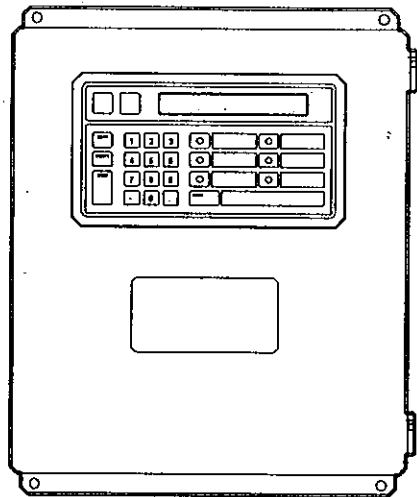


SCHLAGEL, INC.

EDI DISTRIBUTOR

**OPERATION AND
PROGRAMMING MANUAL**

US AND FOREIGN PATENTS GRANTED



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How To Contact Us

Schlagel, Inc.
491 No. Emerson St.
Cambridge MN 55008

PHONE: 612-689-5991 800-328-8002

FAX: 612-689-5310

E-MAIL: sales@schlagel.com

FEATURES

- Microprocessor based intelligent control.
- Rapid - closest path positioning to any spout.
- Large LCD alpha-numeric display with tactile feedback keyboard.
- Keyboard - display unit may be placed at a remote location, up to 50' from control unit.
- Absolute spout positioning. Each duct is uniquely identified. No *home* synchronization is required.
- Remembers all distributor parameters in case of power loss then verifies the spout position when power is restored.
- Single button access is available for up to six often used positions.
- User programmable access numbers may be assigned to all positions. No cross reference charts are necessary.
- A user programmable name of up to 8 characters may be assigned and displayed for each spout position.
- A one time, automated setup procedure allows the control to "LEARN" all parameters of the distributor, even correcting for reversed motor wiring.
- Inexpensive 4 wire cable carries all position signals for each spout from any size distributor. This cable can be routed in a hazardous area without an enclosure.
- No limit switch adjustment for each position of the distributor is necessary.
- Torque limiting clutch prevents damage to the spout and drive in case of a jam from a foreign object.
- Motor enclosures are the only consideration when installing in hazardous environments.
- All electrical components including motor starter and thermal protection (but less disconnects) are included.
- Requires 110v 50/60 hz control power and appropriate 3 phase motor power supplies.
- Built in diagnostic aids.
- Optional interfaces to PLC's or other plant automation systems.

