



EASTERN INSTRUMENTS

CENTRIFEEDER ELECTRONICS

FOR USE WITH CENTRIFEEDER with
Integrated Vibratory Control



REV 4/16 ADDENDUM
VERSION 8.5.0 SOFTWARE

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TABLE OF CONTENTS

SAFETY

Safe Operation	3
Warnings and Cautions	3
Safety Placards	4
1. Installation Guidelines	5
Requirements.....	5
Trouble Areas.....	5
Remote Electronics Enclosure Drawing	6
2. Identifying Your Components	7
Remote Electronics	7
CentriFeeder VIB	8
A Closer Look At Your HMI.....	9
3. Basic Wiring	10
Grounding the CentriFeeder Meter Module	11
Wiring the Remote Electronics Cable at the Meter Module	12
Wiring the Customer Connections.....	13
Customer Connections Outputs.....	14
Wiring the Remote Electronics Cable	16
Wiring the Vibratory Drive.....	17
Connecting Power	18
4. Procedures	19
Powering On.....	19
Vibratory Scaling	21
Advanced Control Settings.....	22
Static Calibration.....	24
Site Calibration.....	26
Setting the Alarm - Rate.....	31
Setting the Alarm - Totalization	31
Setup of Remote Reset & Zero Capability	33
Using the Compact Flash.....	34
Remote Ethernet Access	36
Remote View	37
View Logs	37
5. Changing the IP Address	40
Example of Establishing Communication to PLC: ControlLogix Unit	42
Tag Mapping	42
Security Features	45
6. Certificates	47



SAFETY

SAFE OPERATION

PLEASE READ BEFORE OPERATING THE CENTRIFLOW METER

- Only authorized personnel should operate the CentriFlow Meter. Untrained personnel present a hazard to themselves and the meter and improper operation will void the warranty.
- Check for damaged parts before operating the meter. Any damaged part should be properly repaired or replaced by trained personnel. Do not operate the meter if any component does not appear to be functioning correctly. Contact Eastern Instruments for assistance or for repair components.
- Use the appropriate Personal Protection Equipment as required for operating the meter within its installation location.
- The various surfaces of the CentriFlow Meter module may have sharp edges and have the potential to cause injury. Use the proper protection for your hands when servicing or maintaining your CentriFlow Meter
- The electrical panel (digital electronics) should be closed and the safety latch engaged at all times except during installation or service. At those times, only authorized personnel should have access to the electronics panel. When power is activated, AC voltage may be present throughout the panel. Therefore extreme caution is required.
- ◆ **DO NOT modify or alter this equipment in any way. If modifications are necessary, all such requests must be handled by Eastern Instruments. Any modification or alteration of any Eastern Instruments equipment could lead to personal injury and/or mechanical damage and will void the warranty.**

WARNINGS AND CAUTIONS

- Once power has been supplied to the CentriFlow Meter, it is always on and product may run through it at any time.
- Avoid entering or placing body parts within the meter's enclosure.
- Do not operate without proper training
- Always wear proper PPE
- NEVER service the meter while power is connected.

SAFETY PLACARDS

SOME OR ALL OF THESE WARNINGS MAY BE ON YOUR METER. BE AWARE OF THE POSSIBLE DANGERS PRESENT.



ELECTRICAL SERVICE

Electrical shock or electrocution is possible when servicing the electronics of any Eastern Instruments equipment. Be sure to disconnect power before conducting any repairs on the electronics.



PRODUCT FLOW

The Control Valve for the CentriFeeder is used only as a control valve and does not act as an isolation valve. A secondary isolation valve is recommended to be installed before the CentriFeeder's control valve in order to isolate the CentriFeeder from flow during maintenance or repairs.



PINCH POINTS

The control valve of the CentriFeeder can cause serious injury or amputation. Keep hands clear of the control valve at all times.



LIVE ELECTRICITY

Live electrical wires may be present. Please note that coming into contact with the live wires (AC Power) could cause electrical shock or electrocution.



INSTALLATION

INSTALLATION REQUIREMENTS

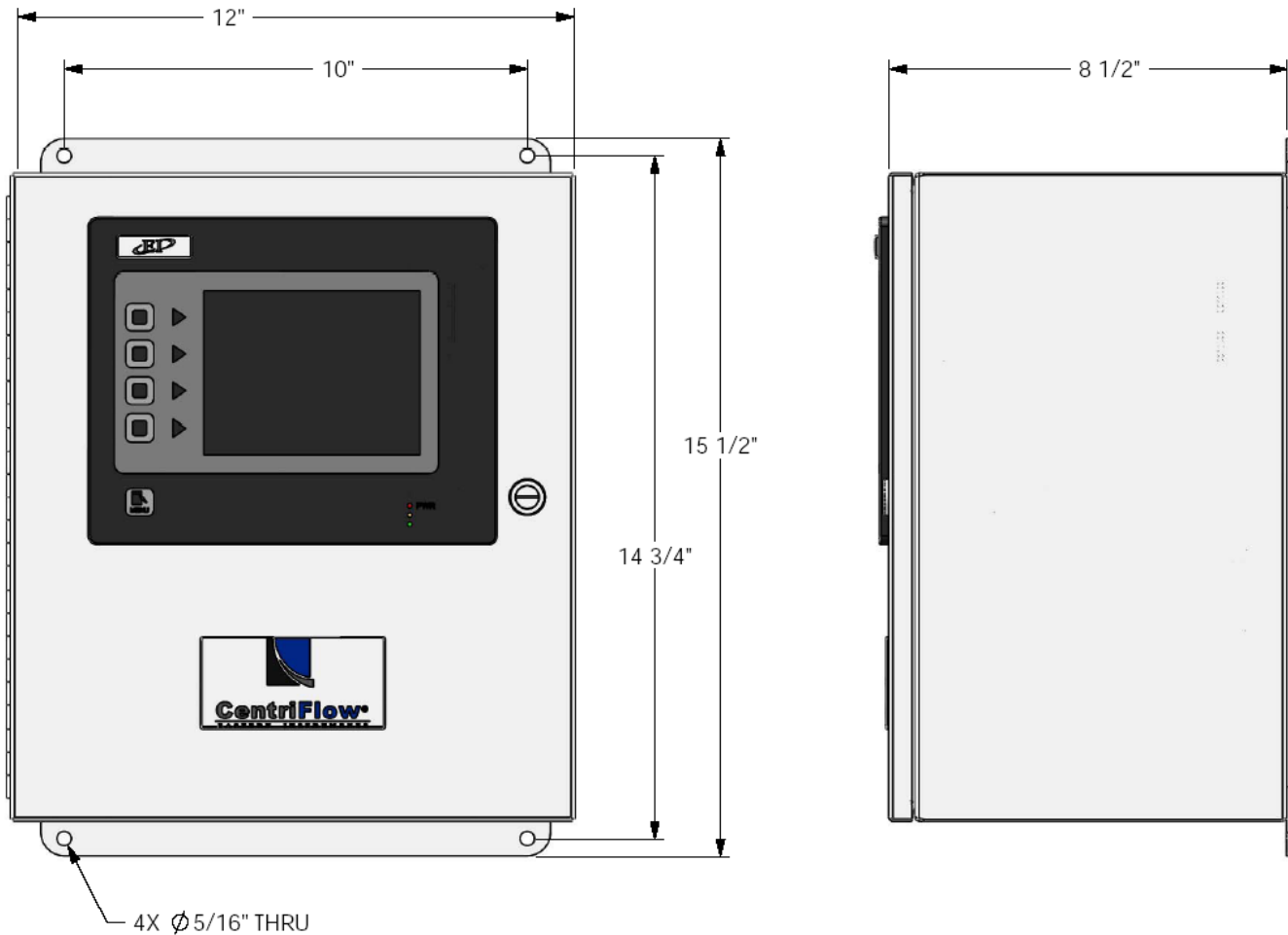
- The meter is to be used in a location where the product can be dropped from a fixed height such as a conveyor, or any type of feed system, which will give a reasonably constant initial vertical velocity. The design of the meter requires the product to contact the Tangential Plate and have some vertical drop.
- The meter should be installed so that it is level in two planes. Use the Bubble Level on top of the Seal Top to help.
- The meter should be mounted using the mount holes only. The mounting method should minimize vibration and any movement. Mounting should not be done using the flange(s).
- The discharge chute that the product stream empties into after traveling through the meter must be free flowing, meaning that it does not allow product to build up and consequently contact the Pan of the meter.
- The Electronics Enclosure and valve should be wired using only the factory cable. There is a standard 10' cable package that includes the Remote Electronics Cable, the valve Power Cable, and the Valve Position Sensor Cable supplied with the CentriFeeder™ Meter. The cables should be cut to the exact length required. Do not coil the cables.
- It is required that the Remote Electronics Cable be run through its own grounded metallic conduit connected on the side of the module and the bottom of the Electronics Enclosure. This Cable MUST be in a separate conduit than that of the AC Power or 24 Vdc Power supplied to the Electronics Enclosure. The valve power and position sensor signal cable can be together in their own grounded metallic conduit.

INSTALLATION TROUBLE AREAS

- The CentriFeeder™ Meter's 4-20mA signal is self-powered and does not require any additional voltage.
- DO NOT RUN 480V, 240V, OR 120V AND SIGNAL LINES IN THE SAME CONDUIT. The power and signal lines should be separate from each other and from all other devices. Running any other power or signal lines in the same conduit could affect the performance of your meter. Isolate both power and signal lines from each other at all times.
- The CentriFeeder™ Meter is balanced at a specific angle and should not be subject to vibration or movement. The mass of the mount should be at least 2 times the mass of the meter .
- The Seal Top should be on the meter at all times that you are not working inside the meter. This is to keep all foreign materials out of the meter that could obstruct its movement or impair its functionality.

