

FeedNet

Manual



Thiele
Technologies
A Barry-Wehmler Company

Streamfeeder
MINNEAPOLIS • MN • USA

Part Number 00900434

© 2009 Thiele Technologies, Inc. - Streamfeeder. All rights reserved.

No part of this publication may be reproduced, photocopied, stored on a retrieval system, or transmitted without the express written consent of Thiele Technologies, Inc. - Streamfeeder.

Thiele Technologies, Inc. - Streamfeeder
103 Osborne Road
Minneapolis, MN 55432-3120 USA

TEL: 763.502.0000
FAX: 763.502.0100
E-MAIL: service@streamfeeder.com
WEB: www.streamfeeder.com

Printed in the USA.

CONTENTS

Safety Information	ii
Specifications	iv
Section 1: About the Collator	1
Section 2: Preparing For Operation	20
Section 3: Operation	29
Section 4: Technical Diagrams	32
Section 5: Replacement Parts	46

BEFORE You BEGIN

Message Conventions



DANGER signifies an action or specific equipment area that can result in serious injury or death if proper precautions are not taken.



WARNING signifies an action or specific equipment area that can result in personal injury if proper precautions are not taken.



CAUTION signifies an action or specific equipment area that can result in equipment damage if proper precautions are not taken.



ELECTRICAL DANGER signifies an action or specific equipment area that can result in personal injury or death from an electrical hazard if proper precautions are not taken.



TIP signifies information that is provided to help minimize problems in the installation or operation of the feeder.



NOTE provides useful additional information that the installer or operator should be aware of to perform a certain task.



CHECK signifies an action that should be reviewed by the operator before proceeding.



IMPORTANT alerts the installer or operator to actions that can potentially lead to problems or equipment damage if instructions are not followed properly.



WARNING LABELS affixed to this product signify an action or specific equipment area that can result in serious injury or death if proper precautions are not taken.

BEFORE YOU BEGIN

Message Conventions



Avoid injury. Do not reach around guards.



Hazardous voltage. Contact will cause electric shock or burn. Turn off and lock out power before servicing.



Moving parts can crush and cut. Keep guards in place. Lock out power before servicing.



Pinch point. Keep hands and fingers clear.



Moving parts can crush and cut. Keep guards in place. Lock out power before servicing.

SPECIFICATIONS

Maximum Product Size..... 5 W x 5.5 L in (127 x 139.7 mm)

Minimum Material Size..... 2 in. W x 2.5 in. L (50.8 mm x 63.5 mm)

Optional..... 1 W x 2.5 L in (25.4 x 63.5 mm)

Min/Max Product Thickness.... .003 in to 1 in. (.07 mm - 25.4 mm)

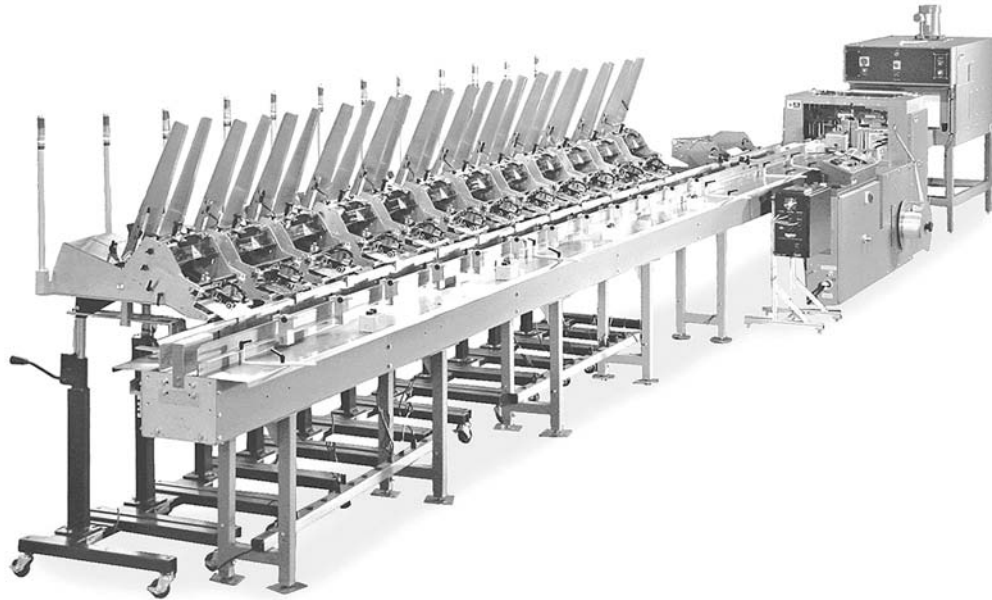
Belt Speed..... 5500 in/min (14,000 cm/min or 140 meters)

Electrical Requirements..... 115/230VAC, 50/60Hz, 6A

Overall Dimensions..... 23.32 in. L (5.9 cm)
13.15 in. W (3.3 cm)
28.82 in. H (adjustable) (7.3 cm)

Weight..... 69 lbs. (32kg)

1 About the Collator



System Overview

The Streamfeeder Universal Collator System is a networked group of Pro Series feeders mounted along a conveyor line and controlled by a PLC. The feeders typically compile product packages by inserting individual products into flight pockets on the line according to set directions stored in the feeders and HMI touch-screen. Other specialized equipment to feed and/or handle products on the line may also be incorporated into the collator system, such as Placers, Droppers, or a Diverter. Completed product packages are typically wrapped or bagged for shipment at the end of the conveyor line.

Each Pro Series feeder is equipped with ***IQuipped™*** electronics. These controls are housed internally in the feeder (ST-1250) or externally in an enclosure (ST-550, ST-850, ST-1450 and SI-1750) and provide the advanced communications that are required as part of the Universal Collator System featuring FeedNet.

Network Integrity

All Pro Series feeders connected to the network must be powered ON and in “**ready**” mode and also “**enabled**” at the HMI touch-screen prior to beginning a job for proper network integrity. If a feeder is in the network but has no product for the current production run, it must be “**disabled**” at the HMI touch-screen. There is no need to power OFF or “**suspend**” the feeder. Disabling the feeder will prevent it from trying to run the carriage and stage product when none is present.

Network Integrity (continued)

All feeders within the network can easily be removed and used elsewhere should a new opportunity arise for product feeding elsewhere within your production department. To remove the feeder, first make sure it is “disabled” at the HMI touch-screen. Second, power the feeder OFF. Next, remove the I/O interface cable and power cord from the AC source. It is now free to be removed and used elsewhere.

Main Collator Components

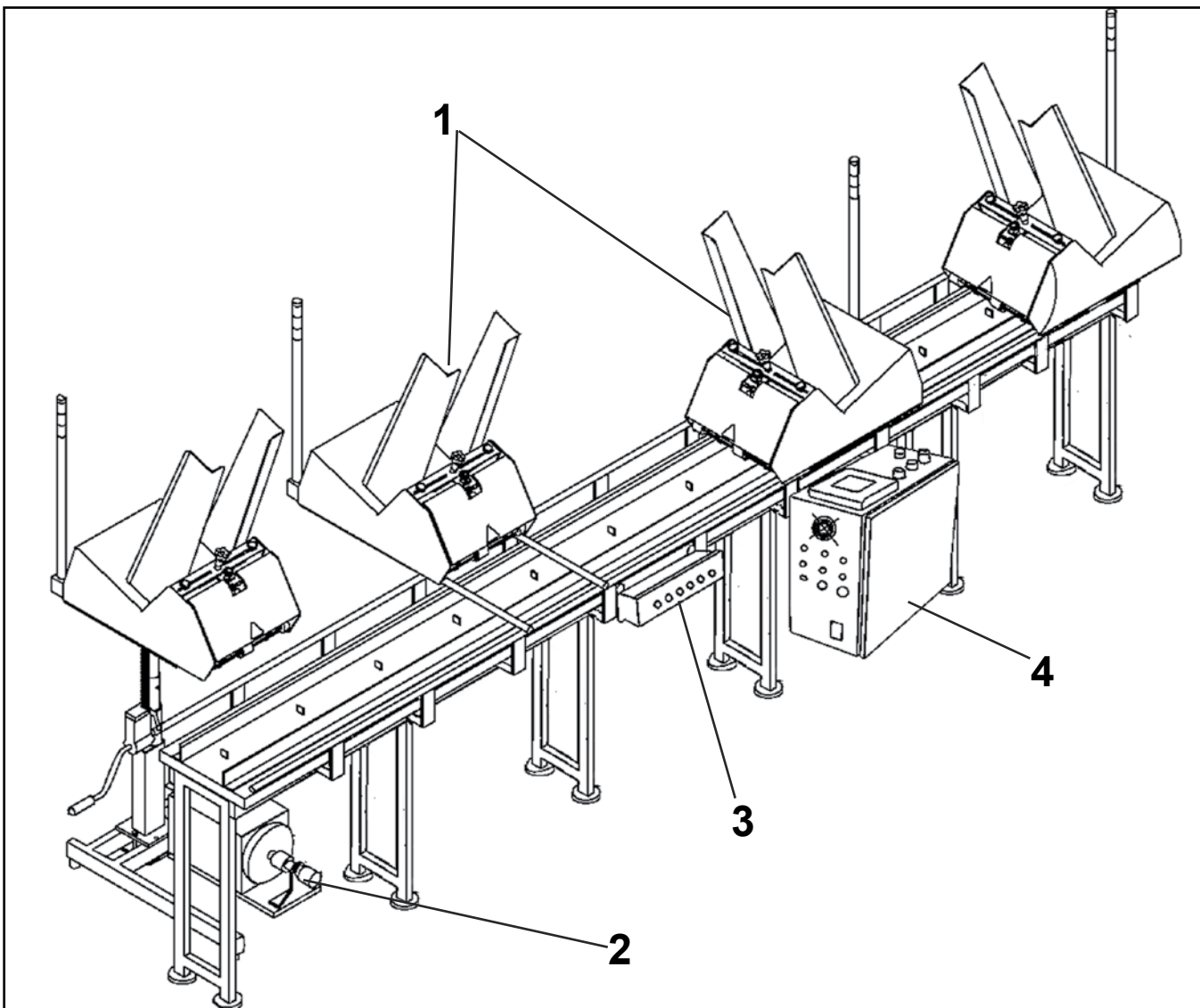


Figure 1. Main Components of the Streamfeeder Universal Collator System

Table 1. Main Component Assemblies

Component	Description
1. Feeder (Inline or perpendicular mounted)	The feeders feed the product according to their own configuration settings and according to the data received from the PLC. They can be mounted on the collator line in various orientations.
2. Encoder	The encoder is direct connected to a turning shaft on the conveyor . The encoder generates pulse signals with each revolution of the shaft. The signal is sent via cable to the encoder input port on the FeedNet enclosure.
(not shown) I/O Cable	The I/O cables provide the signaling between the FeedNet Controller and the feeders. An I/O cable connects to the feeder (ST 1250) or to the <i>IQipped™</i> control box (ST-550, ST-850, ST-1450 or SI-1750) to the Feeder Interface Module.
3. Feeder Interface Module	This module provides feeder interfaces up to six feeders. This module then interfaces to the FeedNet enclosure. These modules are remotely located along the conveyor.
(not shown) Remote Pause / Resume Station	Optional 2-button operator control box. Provides the flexibility to mount additional pause / resume buttons within the collator for starting and stopping the collator system.
4. FeedNet Enclosure	Houses the control intelligence of the collator system. Provides the operator interface for operation of the collator system.

FeedNet Controller Components

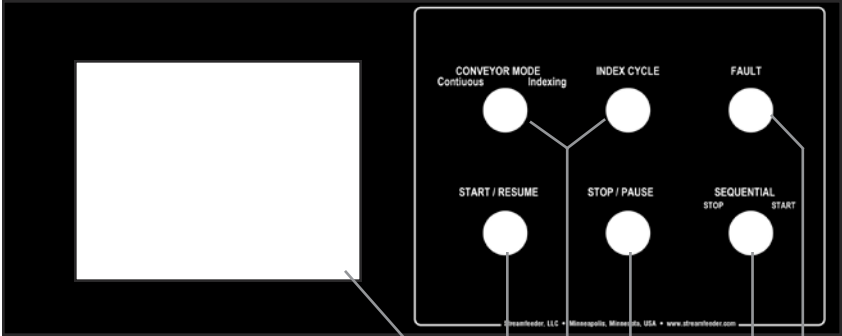


Figure 2-A FeedNet Enclosure: Top

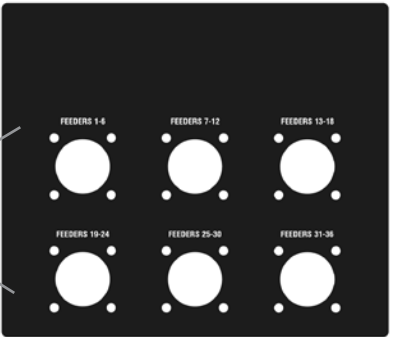


Figure 2-B FeedNet Enclosure: Right Side

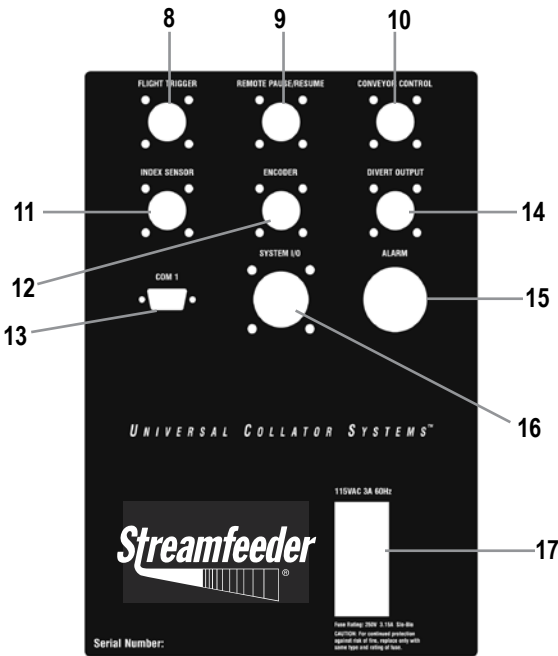


Figure 2-C FeedNet Enclosure: Left Side



Figure 2-D Feeder Interface Module

Table 2. FeedNet Controller Components

Component	Description
1. HMI Touch-screen	Main operator interface. Contains menus for system setup, configurations, and diagnostics.
2. Start/Resume Push Button	Prepares the system for running or in a stand-alone configuration, starts the conveyor in motion.
3. Conveyor Mode Selector Switch and Index Cycle Button	Components for systems requiring an indexing motion profile of the conveyor.
4. Stop/Pause Raised Push Button	Pauses the conveyor.
5. Sequence ON/OFF	This selector switch begins and terminates the collating sequence for the feeders enabled in the network.
6. Fault Lamp	Indicates there is a fault at a feeder station. An error message will also be displayed on the HMI.
7. Feeders X-XX	Interface connector for the Feeder Interface Module.
8. Flight Trigger	Interface connector for the Flight Trigger Sensor.
9. Remote Pause/Resume	Interface connector for optional Remote Pause/Resume control stations.
10. Conveyor Control	Interface connector for starting and stopping the conveyor.
11. Index Sensor	For use with the optional Conveyor Index Control.
12. Encoder	Interface connector for the encoder.
13. COM 1	Interface connector for future expansion and programming.
14. Divert Output	Interface connector for the Divert Signal Output.
15. Alarm	Provides an audible alert tone upon start up and system fault.
16. System I/O	Interface connector for System interface to host equipment.
17. AC Power Module	Provides AC power to the FeedNet controller. Integrated fuse holder and power ON/OFF switch.
18. Feeder Interface Module	Provides the feeder interface connectors. Interfaces to "FEEDERS X-XX" connectors on the FeedNet controller.

HMI Touch-screen Menu



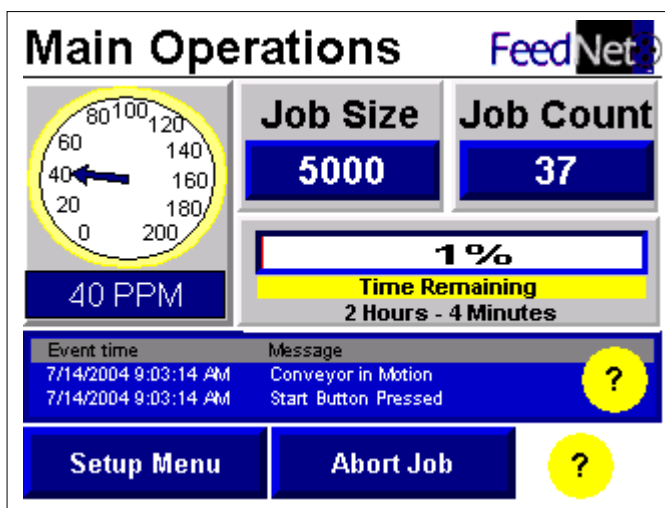
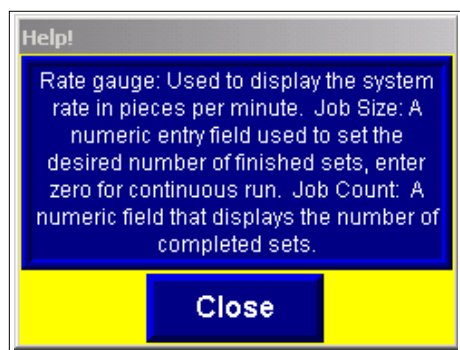
All "#" symbols are placeholders for numbers.



