVE CF to be able to remove your Compact Flash in a safe manner. Press the FORMAT CF Button in order to format your Compact Flash Card.

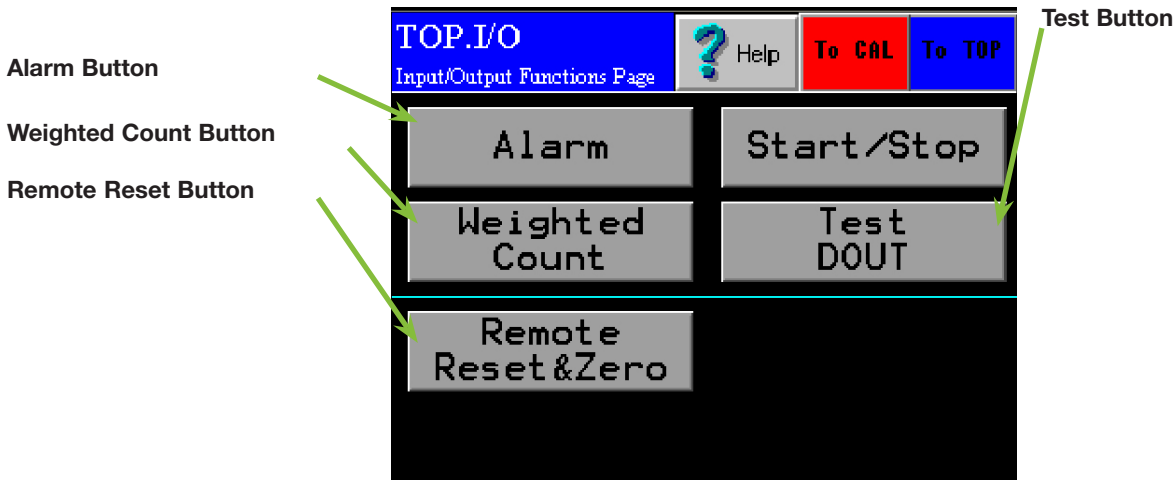


TOP.SET

TOP.SET is the Main Data Entry menu. Access this page by pressing the SET Button from the TOP page. There are five buttons on the TOP.SET page. They are C/W RATIO, FIELD DATA, FIELD CALd, FIELD SAVE and FS MODIFY. From the SET Menu, seen below, you can enter values for your Count to Weight Ratio (Calculate Default Button), enter Field Data such as is taken during Site Calibration (FIELD DATA Button), change your Dynamic Calibration Settings based on your Dynamic Calibration data (FIELD CALd Button), modify your Full Scale value (FS MODIFY Button), or save calibration data to your Flash Card (FIELD SAVE Button).

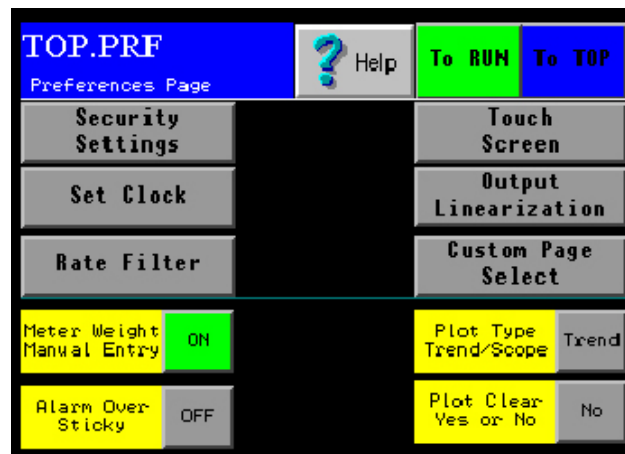
(Continued)

Screen Guide (continued)



TOP.I/O

TOP.I/O is the Main Input/Output Menu page. Access this screen by pressing the I/O Button from the TOP page. This page is for accessing all options associated with setting all inputs and outputs in your process including the Alarm, Weighted Count, Remote Reset and Zero and Start and Stop Logic.



TOP.PRF

The TOP.PRF page allows access to several features that offer greater flexibility during the operation of the ResinTracker™ HMI. From the Top Menu page, select the PRF Button (Preferences) to go to the TOP.PRF (Preferences) page. The features accessed from this page are listed below.

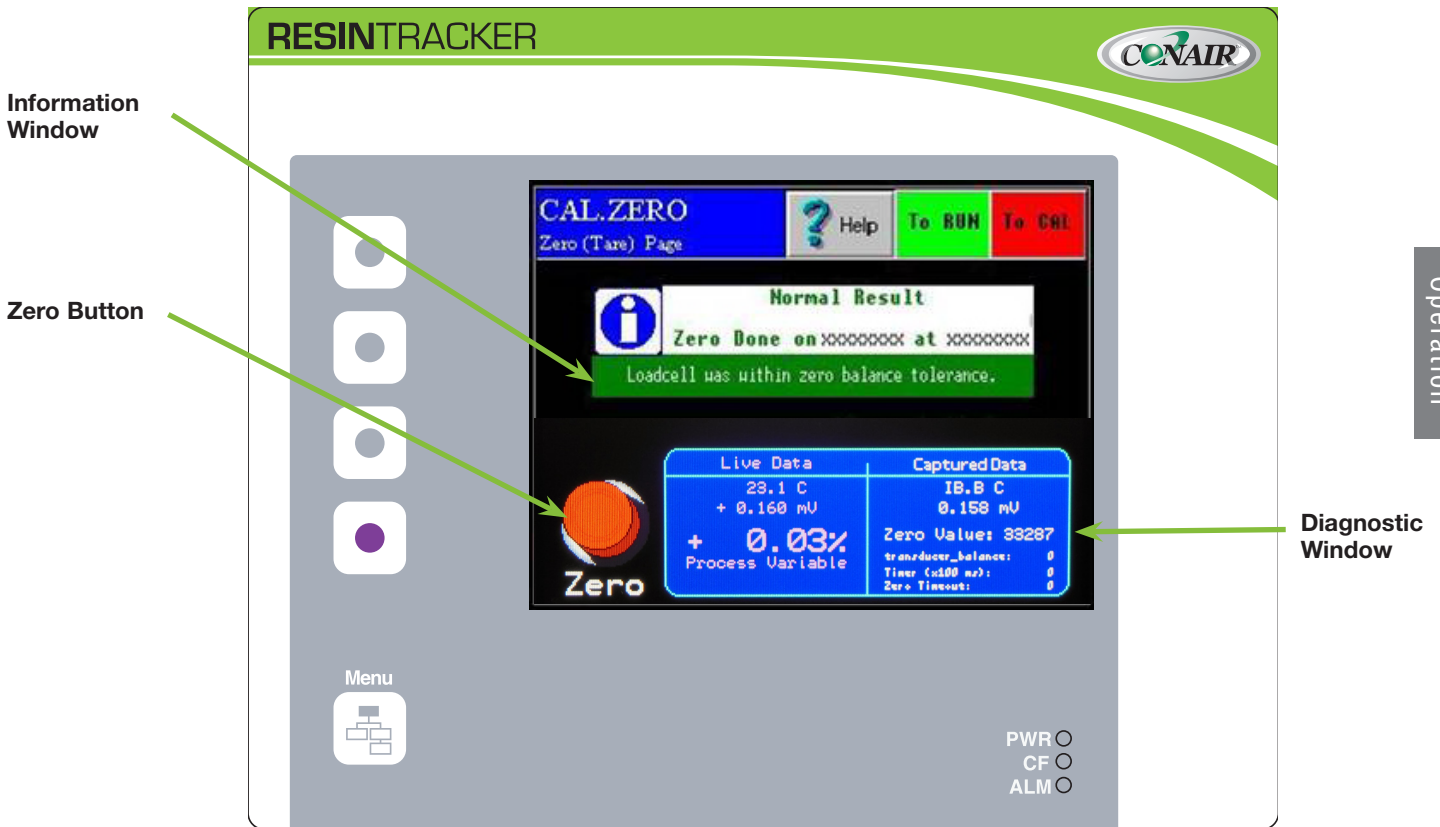
Press the Security Settings Button to access the security settings. Please see the Security Features section of this manual for more information on the Security Settings.

Press the Set Clock Button to modify the current time used and displayed by your HMI. After pressing the Set Clock Button, you will be on the PRF.CLOCK page. Double Click on the time or date values to modify them. The Time keypad will appear. Press the Enter Button on the Time keypad. The hour field will be highlighted and pressing the Up or Down Arrows will change your entry value. Please note that the HMI is set to a 24 hour clock. Pressing either the Next Button or the Previous Button will cycle you through the various editable fields. Press OK to save your changes.

(Continued)

Screen Guide (continued)

Pressing the Dynamic Cal Weight Entry Button allows the user to manually enter the ResinTracker™ Meter weight on the SET.FIELD page while performing a Dynamic Calibration. Press the Dynamic Cal Weight Entry Button so that “On” appears. You may now manually enter metered weight values on the SET.FIELD page during a Dynamic Calibration. Pressing the Alarm Over Sticky Button enables the maximum flow rate alarm LED to remain lit in the event that the Maximum flow rate has been exceeded during a run. This appears on the TOP.RUN page. When this feature is enabled the LED that says “OVR” on the right hand side of the scale (just to the right of the “100”) will remain RED if the maximum flow rate is exceeded. When the run has completed, the LED will be turned off once the Reset button is pressed.