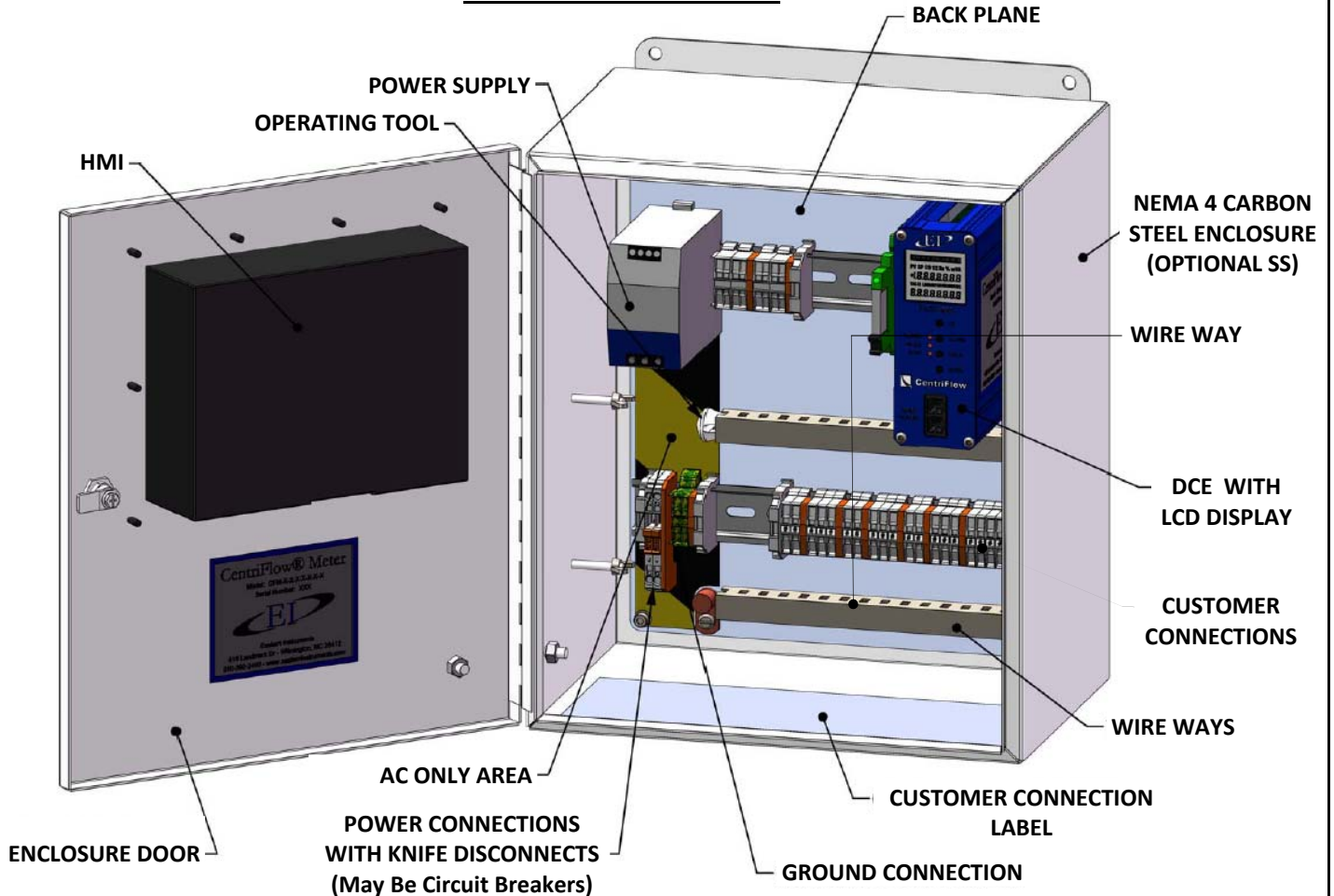


Electronics Enclosure
Dimensional Drawing





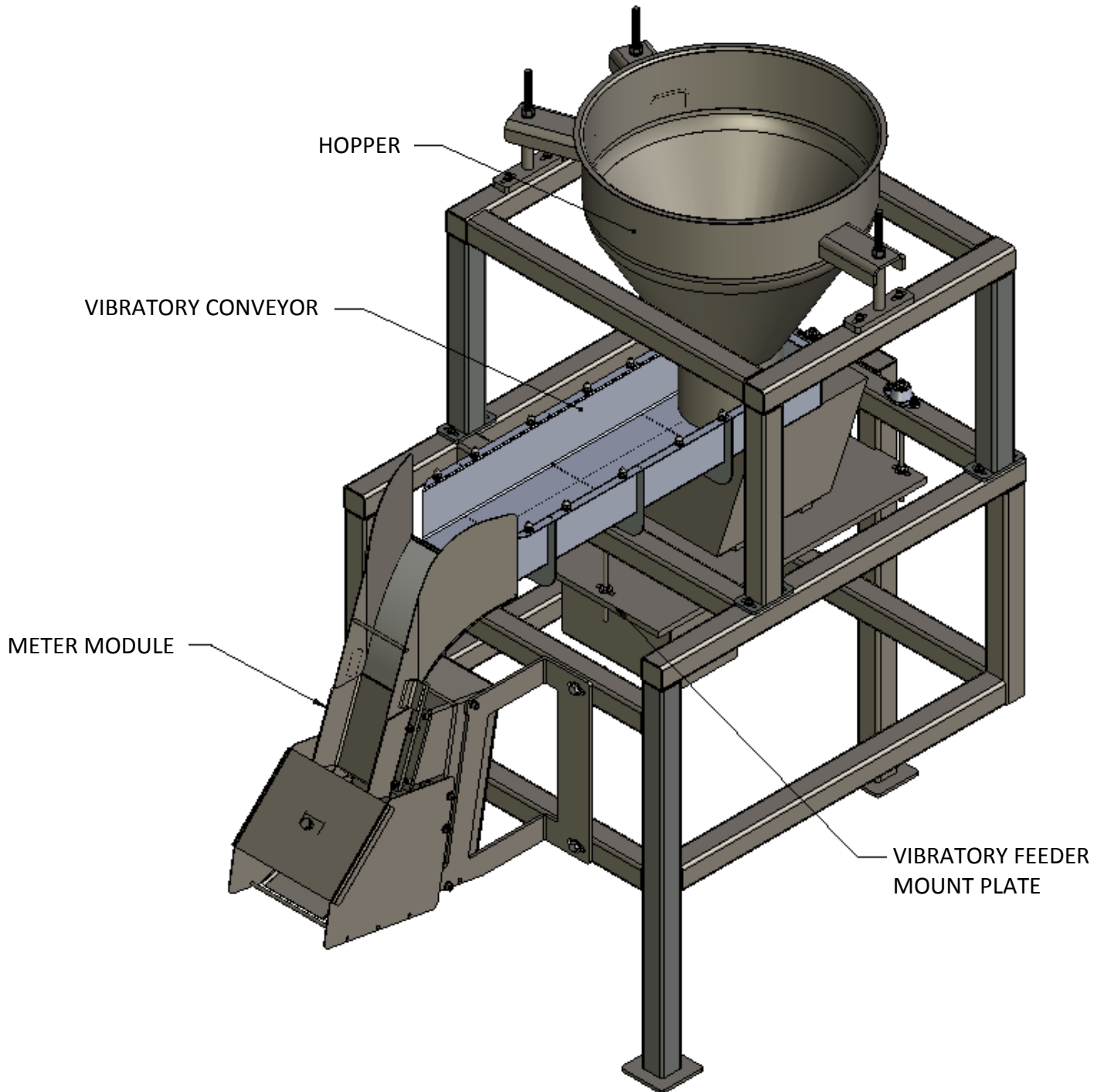
Identifying Your Components: Remote Electronics



The Digital Electronics Enclosure contains the HMI, the Digital CentriFlow® Electronics (DCE), Power Supply, Alarm Relay, Power Connections with Knife Disconnects, and the Customer Connections.



Identifying Your Components:
CentriFeeder VIB

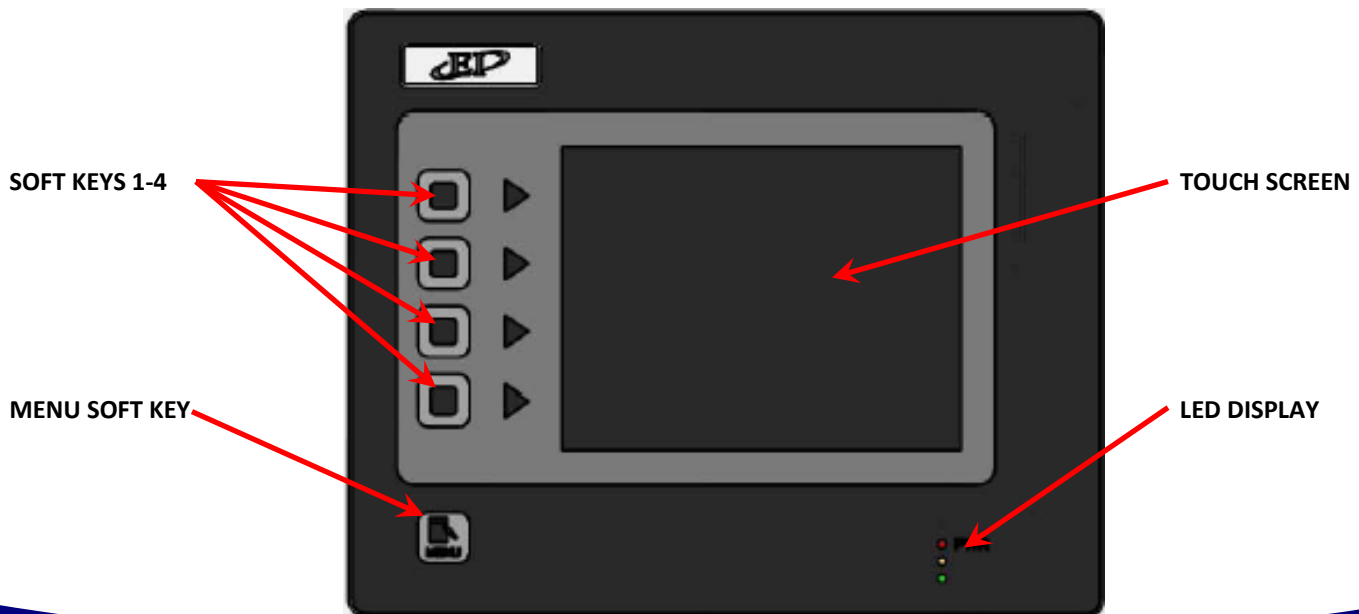


A Closer Look at Your HMI

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 DISPLAY CHART

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



Basic Wiring

Wiring of the CentriFeeder® can be broken down to the following categories:

REMOTE ELECTRONICS:

- Grounding the CentriFeeder Module
- Wiring the Electronics Cable at the Meter Module
- Wiring the Customer Connections at Electronics Enclosure
- Connecting Power

Electrical Information:

The following DCE digital signals are phototransistor outputs:

- Frequency, Flow Rate Proportional (Rate)

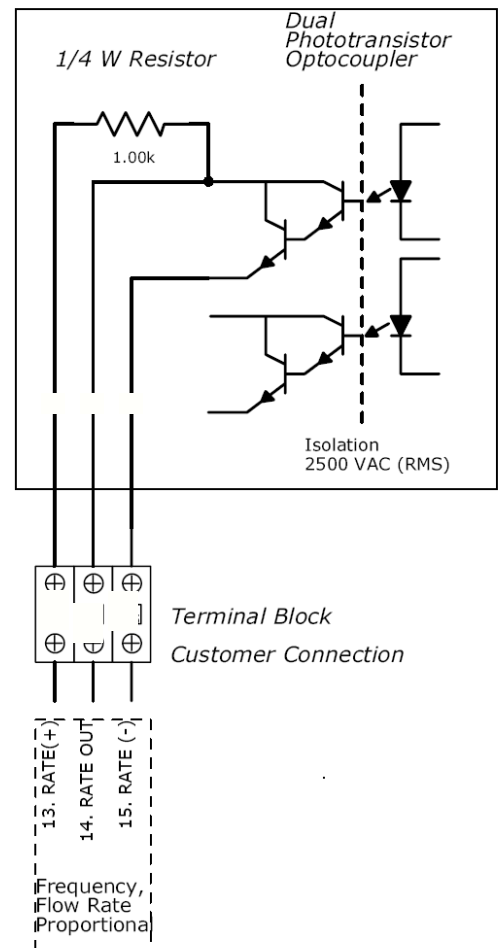
The Internal DCE Schematic to the right shows the Rate Output. However, all digital outputs are designed using the same circuit.

*Digital Output 1 and 2 share power and ground

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

**Digital Output 3 and 4 share power and ground

Internal DCE Schematic



*** A full wiring diagram is provided at the end of the manual.**



Grounding the CentriFeeder 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.

PLEASE BE SURE TO GROUND THE CENTRIFEEDER METER MODULE TO AN EARTH GROUND!



Wiring The Remote Electronics Cable At The Meter Module

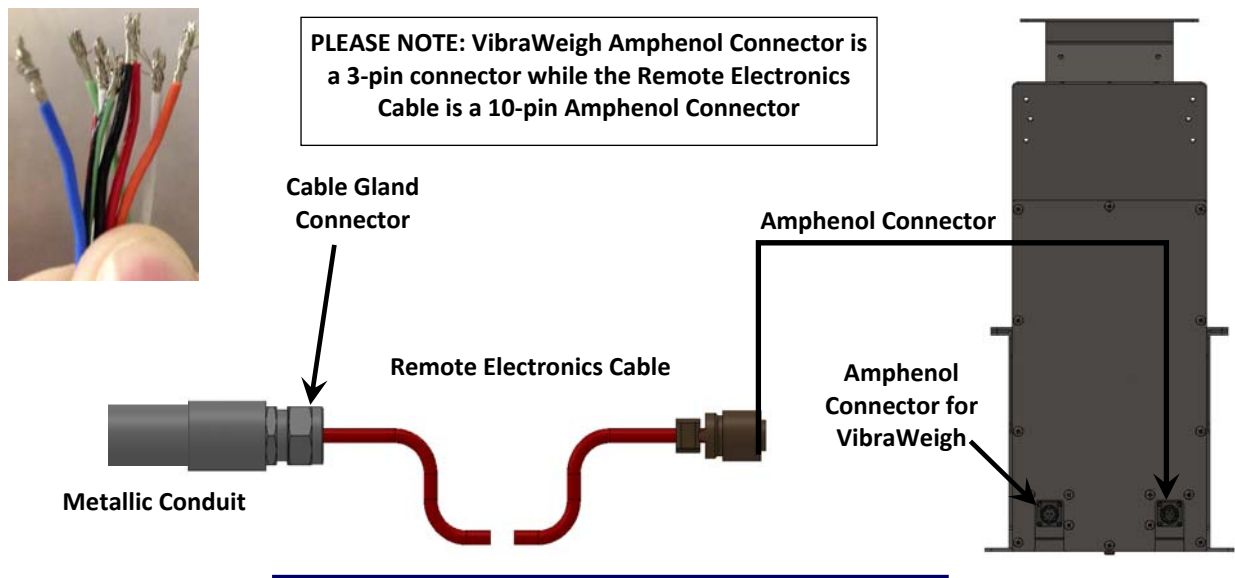
REMOTE ELECTRONICS CABLE

The Remote Electronics Cable is a 9 conductor cable with a shield that attaches the CentriFlow® Meter Module of your CentriFeeder 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 10' long, but it should be cut to the exact length needed. If the distance from the CentriFlow® Meter Module to the Electronics Enclosure is more than 10', a custom length cable which may be supplied with the meter, should also be cut to fit. Excess cable should never be coiled up and placed into the CentriFlow® Meter Module. One end of the Remote Electronics Cable will be affixed to the meter module, while the other end will be cut to length and will be wired to the Electronics Enclosure as demonstrated in the "Wiring the Digital Electronics" portion of this manual.