HOW THE SYSTEM WORKS

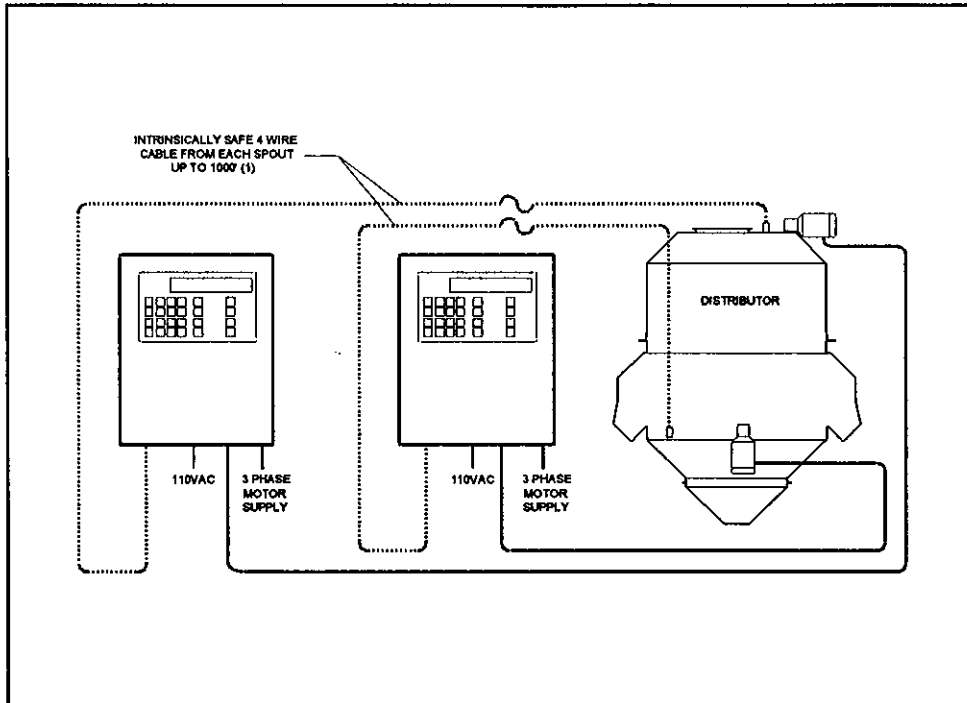


Figure 1. Typical system layout for a double spout distributor.

The control unit houses the barrier relay, microprocessor board, control transformer and reversing starter for the distributor drive motor. The barrier relay provides power to 2 inductive sensors located in the distributor drive housing.

The distributor spout is connected to a coded drive wheel (codewheel) which is driven by a brake motor. The codewheel has information about the exact location and number of each spout position. 2 sensors read this information and send it to the control unit.

The sensor circuit is intrinsically safe and approved by Factory Mutual & CSA for use in certain hazardous locations including Class II Group G locations when properly wired. This circuit is normally wired using inexpensive 4 wire cable up to 1000' long.

Note... The control cabinet itself must not be located in a hazardous area

The control transformer converts 120 volts to 24 volts to power the electronics and the reversing starter coils.

To change positions a user defined number is input at the keyboard. This number is received by the control electronics which in turn activates the proper section of the reversing starter. As the spout revolves, the sensors read the unique code on the codewheel for each spout position and transmit this information to the control unit. The sensor signals arrive inside the control at the barrier relay which outputs its signals to the microprocessor board. This board interprets these signals, controls the reversing

starter and communicates with the operators display panel on the front of the control unit.

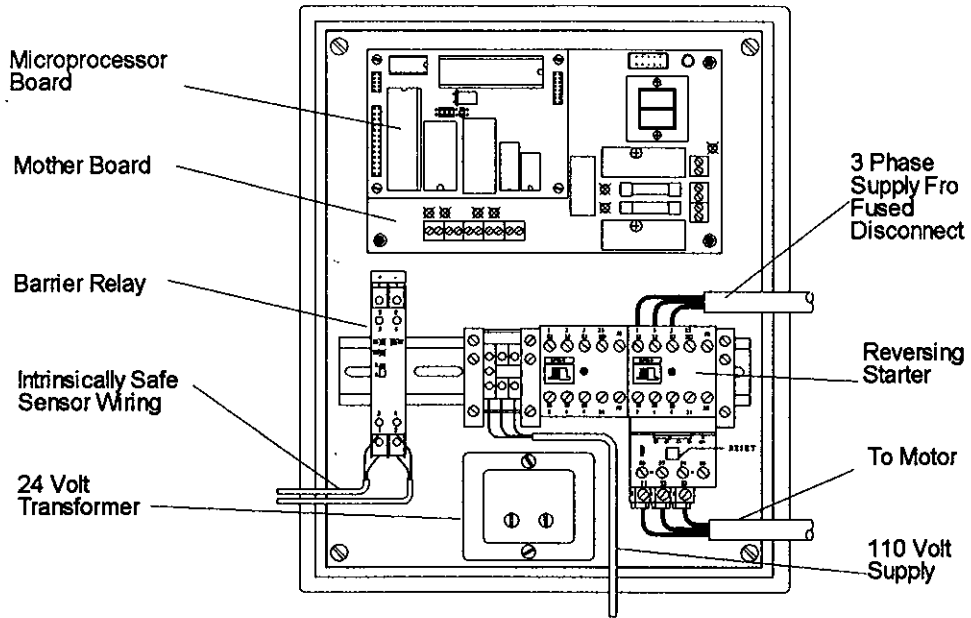


Figure 2 Interior view of the EDI control cabinet showing the 4 electrical circuits required. Route wiring as shown to keep circuits from interfering with each other.