This screen is present upon power up of the FeedNet controller. The screen contains the controller program version number and also the screen program version number. The program version numbers can also be found in the System Diagnostics screen. Touch anywhere on the screen to advance to Main Operations screen.



Help screens are available to explain on-screen options. Click the ? symbol to open the Help screen. For screens with **Enable Help**, click to reveal the ? symbols.



The Main Operations screen provides “real-time” data during system operation.

Rate gauge: Provides up to the second piece per minute rate up to 200 pieces per minute.

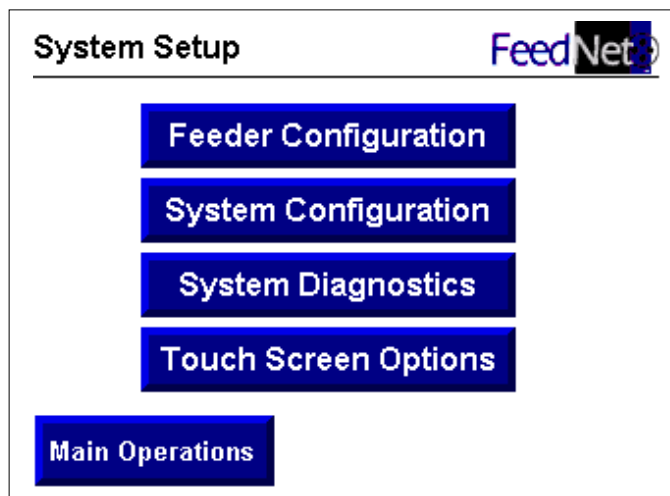
Job Size: For continuous run of the system, set the value to zero (0). For predetermined job sizes, enter the value, complete all other setup configurations, and start system. When the job reaches the last piece (a decrement count), a Sequential Auto Stop routine will be performed to indicate that the system has produced the value entered. All errant pockets are detected to ensure they don’t count toward the total count and the number of completed sets match the value that was entered. A Time Remaining indicator is displayed as the job is being processed.

HMI Touch-screen Menu (continued)

Job Count: This feature allows you to track completed production levels and can be reset for each new job by touching the Job Count # box. The conveyor must be stopped and sequenced off for the reset to take place. A confirming screen will appear, select yes or no to continue or Return to exit.

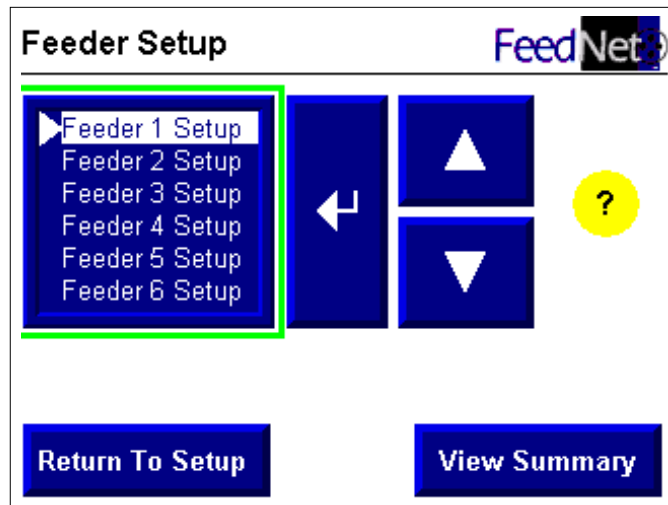
Event List / Message: Displays most recent system events such as start, stop, sequence on, etc. Press to access a complete log of events.

Abort Job: This feature will allow you to abort a running job should you discover an error in the configuration you have selected or to simply empty the conveyor line of product without performing the Sequential Stop routine. Be aware that when initializing this routine, you will have incomplete product sets advancing to the finishing equipment. It may be a good idea to have an additional operator present to manually remove these incomplete sets prior to them proceeding into the finishing equipment. Pressing this button will take you to the Clear Job Confirmation screen (the Clear Job Confirmation screen is explained later in this guide).



The System Setup screen advances the user through all of the setup parameters of the system and screen settings.

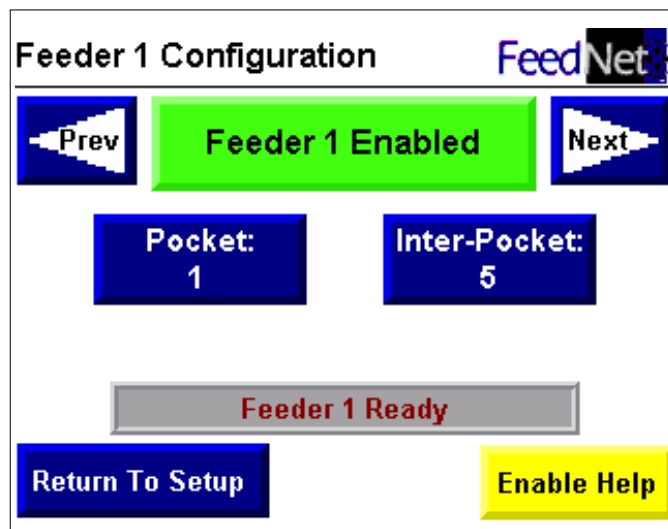
HMI Touch-screen Menu (continued)



Feeder Setup is the first screen under the Feeder Configuration menu. By pressing the up/down arrows, highlight the feeder to set up and press the “enter” (↵) button.

NOTE

Help screens are available to explain on-screen options. Click the ? symbol to open the Help screen. For screens with **Enable Help**, click to reveal the ? symbols.



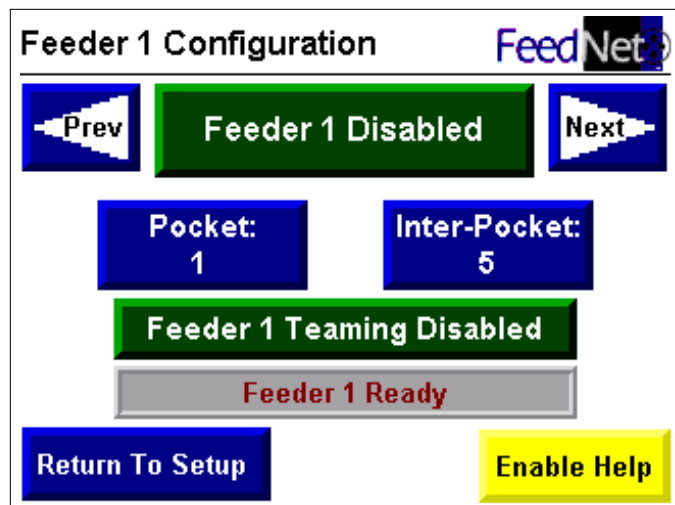
Each feeder has its own setup screen. You can scroll through each feeder screen using the “Prev” and “Next” buttons.

Pressing the top green bar (**Feeder 1 Enabled**) will toggle between enabling (on) and disabling (off) the feeder.

Pocket # indicates the location of each feeder. The first feeder should always be listed as pocket 1. Each feeder after the first will have the listing appropriate to the number of pockets from the first feeder.

The **Inter-Pocket #** feature allows you to “fine-tune” the dispense time of the piece from the feeder into the pocket. 5 represents the center of the pocket. Decreasing the number triggers the feeder to “feed” at the beginning of the pocket, increasing the number triggers the feeder to “feed” at the rear of the pocket.

HMI Touch-screen Menu (continued)



Feeder Teaming is an option and may not be present on your system. This optional feature allows configuration of a team of feeders, allowing identical products to be loaded into multiple feeders and generate alternating feeder triggering to provide increased overall system throughput and extended individual feeder run time. After setup, this feature will generate altered signaling to the feeders on the team so that each feeder delivers product once during the team cycle. This team cycle is defined by how many feeders have been configured as team members. For example, if the team consists of two feeders, then the trigger signaling to each team feeder will be every other pocket. If the team consists of three feeders, each team feeder will be triggered every third pocket.

Feeder status is displayed to alert the user whether the feeder is “ready” or not. Getting the feeder “ready” is done at the feeder by pressing the green button on the operator interface pad.

Upon completion of all feeder setup, press **Return to Setup** to continue with system setup.



*Help screens are available to explain on-screen options. Click the ? symbol to open the Help screen. For screens with **Enable Help**, click to reveal the ? symbols.*

By pressing the **Enable Help** button, help screens can be selected to read more on each feature.

HMI Touch-screen Menu (continued)

Feeder Setup Summary					FeedNet?
Feeder	Set	Pocket	Inter-Pocket	Status	
1	Enabled	1	5	Ready	
2	Enabled	3	5	Ready	
3	Disabled	3	5	Not Ready	
4	Disabled	4	5	Not Ready	
5	Disabled	5	5	Not Ready	
6	Disabled	6	5	Not Ready	

Return To Setup

Feeder Summary 7-12



Help screens are available to explain on-screen options. Click the ? symbol to open the Help screen. For screens with **Enable Help**, click to reveal the ? symbols.

Found in the Feeder Configuration Menu, the Feeder Setup Summary will provide the information of which feeders are enabled and which ones are disabled to ensure all the correct feeders have been chosen for the collating application. Enabled feeder numbers will be in green and the disabled feeders will be darkened in grey.

Feeder Setup Summary					FeedNet?
Feeder	Set	Pocket	Inter-Pocket	Status	Teaming
1	Disabled	1	5	Ready	No
2	Enabled	3	5	Ready	No
3	Disabled	3	5	Not Ready	No
4	Disabled	4	5	Not Ready	No
5	Disabled	5	5	Not Ready	No
6	Disabled	6	5	Not Ready	No

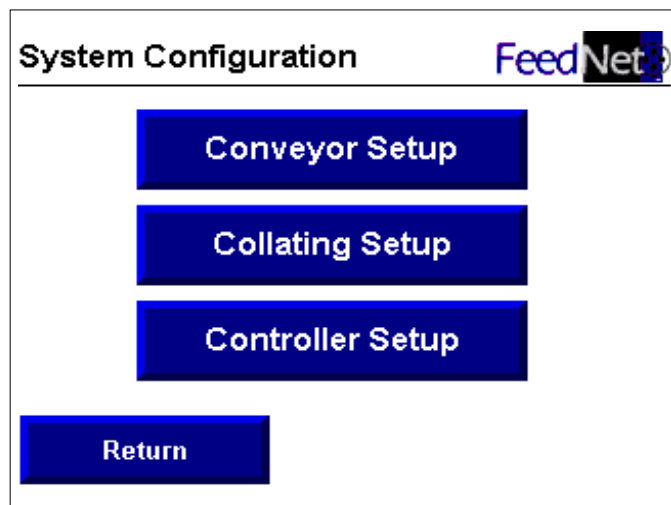
Return To Setup

Feeder Summary 7-12

This feature allows configuration of a team of feeders, allowing identical products to be loaded into different feeders and generate alternating feeder triggering to provide increased overall system throughput and extended individual feeder runtime.

After setup, this feature will generate altered signaling to the feeders on the team so that each feeder delivers product once during the team cycle. This team cycle is defined by how many feeders have been configured as team members. For example if the team consists of two feeders then the trigger signaling to each team feeder will be every other pocket. If the team consists of three feeders the trigger signaling to each team feeder will be every third pocket.

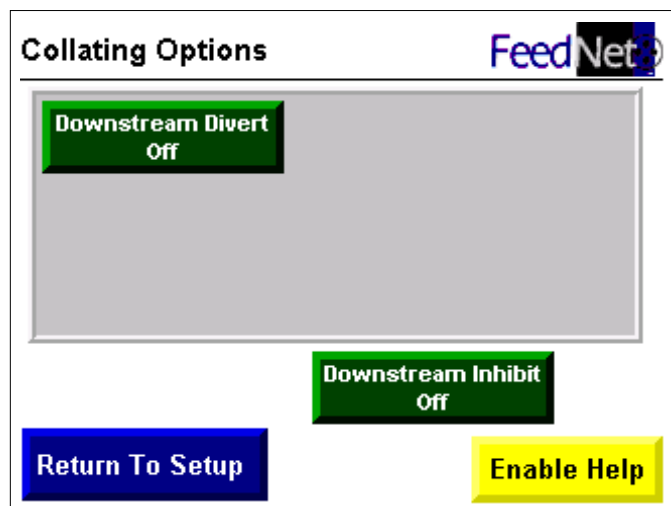
HMI Touch-screen Menu (continued)



The System Configurations screen is accessed from the System Setup screen. It advances the user through the remaining setup procedures.



*Help screens are available to explain on-screen options. Click the ? symbol to open the Help screen. For screens with **Enable Help**, click to reveal the ? symbols.*



In Collating Options, if a divert mechanism for errant packages is present, a signal can be sent from FeedNet to the diverter. Press **Downstream Divert** button to toggle on/off.

To prevent usage of product in errant pockets due to a misfeed, the downstream Inhibit feature will suppress feed signals to all feeders downstream from the errant feeder.

By pressing the **Enable Help** button, help screens can be selected to read more on each feature.

HMI Touch-screen Menu (continued)



Help screens are available to explain on-screen options. Click the ? symbol to open the Help screen. For screens with **Enable Help**, click to reveal the ? symbols.

The 'Collating Options' screen features a title bar with 'Collating Options' and a 'FeedNet' logo with a question mark. The main area contains a green 'Downstream Divert On' button, a 'Pocket:' label with a blue input box containing '0', a 'Divert Signal Open Offset:' label with a blue input box containing '0', and a 'Divert Signal Closed Offset:' label with a blue input box containing '0'. Below these is a green 'Downstream Inhibit Off' button. At the bottom are two buttons: 'Return To Setup' (blue) and 'Enable Help' (yellow).

Once Downstream Divert is turned on, the location of the mechanism will need to be identified by **pocket** location. Press # box to enter the appropriate pocket number.

Open and Closed offsets are based on encoder counts and represent time duration of when the divert activates and deactivates. Values of zero represent immediate activation of the divert when the leading lug is detected for the errant pocket and an immediate deactivation when the trailing lug is detected.

By pressing the **Enable Help** button, help screens can be selected to read more on each feature.

The 'Conveyor/Interface Options' screen features a title bar with 'Conveyor/Interface Options' and a 'FeedNet' logo with a question mark. The main area contains a 'Sequential Auto-Stop:' label with a blue input box containing '0', an 'Indexing Pocket Delay:' label with a blue input box containing '10', and a green 'In-Phase Stop Off' button. At the bottom are two buttons: 'Return To Setup' (blue) and 'Enable Help' (yellow).

The Conveyor/Interface Options screen is shown with the Indexing Conveyor Mode feature enabled. The value entered for **Sequential Auto-Stop** represents the remaining number of pockets after the last enabled feeder and before the finishing device. This value is important to ensure that all completed sets advance into the finishing device prior to the conveyor shutting down.

HMI Touch-screen Menu (continued)

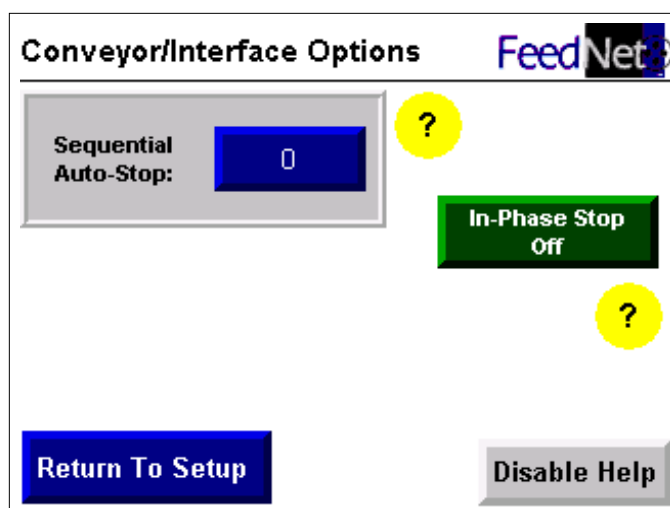
For systems utilizing the indexing conveyor mode feature, the **Indexing Pocket Delay** feature will allow the user to enter a delay time from the time the index signal is initiated. The value entered is multiplied by 100ms. The value 5 would represent 500 milliseconds ($\frac{1}{2}$ second). The value 10 would represent 1 second.

For independently operated conveyors, **In-Phase Stop** can be used to stop the conveyor at a controlled position when the stop button is pressed. With this feature Off, the conveyor will stop immediately when the stop button is pressed.



*Help screens are available to explain on-screen options. Click the ? symbol to open the Help screen. For screens with **Enable Help**, click to reveal the ? symbols.*

By pressing the **Enable Help** button, help screens can be selected to read more on each feature.

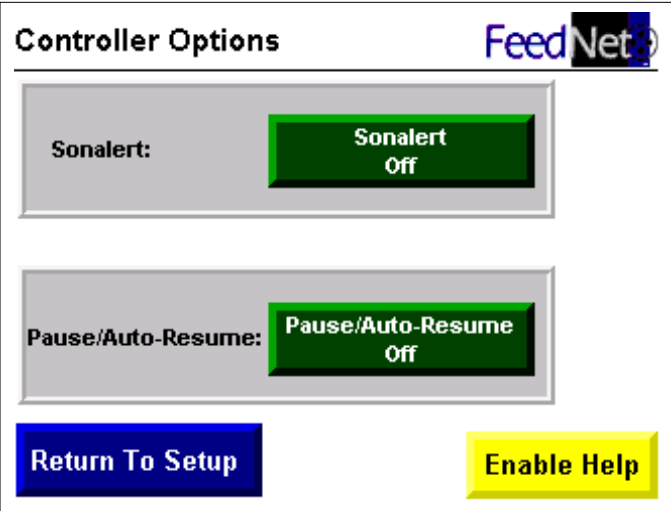


Conveyor/Interface Options (continuous conveyor mode) screen with Help enabled.