PLEASE NOTE: The Electronics Cable MUST be run through grounded metallic conduit. If your Electronics Cable has an Amphenol Connector on one end, we would 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.

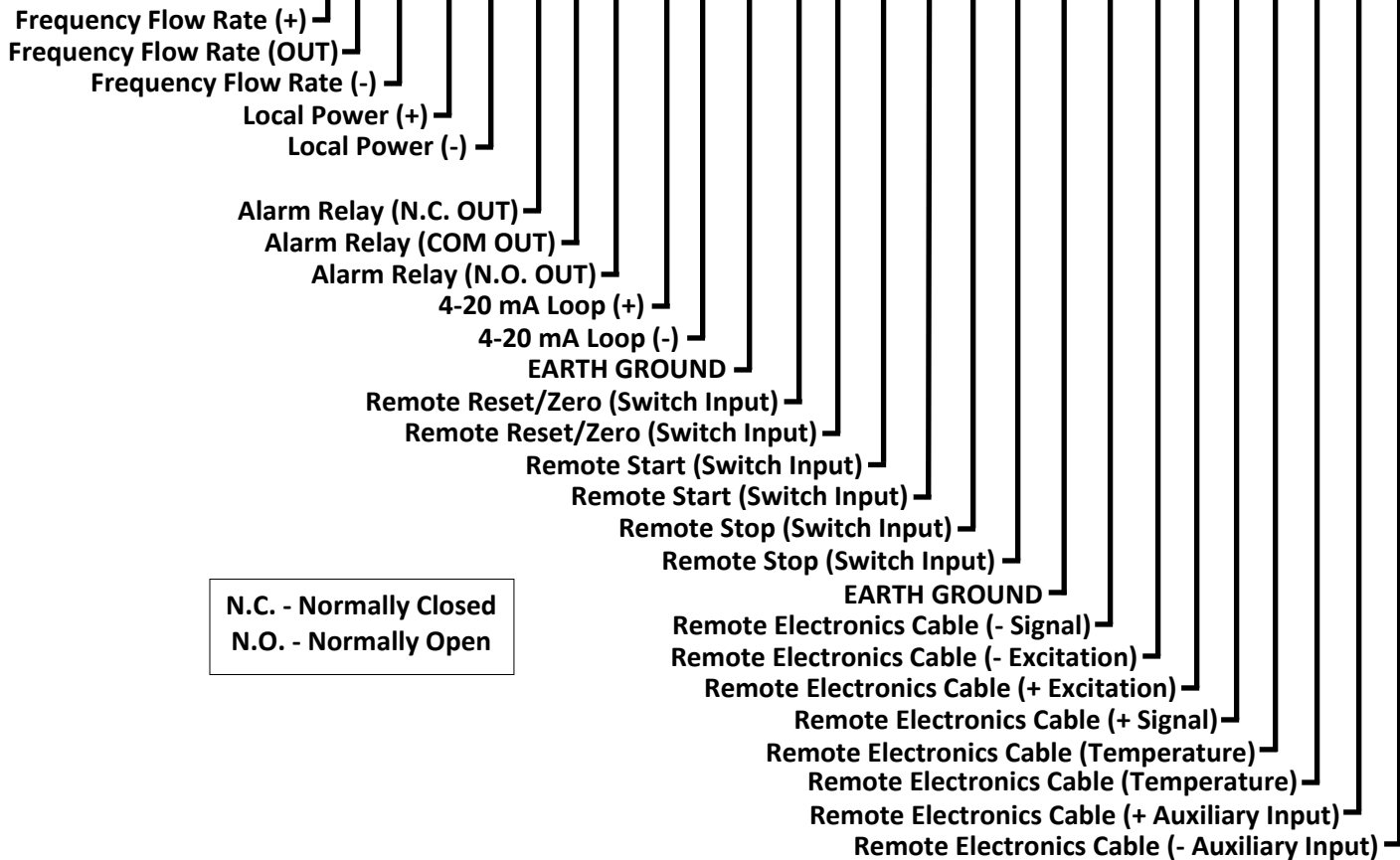
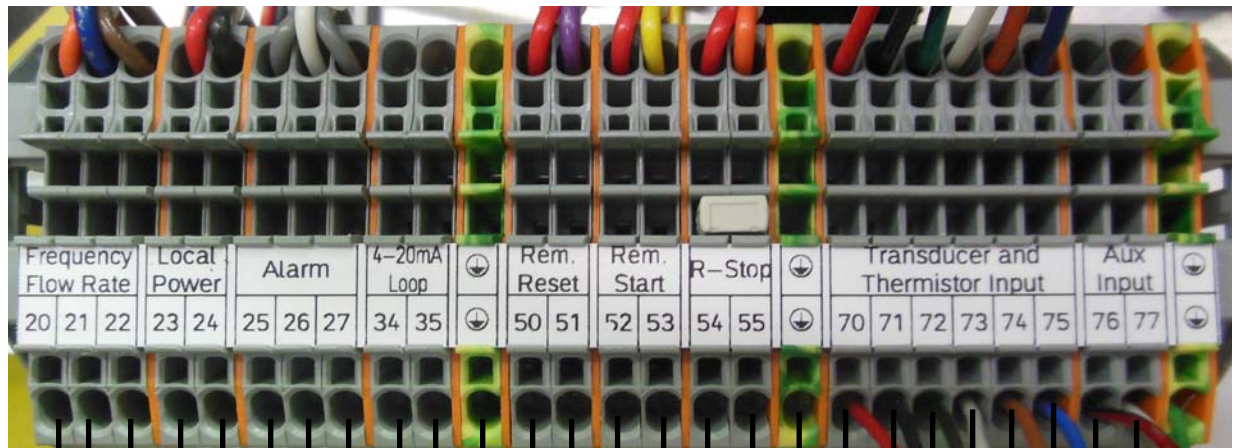
WIRING THE METER MODULE - 9 CONDUCTOR CABLE:

One end of the Remote Electronics Cable will be affixed with a 10-pin Amphenol Connector. This end will be connected to the Meter Module Casing as shown in the picture below. The other end of the cable will be cut to length and will be wired to the Electronics Enclosure as demonstrated in the "Wiring the Digital Electronics" portion of this manual.





Wiring Customer Connections At the Electronics Enclosure



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

**All Connections are made to the Bottom of the Terminal Blocks*

Customer Connections 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.

Note: Use of local power will result in a loss of isolation.

4-20 mA Output

Analog Output (Sourced)

Loop Power NOT Required

Maximum Load Resistance = 900 ohms

NOT AVAILABLE FOR CENTRIFEEDER VIB

The CentriFlow® 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 CentriFlow® 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.

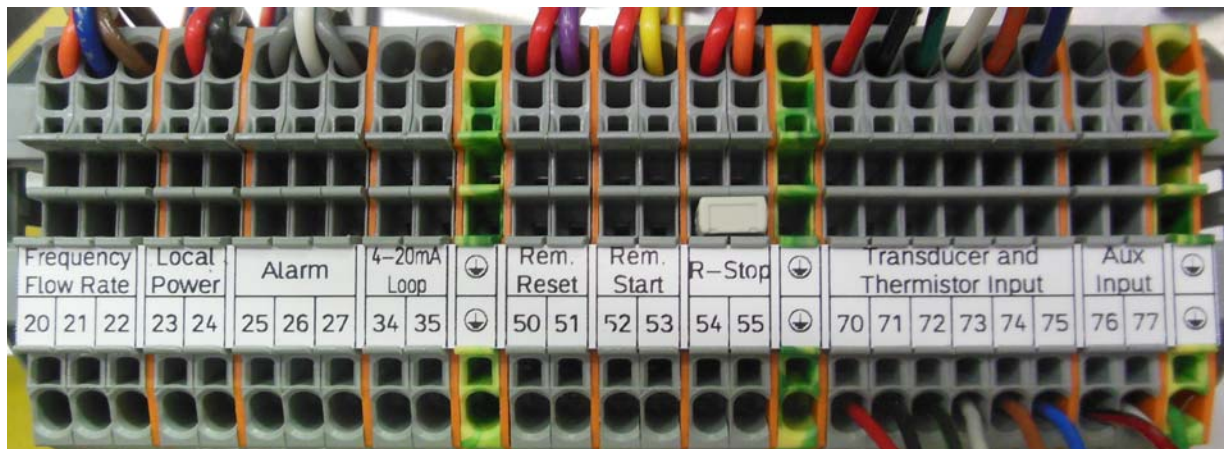
Remote Reset/Zero

Digital Input Pushbutton Switch

By installing a push button on/off switch or other mechanical relay contact, the Remote Input can be used to remotely reset your count. In order for this option to be utilized the push button on/off switch or other mechanical relay contacts (customer supplied) must be installed using the connection listed below. Please note that these inputs are prewired with voltage and only require contact closures to operate correctly (Wiring an SSR to this input will not work properly).

Wiring the Remote Electronics Cable

When wiring the Remote Electronics Cable to your Digital Electronics Enclosure, please match the Customer Connections terminals inside your Digital Electronics to the picture below. If they are different please contact EI for further instructions. The table below shows the correct wire color and terminal for each type of Remote Electronics Cable available. Match your cable to the column in the table below and ensure that the appropriate wires are landed to the appropriate terminals.



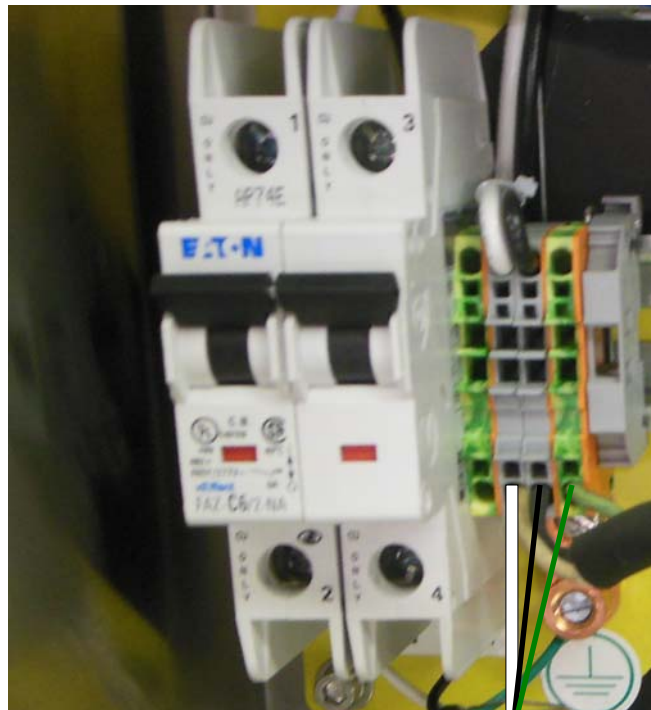
Remote Electronics Cable	4 Conductor Cable	6 Conductor Cable	9 Conductor Cable	Landing Terminal
Shield	Shield	Shield	N/A	Ground Terminal
- Signal	Red Wire	Red Wire	Red Wire	70
- Excitation	Black Wire	Black Wire	Black Wire	71
+ Excitation	Green Wire	Green Wire	Green/Black Wire	72
+ Signal	White Wire	White Wire	White Wire	73
Temperature	N/A	Gold Wire	Gold Wire	74
Temperature	N/A	Blue Wire	Blue Wire	75
+ Auxiliary Input	N/A	N/A	Red/Black Wire	76
- Auxiliary Input	N/A	N/A	White/Black Wire	77
Ground	Green or Green/Yellow Wire (Separate Wire)	Green or Green/Yellow Wire (Separate Wire)	Green Wire	Ground Terminal



Vibratory Drive

You must wire the Vibratory Conveyor to the Electronics Controller by attaching the wire from the Vibratory Conveyor (provided) to the Customer Connections as shown below.