WIRING THE CONTROL

WIRING SENSORS

Connect the 4 wire cable to the 2 sensors located in the weatherproof junction box located on the distributor. Be sure to observe color codes and sensor orientation as shown in the Quick Start Manual. It is recommended that after confirmation of correct wiring, crimp connectors be used for a permanent connection. This cable cannot be enclosed in conduits or trays with non <IS> wiring.

The sensor cable is brought into the control unit in the lower left corner. This is the only wiring allowed in this area of the control box. Keep non <IS> wires at least 2" away. Mark these cables with the <IS> stickers provided along their length and after entry into the control unit.

CONTROL POWER

All wiring, including power circuit disconnect and site disconnect, must comply with all local, state and national codes in addition to any other industry authorities that may be applicable.

110VAC 50/60Hz is required to power the control. This power is usually provided by a 20 amp branch circuit. The power and ground should be brought to the terminal strips as shown. It should be noted that although the memory is retained, a power loss will require resetting the control.

MOTOR CIRCUIT

The reversing starter must be supplied with the correct 3 phase voltage to run the drive motor. Power is brought from a proper fusible disconnect to the reversing starter terminals marked L1, L2, L3. The wiring to the distributor drive motor is taken from terminals T1, T2, T3 on the reversing starter. Using the appropriate wiring practice, route this circuit through a site disconnect then to the distributor brake-motor. It is **not** necessary to check for proper motor rotation. Adjust the thermal overload on the reversing starter for full load motor current.

CONTROL INITIALIZATION & SETUP

The onetime setup procedure for your particular distributor is contained in the separate QUICK START MANUAL. Please refer to that manual for instructions on how to initialize the control during installation. Return to this manual for operating information.

OPERATION

The display console consists of a LCD screen, alpha-numeric keypad and 6 lighted function keys as shown in Fig. 4. The user may program up to 6 single button entry keys for rapid access to often used bins. Additionally, any bin may be assigned and accessed with any number from 1 to 98. Finally, up to 8 characters may be assigned as the name for any bin and will be displayed with the bin number when selected. All of this information is stored in permanent memory and is not lost during power a failure. See the manual programming section for an explanation of this feature.

It is assumed the control has been automatically programmed for the distributor to which it is attached as described in the Quick Start Manual and memory has been reset to the default parameters. The control may then be used as is with no further programming. Appendix A describes the method of restoring default parameters.

DEFAULT OPERATION

With the default setup, the assumption is made that duct 1 on the distributor will be referred to as POS 1 by the operator, duct 2 as POS 2, etc.



Figure 3. Default display for position 1.

In the standby mode the display appears as shown in Fig. 3. This shows that the distributor was positioned by pressing '1<enter>'. The name of this location is "POS 1". The display is now waiting for any new input at the flashing cursor.

A new bin is selected by entering the access number (usually the bin or duct number) followed by <enter>. If it is a legitimate number the spout will move to it via the shortest path, indicating each duct position, visually and audibly, as it travels by them. Upon reaching it's destination the spout stops and again displays the standby mode.

Bins 1 through 6 may also be accessed by the 6 function keys, eg. pressing function key 2 will position the spout at bin 2 and light the function key lamp.

You may program your own access numbers and name as described in the next section.

TIPS AND HINTS

DIRECT DUCT ACCESS - You can position on any DUCT by entering a minus sign before the DUCT number. For example; even though duct number 2 is accessed as '42<enter>' it can also be accessed by '-2<enter>'.

BLANK DUCTS - If your distributor has any blanked off ducts that you do not want accessed, give them an access number you would never use such as 90. Access to them can always be made by the direct duct access method.

DUPLICATE ACCESS NUMBERS - If you inadvertently program the same access numbers to more than one location, only the first position will be recognized and access to the others can only be made by the direct duct access method.

UPS SYSTEM - If you do not want the control to experience a power loss, an expensive UPS can be connected to the 110v control input. Contact us for assistance if you need this kind of protection.

REMOTE OPERATORS CONSOLE - The display-keyboard can be removed from the front of the control and placed up to 50' away. This can be helpful when integrating with a control panel or when it is not convenient to group several control units.

ACCESS TO NAMED LOCATIONS - For some locations there is no logical number that is used such as TRACK, SCALE, DRYER, etc. In this case assign a unique number and also a function key. Label the function key and use it as a 'speed dial' button to access to these locations.