CAL.ZERO

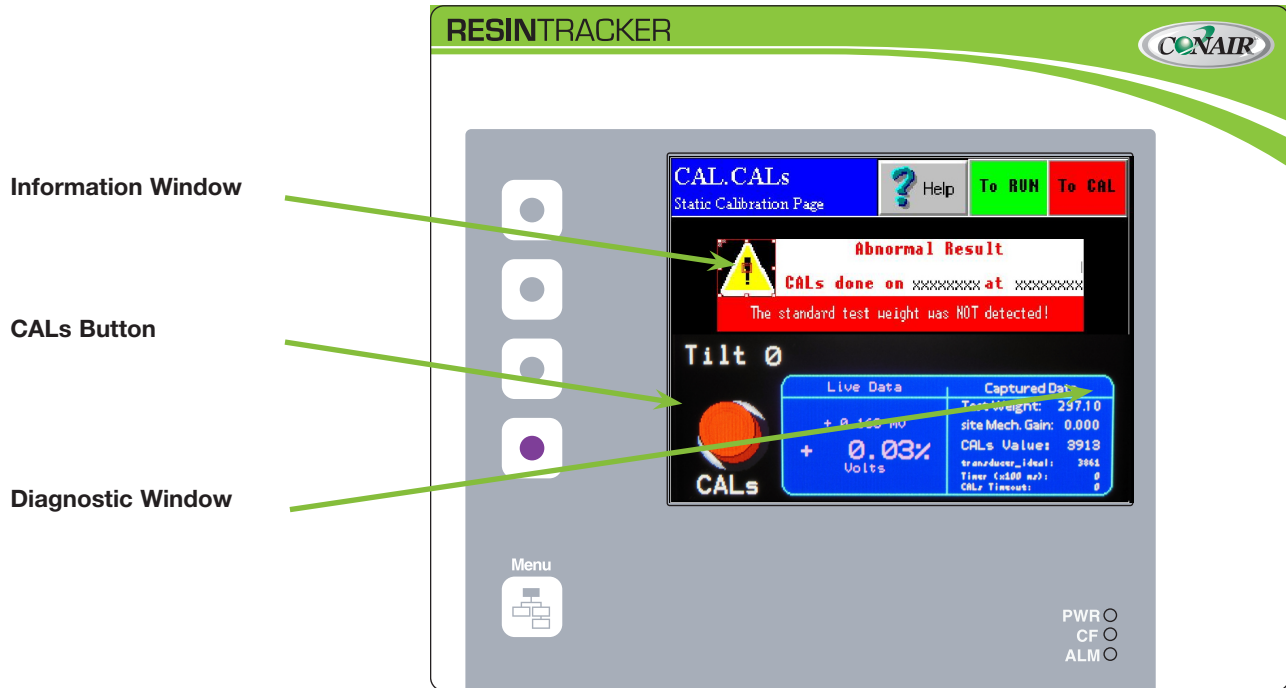
CAL.ZERO is the Zero Calibration page. Access this screen by pressing the ZERO Button on the TOP.CAL screen after pressing the CAL Button from the TOP page. This page is for conducting Zero Calibrations. The procedure for a Zero Calibration can be found under the Static Calibration Section.

The Diagnostic Window displays the Process Variable. The Red Zero Button is pushed in order to run a Zero Calibration. Information on whether the calibration was successful and whether there may be excess product on your Meter Pan may be found in your Information Window.

The meter should normally be re-zeroed when the Process Variable % is greater than +/- 0.25% with no flow. If highest accuracy is required, zero when greater than +/- 0.1%. Conversely, if lower accuracy is required this value can be raised. One can view the Process Variable % on the bottom right of the TOP.RUN page to determine if a zero is needed. Ensure there is no flow prior to performing a zero!

(Continued)

Screen Guide (continued)



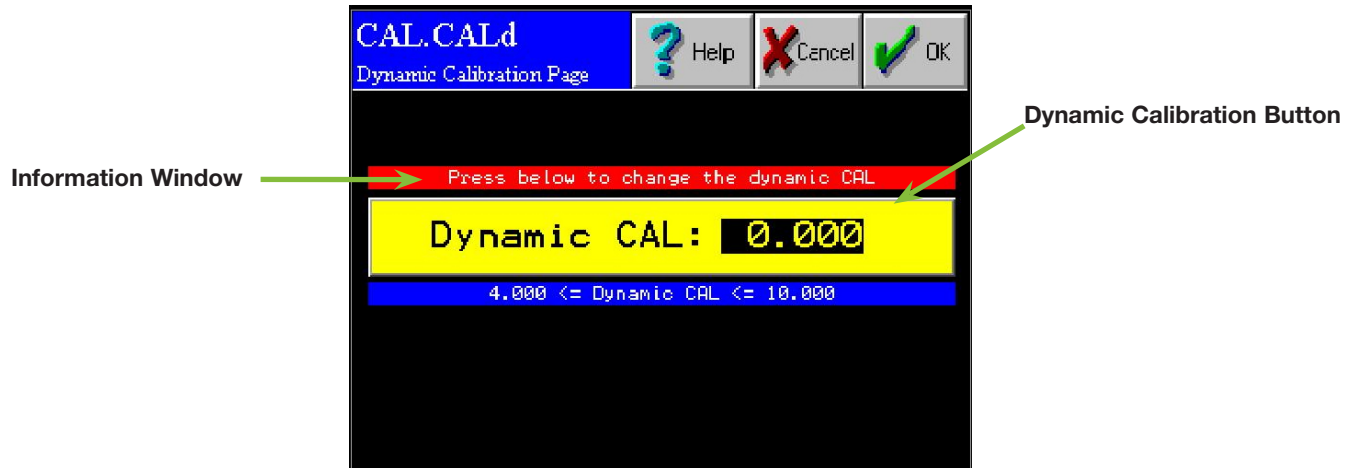
CAL.CALs

CAL.CALs is the Static Calibration page. Access this screen by pressing the CALs Button on the TOP.CAL page after pressing the CAL Button from the TOP page. This page is for conducting Static Calibrations. The procedure for a Static Calibration can be found under the Static Calibration Section.

The Diagnostic Window displays Voltage. The Red CALs Button is pushed in order to run a Static Calibration. Information on whether the calibration was successful may be found in your Information Window. The screen capture below indicates a Static Calibration failure.

Tilt is the meter tilt angle and is typically set at the factory using the SET.SIZE page.

Screen Guide (continued)

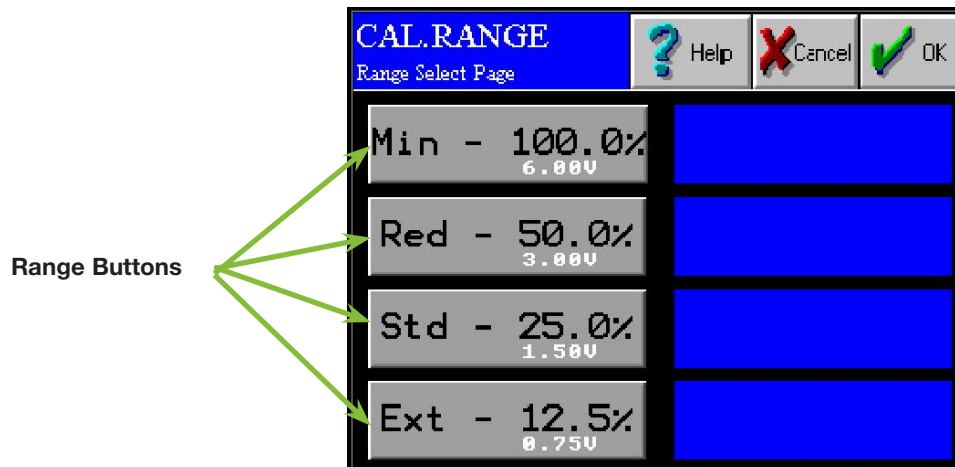


CAL.CALd

CAL.CALd is the Dynamic Calibration page. Access this screen by pressing the CALd Button on the CAL Screen after pressing the CAL Button from the TOP page. This page is for conducting Dynamic Calibration. Please see the Dynamic Calibration (or Site Calibration) procedure in this manual.

The Information Window displays helpful information regarding the options on this screen. Pressing the Dynamic Calibration Button Twice brings up a numeric keypad that allows you to manually enter your Dynamic Calibration Number.

Dynamic Calibration: Displays the setting used to adjust the Electronic Full Scale Flow Rate to the appropriate value. This Voltage can range from a minimum of 4 to a maximum of 10.



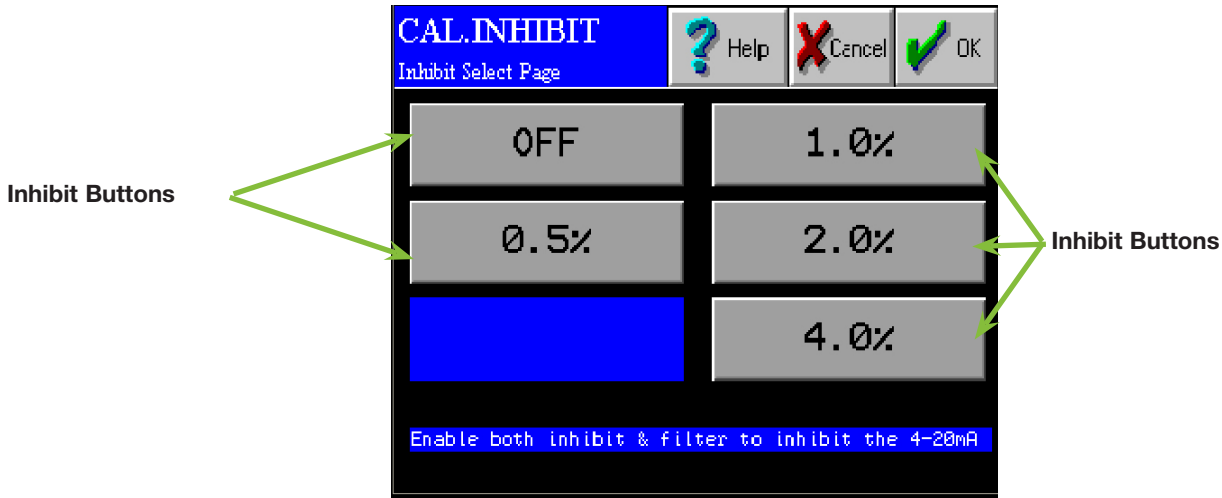
CAL.RANGE

CAL.RANGE is the Calibration Range page. Access this screen by pressing the RANGE Button on the TOP.CAL page after pressing the CAL Button from the TOP page. This page is for changing the Range of you electronics.

The Range can be changed to the desired value by clicking on the appropriate button. The range setting is already selected by the factory and typically adjustment is not required.