- Vibratory Power (N) - #3 CUSTOMER CONNECTIONS
- Vibratory Power (L) - #4 CUSTOMER CONNECTIONS
- Ground - GROUND



**All Connections are made to the Bottom of the Terminal Blocks*



Power

The Digital Electronics Package includes a Power Supply to convert the customer provided VAC power to 24Vdc. Please see the diagram below for wiring connections.

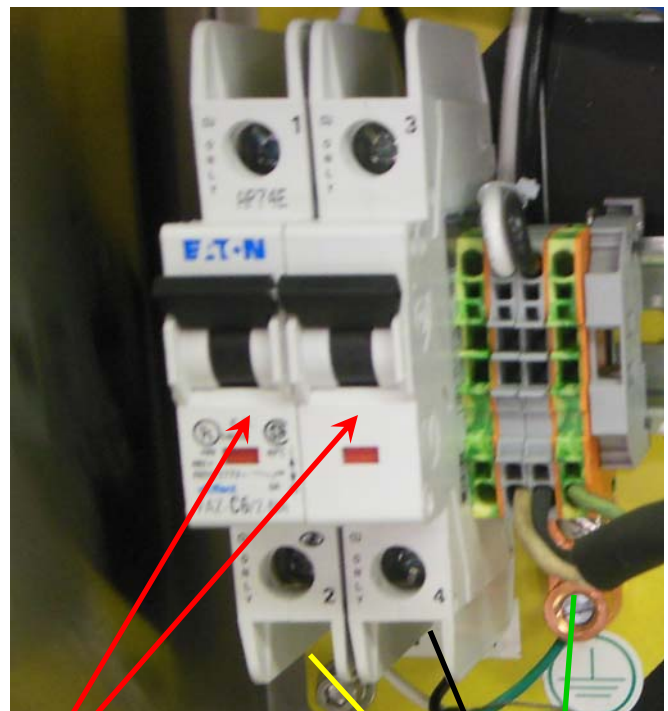
WARNING: TURN POWER OFF AT SUPPLY CIRCUIT BREAKER BEFORE WIRING THE POWER TO YOUR DIGITAL ELECTRONICS PACKAGE!

VAC **ONLY** can be connected to the Power terminals illustrated below. The VAC power is then converted to 24 Vdc through the factory wired Power Supply to supply 24 Vdc power to the electronics.

Wire the VAC Neutral and VAC Line connections to the terminal blocks using the tool provided. The wiring connections are as follows:

AC Ground	-	G (Green)
VAC Neutral	-	N (White/Yellow)
VAC Line	-	L (Black)

Input Voltage	115 VAC
Input Current	5A
Input Frequency	47-63 Hz



Circuit
Breakers

**All Connections are made to the Bottom of the Terminal Blocks*

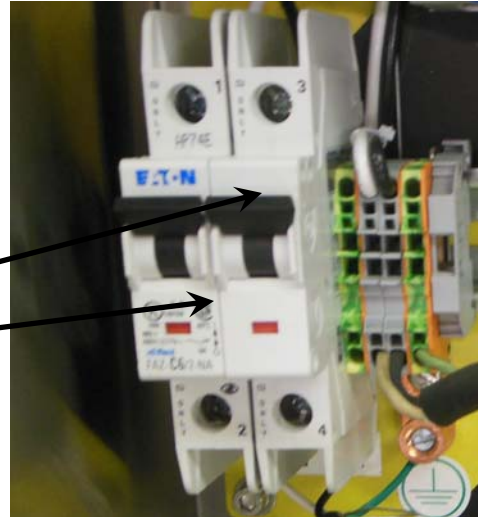


PROCEDURES

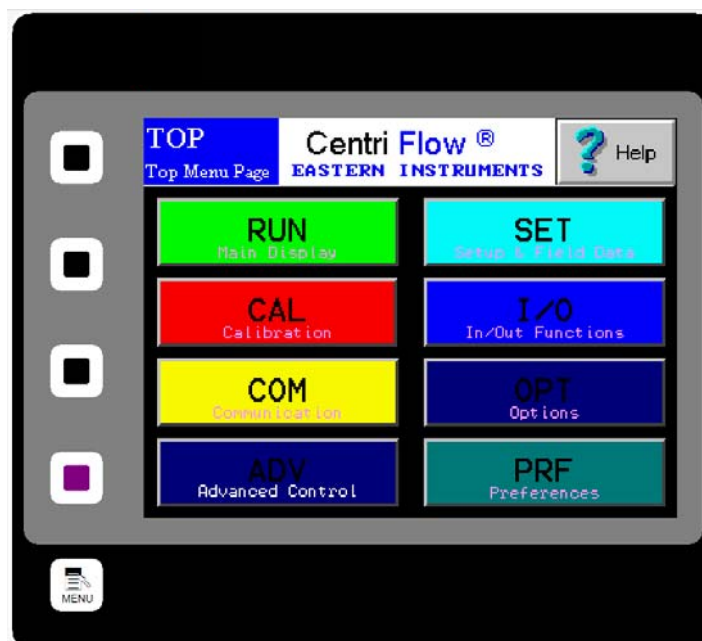
Powering On

To power on your digital electronics, open the Digital Electronics Enclosure and depress the breaker pushbuttons located on the VAC Power wiring connections as shown below.

Circuit Breakers



Close the Digital Electronics Enclosure. The HMI should now be coming on. Upon startup, the HMI will display the Main Menu Screen, also called TOP, as shown below.





TOP.RUN

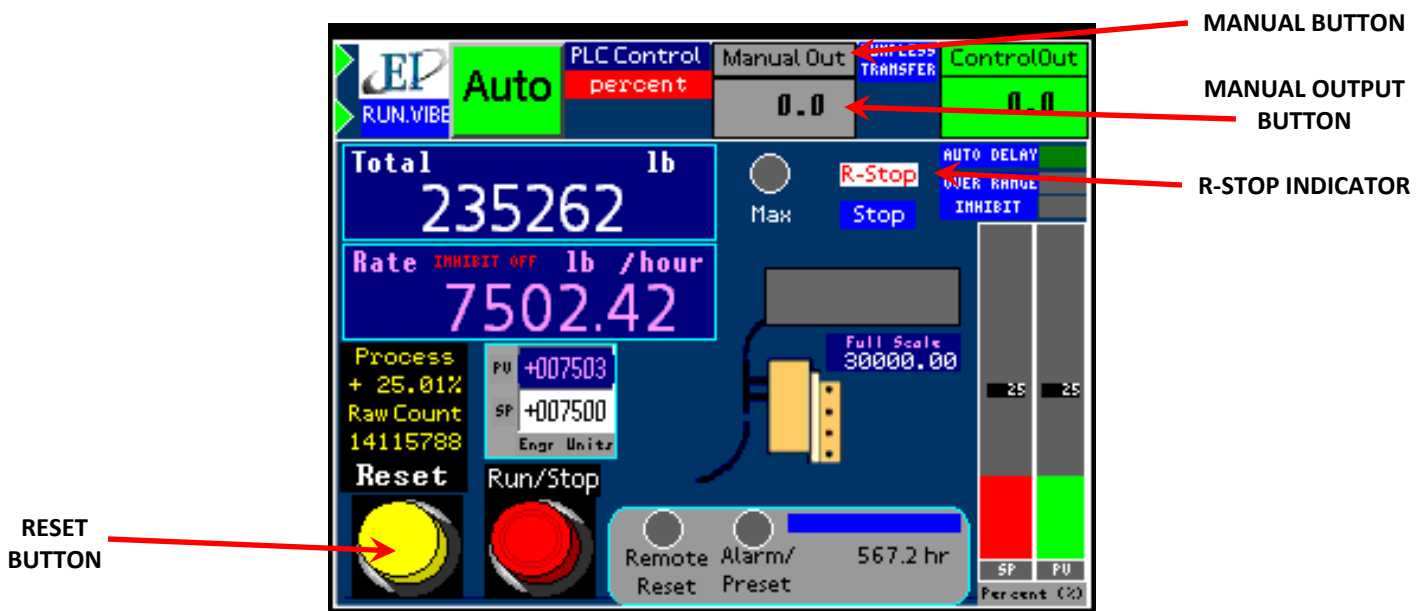
TOP.RUN is the main display mode. Access this screen by pressing the RUN Button from the TOP screen. The customer can choose between Automatic Mode and Manual Mode from this screen as well as view data in real time.

The Red and Green Bar on the Lower Right labeled SP and PV: SP stands for Set Point and represents the chosen value you would like the process to run at. It is represented as a percentage of your EFS value, or Electronic Full Scale. PV indicates your Process Value, or what the process is actually running at.

PV/SP in Engineering Units: The SP and PV values are also represented in Engineering Units in the square above the Run/Stop button on the lower left side of the screen.

The diagram of the valve/meter: A graphical representation of the valve and meter are seen on the center right of the screen and information relating to the valve can be viewed here. An Open/Closed indicator is above the valve graphic while the position of the valve is indicated in the white block under the word "position" on the valve graphic. The value is shown as a fraction of 100% open. The VFS Value, or Virtual Flow Stop Value is also indicated as a percentage of 100% open. Please see the manual for more information on the Virtual Flow Stop. Near the meter representation is an alarm indicator showing whether the alarm has triggered or not.

Total/Rate Indicator: In the top left corner under the Auto and Man Buttons are the numerical values of the calculated Total and Rate values for your process as well as the units of these values.



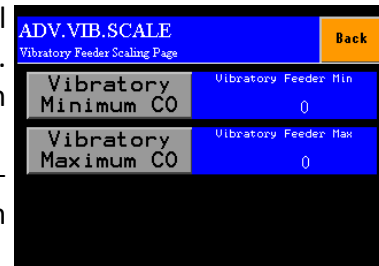
Vibratory Scaling

NOTE: These parameters are typically set up at factory and should not need adjustment.

There is a minimum acceleration required for product in the vibratory tray to begin moving. There is also, a maximum acceleration limit specified by the manufacturer that if exceeded can cause poor short term flow. The scaling of the acceleration of the Vibratory Conveyor allows the limits of the system to be set.

Normally, a 0% control out signal in a 4-20 mA system is 4 mA, while 100% control out is 20 mA. If the minimum acceleration required to move product in the tray is not achieved until 20% control out (7.2 mA), for example, then a control out signal between 0% and 20% will not affect the flow signal. This means that the flow rate will be zero until the control out is greater than 20% which complicates the ability of the controller to maintain the desired flow rate. Although vibratory scaling is typically performed at the factory, if scaling in the field is required, please follow the below steps:

1. From the Main TOP Menu, press the ADV Advanced Control Button and then press the Control Modifications Button. Finally, press the Vibratory Scaling Button so that you are on the page to the right.
2. From the ADV.VIB.SCALE Page, you can set both the Vibratory Minimum Control Out as well as the Vibratory Maximum Control Out.



Determining the Vibratory Minimum Control Out

The Vibratory Minimum Control Out is determined by when product begins to move on the Vibratory Conveyor. Once product begins to move on the conveyor (only slightly) record the output (as a percentage of full scale) by pressing the Vibratory Minimum CO Button and entering it via the numeric keypad.