HMI Touch-screen Menu (continued)



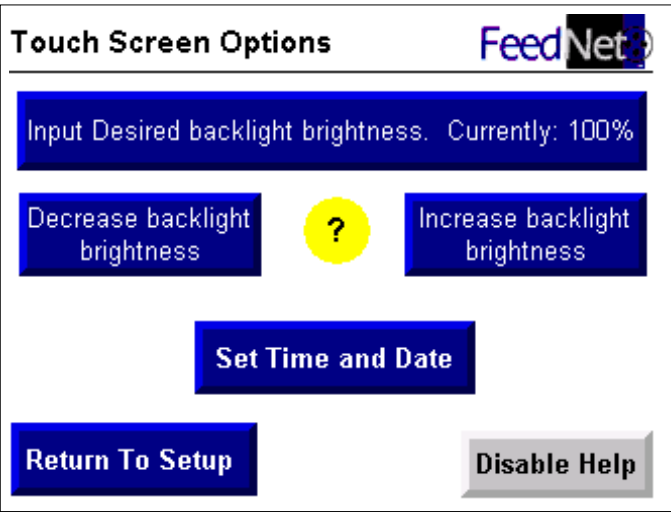
Help screens are available to explain on-screen options. Click the ? symbol to open the Help screen. For screens with **Enable Help**, click to reveal the ? symbols.



Accessed from the System Configuration screen, the audible alarm (**Sonalert**) can be toggled on or off depending upon facility/operation requirements.

The **Pause/Auto-Resume** feature is a signal communicated between FeedNet and the Host System (finishing device). In the event the host system is temporarily stopped, FeedNet will activate a stop routine to its components. When the host system is started again, FeedNet will initiate a start routine.

By pressing the **Enable Help** button, help screens can be selected to read more on each feature.



To adjust the touch screen backlight brightness, press the **Input Desired backlight brightness** button to directly enter a value for the contrast level (1-100) or use the **Increase/Decrease** buttons to alter the contrast level. Default is 100 (brightest). Press the **Set Time and Date** to proceed to the time/date setup screen. Shown with help enabled. This screen is accessed from System Setup screen.

HMI Touch-screen Menu (continued)

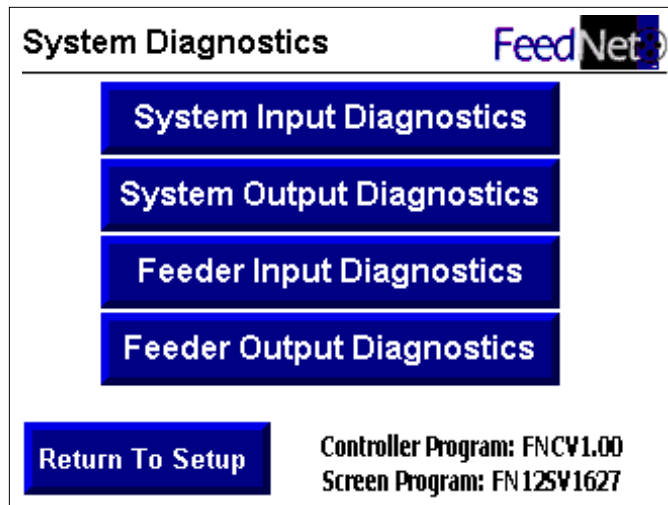


*Help screens are available to explain on-screen options. Click the ? symbol to open the Help screen. For screens with **Enable Help**, click to reveal the ? symbols.*

Keypad used to enter numeric information into numeric prompt fields.

Screen used to set system time and date. Time is in military 24-hour format (06:00:00 = 6:00 am/20:00:00 = 8:00 pm.) Once the information is entered pressing the **Apply** button sets the values into their respective time and date fields. **Cancel** and **OK** returns control back to the Touch Screen Options screen.

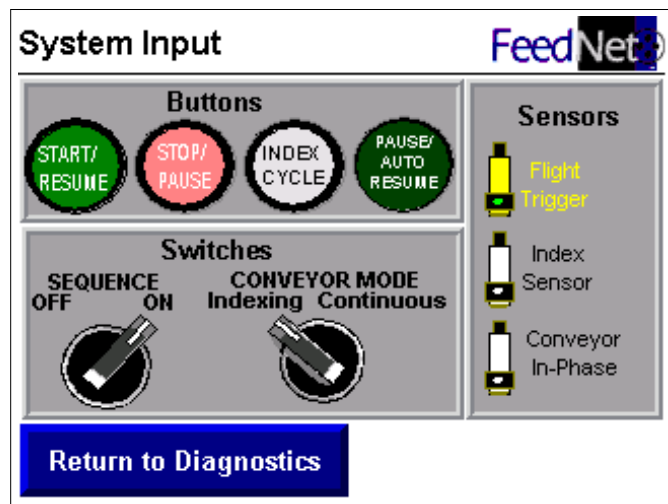
HMI Touch-screen Menu (continued)



The System Diagnostics menus are used to determine potential setup issues, component failure, or assisting in general system setup.

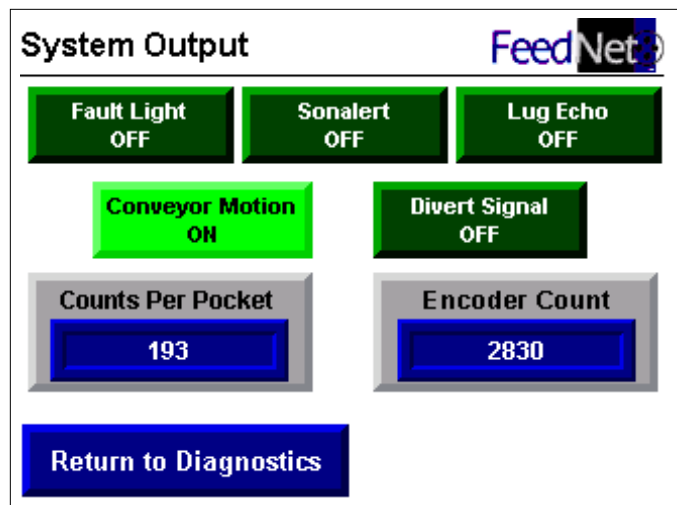


Help screens are available to explain on-screen options. Click the ? symbol to open the Help screen. For screens with **Enable Help**, click to reveal the ? symbols.

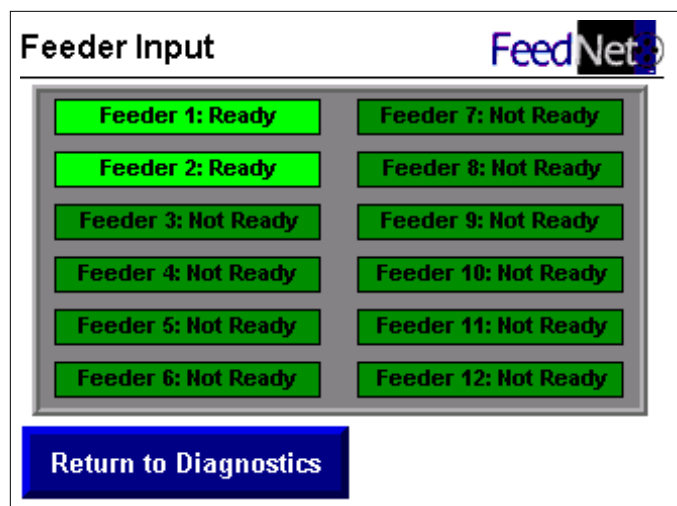


The System Input screen indicates operation of switches and sensors. Once in this screen, the system will not operate but will identify component operation. Pressing or selecting switch position will be indicated each time initiated. To check the sensor operation, the conveyor must be in motion. The conveyor can be put in motion in the System Output Diagnostics menu screen.

HMI Touch-screen Menu (continued)

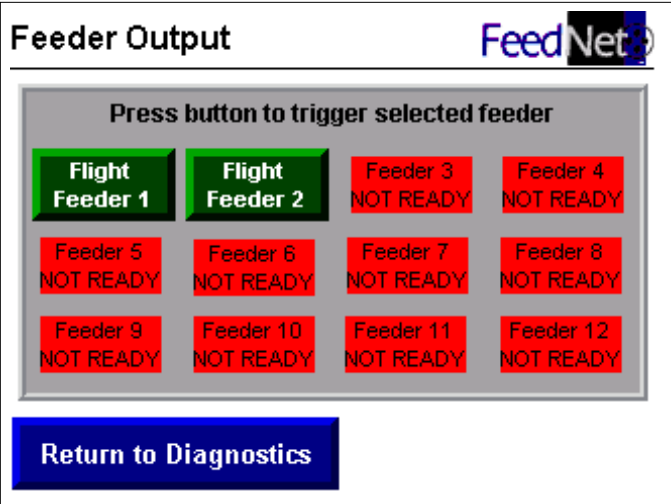


The System Output screen checks proper operation of the outputs. By pressing the appropriate box, the feature listed will be activated. With the conveyor in motion, Counts Per Pocket and Encoder Count will be displayed.



Feeder Input allows the verification of all feeders that are in “ready” mode and which ones are not. Remember, all feeders selected as part of the collation team must be in ready mode for proper system operation.

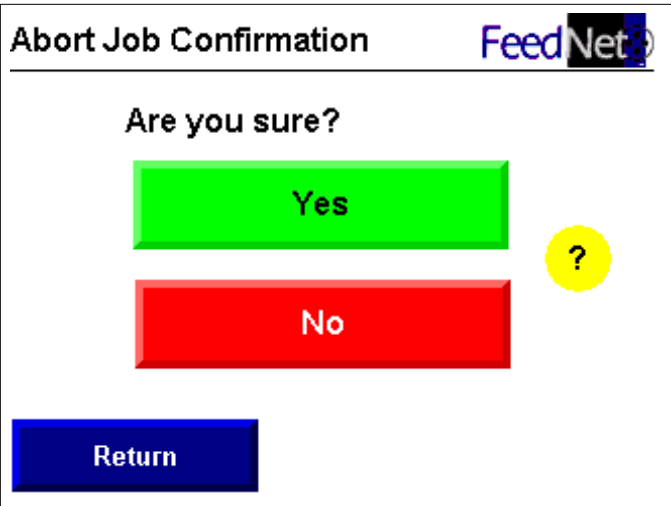
HMI Touch-screen Menu (continued)



Feeder Output allows you to manually trigger the feeder from the touch screen just as FeedNet would during normal operation.



Help screens are available to explain on-screen options. Click the ? symbol to open the Help screen. For screens with **Enable Help**, click to reveal the ? symbols.



Be aware that when initializing this routine, incomplete collated sets will advance to the finishing device. It may be a good idea to reduce speed and manually remove the sets prior to reaching the finishing device.

This feature is found under the Main Operations screen. This feature will allow you to abort a running job should you discover an error in the configuration you have selected or simply to empty the conveyor line of product without performing the Sequence Off routine

A confirming screen will appear. Press **Yes** or **No** to continue.

HMI Touch-screen Menu (continued)



This error screen indicates the feeder is faulted or not ready. It is displayed when the feeder to be triggered is not online because either faulted or not in ready mode.

To perform a manual Abort Job routine, position the Sequential Start / Stop switch to the Stop position, press the RED Stop/Resume button, and then press the GREEN Start/Resume button. This will clear the screen of this alert and clear the conveyor of product.

IQuipped™ Controls User Screen

For detailed information regarding the Pro Series feeder menus, refer to the Pro Series Menu Guide V1.11 that was supplied with each Pro Series feeder.

2. PREPARING FOR OPERATION

Review

IMPORTANT

Any necessary feeder Product Guides or Operator Guides and the Pro Series Menu Guide V1.12 are included with your collator. Follow the procedures in the manual section Preparing for Operation to make all adjustments for proper feeding. Always perform a final manual test to verify individual feeder operation as specified in the manual.

1. Each separate feeder must be set up and adjusted to feed its product smoothly as if it were a stand-alone feeder. This is done using directions from the appropriate Product Guide or Operator Guide for the feeder.
2. The network must be configured for the application you intend to process.
3. The feeders in the network are first cycle tested, then tested with the line running while final material placement adjustments are made.

Before incorporating all feeders into the collator system, each feeder must be set up to feed its material into a conveyor pocket. This procedure is similar to setting up a feeder for one-shot feeding as described in the appropriate Product Guide or Operator Guide for your feeders.

Set Up Individual Feeders

To set up and adjust feeding of individual feeders:

1. With the AC power cord connected to an AC source, turn the AC power switch of the feeder to **ON**.
2. The flight trigger signal is communicated through the collator I/O cables from the FeedNet controller to each feeder via the Feeder Interface Module. No flight trigger signal is present while setting up individual feeders offline. You can either connect the flight trigger sensor that was supplied with the Pro Series feeder or use the Cycle key to initiate the feed signal during setup.
3. Follow the steps in Preparing for Operation in the appropriate feeder Product/Operator Guide and manually test the feeder when completed.
4. If you connected the flight trigger sensor in step 2, remove the flight trigger sensor from the feeder.

Procedure

When all feeders are set up and operating correctly, you may perform the feeder and system configuration. These parameters are made at the HMI touch-screen.

Power up the FeedNet controller by placing the **ON/OFF** rocker switch to the **ON (I)** position. Upon power up, the FeedNet logo and program version screen will appear. Simply touch the screen to advance to the Main Operations screen.

Basic FeedNet Setup Flow Chart



Help screens are available to explain on-screen options. Click the **?** symbol to open the Help screen. For screens with **Enable Help**, click to reveal the **?** symbols.

Main Operations FeedNet

Job Size: 5000 Job Count: 37

Time Remaining: 1% (2 Hours - 4 Minutes)

40 PPM

Start time: 7/14/2004 9:03:14 AM Message: Conveyor in Motion Start Button Pressed

Setup Menu Abort Job

System Setup FeedNet

Feeder Configuration

System Configuration

System Diagnostics

Touch Screen Options

Main Operations

System Configuration FeedNet

Conveyor Setup

Collating Setup

Controller Setup

Return

Conveyor/Interface Options FeedNet

Sequential Auto-Stop: 0

In Phase Stop Off

Interfering Pocket Delay: 10

Return To Setup

Disable Help

Collating Options FeedNet

Downstream Divert Off

Downstream Inhibit Off

Return To Setup

Enable Help

Controller Options FeedNet

Sonalert: Sonalert Off

Pause/Auto-Resume: Pause/Auto-Resume Off

Return To Setup

Enable Help

Collating Options FeedNet

Downstream Divert On

Pocket: 0

Divert Signal Open Offset: 0

Divert Signal Closed Offset: 0

Downstream Inhibit Off

Return To Setup

Enable Help

Feeder Setup FeedNet

Feeder 1 Setup

Feeder 2 Setup

Feeder 3 Setup

Feeder 4 Setup

Feeder 5 Setup

Feeder 6 Setup

Return To Setup

View Summary

Feeder 1 Configuration FeedNet

Prev Feeder 1 Enabled Next

Pocket: 1 Inter-Pocket: 5

Feeder 1 Ready

Return To Setup

Enable Help

Feeder Setup Summary FeedNet

Feeder	Set	Pocket	Inter-Pocket	Status
1	Enabled	1	5	Ready
2	Enabled	3	5	Ready
3	Disabled	3	5	Not Ready
4	Disabled	4	5	Not Ready
5	Disabled	5	5	Not Ready
6	Disabled	6	5	Not Ready

Return To Setup

Feeder Summary / 12

Basic FeedNet Setup Flow Chart (continued)

Main Operations FeedNet

Job Size: 5000 Job Count: 37

40 PPM

Time Remaining: 2 Hours - 4 Minutes

7/14/2004 9:03:14 AM
7/14/2004 9:03:14 AM

Setup Menu Abort Job

System Setup FeedNet

Feeder Configuration
System Configuration
System Diagnostics
Touch Screen Options
Main Operations

Touch Screen Options FeedNet

Input Desired backlight brightness: Currently: 100%

Decrease backlight brightness Increase backlight brightness

Set Time and Date

Return To Setup Enable Help

Set the desired Time

Set Minute: 10 Set Hour: 3

Set the desired Date

Set Day: 14 Set Month: 7 Set Year: 2004

7/14/2004 3:34:36 PM

Cancel OK Apply

System Diagnostics FeedNet

System Input Diagnostics
System Output Diagnostics
Feeder Input Diagnostics
Feeder Output Diagnostics

Return To Setup

Controller Program: FNCV1.00
Screen Program: FNI2SV1627

System Input FeedNet

Buttons: START/RESUME, STOP/PAUSE, INDEX CYCLE, AUDIO AUTO-REQUIRE

Sensors: Right Trigger, Index Sensor, Conveyor In-Phase

Switches: SEQUENCE OFF, CONVEYOR MODE Indexing Continuous

Return to Diagnostics

System Output FeedNet

Fault Light OFF Sonalert OFF Lug Echo OFF

Conveyor Motion ON Direct Signal OFF

Counts Per Pocket: 193 Encoder Count: 2830

Return to Diagnostics

Feeder Input FeedNet

Feeder 1: Ready	Feeder 7: Not Ready
Feeder 2: Ready	Feeder 8: Not Ready
Feeder 3: Not Ready	Feeder 9: Not Ready
Feeder 4: Not Ready	Feeder 10: Not Ready
Feeder 5: Not Ready	Feeder 11: Not Ready
Feeder 6: Not Ready	Feeder 12: Not Ready

Return to Diagnostics

Feeder Output FeedNet

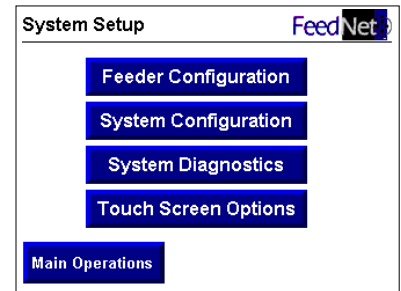
Press button to trigger selected feeder

Flight Feeder 1	Flight Feeder 2	Feeder 3	Feeder 4
Feeder 5	Feeder 6	Feeder 7	Feeder 8
Feeder 9	Feeder 10	Feeder 11	Feeder 12

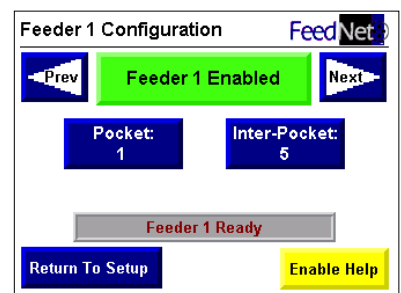
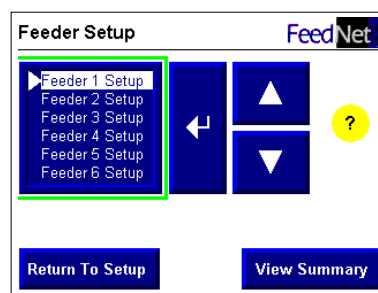
Return to Diagnostics

Set Up System Functions

From the Main Operations Screen you can advance through the Setup menus for configuration of the system.