(Continued)

Screen Guide (continued)



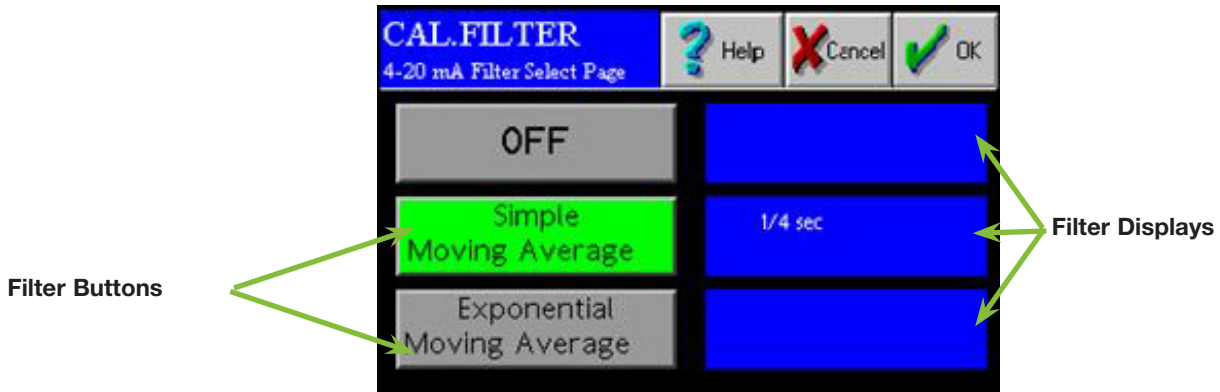
CAL.INHIBIT

CAL.INHIBIT is the Inhibit page. Access this screen by pressing the INHIBIT Button on the TOP.CAL page after pressing the CAL Button from the TOP page. This page is for changing the Inhibit that sets a threshold which the Flow Rate Output must rise above in order for the electronics to begin counting. The range for setting this threshold is from 0.5% of full scale to 4.0% of full scale.

The Inhibit can be changed by pressing the accompanying Inhibit Buttons.

Unless OFF is selected for Inhibit, the Total display on the page TOP.RUN and the output signal 'Frequency, Flow Rate Proportional' will be inhibited. The Inhibit for the Flow Rate display on the page TOP.RUN and the output signal '4-20mA' operate slightly different. The Inhibit is OFF for the Flow Rate and 4-20mA signal when the 4-20mA moving average filter is OFF. (See the page CAL.FILTER.) To Inhibit the Flow Rate and 4-20mA signal, both the 4-20mA moving average filter and the Inhibit must be on.

Screen Guide (continued)



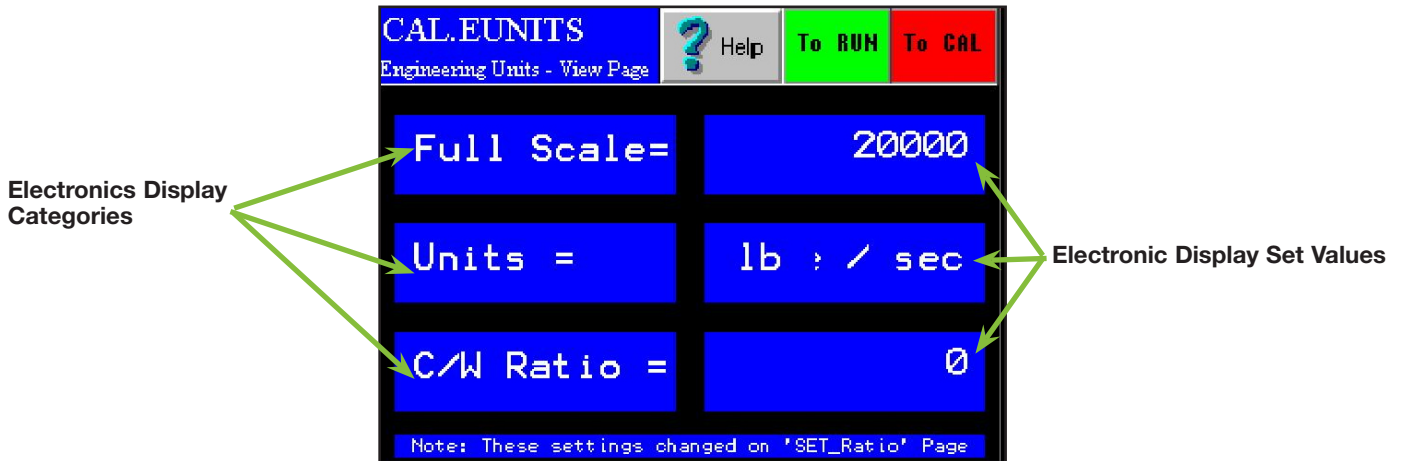
CAL.FILTER

CAL.FILTER is the Filter page. Access this screen by pressing the FILTER Button on the TOP.CAL page after pressing the CAL Button from the TOP page. This page is for selecting the number of points used in the 4-20mA moving average filter. The filter will be a simple moving average filter for filtering up to three seconds and will be an exponential moving average for filtering three seconds or over.

The moving average is a very common filter in digital signal processing. Despite its simplicity, the filter is optimum at performing the common task of reducing random noise while retaining a sharp step response. The moving average filter can also be turned off from this page.

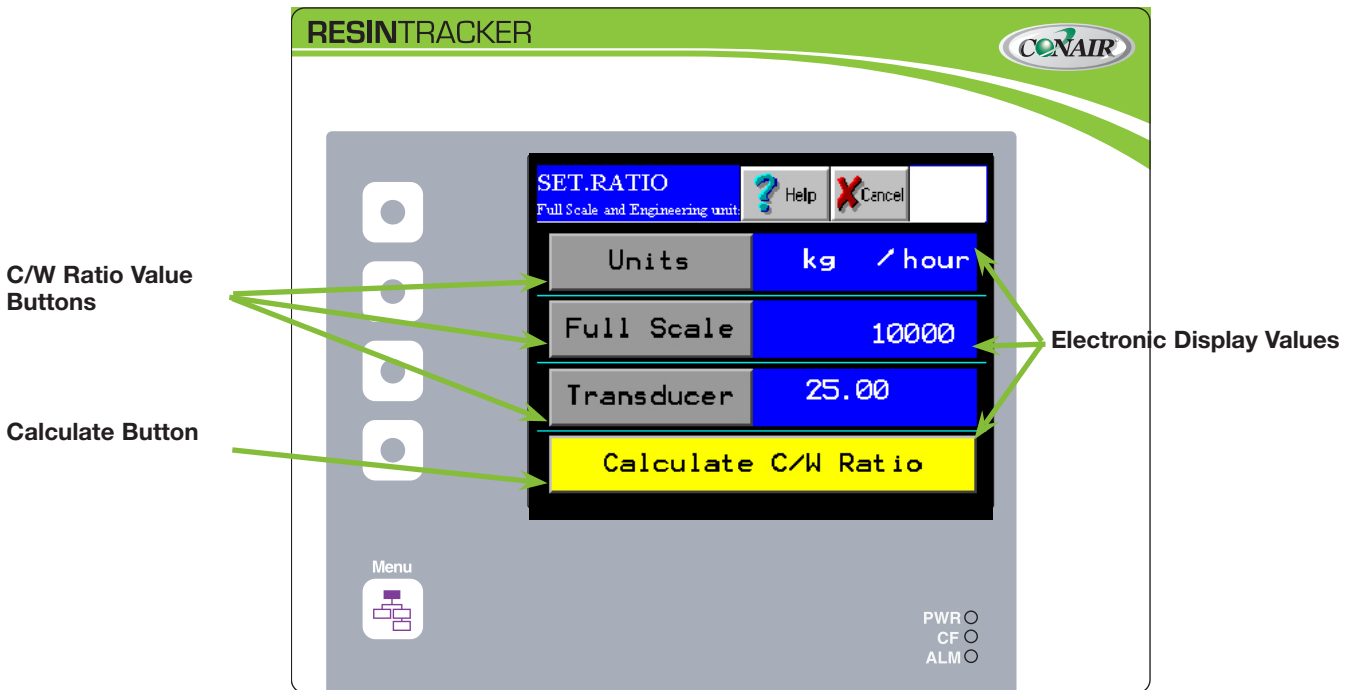
Please note that the inhibit is automatically turned OFF when the Filter is set to OFF.

Screen Guide (continued)



CAL.EUNITS

CAL.EUNITS is the Unit Display page. Access this screen by pressing the EUNITS Button on the TOP.CAL page after pressing the CAL Button from the TOP page. This page displays the Electronic Full Scale, the mass and time units, and the C/W Ratio. The C/W Ratio, or Count per Weight Ratio, is determined by the factory. This value is the number of counts that the Electronics Counter will display per weight of material that is run through the meter. These settings can not be modified from this page.



SET.RATIO

SET.RATIO is the page that allows you to calculate your count per weight ratio. The C/W Ratio, or Count per Weight Ratio, is determined by the factory. This value is the divisor used to calculate the engineering count (total) from the raw count. Your Full Scale value can be changed, the units of your Full Scale value can be modified and the number and size of your Transducers can be modified from this page. The button near the bottom will use this data and recalculate your C/W ratio.

Engineering Count = Raw Count / Count per Weight Ratio

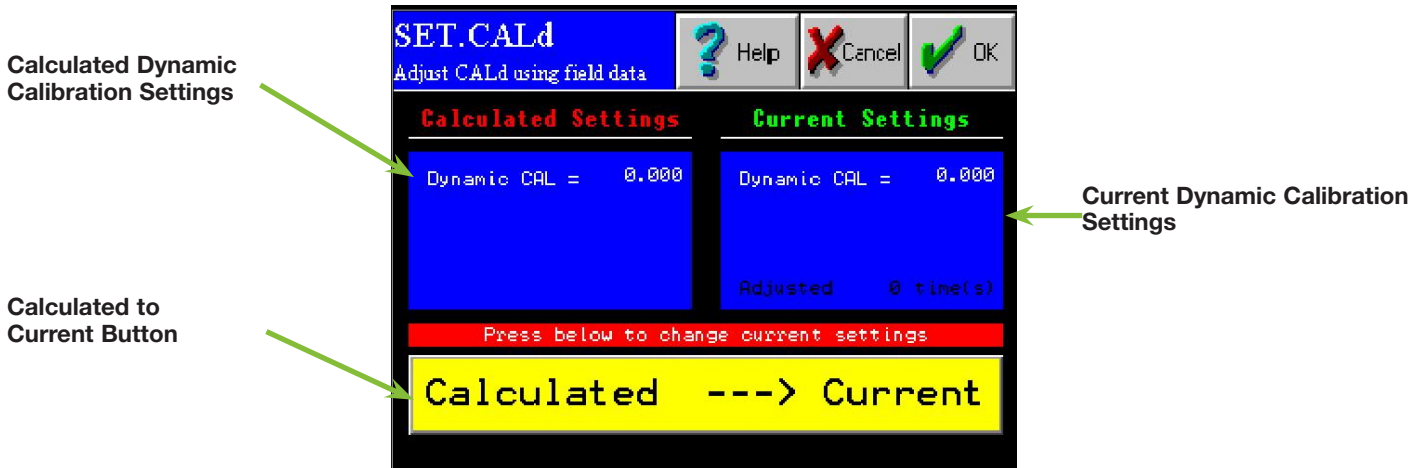
Screen Guide (continued)

SET.FIELD		? Help	To RUN	To SET
Field Data				
Run	CF Meter	Actual	R/M Ratio	% Error
1	0.000	0.000	0.0000	+ 0.000
2	0.000	0.000	0.0000	+ 0.000
3	0.000	0.000	0.0000	+ 0.000
4	0.000	0.000	0.0000	+ 0.000
5	0.000	0.000	0.0000	+ 0.000
Next Run	Enter Run	Clear Run	Prev Run	0.0000 Average
				0.000000 STD
				0.0000 % STD

SET.FIELD

SET.FIELD is the page that allows you to collect and verify your site calibration data. This page is used extensively in Site Calibration as shown in the Site Calibration section of Chapter 3 of this manual. This screen allows you to compare the metered weight of material run through the meter versus the actual weight of the material, often weighed by a static scale after being diverted. By pressing the FIELD DATA CURRENT RUN Buttons (1-5) you can select which runs will be used during your Site Calibration calculation. The green RUN SELECTOR INDICATOR lights will be lit green when selected. Selecting certain runs using your FIELD DATA CURRENT RUN Buttons will also be useful when used in conjunction with the FUNCTION Buttons at the bottom of the screen for clearing a certain run or entering the actual data for a specific run. Values for the actual weight of material run through the meter can be entered by touching the appropriate area in the “Actual” column. A numeric keypad will prompt you to enter your data.