Determining the Vibratory Maximum Control Out

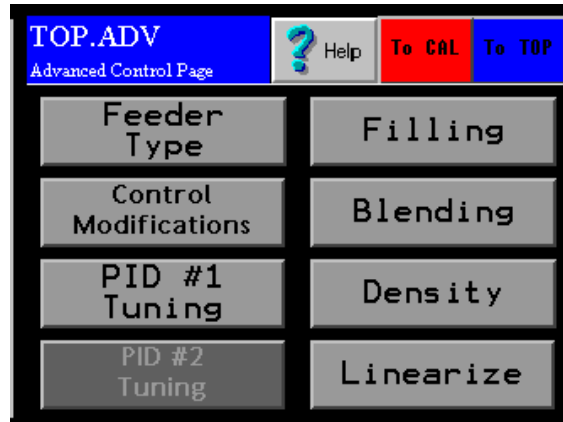
The Vibratory Maximum Control Out is determined by the amount of product that is able to move through the system. Set the maximum Control Out to 100% and see if full scale is exceeded as product runs through the meter. If full scale is exceeded, then the Maximum Control Out should be lowered until the flow rate no longer exceeds full scale. The Vibratory Maximum Control Out can be entered in a similar manner as the Vibratory Minimum Control Out as described above.



ADVANCED CONTROL SETTINGS

NOTE: These parameters are typically set up at factory and should not need adjustment.

Your Advanced Control Settings can all be accessed via the TOP.ADV Page by pressing the Advanced Control Button on the Main Menu.

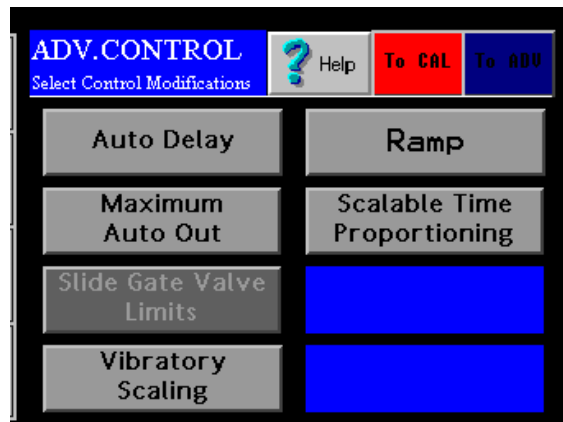


Selecting Your Feeder Type

Press the Feeder Type Button on the TOP.ADV Page. There are several options for your feed device, but for the CentriFeeder with a Vibratory Conveyor provided by Eastern Instruments, press the Peripheral Vibratory-Internal Button and press OK.

Control Modifications

Press the Control Modifications Button to access the ADV.CONTROL Page. You should now see the page below.



Setting the Auto Delay: Sets the duration of time that the unit stays in Manual Mode before switching to Automatic Mode when first started up. See the Setting the Auto Delay section of the CentriFeeder Manual



Setting the Maximum Auto Out: Sets the upper limit for use with an upper limit alarm. Please see the Setting the Maximum Auto Out section of the CentriFeeder Manual.

Vibratory Scaling: Scales the acceleration of the Vibratory Conveyor for its upper and lower limits. Please see the Vibratory Scaling section of this Addendum.

Ramp: When changing from one Set Point to another, the value set here will determine how great the ramp steps up or down to the new Set Point. This value is in % per second; if the Set Point change is from 10 ton/hr to 15 ton/hr (a change of 5 ton/hr) and the Ramp Rate is 50%/s, the Set Point will switch from 10 ton/hr to 12.5 ton/hr in 1 second and from 10 ton/hr to 15 ton/hr in 2 seconds.

Scalable Time Proportioning: Not used in conjunction with the CentriFeeder with Vibratory Control.

PID #1 Tuning

PID #1 Tuning allows you to tune the PID Control Loop for the CentriFeeder. Many of the features found here can also be accessed via the Main Run Page including toggling between Manual and Auto Control, setting the Manual Out or set point for Manual Control and setting the Process set point which is the set point for Automatic Mode.

Filling

Currently not used in conjunction with the CentriFeeder with Vibratory Control.

Blending

Currently not used in conjunction with the CentriFeeder with Vibratory Control.

Density

Currently not used in conjunction with the CentriFeeder with Vibratory Control.

Linearize

Currently not used in conjunction with the CentriFeeder with Vibratory Control.

Static Calibration (Static Cal.)

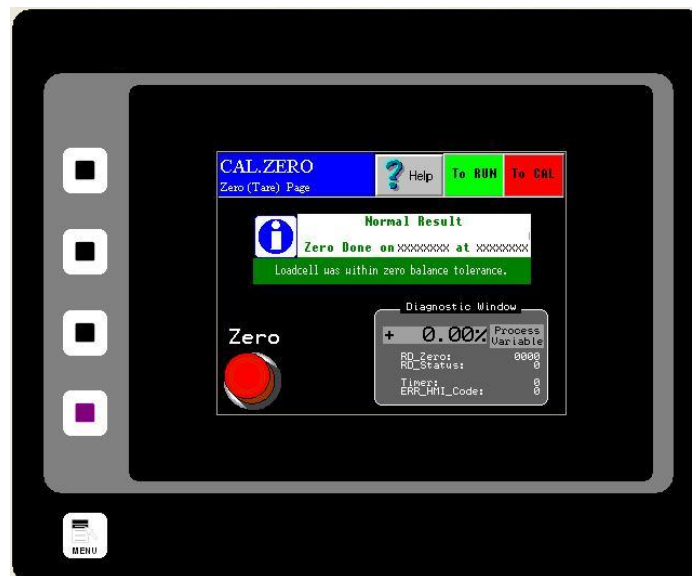
Static Calibration sets the Range of the Transducer in the CentriFlow Meter. This allows the meter to be versatile in a way such that it can be ranged up, known as Extended Static Calibration, or it can be ranged down, known as Reduced Static Calibration. The Static Calibration is a Factory Setting and 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:

Step 1: Click the CAL Button on the TOP Menu, then click the ZERO Button.

Step 2: You should now be on the CAL.ZERO page as seen below.



Step 3: Press the Zero Button. Verify that the number displayed in the Diagnostic Window is 0.0 % Process Variable.

Step 4: The Zero portion of Static Calibration is complete. Press the Red TO CAL Button on the upper right of the screen in order to return to the TOP.CAL page.

Step 5: Press the CALs Button. You should now be on the CAL.CALS page as seen on the next page.

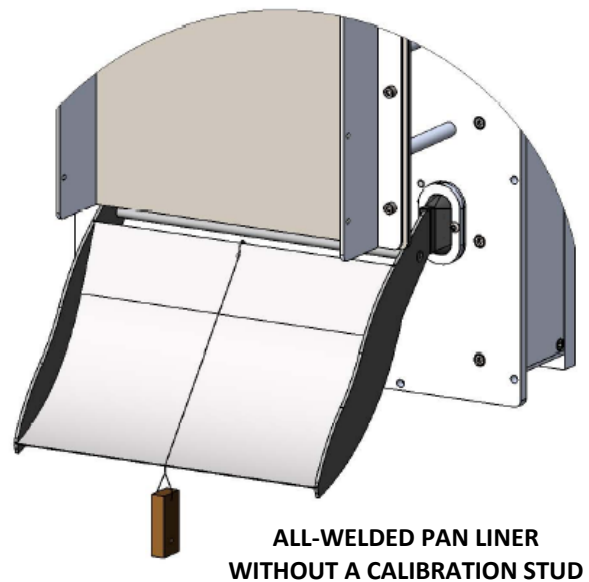
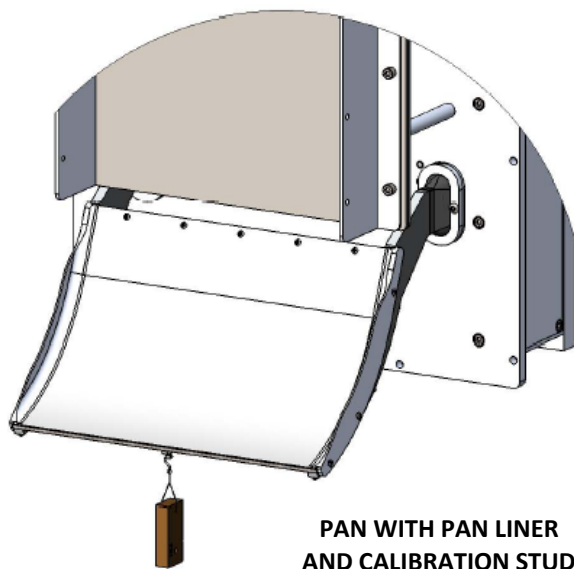
Step 6: Hang the Test Weight provided with the Electronics Enclosure from the Calibration Stud located under the bottom edge of the Pan as seen below. For Pans that have more than one Calibration Stud, there should be a Test Weight for each. Some optional pans may not have a Stud. In these cases the 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 shown below. 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.



Step 7: 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.

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

Step 8: Remove the Test Weight from the Calibration Stud. The voltage should return to 0.00% Volts.





Site Calibration

When the CentriFlow® 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.

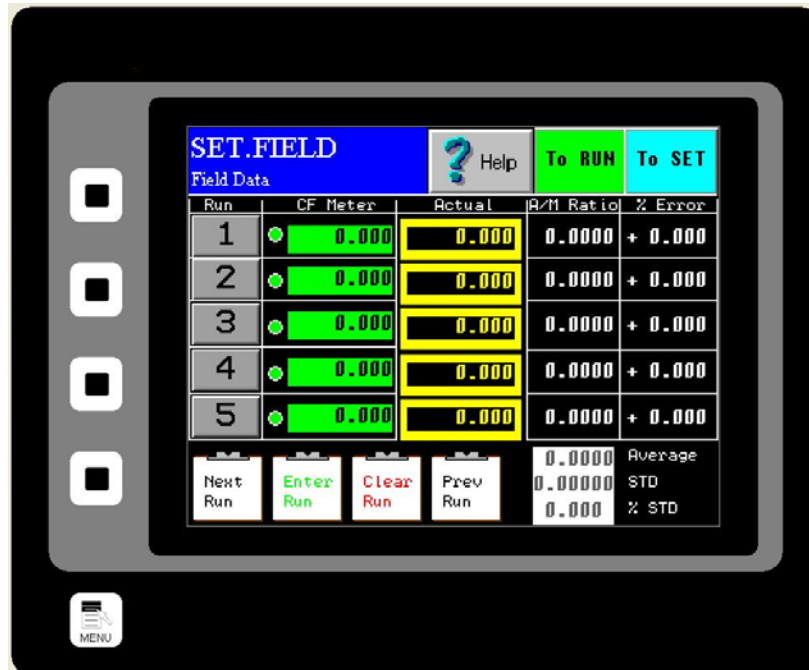
The Calibration Voltage, however, is the adjustment that is made to Calibrate or Site Calibrate the Electronics to a particular application. Although the Factory setting may be quite accurate, it is likely due to differences in installation, feed systems, and material being measured, that an adjustment be made after the CentriFlow® 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 CentriFlow® Meter, either Type I or Type II, the method of capturing the material to be weighed will be different. For a Type I 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 CentriFlow® 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 CentriFlow® Meter ensuring an accurate adjustment to the Calibration. The procedure is explained as follows:

- Step 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.

- Step 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.

Step 3: After product has stopped flowing through the meter, go to the SET.FIELD page located under the SET option on the MAIN MENU. **HINT: Press the MENU softkey, then press SET, and finally, FIELD DATA.**



Step 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.