1. Press Setup Menu button
2. Press Feeder Configuration button



3. Select the desired feeder. Use the **Up/Down** arrows to highlight, then (**↵**) to enter.
4. Press the “**Disabled/Enable**” button to select which feeders will be part of the network.
5. If this feeder is not going to be part of the network, leave it Disabled and proceed to step 7.
6. **Pocket #** indicates the location of each feeder. The first feeder should always be listed as pocket 1. Each feeder after the first will have the listing appropriate to the number of pockets from the first feeder.

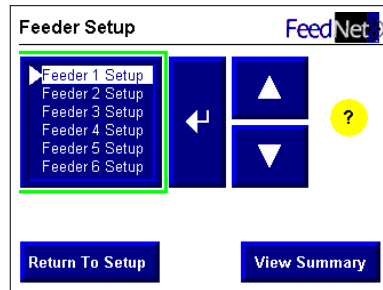
The **Inter-Pocket** feature allows you to “fine-tune” the dispense time of the piece from the feeder into the pocket. 5 represents the center of the pocket. Decreasing the number triggers the feeder to “feed” at the beginning of the pocket, increasing the number triggers the feeder to “feed” at the rear of the pocket.



Steps 3-6 must be performed for all feeders in the network.

After all feeders are configured, you can view the “**enabled/disabled**” configuration of all feeders from the Configuration Summary screen.

Set Up System Functions (continued)



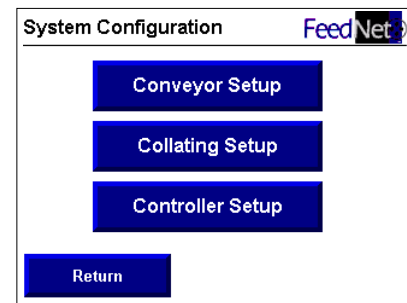
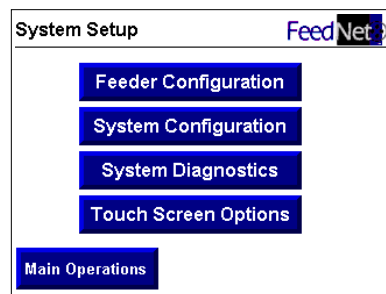
The Feeder Setup Summary screen shows a table with the following data:

Feeder	Set	Pocket	Inter-Pocket	Status
1	Enabled	1	5	Ready
2	Enabled	3	5	Ready
3	Disabled	3	5	Not Ready
4	Disabled	4	5	Not Ready
5	Disabled	5	5	Not Ready
6	Disabled	6	5	Not Ready

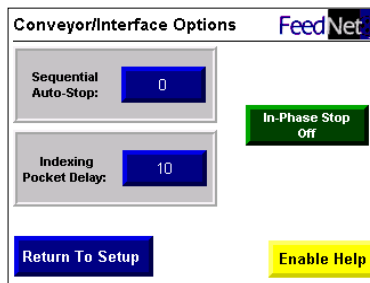
At the bottom, there are two buttons: 'Return To Setup' and 'Feeder Summary 7-12'.

From the Feeder Setup screen press View Summary to view the Feeder Setup Summary screen. NOTE: All enabled feeders must be in “ready” mode prior to job start up.

From the Feeder Setup Summary screen, return to the Feeder Setup screen by pressing the Return to Setup button. To return to the System Setup screen from the Feeder Setup screen, press the Return to Setup button.



7. To set up the System options press the System Configuration button.
8. Next, press the Conveyor Setup button.



9. Press the number box for Sequential Auto-Stop to enter the value. This value will represent the number of unoccupied pockets after the last enabled feeder to determine how many pockets the conveyor will need to cycle to completely empty the conveyor of finished products.
10. If you are using Index Control, pressing the Indexing Pocket Delay box will allow you to enter a delay value (this value is multiplied by 100ms) for the index cycle.

Set Up System Functions (continued)



Communication of this signal is accomplished through the System I/O interface.

The 'Conveyor/Interface Options' screen features a title bar with 'Conveyor/Interface Options' and the 'FeedNet' logo. It contains two input fields: 'Sequential Auto-Stop' with a value of 0 and 'Indexing Pocket Delay' with a value of 10. To the right, there is a green button labeled 'In-Phase Stop Off'. At the bottom, there are two buttons: 'Return To Setup' (blue) and 'Enable Help' (yellow).

11. If your host equipment is equipped with an In-Phase Stop feature, you will want to turn ON the In-Phase Stop feature. This feature, when ON, will prevent accidental feeds upon restart after a system stop routine has been performed. Press the Return to Setup button to return to that screen.

The 'System Configuration' screen has a title bar with 'System Configuration' and the 'FeedNet' logo. It displays three stacked blue buttons: 'Conveyor Setup', 'Collating Setup', and 'Controller Setup'. At the bottom left is a blue 'Return' button.

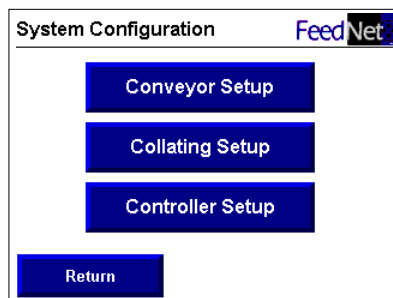
The 'Collating Options' screen features a title bar with 'Collating Options' and the 'FeedNet' logo. It shows a large grey rectangular area. Below this area is a green button labeled 'Downstream Inhibit Off'. At the bottom, there are two buttons: 'Return To Setup' (blue) and 'Enable Help' (yellow).

12. Next, choose Collating Setup by pressing that box.
13. Turn on or off Downstream Divert and/or Downstream Inhibit by pressing the box. If Downstream Divert is selected ON, enter the pocket number of where the Diverter Device is.

This is a detailed view of the 'Collating Options' screen. The 'Downstream Divert' button is now green and labeled 'On'. To its right is a 'Pocket:' label followed by a blue input box containing the value 0. Below these are two more blue input boxes: 'Divert Signal Open Offset' (value 0) and 'Divert Signal Closed Offset' (value 0). The 'Downstream Inhibit Off' button remains green. At the bottom are 'Return To Setup' (blue) and 'Enable Help' (yellow) buttons.

14. To enter a value, press the Pocket box, enter the value, and press the arrow button to return.
15. Adjust the open/close offset of the divert device by increasing or decreasing the Divert Signal Open Offset/Divert Signal Closed Offset. Press the Return to Setup button to return to the System Configuration screen.

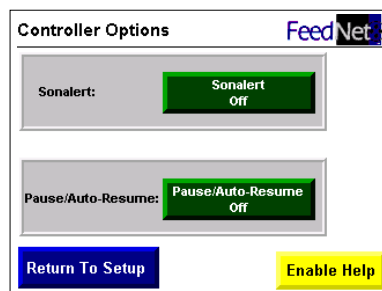
Set Up System Functions (continued)



16. Next, press the Controller Setup button.



Controller options are typically set on first sytem run and are not part of standard system setup.

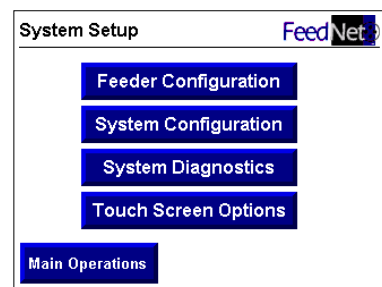


17. Accessed from the System Configuration screen, the audible alarm (**Sonalert**) can be toggled on or off depending upon facility/operation requirements.

The **Pause/Auto-Resume** feature is a signal communicated between FeedNet and the Host System (finishing device). In the event the host system is temporarily stopped, FeedNet will activate a stop routine to its components. When the host system is started again, FeedNet will initiate a start routine.

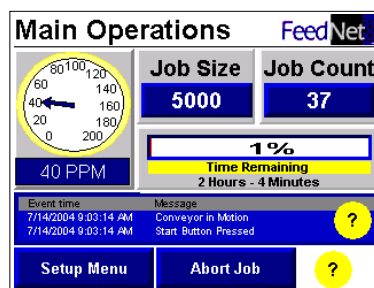
By pressing the **Enable Help** button, help screens can be selected to read more on each feature.

18. Press the Return to Setup button to return to the System Setup screen.



17. Press the Main Operations button to return to the Main Operation Screen.

Set up System Functions (continued)



When job size is set to zero, there will be no reporting data for the Time Remaining feature.

18. The last item to set up is the Job Size. If you have a preset number of items to process, enter that value by pressing the number box, enter value, and press the return arrow. For more detail of this function, refer to the JOB SIZE description in the HMI TOUCH-SCREEN MENU section.

If the application you are preparing to run does not have a preset number of pieces to process, entering a value of zero in the job size box will let the conveyor continuously run until you perform a Sequential Stop routine.

To start the line sequentially, turn the Sequential switch to the Start position and press the green start button. The conveyor will start and the collating process will initiate.

Once running, the collator system can be stopped/paused for any reason at the FeedNet controller or at optional Pause/Resume stations. Pressing the pause button will immediately stop the conveyor. Pressing the resume button will immediately start the conveyor back up. The pause and start buttons do not initiate the Sequential routines after the system is running.

The collator system as a whole is ready. You can now start up the finishing device. Make sure you have taken all the necessary steps involved with properly setting up the finishing device. Refer to the documentation for that piece of equipment for correct start up procedures.

When starting and stopping using this routine, all feeders do not initiate and cease feeding at the same time. When the line starts and stops in the Sequential Start and Sequential Stop routines, each feeder will not feed each pocket every time, as doing so would create some partially-filled pockets at the beginning and end of the production run. Feeders will instead initiate feeding sequentially down the line so that complete material sets go into each pocket. Likewise, feeders will stop feeding in a sequential order to maintain complete sets.

Set up System Functions (continued)

FeedNet is equipped with several ways of handling erroneous packages. Starting with the Pro Series feeder, MISS detect is standard and DOUBLE detect is optional. At the corresponding screen of the feeder, you can select the desired output.

MENU 8: Double

If your feeder is equipped with Double Detection, this menu will allow you to do the following if a double feed occurs:

1. Output: OFF/ON
2. Feeder Pause: OFF/ON

To energize the output if a double occurs:

1. Use the Up/Down arrow keys to position the cursor arrow by the Output.
2. Press the enter key. This will take you to a submenu where you will choose Consecutive Doubles.

3. OPERATION

For Conveyors Controlled by the FeedNet Controller

IMPORTANT

Prior to operating, verify that all feeders you have enabled are in ready mode and have product loaded in them.

For Conveyors Controlled by the Finishing Device (Wrapper, Cartoner, Etc)

Sequence ON/OFF

Fault Handling

Consecutive Doubles (1-99)

1. Press the enter key to engage the cursor. Use the Up/Down arrow keys or numeric keypad to set your desired number of doubles before an output signal is generated. (A value of 1 indicates that no doubles are acceptable; a value of 2 indicates that 1 double is acceptable but 2 in a row is not, etc.).
2. Press the enter key to save new value or press Menu to restore old value.
3. Press the Menu key to bring you up a level, out of the submenu and back to the Double primary screen.
4. Verify that the Output is ON.

To pause the feeder if a Double occurs:

1. Use the Up/Down arrow keys to position the cursor arrow by Feeder Pause.
2. Press the Enter key to toggle function ON or OFF.

MENU 10: Miss

This menu will allow you to activate the Miss Output and configure its operation as follows:

1. Output: OFF/ON
2. Duration: 20ms to 999ms (Default is 100ms)/0 LATCHED.
3. Feeder Pause: OFF/ON

To energize the output if a double occurs:

1. Use the Up/Down arrow keys to position the cursor arrow by the Output.
2. Press the enter key. This will take you to a submenu where you will choose Consecutive Misses.

Consecutive Misses (1-99)

1. Press the Up/Down arrow keys to position the cursor arrow by Consec Misses:
2. Press the Enter key to engage the cursor. Use the Up/Down

Fault Handling (continued)



*The default parameter is shown in **BOLD** type.
An asterisk (*) is displayed next to the active selection.*

arrow keys or numeric keypad to set the desired number of misses before an output signal is generated. (A value of 1 indicates that no misses are acceptable; a value of 2 indicates that 1 miss is acceptable but 2 in a row is not, etc.).

3. Press the enter key to save the new value or press Menu to restore the old value.
4. Press the Menu key to bring you up a level, out of the submenu and back to the Miss primary screen.
5. Verify that the Output is ON.

To set the length of time that the Miss Fault output will be energized in the event of a miss:

1. Use the Up/Down arrow keys to position the cursor arrow by Duration.
2. Press the enter key to engage the cursor.
3. Use the Up/Down arrow keys or numeric keypad to set your desired value (20ms to 999ms). However, you may enter a value of zero. This will cause the Miss Output to latch “ON” in the event of a Miss. The Miss Fault output will remain latched until the next Flight Trigger is received.
4. Press the enter key to save the new value or press the Menu key to restore old value.

To pause the feeder if a Miss occurs:

1. Use the Up/Down arrow keys to position the cursor arrow by Feeder Pause.
2. Press the Enter key to toggle function ON or OFF.

SYSTEM LEVEL FAULT HANDLING

With the feeder fault options configured you can now configure the system fault handling at the HMI touch screen.

From the System Configuration Menu, select Collating Options. This

Fault Handling (continued)



*The default parameter is shown in **BOLD** type.
An asterisk (*) is displayed next to the active selection.*

menu will allow you to enter values for system fault handling.

1. If a diverter is present on the system, count down from the last feeder the number of pockets that the diverter is located. Enter that value by pressing the Pocket ## box.
2. To inhibit feeders downstream from a erroneous feed, select Down Stream Inhibit ON by pressing that box.