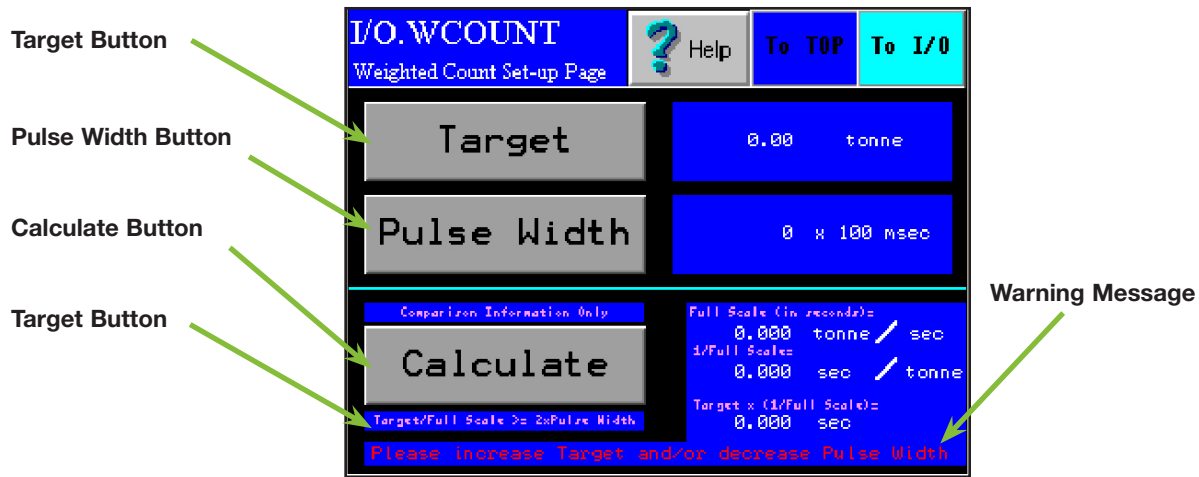
Screen Guide (continued)



SET.CALd

SET.CALd is a page used in conjunction with SET.FIELD page in order to adjust your Dynamic Calibration using recently collected field data. Once the field data is entered, open this page and you should see the new calculated Dynamic Calibration value under the CALCULATED DYNAMIC CALIBRATION SETTINGS section. Your current calibration settings will be displayed under the CURRENT DYNAMIC CALIBRATION SETTINGS section. The CALCULATED TO CURRENT Button allows you to change your Dynamic Calibration using the new, calculated value. For detailed instructions on how to perform a Dynamic, or Site, Calibration, please see the Site Calibration section of Chapter 3.

Screen Guide (continued)



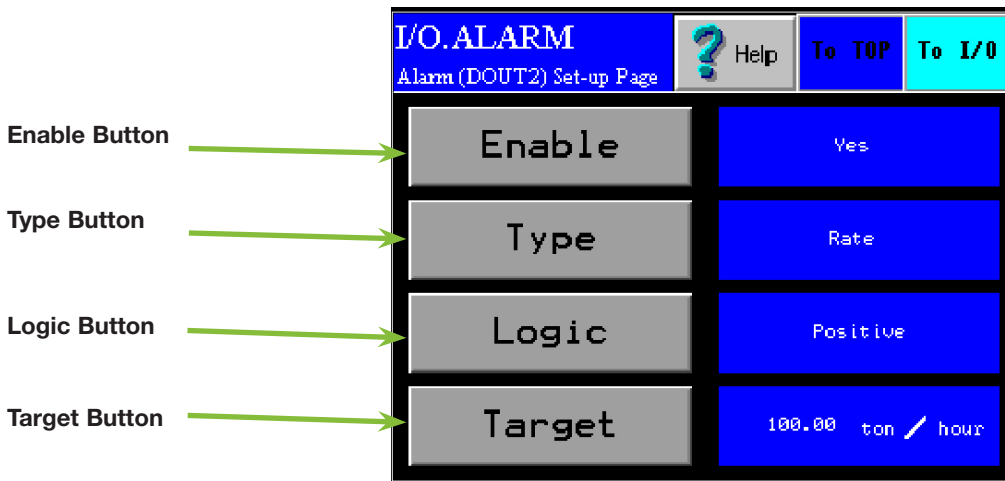
I/O.WCOUNT (Optional)

The I/O.WCOUNT page allows you to set up the weighted count option. This option allows you to set a target weight that will trigger a pulsed signal each time that target weight passes over the meter. The TARGET Button allows you to determine when the pulse will trigger by selecting the target weight, while the PULSE WIDTH Button allows you to determine the length, or duration, of the pulse signal. The values become effective immediately upon entry. You do not need to press the CALCULATE Button for the new Weighted Count values to become effective. The CALCULATE BUTTON is used as a reference guide only and will estimate, using your Full Scale value and your flow rate, the time taken to reach the target weight and thus, an estimate of the time between each pulse signal. The CALCULATE Button offers a way to ensure that the Target value is compatible with your Pulse Width value.

For example, if you are using your Weighted Count option to monitor product flowing at 60,000 lb/min in order to send a pulsed signal to an indicator light every time 1,000 lb passes through the meter and your pulse width is set to one second, the indicator light will never go off before it is signaled to come back on again.

If this is the case, a warning message like the one shown below, will appear. Raising your target value, lowering your pulse width, or both will remedy this.

Screen Guide (continued)




I/O.ALARM

I/O.ALARM is the Alarm page. Access this screen by pressing the ALARM Button from TOP.I/O page. This page is for changing the options of the alarm. The alarm can be turned on and off using the ENABLE Button.

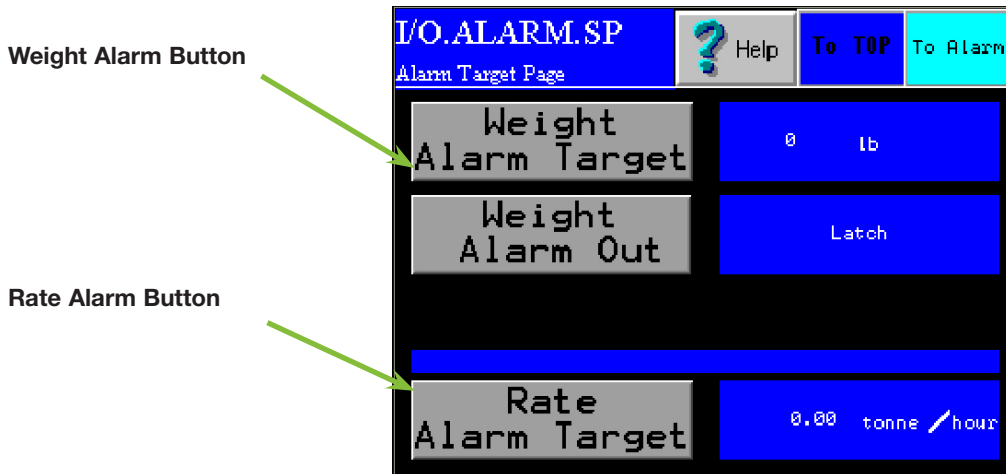
Press the ENABLE Button until the desired result is displayed in the Blue display box to the right of the ENABLE Button. The alarm can be used to monitor either flow rate or weight using the TYPE Button. Press the TYPE Button until the desired result is displayed in the Blue display box to the right of the TYPE Button.

The Target Value for both rate and weight alarms can be set by pressing the TARGET Button and entering an appropriate value. Pressing the TARGET Button will take you to the I/O.ALARM.SP page. For more information on this page, please turn to the next page.

The alarm can be set as either a High Alarm or a Low Alarm. Use the LOGIC Button to choose which type of alarm you would like to use. Press the LOGIC Button until the desired result is displayed in the Blue display box to the right of the LOGIC Button.

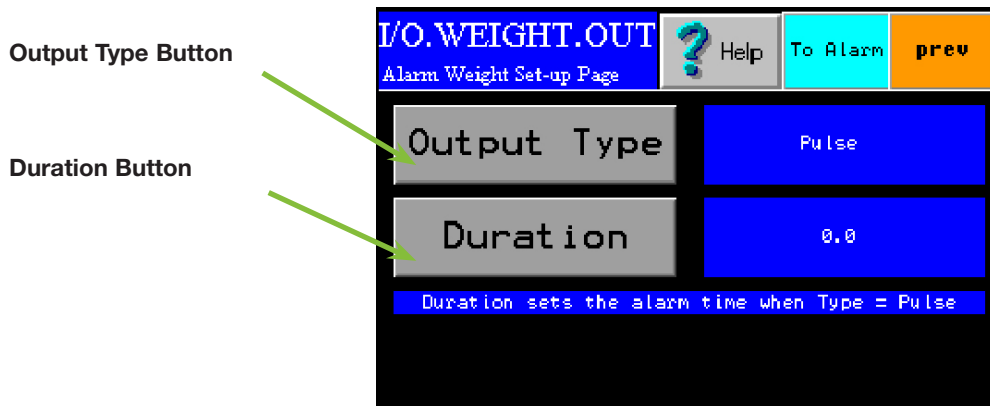
 **NOTE:** positive logic indicates that the alarm has been set as a high alarm and will trigger when flow (or weight) goes above the target value. Negative logic indicates that the alarm has been set as a low alarm and will trigger when flow (or weight) goes below the target value.