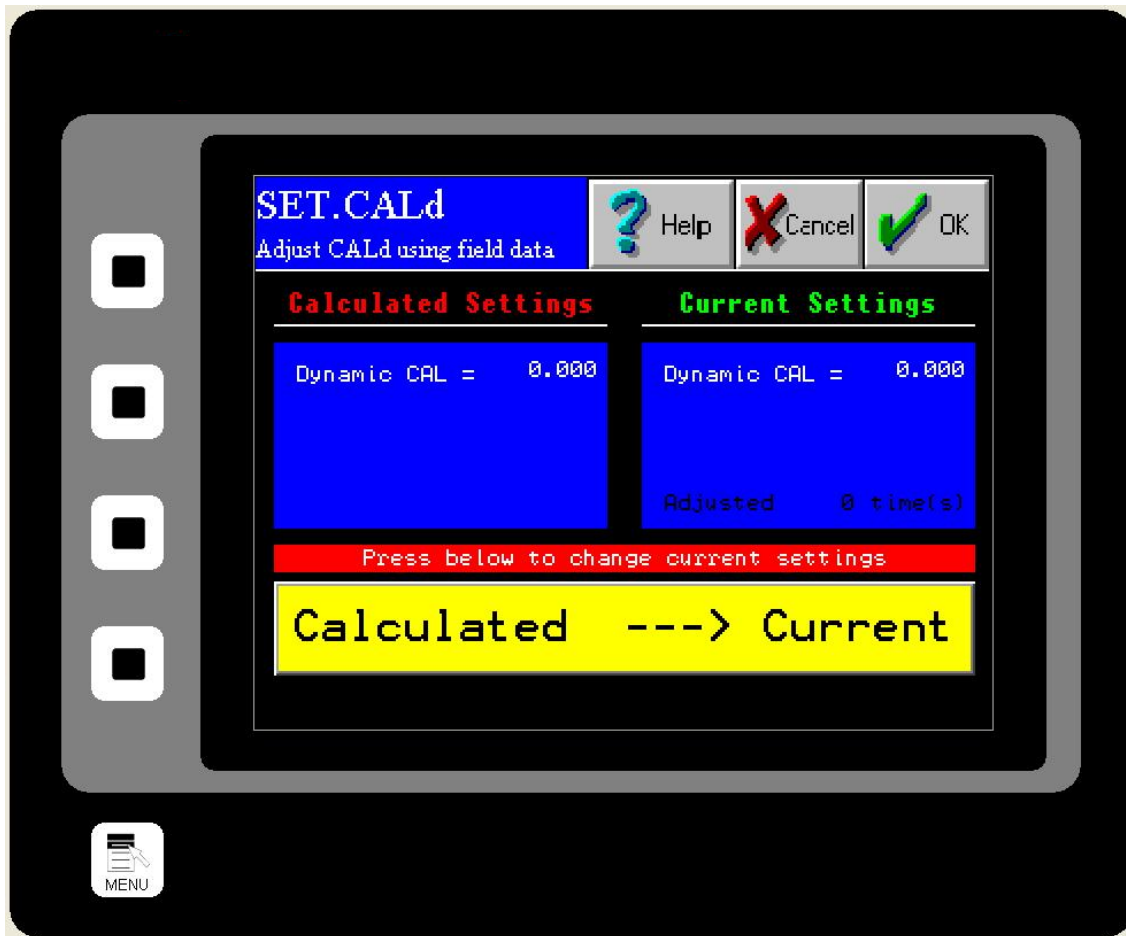
Step 5: Weigh the collected material on a static scale and record the weight in the YELLOW block (Actual) next to the value automatically entered in STEP 4. Press the YELLOW box to bring up a numeric keypad. After entering the value, press the NEXT RUN Button to prepare for the next run. It is important 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.

Step 6: Return to the TOP.RUN page and press the RED RESET Button on the bottom left.

Step 7: Repeat Steps 2-6 four more times to complete the 5 Field Data runs.

Step 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.

- Step 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.
- Step 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.



- Step 11:** To accept the new Dynamic Calibration press the YELLOW CACULATED 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

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.

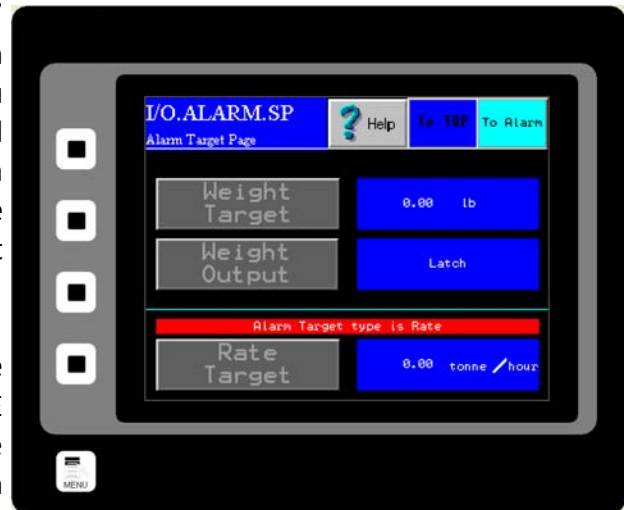
Step 1: From the TOP.I/O page press the ALARM Button. Details of this page can be found in the HMI Screen Guide in this manual.

Step 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.

Step 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.

Step 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.

Step 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.



Step 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.



Step 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.

Step 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

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.

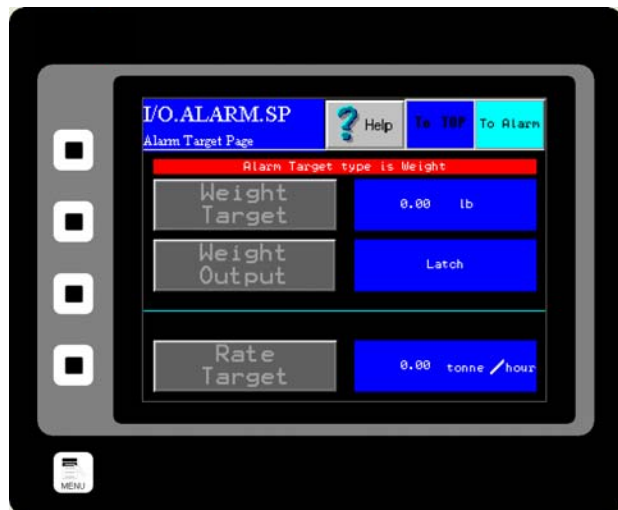
Step 1: From the TOP.I/O page press the ALARM Button. Details of this page can be found in the HMI Screen Guide in this manual.

Step 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.

Step 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.

Step 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.

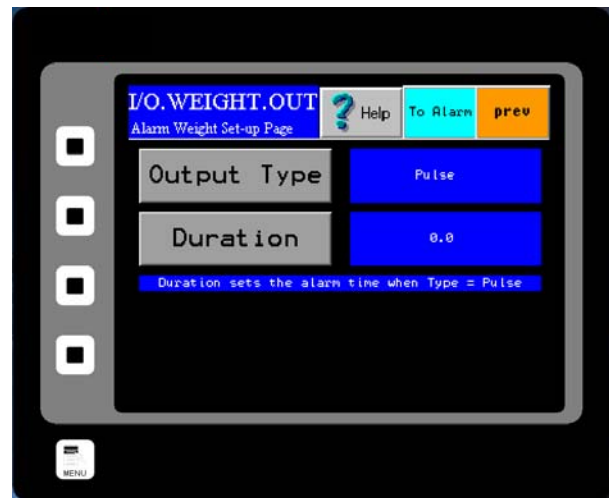
Step 5: You should now be on the I/O.ALARM.SP page. Press the WEIGHT TARGET Button. Details of this page can be found in the HMI Screen Guide in this manual.



Step 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.



Step 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.



Step 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.

Step 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.

Step 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.

Setup of Remote Reset & Zero Capability

What is Remote Reset?

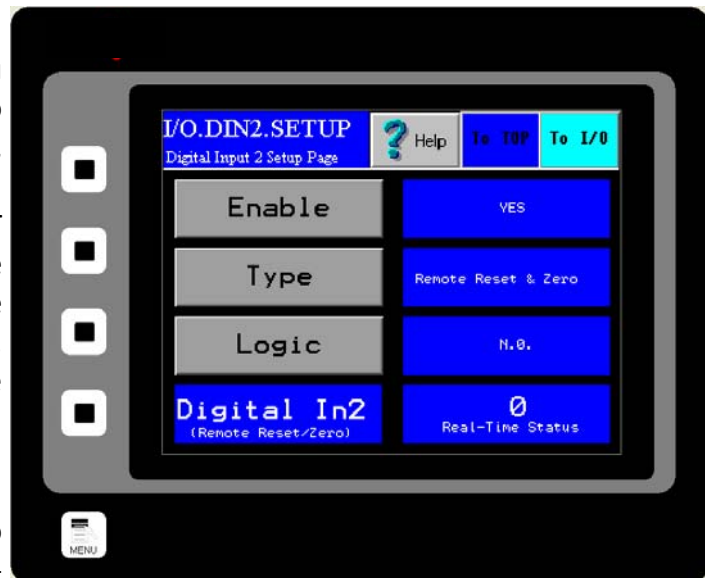
Remote Reset allows you to remotely trigger a reset of the Totalization on your Digital Electronics. This feature is similar to pressing the RESET Button from the TOP.RUN page. The Remote Reset can be utilized by installing a remote push button on/off switch (customer supplied). To properly wire the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

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!

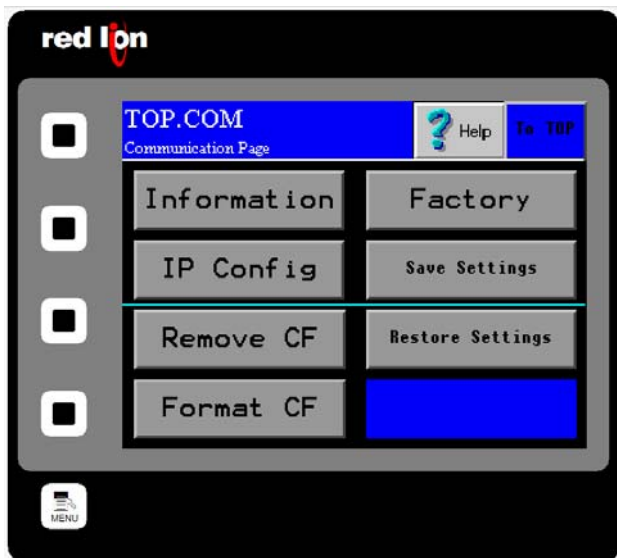
Removing the Flash Card

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.

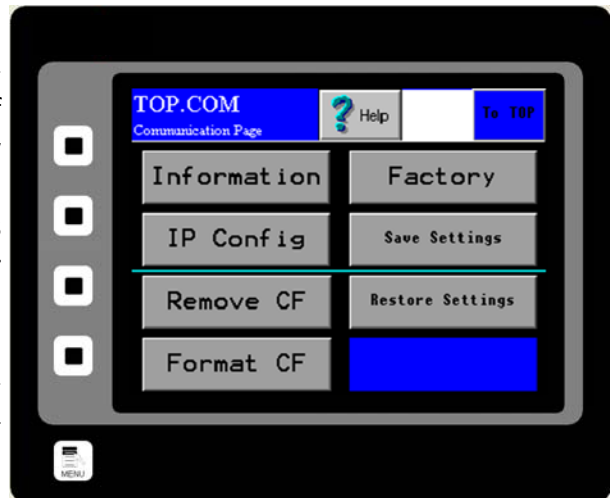
Next, press the Remove CF button and finally, press the SAFELY REMOVE COMPACT FLASH button. When the 'Safe' prompt is indicated, you may safely remove the Compact Flash card.

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.



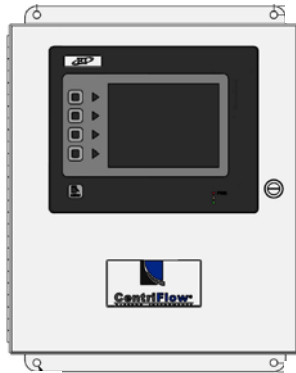
Restore Settings

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.

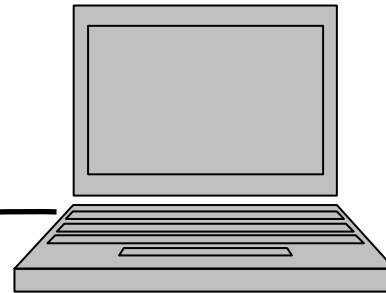
Please note that as data is saved on your Compact Flash Card and the Card reaches its data storage capacity, the HMI will begin overwriting the oldest data as the newest data is saved to the Compact Flash Card.

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.



Digital Electronics connected via Ethernet Cable to a Laptop
Note: Crossover cable may be required for communication directly between HMI and a computer



Establishing Communication

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

IP Address: 192.168.2.90
Mask: 255.255.255.0

NOTE: IF YOUR CENTRIFEEDER™ WAS SUPPLIED AS PART OF A LARGER SYSTEM OR MULTIPLE UNIT SYSTEM, THE IP ADDRESS MAY BE DIFFERENT THAN SHOWN ABOVE.

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

Please read the following if you are using Internet Explorer as your Internet Browser. Make sure that in your Advanced Internet Options Menu, under Tools, under the Phishing Filter option, that the "Automatic Website Checking" is off.

Once TCP/IP settings are complete and the Ethernet Cable linkage is made, your Internet Browser can be used to access the Digital Electronics by entering the IP address into the Address Bar. When entering the IP address please enter in the format illustrated below:

http://###.###.#.###

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.