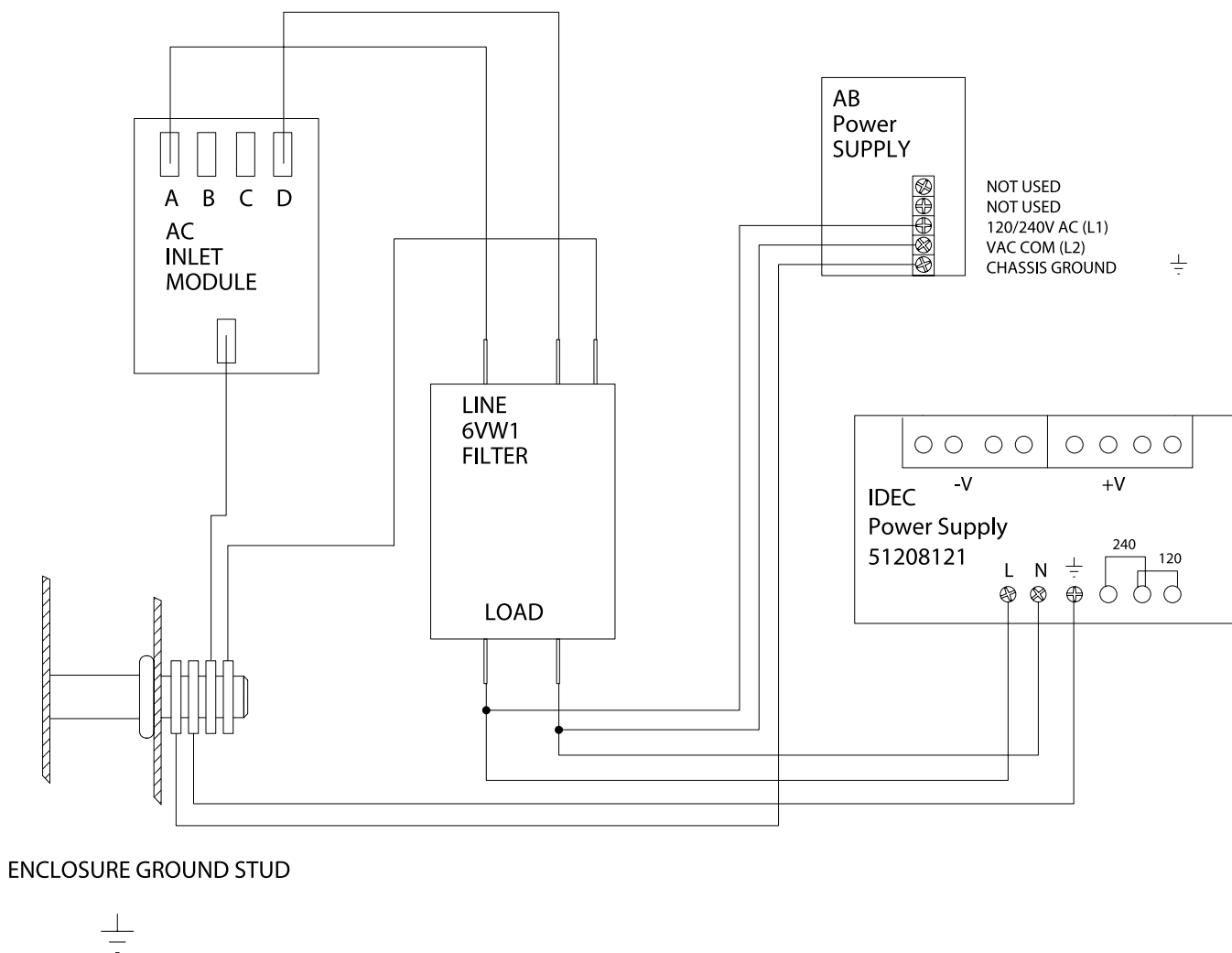
The Pro Series feeders have an optional Tower Lamp (standard on the ST-1450) that will illuminate to represent the status of each feeder.

- SOLID RED = Guard open
- SOLID GREEN = Feeder in Ready Mode
- SOLID AMBER = Miss
- BLINKING AMBER = Double
- SOLID GREEN with SOLID AMBER = Low stack (Optional)

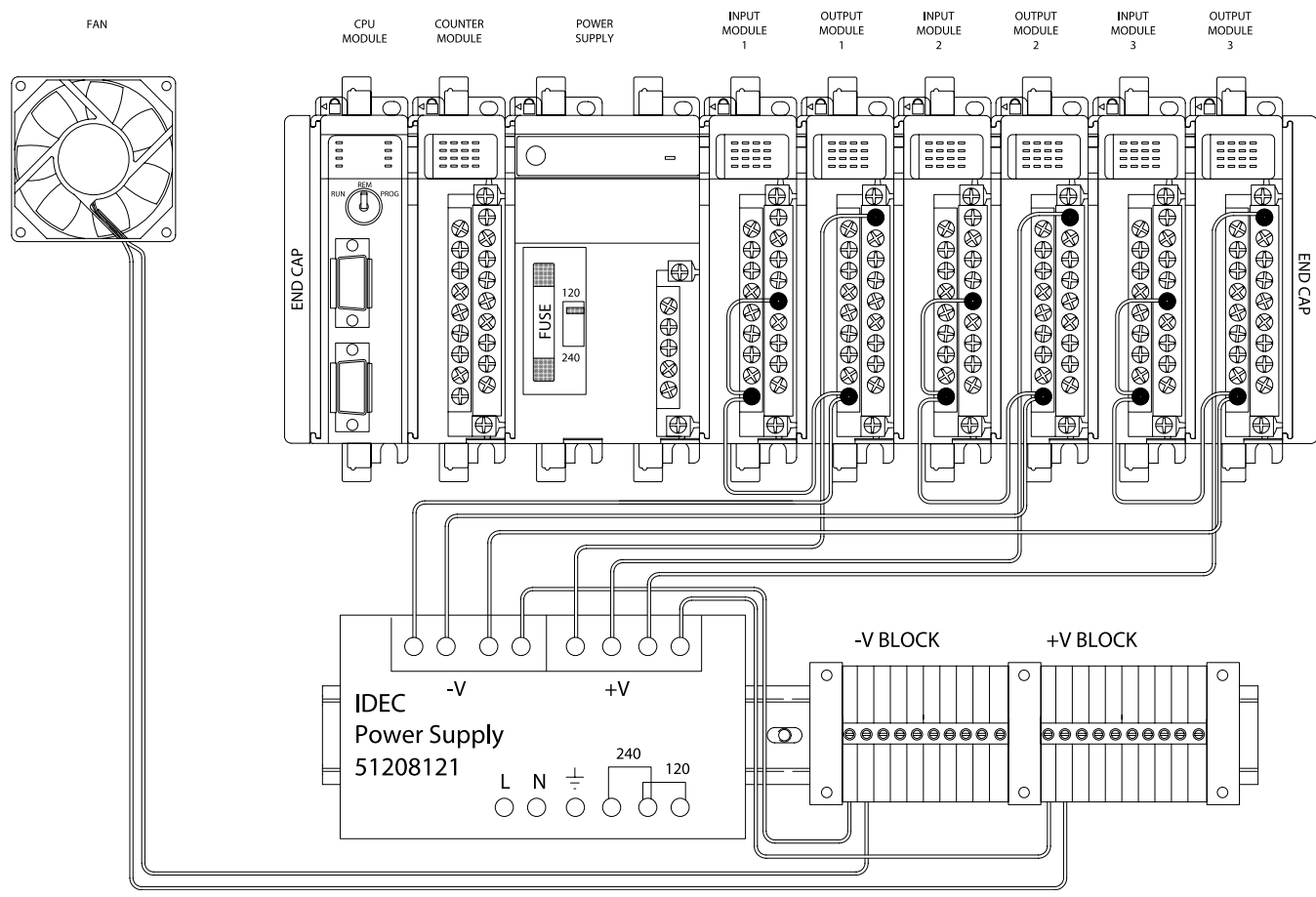
The Remote Access Dial-in Modem allows for quick connection of your FeedNet system to any standard phone line. This feature provides the enables easy system upgrades through the modem, avoiding costly on-site technical assistance. The modem allows for system expansion upgrades at speeds up to 56k.

4. TECHNICAL DIAGRAMS

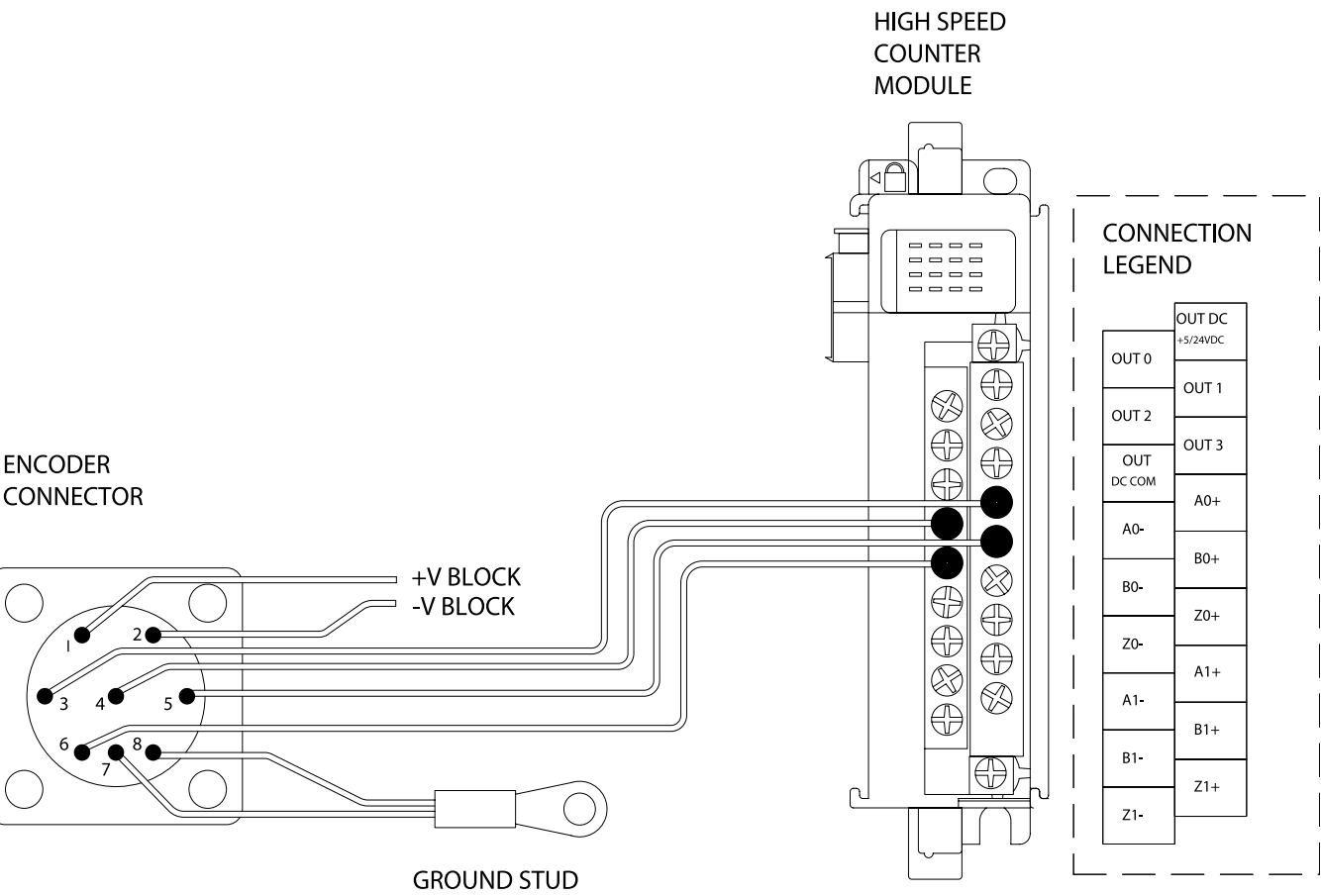
FeedNet AC Schematic



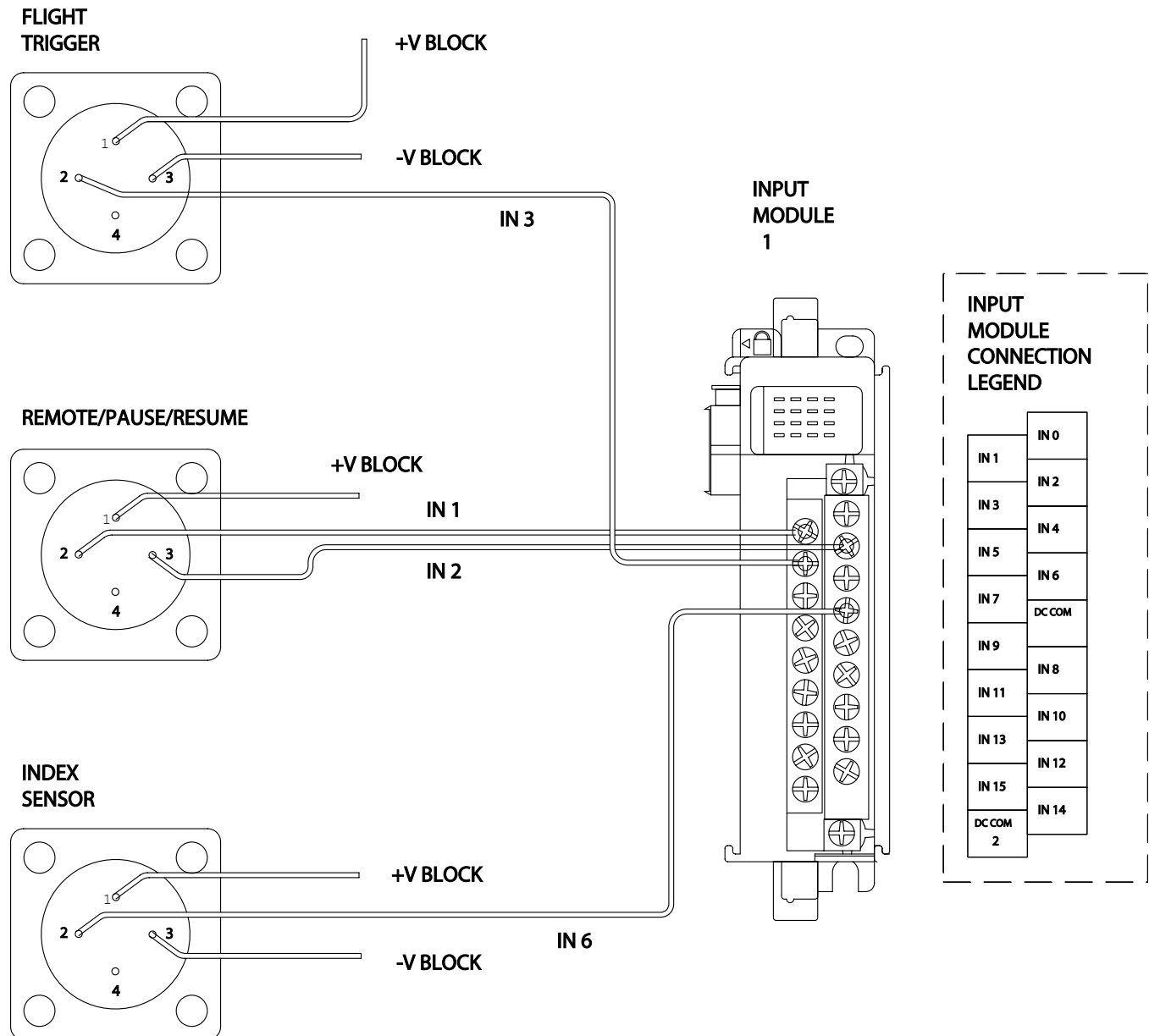
FeedNet I/O Module and Fan DC Distribution Schematic



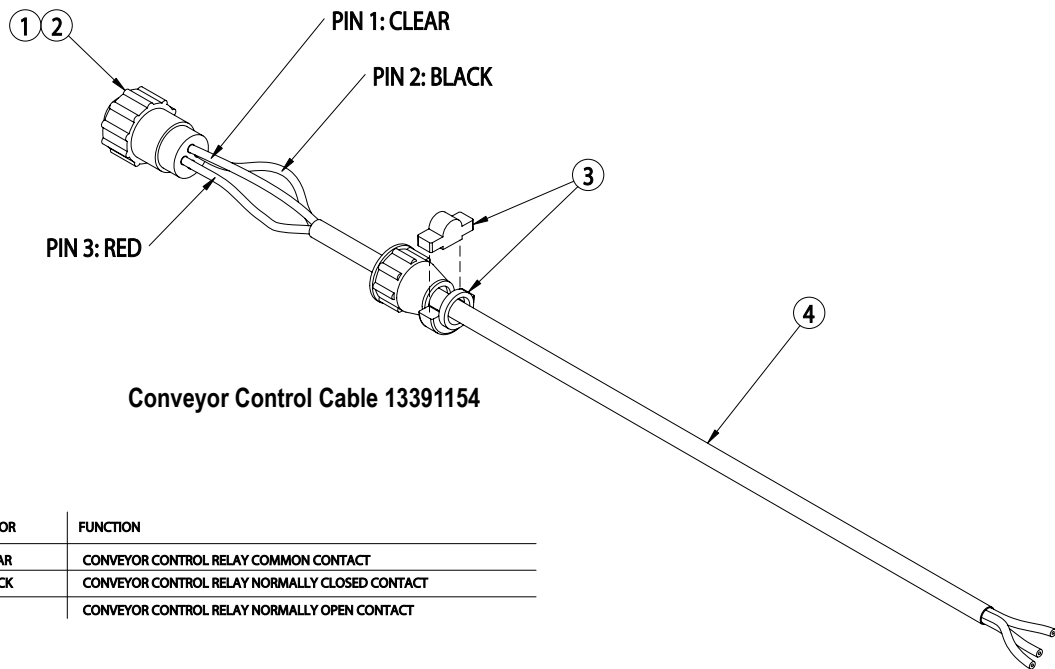
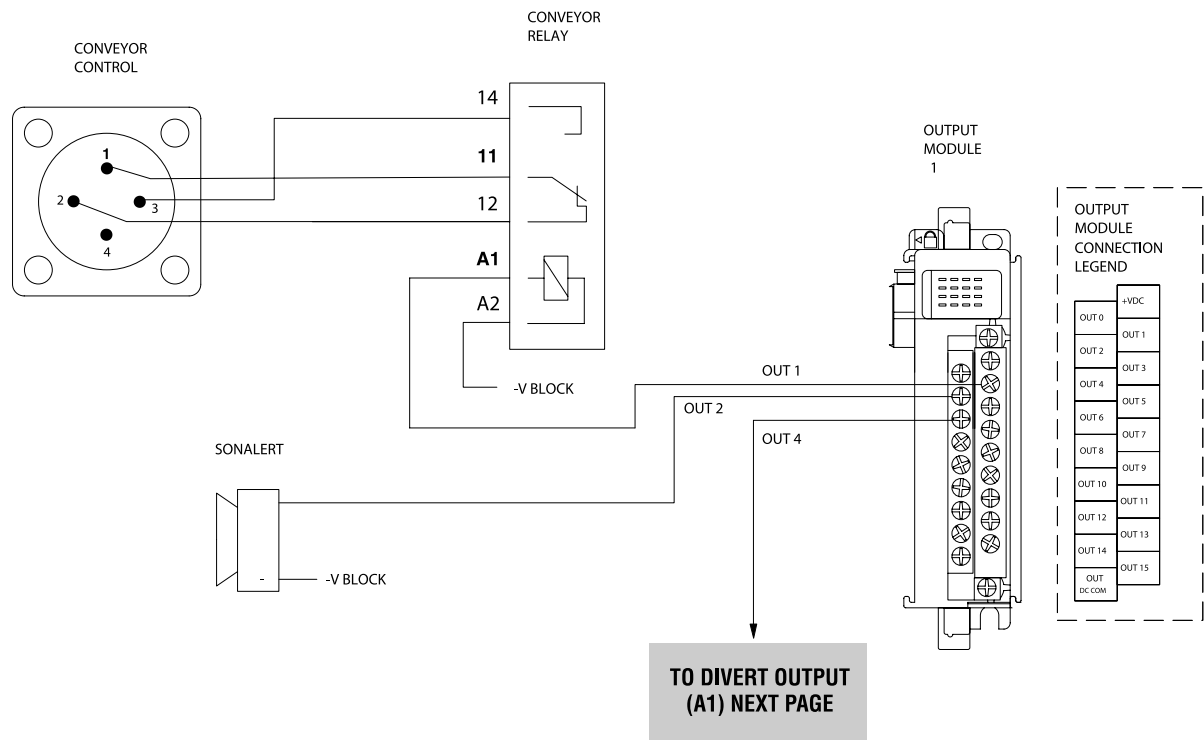
Encoder