Screen Guide (continued)



I/O.ALARM.SP

I/O.ALARM.SP is the Alarm Target Entry page. Access this screen by pressing the TARGET Button from the I/O.ALARM page. This page is for changing the values that will trip the alarm. You can enter a weight by pressing the WEIGHT ALARM Button or enter a rate by pressing the RATE ALARM Button. The value entered will display to the right of the button.



I/O.WEIGHT.OUT

I/O.WEIGHT.OUT is the page that allows you to define the type of Weight of Totalization alarm that you will be utilizing. Access this screen by first pressing the I/O Button from the TOP.MENU page. Then, press the ALARM Button, followed by the TARGET Button, and finally, the WEIGHT OUTPUT Button. The two types of Weight Alarms to choose from are Pulsed Weight Alarms, or Latch Weight Alarms. A Pulsed Weight Alarm will allow you to choose a Weight Target and when that amount of weight, or Total Weight, passes through the meter, the alarm will be tripped for a set duration of time. A Latch Weight Alarm will trip as soon as the Target Weight is reached and will remain tripped, or “latched”, until the Totalization count is reset. For instructions on Totalization reset, please see the TOP.RUN page in the Screen Guide section of Chapter 4.

Pressing the OUTPUT Button will allow you to choose between a Pulsed Weight Alarm or a Latch Weight Alarm. If a Pulsed Weight Alarm is chosen, a duration for the Pulsed Alarm can be chosen as well. This is accomplished by pressing the DURATION Button and entering an alarm duration in seconds. The Totalization Count is reset once the Pulse Alarm time expires.

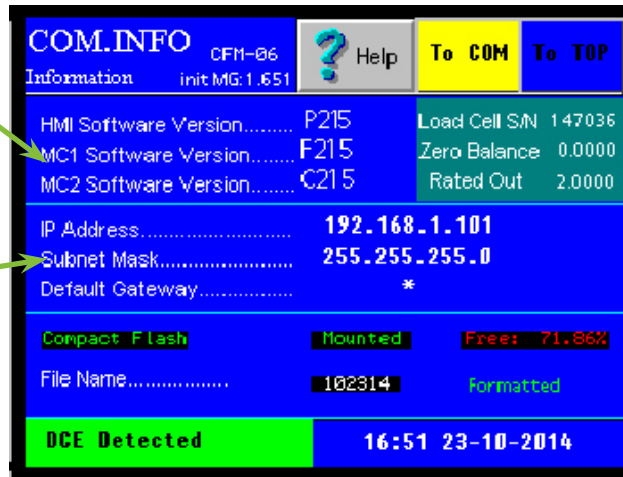
NOTE: While a duration can be entered even while a Latch Weight Alarm is selected, the duration entered will have no effect unless a Pulse Weight Alarm is chosen.

(Continued)

Screen Guide (continued)

Software Versions

Communications
Protocol Information



COM.INFO

This screen is accessed when the INFORMATION Button is pushed from the TOP.COM page. This page can be accessed to view information regarding the software version for your particular unit as well your current communication protocol information. You will also notice an indicator displaying whether you currently have a Flash Card Installed. On the lower left is an indicator that displays the status of the communication to your DCE.

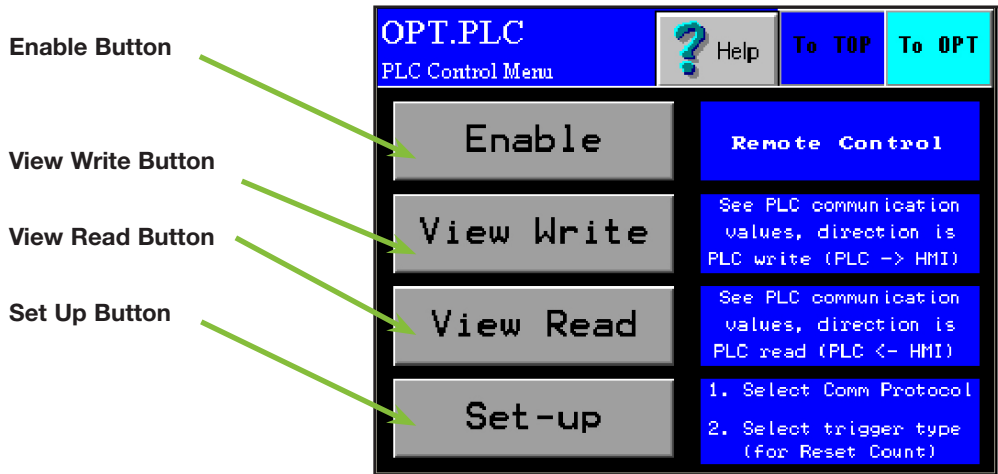
Factory/Current Button



COM.FACTORY

This screen is accessed when the FACTORY Button is pushed from the TOP.COM page. To revert back to factory settings, press the FACTORY/CURRENT Button and you will be prompted to press “Yes” or “No” if you would like to proceed. Press the YES Button to revert to the factory settings.

Screen Guide (continued)



OPT.PLC (Optional)

This screen is accessed when the PLC button is pushed from the TOP.OPT page. The TOP.OPT page is accessed by pushing the OPTIONS Button from the Main Menu. Pushing the buttons on this menu allow you to Enable or Disable local control of the electronics and allows you to both set up and view the data that is both transmitted to the HMI by a PLC and to a PLC from the HMI.

Parameter	Value	Description
These are values communicated from the PLC to HMI.		
Remote Reset	6 6	Resets the totalization 0 = Normal, 1 = Reset
Remote Zero	6 6	Zeros the Process Variable 0 = Normal, 1 = Reset
Remote Product	6 6	Selects the product CAL Valid Range = 0 to 8
Remote CAL	56.000	Remote product CAL value 4.000 ≤ Range ≤ 10.000
Remote Target	56.000	Alarm Weight Target Value 0.01 ≤ Range ≤ 999999.99

OPT.PLC.WRITE (Optional)

This screen is accessed when the VIEW WRITE Button is pushed on the OPT.PLC page. The OPT.PLC page is accessed when the PLC button is pushed from the TOP.OPT page. The TOP.OPT page is accessed by pushing the OPTIONS Button from the Main Menu. This page allows you to view the information regarding PLC to HMI communication. Only the PLC to HMI communication is active. The remote functions such as Zero, CAL, etc. are not active. To enable functions, please go to the TOP.RUN page. Please note that the help screen, accessible from your HMI, contains the below information as well.

Notes on PLC Remote Control

- Reset is also available locally when the PLC is enabled
- Zero is also available locally when the PLC is enabled
- Local product select is overwritten when PLC is enabled
- Remote Calibration is only valid when PLC is enabled
- Local alarm target is overwritten when PLC is enabled

(Continued)

Screen Guide (continued)

OPT.PLC.READ		?	Help	prev
PLC Read Comm. Values Page				
These are values communicated from the HMI to PLC.				
Rate.....	123456.00	TOP.RUN page 'Rate'		
Total.....	5400.250	TOP.RUN page 'Total'		
Zero Readback.....	6	Zero Result Readback 1 = Normal, 2-5 = Abnormal		
MCAL Readback.....	6	Multiple CAL Readback		
Target Readback.....	123456.00	Compare Target Readback		
Temperature:	0.0 C			

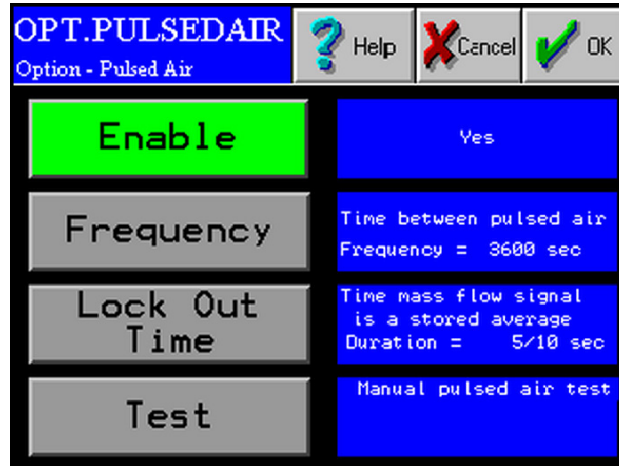
OPT.PLC.READ (Optional)

This screen is accessed when the VIEW READ Button is pushed on the OPT.PLC page. The OPT.PLC page is accessed when the PLC button is pushed from the TOP.OPT page. The TOP.OPT page is accessed by pushing the OPTIONS Button from the Main Menu. This page allows you to view the information regarding PLC to HMI communication. Only the PLC to HMI communication is active. The Rate, Total and other values are fixed and not live. To update the PLC “read” values, please go to the TOP.RUN page.

Return Codes from Zero request

- [0] None
- [1] Success, normal result
- [2] Failure, abnormal result
- [3] Prohibited, local zero not completed
- [4] Prohibited, local zero is abnormal
- [5] Prohibited, PV% is greater than inhibit

Screen Guide (continued)



OPT.PULSEDAIR (Optional)

This screen is accessed when the PULSED AIR Button is pushed from the TOP.OPT page. The TOP.OPT page is accessed by pushing the OPTIONS Button from the Main Menu. This screen enables you to able and disable the pulsed air option, change the frequency of the blasts of air, set Lock Out Time and to perform a manual test of the Pulsed Air System.

ENABLE: Turns on and off the Pulsed Air Option.

FREQUENCY: The duration of time between blasts of air. This duration is input in seconds and can be changed as appropriate. The recommended Frequency is once per hour or once every 3600 seconds.

LOCK OUT TIME: The Digital Electronics averages the real time flow rate during normal operation and locks the mass flow signal at this value during an air blast. The amount of time that the Mass Flow Signal is locked during the blast can be changed here.

TEST: Allows manual operation of the Pulsed Blast System.

Maintenance

Maintenance Features.....	5-2
Warnings and Cautions.....	5-2
Maintenance Overview	5-3
Preventative Maintenance Schedule	5-3
Pulsed Air System Option Maintenance	5-4
Transducer Replacement	5-4
Flexure Replacement	5-6
Pan Arm Boot Replacement Procedure	5-9
Pan Liner Replacement Procedure.....	5-10

Maintenance Features

The ResinTracker™ needs regular, scheduled maintenance for peak performance.