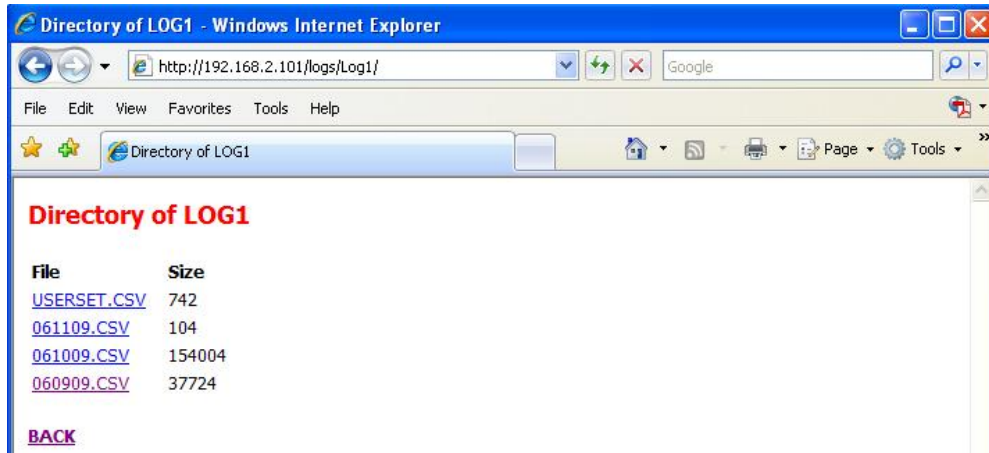


Remote View

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.

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 (HR:MIN:SEC)	RAW (Count)	ENGR (Count)	Volts (%)	PV (%)	RATE (Mass/Time)	ALARM (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	23.9	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.)

PLEASE NOTE THAT THIS LOG HAS BEEN DISABLED IN SOFTWARE VERSION 8.5.0. IF YOU WOULD LIKE IT TO BE ENABLED, PLEASE CONTACT EASTERN INSTRUMENTS.

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:	Type I	Reverse			
Model:	CFM-12				
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	

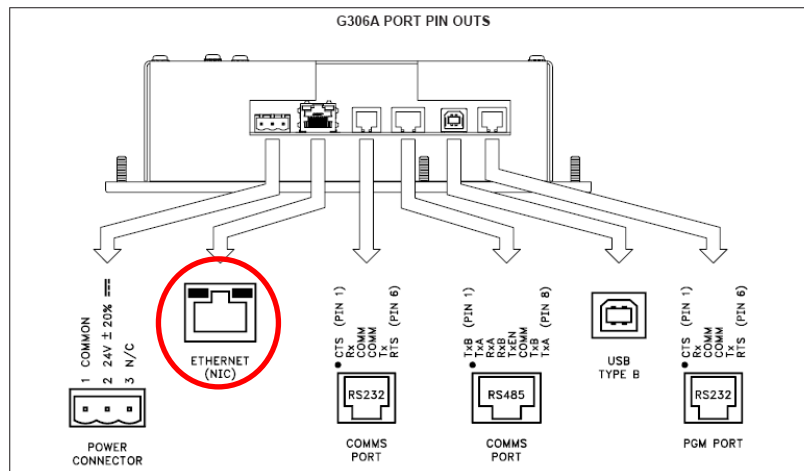
View Data

This option is not used.

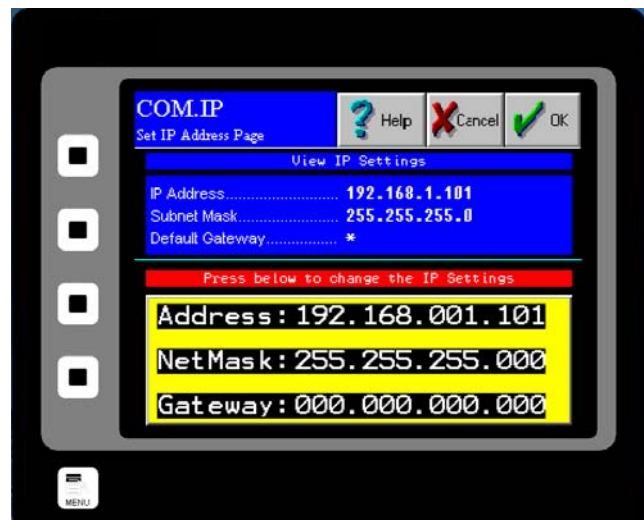
Changing the Ethernet/IP Address (Optional)

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.

Step 1: Install your Ethernet Cable into the RJ45 connection (Ethernet NIC) 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.



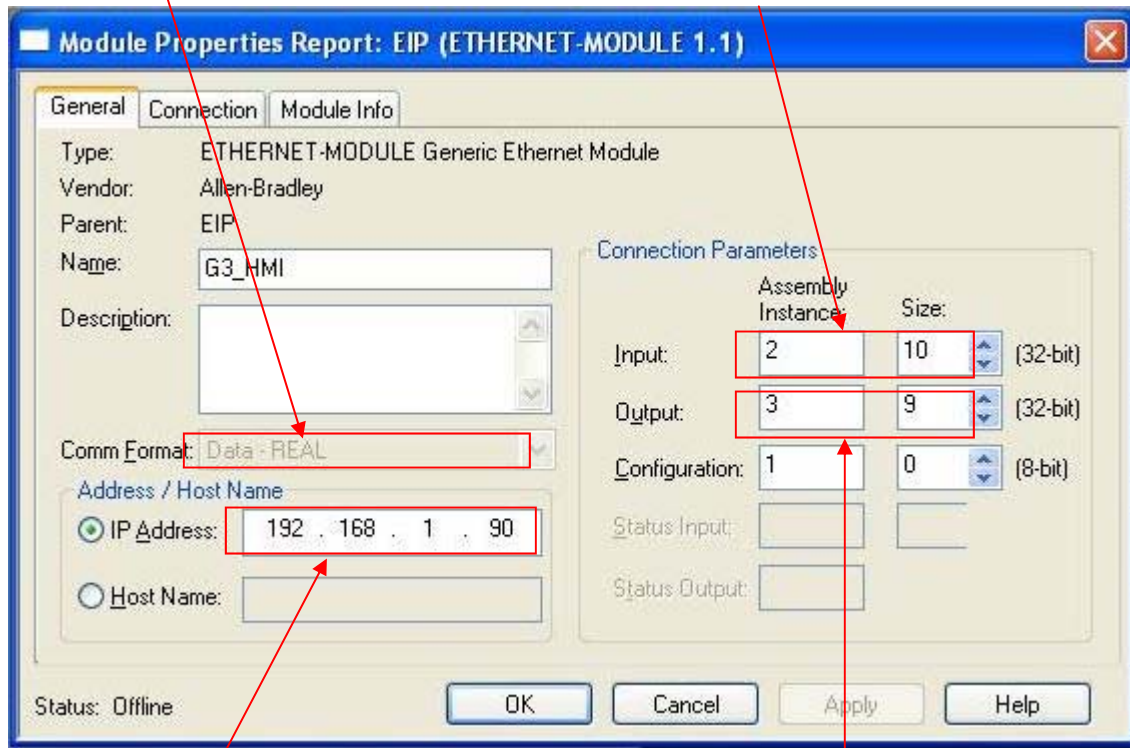
Step 2: You must first Manually Configure the IP Address for your Digital Electronics. In order to accomplish this, you must first access the COM.IP page by pressing the COM Button on your TOP Menu and then, pressing the IP CONFIG Button. You should now see this screen (right).



Example of Establishing Communication To PLC: ControlLogix Unit

Set Comm Format to "Data-Real"

Input Assembly Instance must be set to 2.
Input Size must be set to 10.



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 7.

The diagram above is a screen capture from RSLogix 5000 software. See Red Lion Technical Note TNO17 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 10, and Output Size to 9, 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 see Technical Note TNO17 on our website.

Tag Mapping

Name	Value	Force M	Style	Data Type	Description
+ G3_HMI:C	{...}	{...}		AB:ETHERNET_MODULE:C:0	
- G3_HMI:I	{...}	{...}		AB:ETHERNET_MODULE_REAL_40B...	
- G3_HMI:I.Data	{...}	{...}		Float REAL[10]	
G3_HMI:I.Data[0]	0.0		Float REAL	REAL Rate	rate
G3_HMI:I.Data[1]	0.0		Float REAL	REAL Totalization	total
G3_HMI:I.Data[2]	0.0		Float REAL	REAL Zero Readback	0 readback
G3_HMI:I.Data[3]	0.0		Float REAL	REAL Product	Product
G3_HMI:I.Data[4]	0.0		Float REAL	REAL Remote Alarm	Alarm Target
G3_HMI:I.Data[5]	0.0		Float REAL	REAL Current Temp.	Temp
G3_HMI:I.Data[6]	0.0		Float REAL	REAL Valve Position	Valve Position
G3_HMI:I.Data[7]	0.0		Float REAL	REAL Setpoint %	Setpoint%
G3_HMI:I.Data[8]	0.0		Float REAL	REAL Setpoint ENG	Setpoint ENG
G3_HMI:I.Data[9]	0.0		Float REAL	REAL Status	Status
+ Status	67		Decimal INT		
- G3_HMI:O	{...}	{...}		AB:ETHERNET_MODULE_REAL_36B...	
- G3_HMI:O.Data	{...}	{...}		Float REAL[9]	
G3_HMI:O.Data[0]	0.0		Float REAL	REAL Remote Reset	Reset
G3_HMI:O.Data[1]	0.0		Float REAL	REAL Remote Zero	0
G3_HMI:O.Data[2]	0.0		Float REAL	REAL Remote mCal	Product Select
G3_HMI:O.Data[3]	0.0		Float REAL	REAL Remote dCal	dCAL Select
G3_HMI:O.Data[4]	0.0		Float REAL	REAL Remote Alarm	Alarm Target
G3_HMI:O.Data[5]	0.0		Float REAL	REAL Start/Stop Valve	Start/Stop
G3_HMI:O.Data[6]	0.0		Float REAL	REAL PID#1 Setpoint	PID#1 Setpoint
G3_HMI:O.Data[7]	0.0		Float REAL	REAL Manual/Auto Select	Man/Auto
G3_HMI:O.Data[8]	0.0		Float REAL	REAL Clean ICV	Clean ICV

Data Received by PLC from HMI (Optional)

There are 10 input tags, I.Data[0] - I.Data[9]. As shown in the diagram above, Rate is mapped to I.Data[0], Total is mapped to I.Data[1], Zero Readback is mapped to I.Data[2], Product is mapped to I.Data[3], Remote Alarm is mapped to I.Data[4], the meter's current temperature is mapped to I.Data[5], the Integrated Control Valve's Position in Percent is mapped to I.Data[6], the Set Point for the read back register (in Percent) is mapped to I.Data[7], the Set Point for the read back register for Set Point (In Engineering Units) is mapped to I.Data[8] and the Status (i.e. PLC enable, Manual/Auto Mode, Start/Stop, Percent/Engineering Units, Valve Stuck) is mapped to I.Data[9].

Commands Transmitted by the PLC to HMI (Optional)

There are 9 output tags, O.Data[0] - O.Data[6]. As shown in the diagram above Remote Reset (Resets the total) is mapped to O.Data[0], Remote Zero (Resets the Zero) is mapped to O.Data [1], Remote Multiple Calibration is mapped to O.Data[2], Remote Dynamic Calibration is mapped to O.Data[3], Remote Alarm Target (lets you remotely set the alarm's target) is mapped to O.Data[4], Start/Stop, or process on/off is mapped to O.Data[5], Set Point is mapped to O.Data[6], Selection of Manual/Auto Mode is mapped to O.Data[7] and a clean ICV feature is mapped to O.Data[6]. Please note the units as expressed in "Status" bit I.Data [5].