Flight Trigger Remote Pause/Resume Index Sensor Schematic



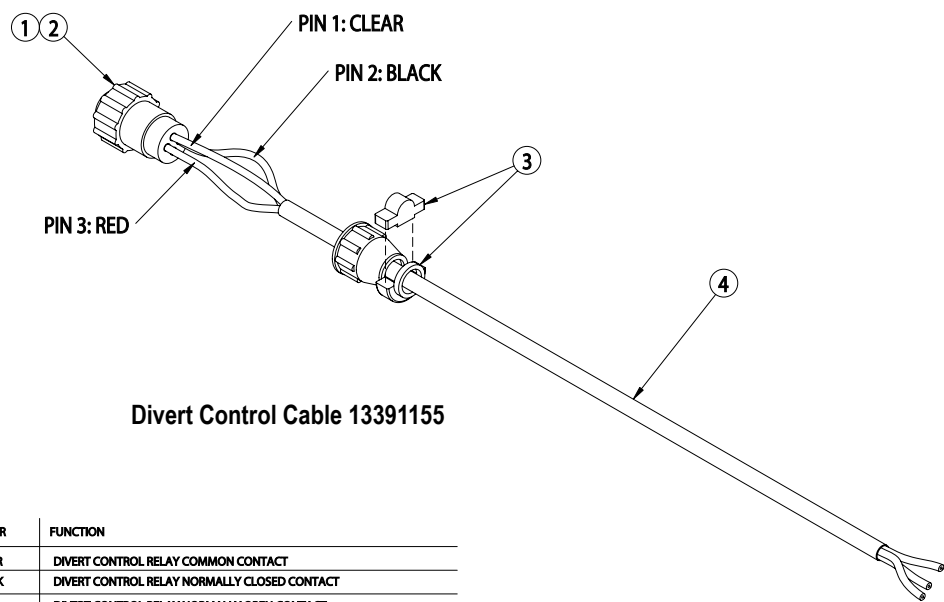
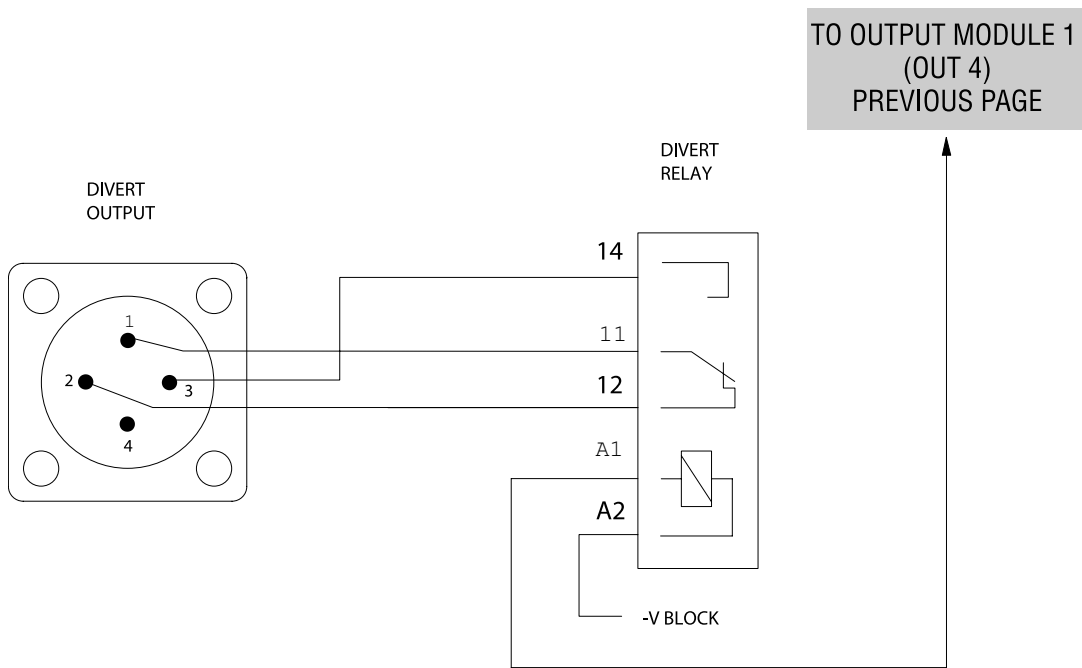
Conveyor Control Schematic



ITEM	COLOR	FUNCTION
1	CLEAR	CONVEYOR CONTROL RELAY COMMON CONTACT
2	BLACK	CONVEYOR CONTROL RELAY NORMALLY CLOSED CONTACT
3	RED	CONVEYOR CONTROL RELAY NORMALLY OPEN CONTACT

ITEM	QTY	PART #	DESCRIPTION
1	4	53500502	PIN CONTACT MALE 24-20 AWG AMP
2	1	53500504	PLUG 4 PIN 206429-1 AMP
3	1	53500506	CLAMP CABLE CIRCULAR 4 PIN AMP
4	TBD	53500065	CABLE 3 CONDUCTOR 20 GA

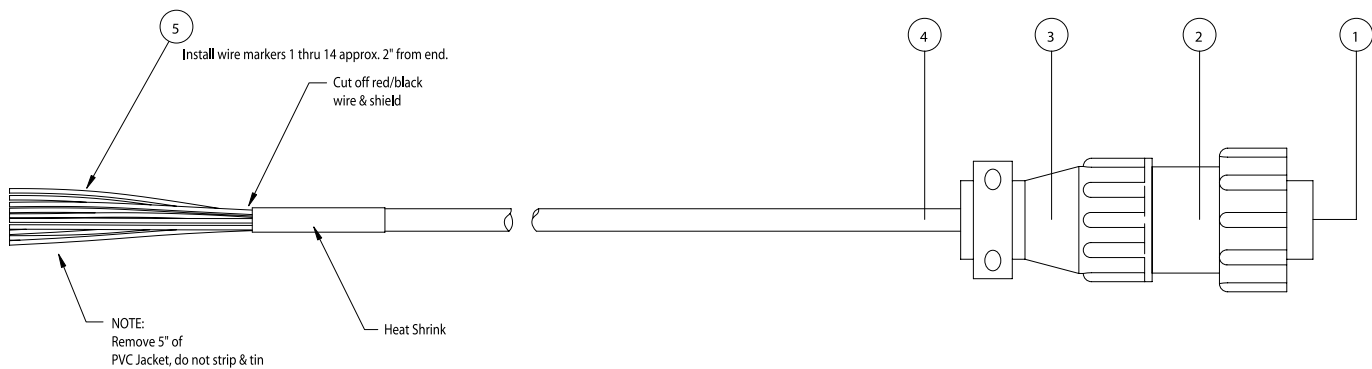
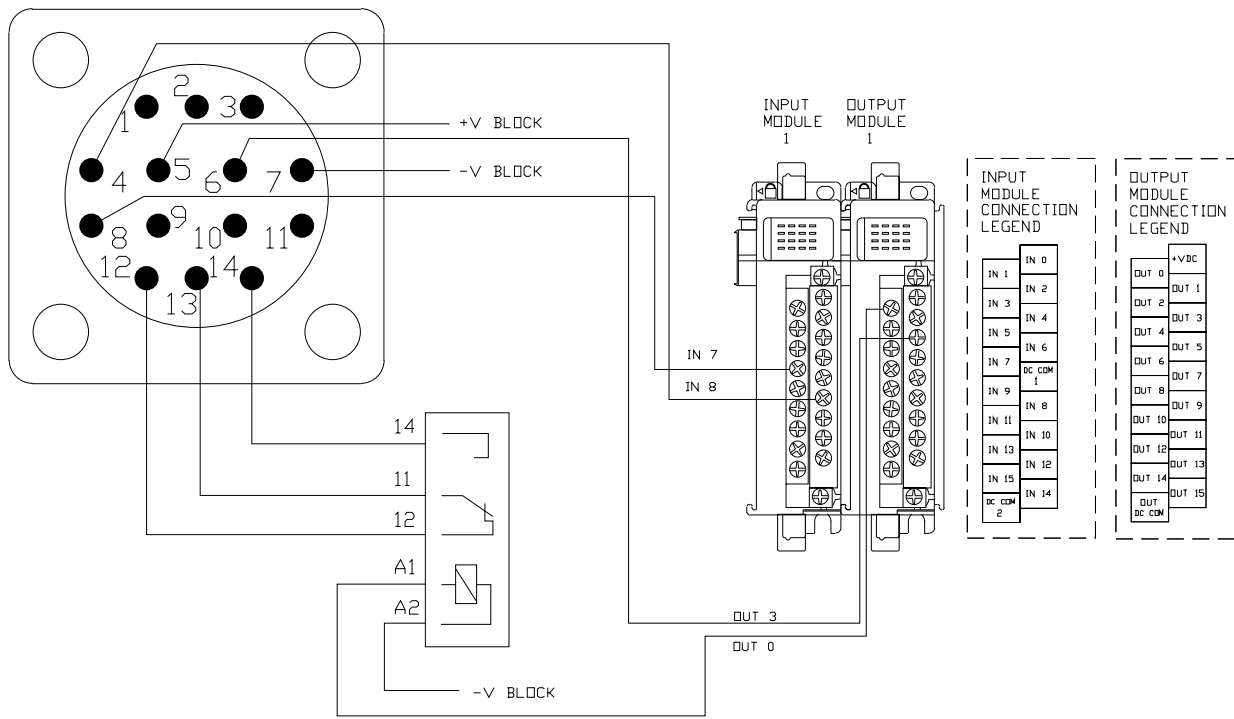
Divert Output Alarm Schematic



ITEM	COLOR	FUNCTION
1	CLEAR	DIVERT CONTROL RELAY COMMON CONTACT
2	BLACK	DIVERT CONTROL RELAY NORMALLY CLOSED CONTACT
3	RED	DIVERT CONTROL RELAY NORMALLY OPEN CONTACT

ITEM	QTY	PART #	DESCRIPTION
1	4	53500502	PIN CONTACT MALE 24-20 AWG AMP
2	1	53500504	PLUG 4 PIN 206429-1 AMP
3	1	53500506	CLAMP CABLE CIRCULAR 4 PIN AMP
4	TBD	53500065	CABLE 3 CONDUCTOR 20 GA

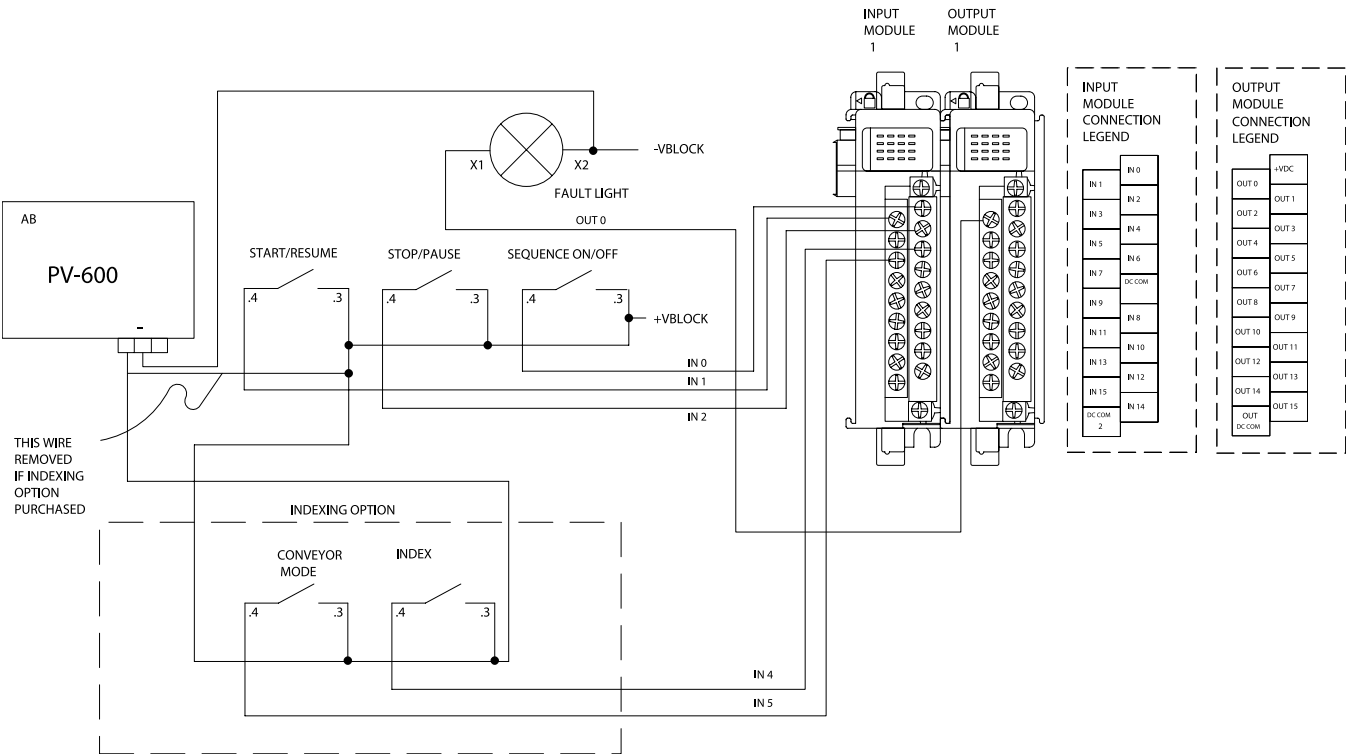
FeedNet System I/O



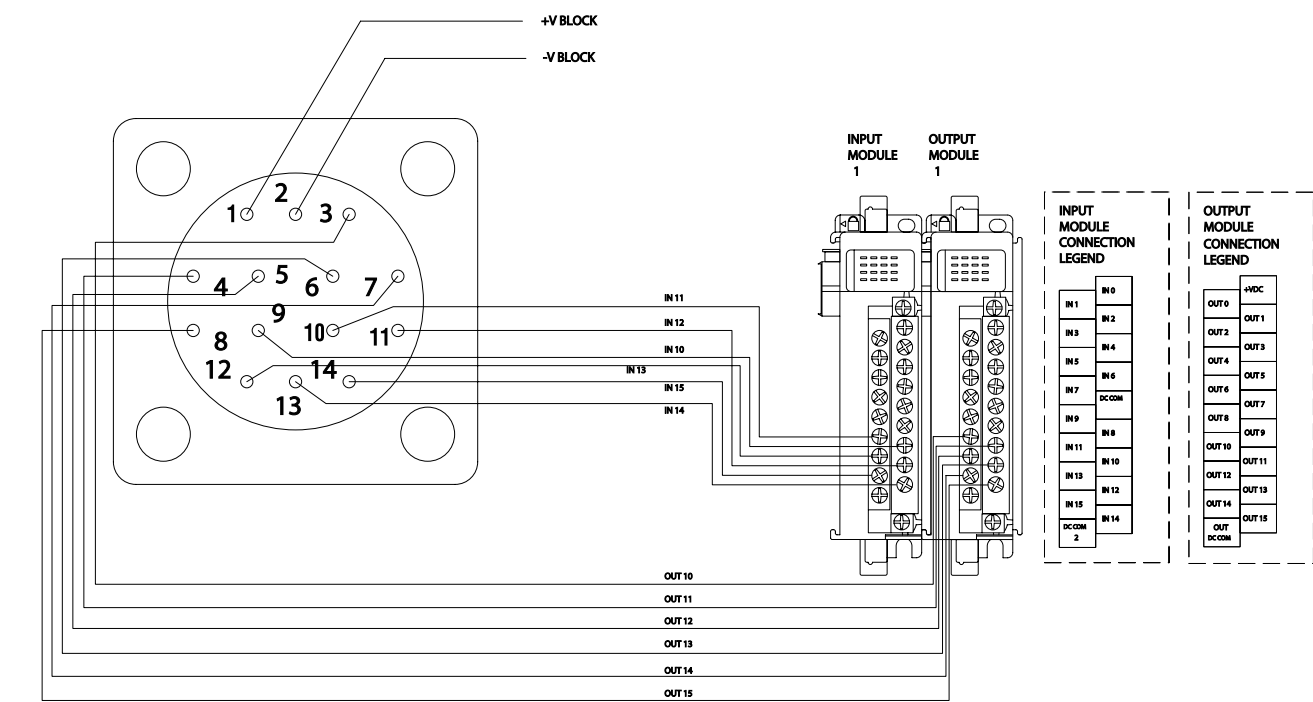
PIN #	COLOR	FUNCTION
1	Brown	
2	Red	
3	Orange	
4	Yellow	Pause Auto-Resume (Input)
5	Green	+24VDC
6	Blue	Lug Echo (Output)
7	Violet	Ground
8	Gray	In Phase Stop (input)
9	White	
10	Black & Shield	
11	Tan	
12	Pink	Fault Output Relay N.C.
13	Red & Yellow	Fault Output Relay Common
14	Red & Green	Fault Output Relay N.O.