Warnings and Cautions

To maintain the best performance of the ResinTracker™ it must be cleaned and inspected regularly. Maintenance includes a weekly, quarterly, and semi-annual (every 6 months) schedule.

Use this maintenance schedule as a guide. You may need to shorten the time of the maintenance schedule, depending on how often you use the ResinTracker™, and the types of material flowing through it. Follow all precautions and warnings when working on the equipment.



WARNING: Improper installation, operation, or servicing may result in equipment damage or personal injury.



This equipment should be installed, adjusted, and serviced by qualified technical personnel who are familiar with the construction, operation, and potential hazards of this type of machine.

All wiring, disconnects, and fuses should be installed by qualified electrical technicians in accordance with electrical codes in your region. Always maintain a safe ground. Do not operate the equipment at power levels other than what is specified on the machine serial tag and data plate.



WARNING: Voltage hazard



This equipment is powered by three-phase alternating current, as specified on the machine serial tag and data plate.

A properly sized conductive ground wire from the incoming power supply must be connected to the chassis ground terminal inside the electrical enclosure. Improper grounding can result in severe personal injury and erratic machine operation.

Always disconnect and lock out the incoming main power source before opening the electrical enclosure or performing non-standard operating procedures, such as routine maintenance. Only qualified personnel should perform troubleshooting procedures that require access to the electrical enclosure while power is on.



WARNING: Pneumatic hazard

This equipment uses pneumatic pressure if equipped with Pulsed Air (Optional). Always disconnect compressed air source before performing routine maintenance.

Maintenance Overview


This section describes the maintenance schedules that should be performed as well as the maintenance procedures to follow.

To maintain the best performance, follow this maintenance schedule and develop an effective preventative maintenance program.

Preventative Maintenance Schedule

- **Weekly**


- Blow or vacuum, dust and chips from all surfaces of the ResinTracker™. Open pneumatic and electrical enclosures and remove the dust and chips from all components.
- Check that the FRL (filter-regulator-lubricator) for the air input is filled with oil and that the oiler is working. Pressure should be set for around 80 PSI (for the Pulsed Air option only).

 **Note:** This unit also has an automatic drain for any moisture that may develop. The bowl should be kept clean to ensure it will operate properly.


- **Quarterly (every 3 months) or as often as necessary**

- Blow or vacuum dust and chips from the inside the ResinTracker™. Remove all dust and chips from inside all control cabinets. Remove any excess oil from the pneumatic enclosure.
- Verify that all electrical terminals are tight.
- Check that all air lines are in order (free of cuts or abrasions).
- Check the condition of the weigh pan arm gaskets. If worn or damaged, replace with a new set of gaskets (where applicable).

 **CAUTION: Moving Parts (ZCV Option only)**

 Before removing lockout devices and returning switches to the ON position, make sure that all personnel are clear of the machine, tools have been removed and all safety guards are reinstalled.

 **WARNING: Electrical hazard**

 Before performing maintenance or repairs on this product, disconnect and lock out electrical power sources to prevent injury from unexpected energization or start-up. A lockable device has been provided to isolate this product from potentially hazardous electricity.

Contact Conair
Parts and Service
Phone: 800-458-1960
From outside of the
United States,
Call: 814 437 6861

Pulsed Air System Option Maintenance

Periodically check the operation by observing the pressure gauge located on the regulator. It will drop to ½ or more of the set pressure during the blast. If the pressure drop is not observed as the associated LED in the control box is lighting, then replace/clean the solenoid valve.

Drain the water from the Volume Chamber periodically until some pattern is established. If water is consistently found, consider adding an automatic drain to the volume chamber or improving the supply air quality. DO NOT allow water to fill the volume chamber and then spray into the meter measurement section.

Transducer Replacement Removal

Contact Conair
Parts and Service
Phone: 800-458-1960
From outside of the
United States,
Call: 814 437 6861

- 1 Disconnect power to the ResinTracker™ Meter.**
- 2 Remove the Seal Top.**
- 3 Disconnect the leads from the Transducer to the Wago connector.**
- 4 Remove the Column Cap holding the Transducer wire.**
- 5 Remove the Transducer.**
- 6 Make sure the Shipping Locks are not “Locked” when beginning the replacement.** If the Transducer is being replaced at a location other than the installation point, the Shipping Locks should be locked while the meter is being moved.
- 7 Make sure that there is no product flowing through the system.**

Reinstallation


- 1 Make sure that the ResinTracker™ is installed properly and securely.** If the Transducer is being replaced in another location other than the installation point, set the meter at the exact same level so that the balance of the Pan is correct.
- 2 Fasten the Transducer,** using the original screws with Removable Loctite 242 (Blue), to the Beam Attachment.
- 3 Connect the thin wires from the Transducer to the Wago connector putting them into their color-coded slots.**



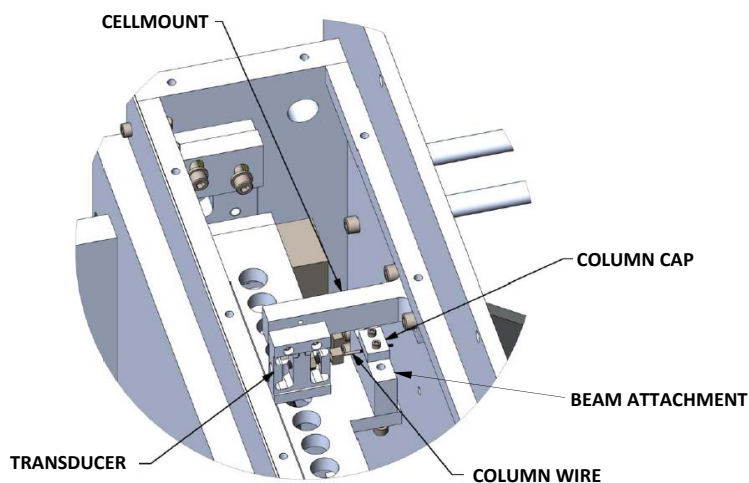
Note: White and Red are mV output, Green and Black are 5.0 Vdc input. 10.0 Vdc for analog electronics with potentiometers.

- 4 Place a 0.010” (brown) shim (0.015” pink shim for meters with S/N prior to S/N 965) between the Upper Overtravel Screw and the Extra Weight on both sides.** See diagram for part identification.
- 5 Hang the calibration weight from the stud under the Pan.**
- 6 Check that the Column Wire lays flat on the Beam Attachment and is perpendicular to the Backplate.** If the wire does not sit flat or is not parallel to its surface, adjust the beam attachment to correct this.

Transducer Replacement (continued)

- 7** Tighten the screws holding the Beam Attachment when the correct position is obtained.
 - 8** Install the new Column Cap over the Column Wire. Use Loctite 242 (Blue) on screws.
 - 9** Tighten the screws evenly and very slowly so as not to distort Column Wire. Tighten equally in steps until tightly torqued.
 - 10** Remove the calibration weight(s) and shims.
 - 11** Use a voltage meter to observe the output of the Transducer. Read between the red and white wires. The desirable installation would result in a 0.00 mV output; however, the meter will work within ± 0.35 mV (± 0.7 mV for analog) of 0.00 mV.
 - 12** Retighten the Column Cap screws while monitoring the mV output from the Transducer. Adjusting the screws may help to counteract the force exerted on the Transducer during the tightening process. If the output is not within the parameters, contact Conair Parts and Service.
 - 13** Check the gap between the Overtravels and the Counterweight by sliding the shims between them. The shims should fit under the Overtravel with very, very light friction.
-  **Note:** Be sure that the calibration weight is off the Pan and that the Pan is in a static state. This gap is the full motion of the Pan and needs to be as precise as possible.
- 14** Remove all the shims and the calibration weight.
 - 15** Check the output for a 0 ± 0.35 mV (± 0.7 mV for analog) reading.
 - 16** Reinstall the Shipping Locks (for transport purposes) if the meter is not at its installation point. If the meter is at its installation point, make sure that the Shipping Locks are not installed and that the Seal Top has been installed.

Contact Conair
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Phone: 800-458-1960
From outside of the
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Call: 814 437 6861



CFM-12 SHOWN WITH PARTS REMOVED FOR CLARITY


Flexure Replacement

Protecting the Transducer

- 1 Power down the electronics and VibraWeigh (if equipped).** Then, Lock and Tag the electronics for safety.
- 2 Remove the Seal Top from the meter and install the Shipping Locks.**
- 3 It is recommended that the Transducer be removed** in order to protect the Transducer from being pulled or pushed as the meter is being moved.

Removing the Meter from the Installation Point (Open or Enclosed)

- 1 Disconnect the Transducer Cable & other power connections from their Wagos (connection terminals).**

 **Note:** Take notes on the connections to help with reinstallation. There should be nothing connected to the meter that could hinder the removal of the meter from its installation point.

- 2 Unscrew the 8 screws holding the meter to the customer's installation location.** When moving the meter, try to keep the Measurement Pan from coming into contact with anything.

 **Note:** Never support the meter by the measurement pan!

- 3 Place the ResinTracker™ Meter on a stable surface for repairs.**
- 4 Remove the six Socket Head Cap Screws** holding the Mount Assembly to the Meter Casing and remove the Mount Assembly.
- 5 Remove the Socket Head Cap Screws** holding the Seal Plate to the Meter Casing.
- 6 Remove the Seal Plate from the casing,** exposing the inner components of the meter.
- 7 Remove any silicone from the Meter Casing to prepare it for later reinstallation.**

Preparing the Meter for Flexure Replacement


- 1 Remove the Shipping Locks.**
- 2 Locate the Overtravel stops that encompass the Counterweight arm.**
- 3 Place the 0.015" (brown) shims provided in the kit, on the top of the Counterweight.** Slide these shims between the Counterweight and the Overtravel screws.
- 4 Push up on the Counterweight** and place the 0.010" (brown) shims between the bottom of the Counterweight and the Lower Overtravel screws. This should be a good fit.
- 5 Mark the Spacers beside the top screw of each Flexure assembly with a marker.** Also, put an "X" on the top Spacer for identification. This will allow you to line up the Spacers correctly in the next few steps.

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Flexure Replacement (continued)

Replacing the Flexures

1 Unscrew the 4 Socket Head Cap Screws that hold the Flexure Assembly together.

 **Note:** Replace only one side at a time, broken ones first. Generally, all the Flexures are replaced to ensure meter integrity even if they aren't broken.

2 Remove the old Flexure and reassemble with the new Flexure. Using the markings that you created on the Spacers, line up the Spacers in their original state.