CONTROLLER TAGS			
Data Sent to the PLC			
Address	Description	HMI Internal Tag	Comments
C02:00	Flow Rate	DS_rate (real)	Displayed on run page as "Rate"
C02:01	Totalization	counter_eng (real)	Displayed on run page as "Total"
C02:02	Remote Zero Readback	PLC_zero_rdbk (real)	1-norm; 2-abnorm; 3-prohib/not done; 4-prohib/abnorm; 5-prohib/PV > inhibit
C02:03	Remote mCAL Readback	PLC_MCAL_rdbk (real)	Readback for "Remote Product"
C02:04	Remote Alarm Target Readback	PLC_CompareTarget_rdbk (real)	Readback for "Remote Target"
C02:05	Current Temperature	PLC_temperature_read (real)	Temperature in °C
C02:06	Valve Position	PID2_position (real)	Displayed on run page as "ICV Pos"
C02:07	SP % Readback	PID_SetPoint_Value (real)	Displayed on run page as "Process SP"
C02:08	SP Eng Readback	PID_SetPoint_Engr (real)	Displayed on run page as "SP"
C02:09	BIT 0 Local/Remote Control	PB_PLC_enable (flag)	0=Local Control; 1=Remote Control
C02:09	BIT 1 Manual/Auto SP (PID#1)	PID_Type_Value (int)	0=Manual SP; 1=Auto SP
C02:09	BIT 4 Valve Open/Valve Closed	RB_DOUT1 (int)	0=Valve Closed/Off; 1=Valve Open/On
C02:09	BIT 6 %/ENG SP	PB_PLC_engr (flag)	0=%; 1=ENG
C02:09	BIT 7 Valve Free/Valve Stuck		0=Free; 1=Stuck
Data Received from the PLC			
Address	Description	HMI Internal Tag	Comments
C03:00	Remote Reset	A:PB_cntr_reset	Resets Totalization 0=normal; 1=reset
C03:01	Remote Zero	EIP_zero_PV (real)	Zeros the PV
C03:02	Remote mCAL	EIP_MCAL_sel (real)	Selects Product Preset (1-8)
C03:03	Remote dCAL	EIP_MCAL_remote (real)	Selects dCAL (4-10)
C03:04	Remote Alarm Target	EIP_CompareTarget (real)	Alarm Weight Target (0.01-999999.99)
C03:05	Start/Stop Valve	PLC_start (real)	Starts/Stops the process (edge triggered)
C03:06	PID#1 SP	PID_SetPoint_Value (real)	Remotely Sets SP (dependant on format)
C03:07	Manual/Auto Control		Switch Modes 0=Manual, 1=Auto
C03:08	Clean ICV		Switch from 0 to 1 in order to clean ICV

PLC Programming Note:

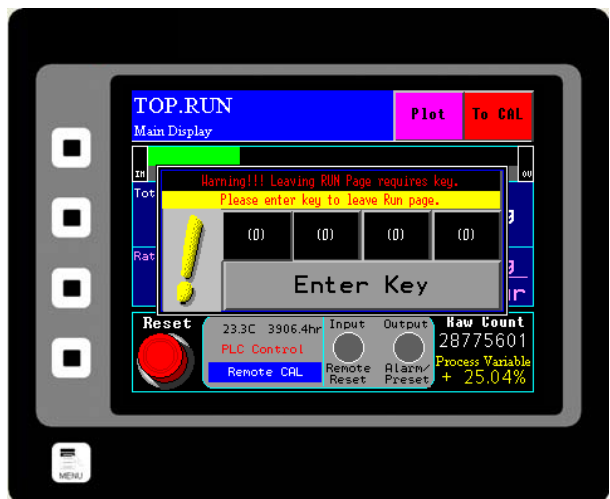
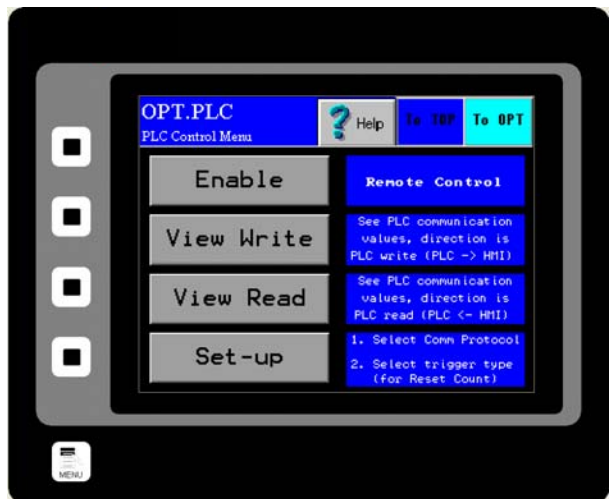
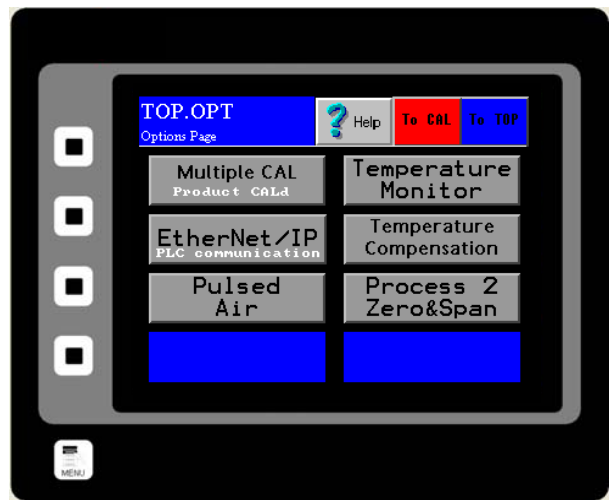
The valid values for Reset are 0 for normal operation and 1 in order to reset the total. Reset can be programmed for level or edge triggered from the HMI OPT.PLC page. The valid values for Remote Zero are 0 for none and 1 to perform the zero calibration.

The valid values for Remote Product (Multiple Calibration) are 1 thru 8 which select products 1 thru 8 respectively. 0 can also be utilized which will use the Remote d(cal) value.

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



Security Features

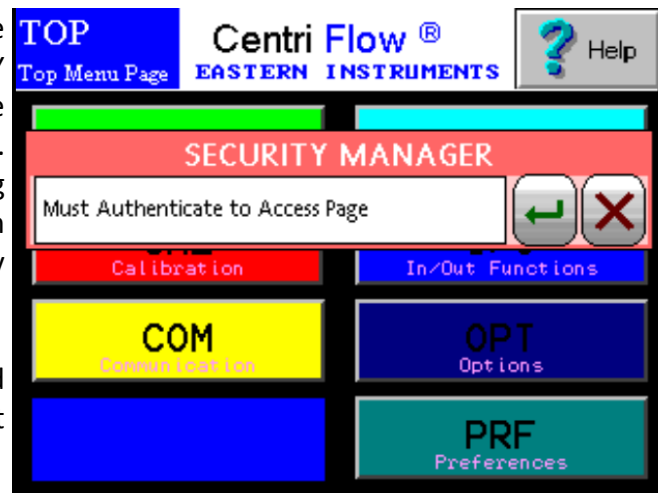
Your CentriFlow® HMI is equipped with a security system that allows sensitive information and settings for your process to be protected via a password-based security layer. The password-based security system is designed to protect your information and settings from unauthorized access and tampering.

Please note that three pages require no security authorization to view. These pages are the TOP Menu, the TOP.RUN (or Main Display) page and the RUN.TREND (Plotting) page. All other pages require the entry of both a username and password to access.

Logging On

When accessing any page other than the three mentioned above, an orange “SECURITY MANAGER” dialog box will appear. Press the RETURN 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**



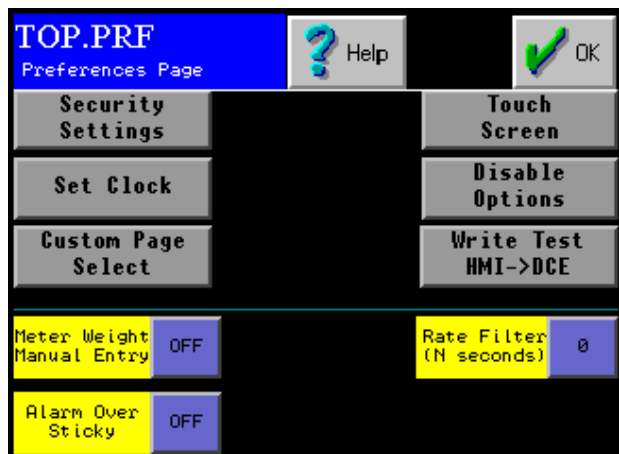


After correctly entering your username and password, you will be logged on to the system. Please note that the HMI security system is configured to time out after 10 minutes of inactivity, at which time you will be required to login again. You will also be required to login any time the HMI unit is powered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

Changing Your Password

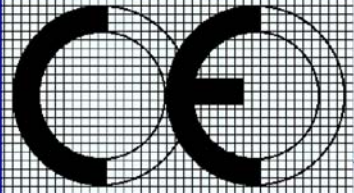
The password-based security system of your HMI was designed to have a similar look and feel to computer-based security systems commonly encountered on a PC. It is recommended to change your password for security purposes, upon entering your system, however it is important to remember your password and 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 CentriFlow® 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. Again, you may click the “Symbol” button to use numeric characters. You will then be prompted to repeat the new password. The password should now be successfully changed.





EASTERN INSTRUMENTS



Barclay-Phelps

CE MARKING SPECIALISTS

Hoi Yuen Road, Kwun Tong, Kowloon, Hong Kong

CERTIFICATE & DECLARATION OF CONFORMITY FOR CE MARKING

Company contact details:

Eastern Instruments
416 Landmark Drive, Wilmington, NC 28412, USA

Eastern Instruments declares under their sole responsibility that their:

Digital CentriFlow Electronics
listed as the following model numbers
CV-UV-25-H1-CV-ET-MC-WC-IT-AZ-FL-EH-AF-5K-PA
CV-UV-25-H1-CV-DN-MC-WC-IT-AZ-FL-EH-AF-5K-PA
CV-UV-25-H1-CV-PB-MC-WC-IT-AZ-FL-EH-AF-5K-PA
CV-UV-25-H1-CV-CAN-MC-WC-IT-AZ-FL-EH-AF-5K-PA
SV-UV-25-H1-CV-ET-MC-WC-IT-AZ-FL-EH-AF-5K-PA
SV-UV-25-H1-CV-DN-MC-WC-IT-AZ-FL-EH-AF-5K-PA
SV-UV-25-H1-CV-PB-MC-WC-IT-AZ-FL-EH-AF-5K-PA
SV-UV-25-H1-CV-CAN-MC-WC-IT-AZ-FL-EH-AF-5K-PA

comply with the Essential Requirements of the following EU Directives:

Low Voltage Directive 2006/95/EC
Electromagnetic Compatibility Directive 2004/108/EC
RoHS 2 Directive 2011/65/EU

and further conform with the following EU Harmonized Standards:

EN 61010-1:2010
EN 61326-1:2013

Dated: 13 November 2015

Position of signatory: Technical Director

Name of Signatory: Robert Otto Brandt, Jr.

Signed below:

on behalf of Eastern Instruments



Panel Shop Certification Record

Listing# E212589
Original Certification: June 30, 2015
Revised Certification: N/A

This Certification is issued to:
Eastern Instruments
416 Landmark Drive
Wilmington, NC 28412

For the product(s):
Open/Enclosed Industrial Control Panels

Have been certified to the following standard(s):
UL 508A: Standard for Safety, Industrial Control Panels, Revision Date: January 13, 2014
CSA C22.2 #14: Industrial Control Equipment, Revision Date: March 2013

Rick Cooper,
Director of Laboratory Operations
Safety Laboratory



All changes proposed in the previously identified product that affects the above information must be submitted to MET for evaluation prior to implementation to assure continued MET Certification status.

The covered product(s) shall be subject to follow-up inspections to ensure that the Certified product(s) are identical to the product sample evaluated by MET Laboratories, Inc. and that all manufacturer's responsibilities are being fulfilled as specified in the Manufacturer's Responsibility section of the Certification report. The applicant named above has been authorized by MET Laboratories, Inc. to represent the product(s) listed in this record as "MET Certified" and to mark this/these product(s) according to the terms and conditions of the MET Applicant Contract, MET Listing Reports, and the applicable marking agreements. Only the product(s) bearing the MET Mark and under a follow-up service are considered to be included in the MET Certification program. This certification has been granted under a System 3 program as defined in ISO Guide 67.



MET Laboratories, Inc. is accredited by OSHA and the Standards Council of Canada.
The Nation's First Nationally Recognized Testing Laboratory

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