ITEM	QTY.	PART #	DESCRIPTION
1	14	535-00-502	Contact Pin Male
2	1	44-649-028	Plug Amp 14 Pin
3	1	44-649-029	Clamp 16 Pin
4	TBD	535-00-127	Cable 15 Conductor
5	1	53-500-282	Label Kit

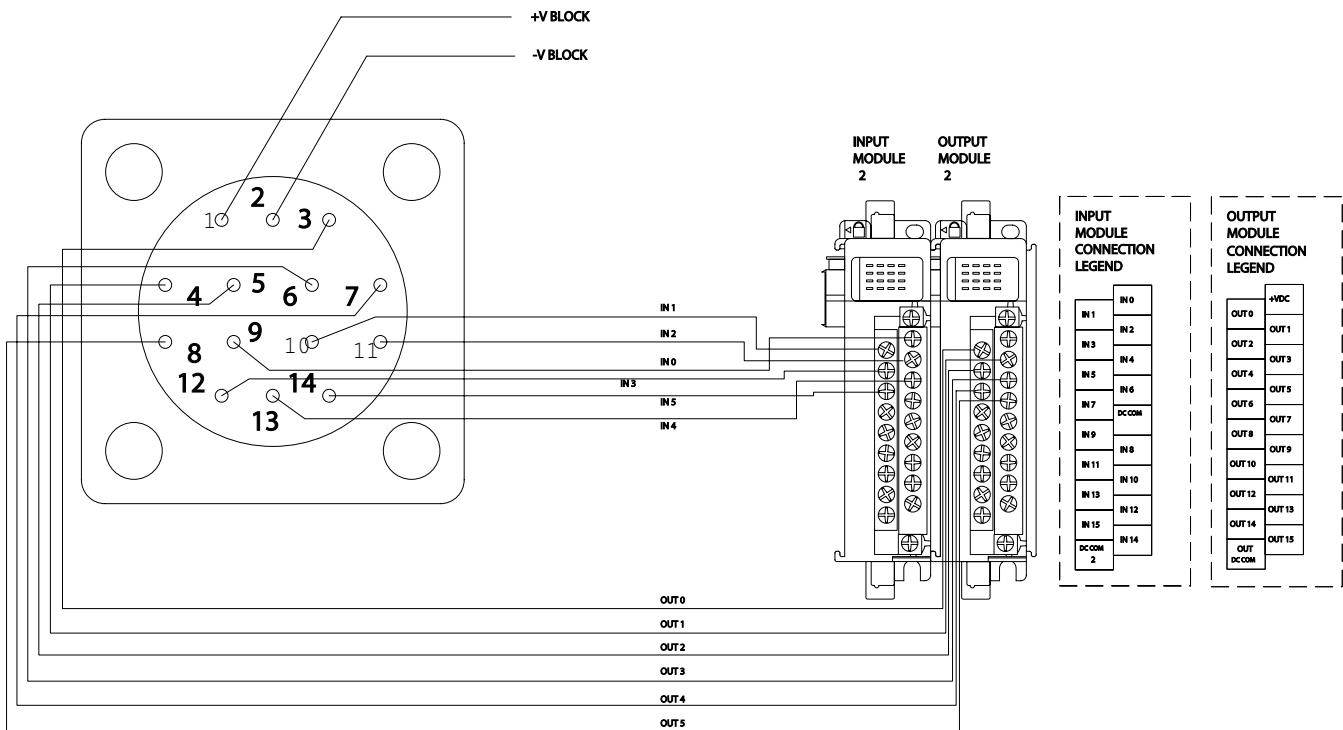
FeedNet Operator Control



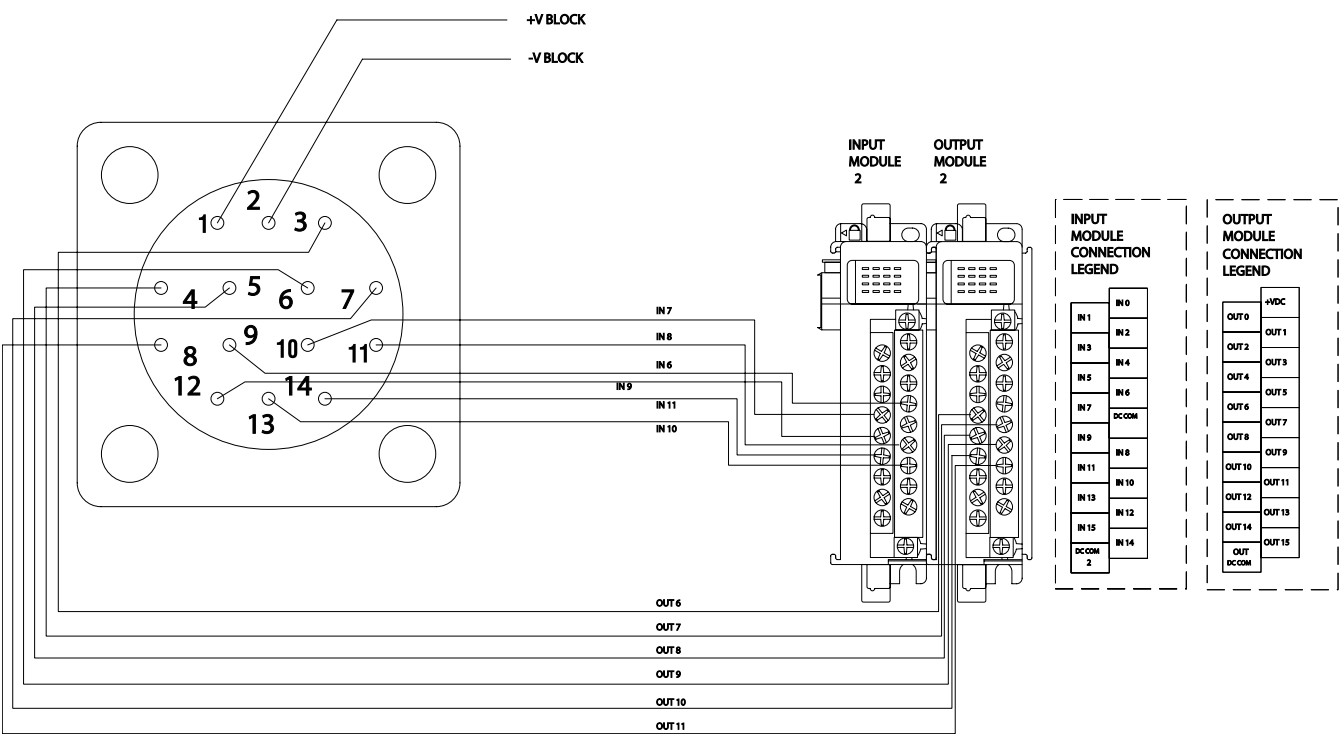
FeedNet Feeders 1-6



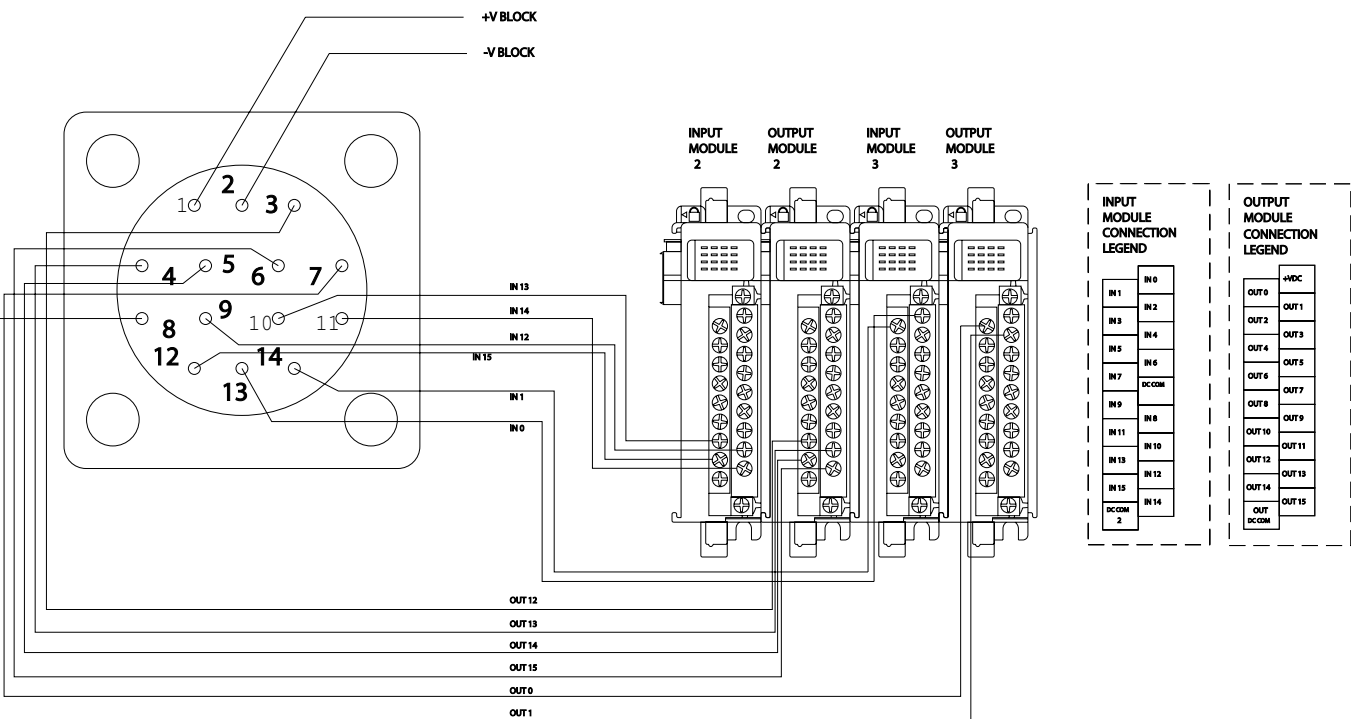
FeedNet Feeders 7-12



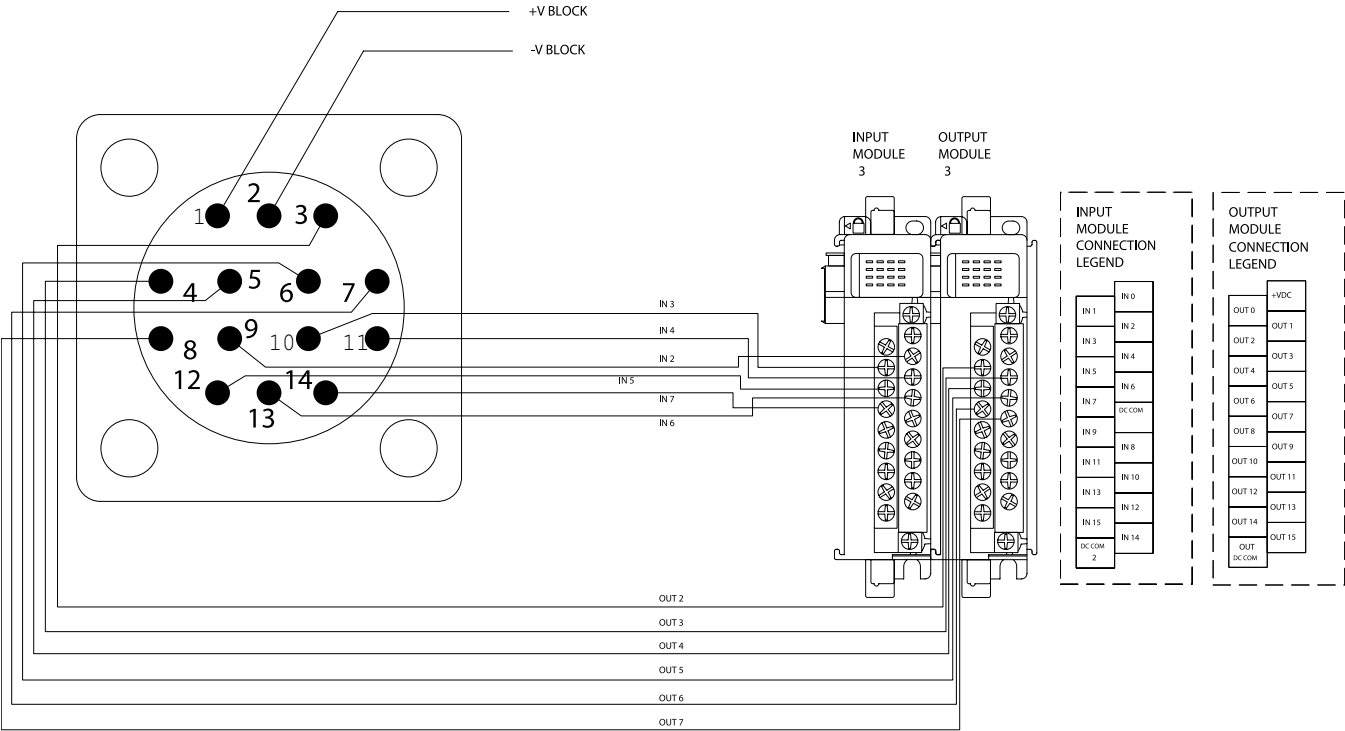
FeedNet Feeders 13-18



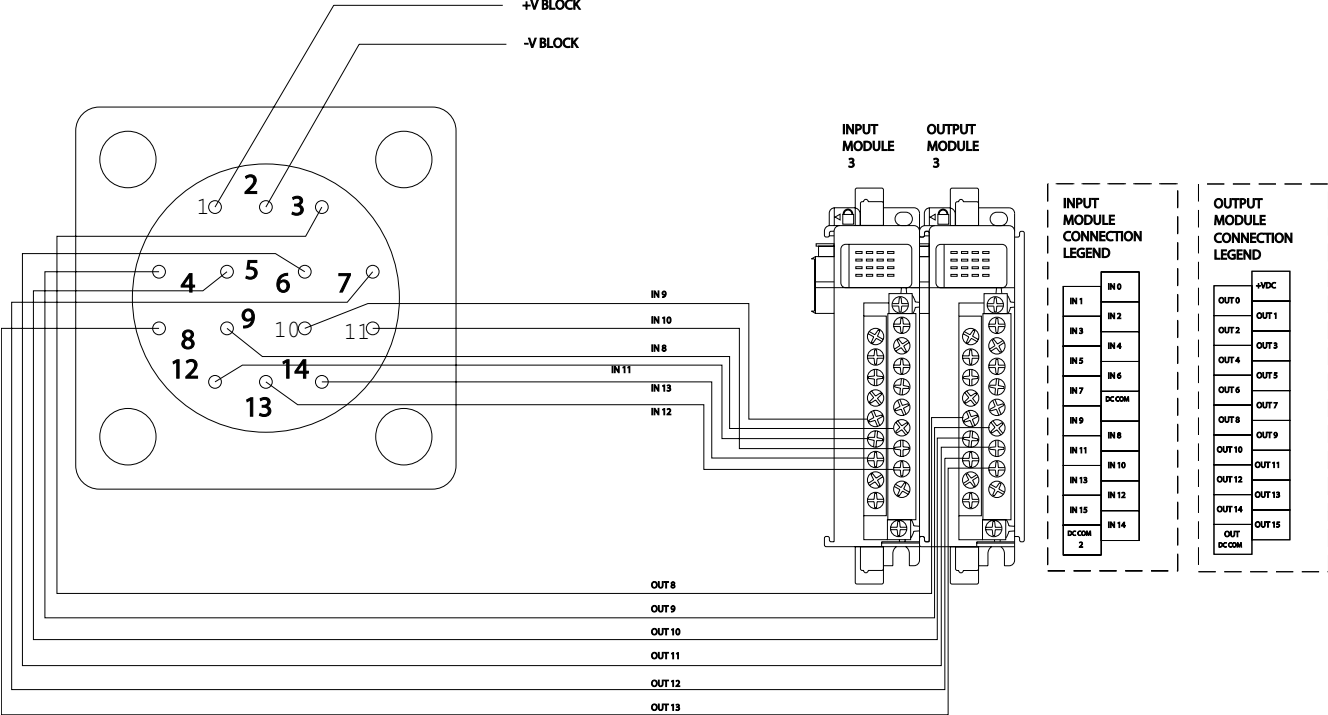
FeedNet Feeders 19-24



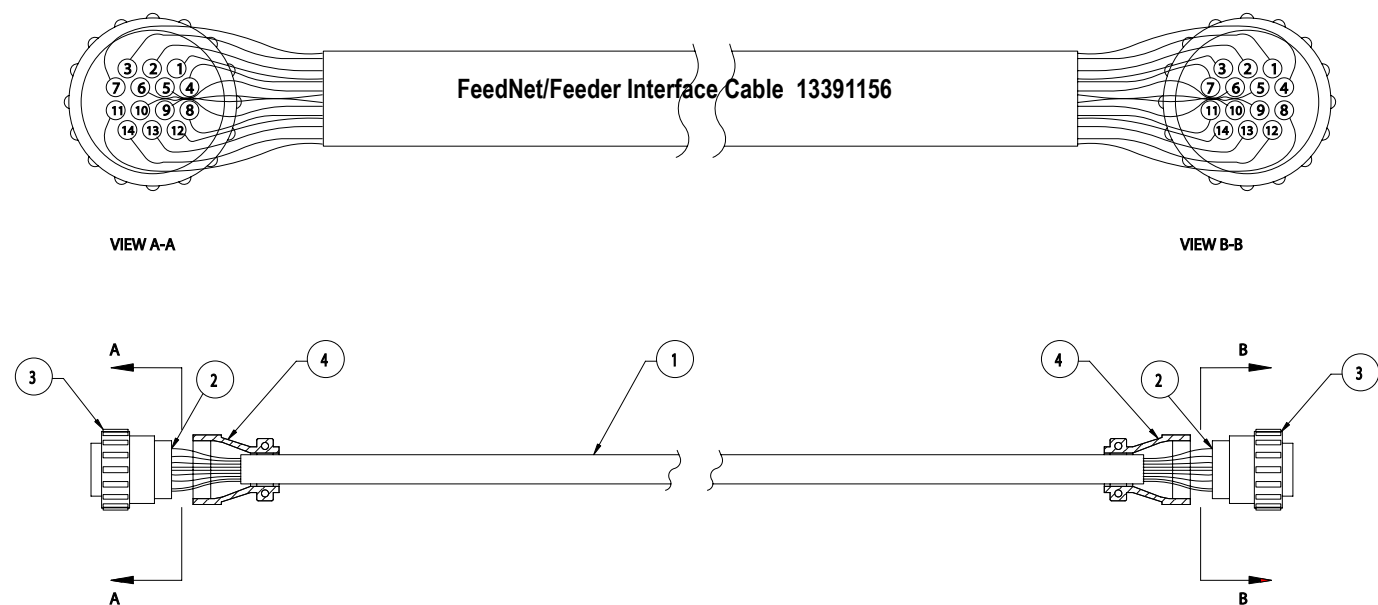
FeedNet Feeders 25-30



FeedNet Feeders 31-36



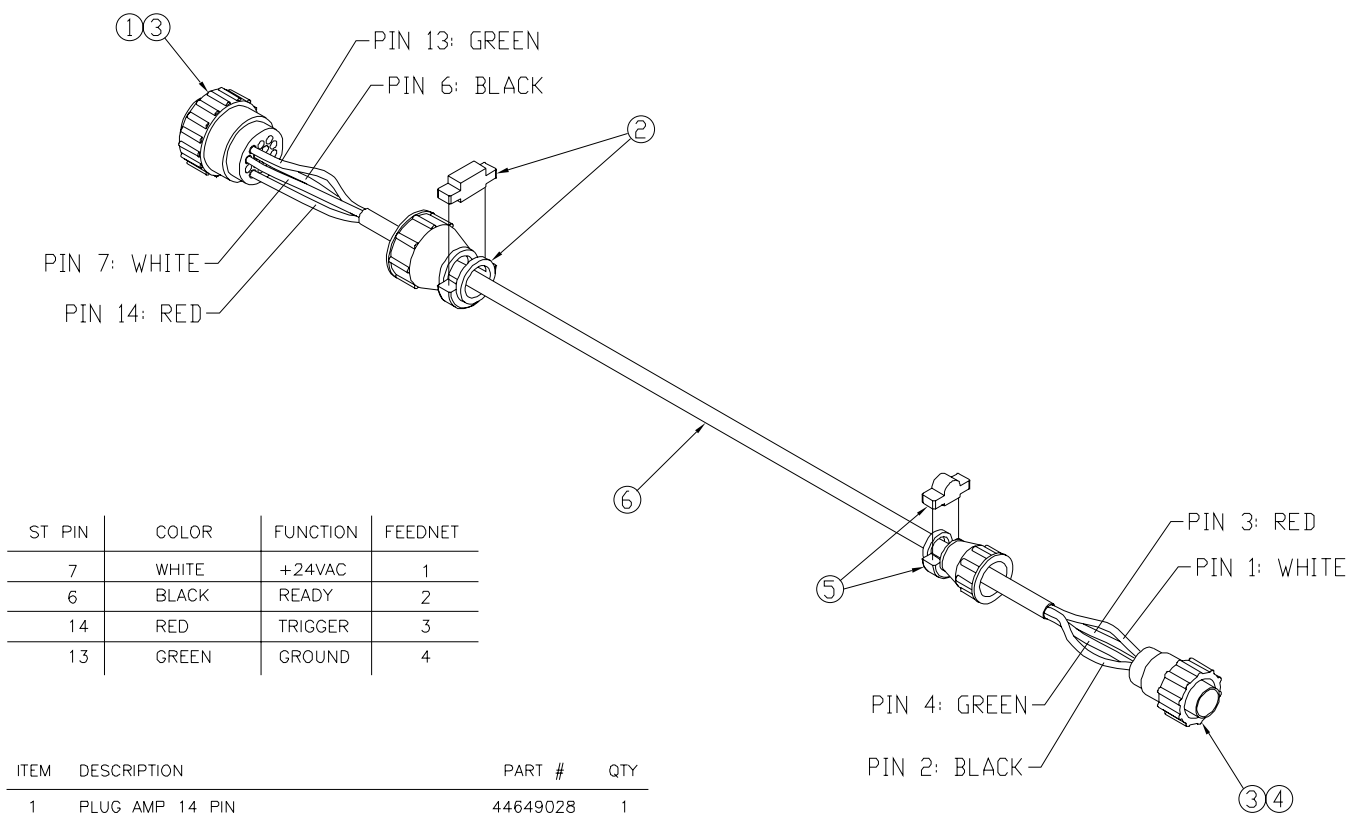
FeedNet Controller to Feeder Interface Box Cable



ITEM	QTY	PN	Description
1	Per Order	53500127	Cable
2	28	53500502	Male Crimp Pin
3	2	44649028	14 Pin Connector
4	2	44649029	Connector Shell

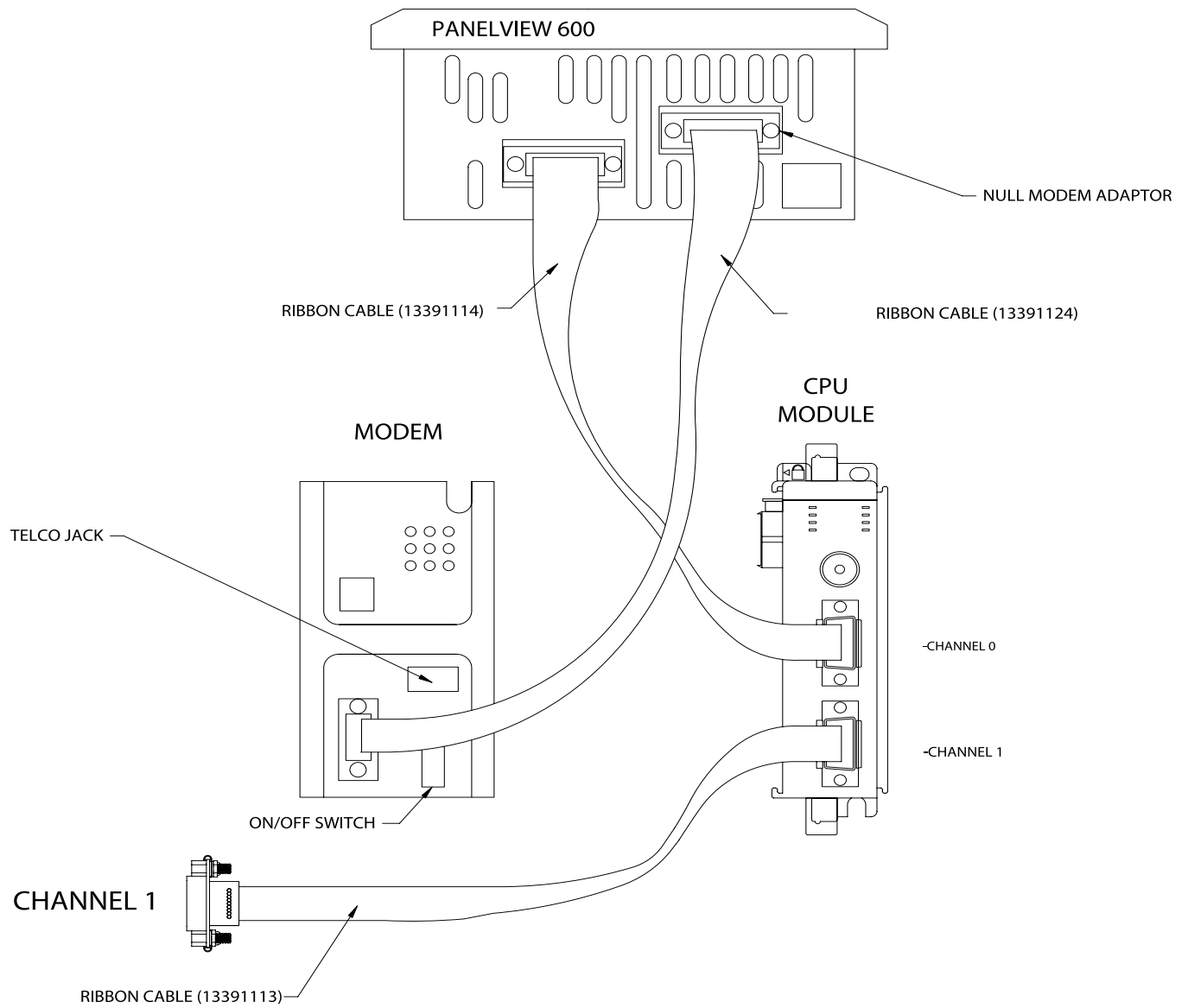
PIN NUMBER	WIRE COLOR	SIGNAL
1	Brown	+24VDC
2	Red	Ground
3	Orange	Feeder 1 Trigger
4	Yellow	Feeder 2 Trigger
5	Green	Feeder 3 Trigger
6	Blue	Feeder 4 Trigger
7	Violet	Feeder 5 Trigger
8	Gray	Feeder 6 Trigger
9	White	Feeder 1 Ready
10	Black	Feeder 2 Ready
11	Tan	Feeder 3 Ready
12	Pink	Feeder 4 Ready
13	Red/Yellow	Feeder 5 Ready
14	Blue/Green	Feeder 6 Ready

Interface to ST Feeder Cable



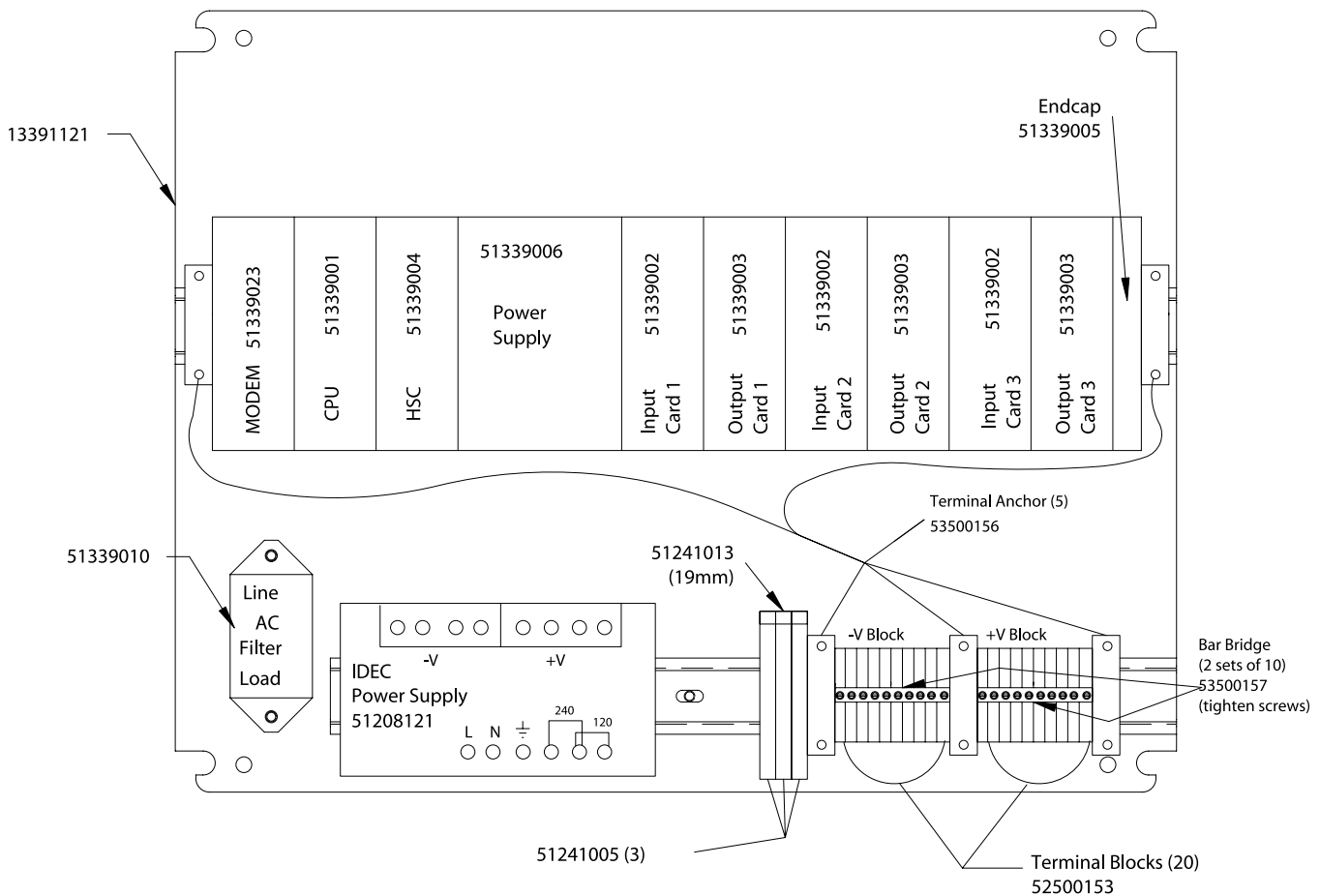
ITEM	DESCRIPTION	PART #	QTY
1	PLUG AMP 14 PIN	44649028	1
2	CLAMP 16 PIN	44649029	1
3	PIN CONTACT MALE 24-20 AWG AMP	53500502	8
4	PLUG 4 PIN 206429 1-AMP	53500504	1