3 Replace the screws using Removable Loctite 242 (Blue), but do not tighten.

4 Create a gap between the top spacers and the Flexure mount using the old Flexure, so that the Spacers have equal pressure on the Flexure. Keep the sides flush.

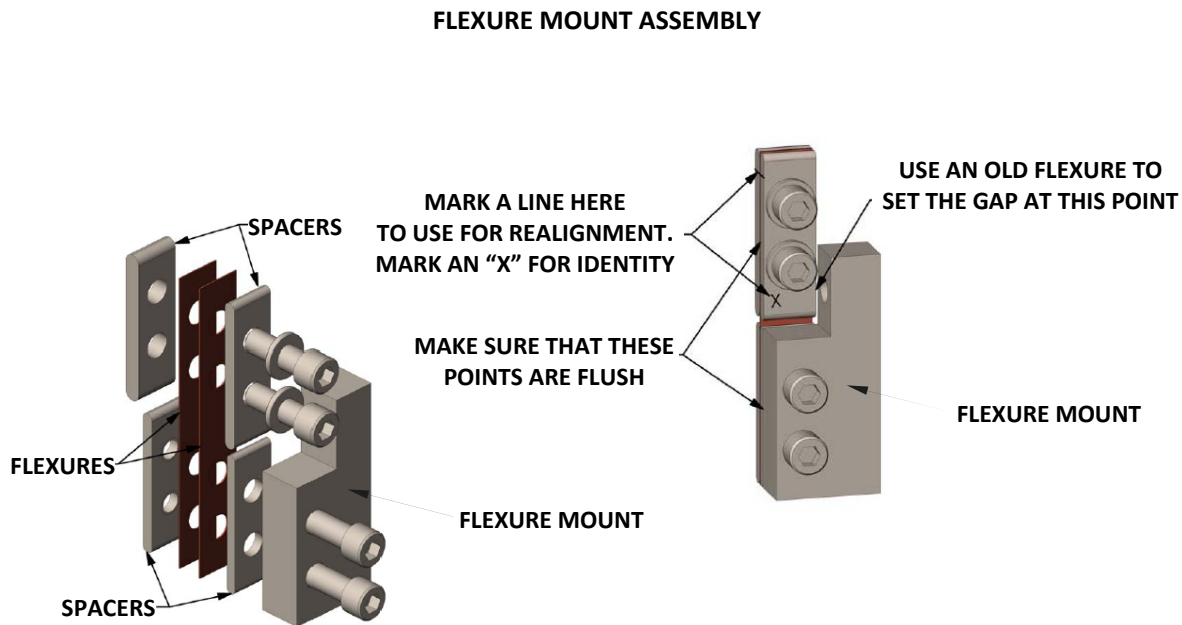
5 Run the old Flexure down the side of the assembly to ensure that the Spacers and the new Flexure are flush.

6 Wedge the old Flexure into the space between the Flexure Mount and the top Spacer Assembly to establish a gap in which the Flexure Mount will be able to move.

7 Tighten the screws when the gap is set and the assembly is flush on both sides. Remove the old Flexure shim for making the gap.

8 Repeat the replacement steps for all other Flexure Assemblies one at a time.

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Flexure Replacement (continued)

Rebalancing and Mounting of the ResinTracker™ Meter

- 1** First, visually inspect the inner components to make sure all of the Flexure assemblies look correct and there is no debris left in the casing.
- 2** Put the meter at the installed angle 0°, 10°, or 20° (this is crucial)
- 3** Since the Transducer is not attached at the Column, the Pan Assembly should be free floating. The meter is a perfectly balanced system and must be mechanically balanced at the Overtravels. There must be a 0.015" gap on the Upper Overtravels and 0.010" on the Lower Overtravels.
- 4** Adjust the Overtravels to the correct gaps and test by lightly touching the Pan. You will see the meter's Pan Assembly and Counterweight move freely and balanced to those gaps. If they don't balance or move freely, find the rubbing spot and fix. If the Overtravels have to be changed significantly, check the angle that the meter is at and make sure you are at the factory angle of installation. Call Conair for questions.
- 5** Reinstall the Shipping Locks.
- 6** Reapply silicone to the entire Meter Casing perimeter neatly. This seal is important to keep out dust or any other particles that may affect the meter's performance. Make sure you don't get silicone on the Counterweight or Extra Weight.
- 7** Realign the Meter Casing and the Seal Plate and tighten in place with the original screws.
- 8** Wipe the excess silicone from the sides after the Seal Plate is tightened.
- 9** Reattach the Mount Assembly using the original screws and Removable Loctite 242 (Blue).
- 10** Reattach the Transducer Cable and Power Supply to their original positions.
- 11** Now the meter is ready for the Transducer to be reattached. *Refer to the Transducer Replacement* in this section to reinstall the Transducer or to replace it .

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Pan Arm Boot Replacement Procedure

Before replacing the Pan Arm Boots, be sure that the Shipping Locks are installed and are in the locked position in order to protect the Transducer from damage.

1 Loosen the screws and remove them if your meter has optional Boot Clamps as shown in the top photograph.

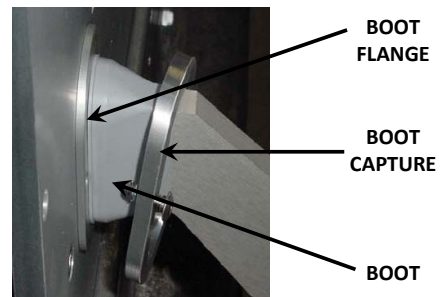


2 Remove the two Socket Button Head Cap Screws from the Boot Capture as shown in the middle photograph. You will need an 1/8" Hex Key.

3 Slide the Boot Capture, Boot and Boot Flange towards the Pan Section.

4 Repeat Steps (1 and 2) for each Pan Arm.

5 Ensure that the weight of the Pan is supported before the Pan Arm assembly bolts are removed.



6 Remove the bolt and special nut that holds the Pan Arm to the Counterweight Arm as shown in the bottom photograph. To do this you will need a 1/2" open end wrench and a 5/32" Hex Key. Repeat this step for each Pan Arm.

7 Disconnect the Pan Arms from the Pan Arm Extension.

8 Remove the Boot Flange and the Boot from each Pan Arm once the Pan is removed from the Pan Arm Extension, leaving the Boot Capture in place.



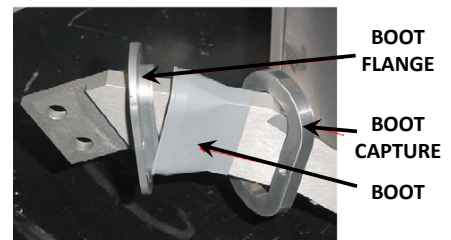
9 Ensure there is no debris or product in or around the Pan Arm Extension in the area where it protrudes through the Backplate.

10 Clean as needed.

11 Slip the new Boots over the Pan Arms.

12 Replace the Boot Flanges back on to the Pan Arms with the lip of the Boot Flange facing the Boot on the Pan Arm.

13 Ensure all Boot Captures, Boots, and Boot Flanges are correctly orientated on the Pan Arms before reinstalling the Pan Arms to the Pan Arm Extension.



14 All bolts need to have Loctite 242 (Blue) applied to them.

15 Reinstall all bolts and nuts in the same orientation that they were removed to reattach the Pan Arms to the Pan Arm Extension.

16 Make sure all bolts and nuts are tight before proceeding to the next step.

17 Slide the Boot Flange back against the Backplate, then carefully slide the Boot back against the Boot Flange ensuring not to rip or tear the Boot.

18 Make sure the Boot is properly seated on the Boot Flange with no folds or gathers in the Boot material.

19 Slip the Boot Capture back against the Boot and the Boot Flange and install the two bolts in the Boot Capture. Ensure bolts have Loctite 242 (Blue) on them.

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(Continued)

Pan Arm Boot Replacement Procedure (continued)

- 20 Tighten the Boot Flange bolts on both sides of the Boot Capture** until there is equal spacing between the Boot Flange and the Boot Capture, this gap should be approximately 0.015". Be sure not to over tighten.
- 21 Return Shipping Locks to the unlocked position.**

Pan Liner Replacement Procedure

Before any work is done on the meter, the Shipping Locks must be installed to protect the Transducer. Whether or not you are changing the Pan Liner with the meter in its installation point, the Shipping Locks must be put on. If the unit is an Enclosed meter and has only one Access Door, the unit must be removed from its enclosure to replace the Pan Liner. Once you have the ResinTracker™ Meter where you can work on it and the Shipping Locks are in place, follow the instructions below.

- 1 Take notice of the Pan Guides and which side they are on.** They must be reattached in the exact same format. You may want to designate a left and right by marking a small L & R with a felt tip pen on the side of the Pan Guides. Make sure to use something that will not scratch them.
- 2 Remove the screws on the sides of the Pan Guides.**
- 3 Remove the screws along the top of the Pan Liner and remove the old Pan Liner.**
- 4 Clean any surfaces that may have collected product, including under the Pan Liner.**
- 5 Realign the new Pan Liner with the polished surface up.**
- 6 Reattach the Pan Liner along the top using new screws with a small amount of removable Loctite 242 (Blue).** Do not tighten.
- 7 Realign the proper Pan Guide to its original position and hold in place with small clamps (with rubber stops).** If available, use a clamp with rubber stoppers on the Pan Guides. The clamp should have a piece of rubber or some other protective material between it and the Pan Guides. The Pan Liner should curve to fit the Pan Arm without gaps and without bowing the Pan in the middle.
- 8 Tighten the Pan Guides using new screws and lock washers.**
- 9 Reinstall the other Pan Guide in the same way** and be sure that the Pan Liner has no bow in the middle. If it does, loosen the Pan Guides and press down on the Pan Liner again while tightening the Pan Guides.
- 10 Tighten the screws along the top of the Pan Liner** and make sure that the Pan Liner is flush on all Pan Arms.
- 11 Reinstall the meter if necessary and remove the Shipping Locks only after the meter is completely reinstalled.** Check your Manual Zero and Static Calibration to make sure that no damage has been incurred during the procedure.

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Troubleshooting

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Before Beginning

You can avoid most problems by following the recommended installation, operation and maintenance procedures outlined in this User Guide. If you have a problem, this section will help you determine the cause and tell you how to fix it.