5	CLAMP CABLE CIRCULAR 4 PIN AMP	53500506	1
6	CABLE 4 CONDUCTOR 22 GA	53500146	Per Order

Communications



5. REPLACEMENT PARTS

FeedNet Control Box Components



Other Replacement Parts

DESCRIPTION	S/F PN
COMPACTLOGIX L30 CPU.....	51339001
COMPACTLOGIX 16 POINT INPUT CARD	51339002
COMPACTLOGIX 16 POINT OUTPUT CARD.....	51339003
COMPACTLOGIX HSC CARD	51339004
COMPACTLOGIX RIGHT END CAP	51339005
COMPACTLOGIX POWER SUPPLY	51339006
PANELVIEW 600 TOUCH SCREEN	51339007
ENCLOSURE	51339008
BACK PANEL	51339016
AC FILTER	51339010
ENCODER	51339011
ENCODER MOUNTING BRACKET	51339012
ENCODER CONNECTOR & CABLE.....	51339013
FLEXABLE COUPLING	51339014
FEEDER INTERFACE BOX.....	51339015
24VDC FAN	51327038
PLC-RELAY (FORM C).....	51241005
FAN GRILL	53500281
4PIN CHASSIS CONNECTOR	53500505
CHASSIS CONNECTOR PINS	53500503
14PIN CHASSIS CONNECTOR	44649027
AC INLET MODULE	44649034
2 POS ROTARY SWITCH.....	53500522
GREEN PUSHBUTTON.....	53500519
RED PUSHBUTTON	53500521
RED PANEL LIGHT.....	53500548
SONALERT BUZZER	53500571
DIN RAIL (LONG).....	51339017
DIN RAIL (SHORT)	51339018
3A FUSE	53500006
FLIGHT SENSOR ASSEMBLY	63011038
POWER SUPPLY	51208121
8 PIN PLUG.....	51277124
8 PIN SOCKET	53500585
PIN CONTACT	51277125
SOCKET CONTACT.....	53500586
MODEM.....	51339023
NULL MODEM ADAPTER DB9-M/F.....	51339028



103 Osborne Road • Minneapolis, MN 55432-3131 USA
TEL: 763.502.0000 • FAX: 763.502.0100
E-MAIL: service@streamfeeder.com
WEB: www.streamfeeder.com