Before you begin troubleshooting:

Additional manuals and prints for your Conair equipment may be ordered through the Customer Service or Parts Department for a nominal fee. Most manuals can be downloaded free of charge from the product section of the Conair website. www.conairgroup.com

- Find any wiring, parts, and assembly diagrams that were shipped with your equipment. These are the best reference for correcting a problem. The diagrams will note any custom features or options not covered in this User Guide.
- Verify that you have all instructional materials related to the ResinTracker™. Additional details about troubleshooting and repairing specific components are found in these materials.
- Check that you have manual for other equipment connected in the system. Troubleshooting may require investigating other equipment attached to, or connected with the ResinTracker™.

A Few Words of Caution



WARNING: Improper installation, operation or servicing may result in equipment damage or personal injury.

This equipment should only be installed, adjusted, and serviced by qualified technical personnel who are familiar with the construction, operation, and potential hazards of this type of machine.

All wiring, disconnects, and fuses should be installed and adjusted by qualified electrical technicians in accordance with electrical codes in your region. Always maintain a safe ground. Do not operate the equipment at power levels other than what is specified on the machine serial tag and data plate.



WARNING: Electrical hazard



Before performing maintenance or repairs on this product, disconnect and lock out electrical power sources to prevent injury from unexpected energization or start-up. A lockable device has been provided to isolate this product from potentially hazardous electricity.

Identifying the Cause of a Problem

The Troubleshooting section covers problems directly related to the operation and maintenance of the ResinTracker™. This section does not provide solutions to problems that originate with other equipment. Additional troubleshooting help can be found in manuals supplied with the other equipment.

The main problems you will see with the ResinTracker™ are:

- **ResinTracker™ Operation concerns.** This section contains problems that may be related to operation of the ResinTracker™.

Additional troubleshooting help can be found in the documentation manuals included with this User Guide.

Performance Problems

Look in this section when you have problems such as lights on the control that are working improperly, buttons that do not execute the function properly, and when information input is not executed properly.

Symptom	Possible Cause	Solution	
ResinTracker™ will not start.	No power to unit.	Verify that power is not disconnected or unit has been unplugged.	
	Analog or frequency signal not interfaced to the PLC		
	Transducer problems	Make sure that the wire insulation is not pinched at the terminations. Check for 10.00 Vdc (5.00 Vdc for digital) at the Transducer black and green wires.	
	Obstructions		The meter's Pan Assembly is unable to move because of product or other obstruction making contact. Inspect the Flexures. Make sure the Overtravel gaps are properly set. Make sure that there is nothing between the Extra Weight(s) and the back Seal Plate. Shipping Locks are locked.
		Calibration issues	Check the Manual Zero and Status Calibration. Check the inhibit level. Check the optional Auto-Zero circuit for sampling mode.
		Disconnect in the off position.	Turn disconnect to the on position.
		Reset has not been pressed.	Press and hold reset.
	Alarm fault condition not remedied.	Clear alarm condition.	

Performance Problems (continued)

Look in this section when you have problems such as lights on the control that are working improperly, buttons that do not execute the function properly, and when information input is not executed properly.

Symptom	Possible Cause	Solution
Inability to get stable Manual Zero at 0V	The zero balance method is incomplete. Pan is obstructed	Finish the zero balance method. Check for Pan obstructions. Check for product buildup on the Pan Assembly. Make sure the Overtravel gaps are properly set. Make sure that there is nothing between the extra weight(s) and the back Seal Plate. Shipping Locks are locked and are not touching the counterweight.

Performance Problems (continued)

Look in this section when you have problems such as lights on the control that are working improperly, buttons that do not execute the function properly, and when information input is not executed properly.

Symptom	Possible Cause	Solution
Inability to get stable Manual Zero at 0V	Transducer problems	<p>Make sure that the wire insulation is not pinched at the terminations.</p> <p>Check for 10.00Vdc at the Transducer on the black and green wires.</p> <p>Inspect the Column Wire and security of the column Cap.</p> <p>Ensure that the Transducer Cable is not coiled up in the Meter Casing, applying pressure on the Counterweight.</p> <p>Ensure that the Transducer Cable runs inside the conduit from the meter to the electronics.</p>
	Electrical noise	<p>Make sure all connections are tight.</p> <p>Make sure all components are grounded properly.</p> <p>Isolate the power and output lines from all other devices and each other.</p> <p>Find the source of noise and remove/filter/suppress it.</p>
	Air movement around the Pan	<p>Shield the meter from air blowing directly on the Pan Assembly. (Air is mass, and the ResinTracker™ will weigh it)</p>
	VibraWeigh option calibration	<p>Check the VibraWeigh is turned on and operating with a smooth and constant vibration.</p>

Performance Problems (continued)

Look in this section when you have problems such as lights on the control that are working improperly, buttons that do not execute the function properly, and when information input is not executed properly.

Symptom	Possible Cause	Solution	
Meter showing output when there is no product flowing.	Manual Zero	Check the Manual Zero and Static Calibration to ensure proper setup.	
	Transducer problems	Inspect the Column Wire	
	Electrical Noise		Make sure all components are grounded properly.
			Isolate the power and output lines from all other devices and each other.
			Find the source of noise and remove, filter, or suppress it.
	Air Movement around the Pan	Shield the meter from air blowing directly on the Pan Assembly (Air is mass, and the ResinTracker™ will weigh it).	
VibraWeigh option calibration	Check to make sure the VibraWeigh is turned on and operating with a smooth and constant, side-to-side vibration.		
Pan obstructions		Look for product buildup on the Pan Assembly.	
		Make sure the Overtravel gaps are properly set.	
		Make sure there is nothing between the Extra Weight(s) and the back Seal Plate.	
		Shipping Locks are locked.	
		Eliminate vibration from other areas.	

Performance Problems (continued)

Look in this section when you have problems such as lights on the control that are working improperly, buttons that do not execute the function properly, and when information input is not executed properly.

Symptom	Possible Cause	Solution
Machine accuracy not to user specification	Incorrect site calibration	Perform Static Calibration and site calibration methods.
	Manual Zero shift	Check for buildup on the Pan Assembly.
	Check for electrical noise	<p>Make sure all components are grounded properly.</p> <p>Isolate the power and output lines from all other devices and each other.</p> <p>Find the source of noise and remove, filter, or suppress it.</p>
Performance problems	Check for Air movement around the Pan.	Shield the meter from air blowing directly on the Pan Assembly (Air is mass, and the ResinTracker™ will weigh it).
	Check the flowability of your product to make sure it is not varying	<p>Decrease pulsations and give the meter a continuous product presentation.</p> <p>Use liners for decreased product resistance.</p>
	Check for physical damage on the meter.	Contact Conair Parts and Service if any parts are damaged.

Performance Problems (continued)

Look in this section when you have problems such as lights on the control that are working improperly, buttons that do not execute the function properly, and when information input is not executed properly.

Symptom	Possible Cause	Solution
The ResinTracker™ Meter rates and PLC rates not agree.	MRT programming	<p>Check for programming errors.</p> <p>Check the wiring for good connections.</p> <p>Check to make sure that the electronic full scale, proportional to the 4-20mA signal, is set up the same in the PLC.</p>
	Loop power	The ResinTracker™ provides its own power and should not have loop power from the PLC.
	Analog signal is not calibrated	Contact Conair for assistance.
	The PLC scan time is too slow.	<p>If the scan time of the PLC is more than 50ms, it may lose too many data points.</p> <p>Use the optional MRT's output and increase the normalizing factor.</p> <p>Increase the scan time.</p> <p>Switch to the frequency output and use a counter card in the PLC.</p>
	Wiring	Check all wiring from the meter to the PLC.

 **Note:** Always disconnect the power and inspect for visible physical damage before servicing.

We're Here to Help

Conair has made the largest investment in customer support in the plastics industry. Our service experts are available to help with any problem you might have installing and operating your equipment. Your Conair sales representative also can help analyze the nature of your problem, assuring that it did not result from misapplication or improper use.

Additional manuals and prints for your Conair equipment may be ordered through the Customer Service or Parts Department for a nominal fee.


Most manuals can be downloaded free of charge from the product section of the Conair website.

www.conairgroup.com

How to Contact Customer Service

To contact Customer Service personnel, call:



 **NOTE:** Normal operating hours are 8:00 am - 5:00 pm EST. After hours emergency service is available at the same phone number.

From outside the United States, call: 814-437-6861

You can commission Conair service personnel to provide on-site service by contacting the Customer Service Department. Standard rates include an on-site hourly rate, with a one-day minimum plus expenses.

Before You Call...

If you do have a problem, please complete the following checklist before calling Conair:

- Make sure you have all model, control type from the serial tag, and parts list numbers for your particular equipment. Service personnel will need this information to assist you.
- Make sure power is supplied to the equipment.
- Make sure that all connectors and wires within and between control systems and related components have been installed correctly.
- Check the troubleshooting guide of this manual for a solution.
- Thoroughly examine the instruction manual(s) for associated equipment, especially controls. Each manual may have its own troubleshooting guide to help you.

Equipment Guarantee

Conair guarantees the machinery and equipment on this order, for a period as defined in the quotation from date of shipment, against defects in material and workmanship under the normal use and service for which it was recommended (except for parts that are typically replaced after normal usage, such as filters, liner plates, etc.). Conair's guarantee is limited to replacing, at our option, the part or parts determined by us to be defective after examination. The customer assumes the cost of transportation of the part or parts to and from the factory.

Performance Warranty

Conair warrants that this equipment will perform at or above the ratings stated in specific quotations covering the equipment or as detailed in engineering specifications, provided the equipment is applied, installed, operated, and maintained in the recommended manner as outlined in our quotation or specifications.

Should performance not meet warranted levels, Conair at its discretion will exercise one of the following options:

- Inspect the equipment and perform alterations or adjustments to satisfy performance claims. (Charges for such inspections and corrections will be waived unless failure to meet warranty is due to misapplication, improper installation, poor maintenance practices, or improper operation.)
- Replace the original equipment with other Conair equipment that will meet original performance claims at no extra cost to the customer.
- Refund the invoiced cost to the customer. Credit is subject to prior notice by the customer at which time a Return Goods Authorization Number (RGA) will be issued by Conair's Service Department. Returned equipment must be well crated and in proper operating condition, including all parts. Returns must be prepaid.

Purchaser must notify Conair in writing of any claim and provide a customer receipt and other evidence that a claim is being made.

Warranty Limitations

Except for the Equipment Guarantee and Performance Warranty stated above, Conair disclaims all other warranties with respect to the equipment, express or implied, arising by operation of law, course of dealing, usage of trade or otherwise, including but not limited to the implied warranties of merchantability and fitness for a particular purpose.