TROUBLESHOOTING & ERROR CODES

PROBLEM	CAUSE	REMEDY
<p>"DRIVE ERROR" (Press any key to recover)</p>	<p>Improper sensor hookup or broken or shorted sensor wiring.</p>	<p>Make sure the sensors are connected to the barrier relay as indicated in "WIRING SENSORS". Correct polarity must be observed for the barrier LEDs to light.</p>
	<p>No motor power. Starters are operational.</p>	<p>Check for open disconnect or open fuses in 3 phase supply.</p>
	<p>No motor power. Starters are not operational.</p>	<p>Check the overload on the starter and reset if necessary. Also check for open fuses on microprocessor board.</p>
	<p>Motor runs but no spout movement.</p>	<p>Check for slipping clutch in the worm gear drive, jammed spout or malfunctioning brake in the motor.</p>
<p>"CHECK SENSORS" (Press any key to recover)</p>	<p>The sensors are having trouble reading the codewheel.</p>	<p>The sensor bracket must have the proper spring pressure (see below), wire connections tight and both barrier relay lights K1 & K2 must blink when the spout is turning.</p>

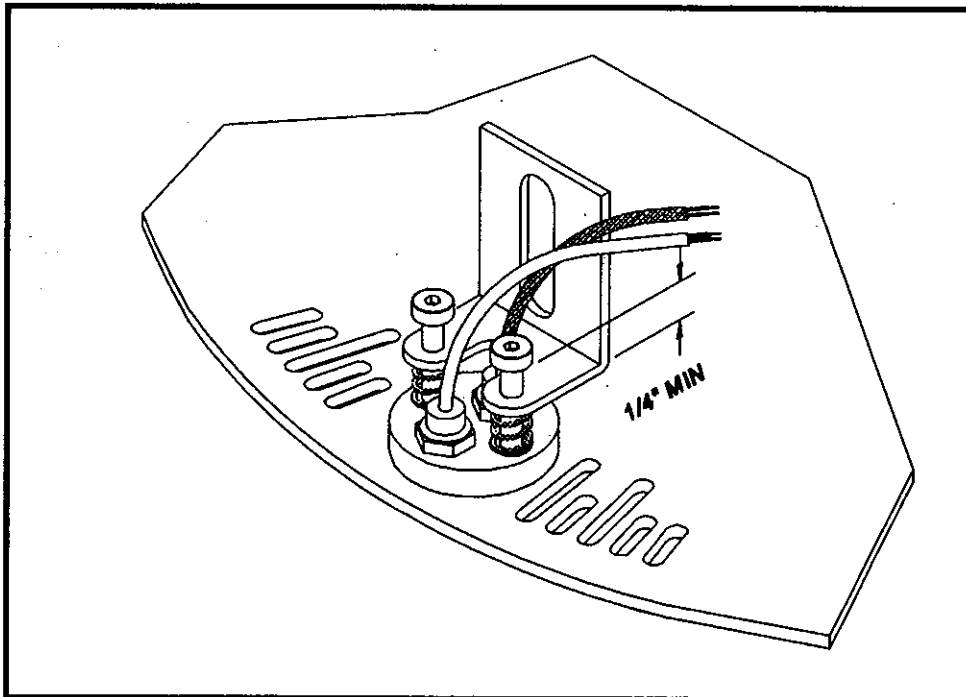


Figure 4. This is a typical sensor assembly. The spring loaded sensor pad must have at least 1/4" compression and slide freely to properly read the codewheel.

SPECIAL PROGRAM ACCESS CODES

The following codes can be entered after the distributor has been setup and is in the operational mode and are entered in place of a duct number. These codes allow access to various routines not used during normal operation.

CAUTION: The codes in bold print should only be used by customer personal familiar with the setup and programming of the EDI Distributor. The other codes should never be used unless the user is instructed to do so as part of a troubleshooting process with factory personal. **Internal memory may be corrupted if these routines are used improperly.**

ACCESS CODE	DESCRIPTION
5991	Begin the 'LEARN' procedure without a reset.
5992	Duct centering adjustment.
5993	Setup access codes and position names.
5994	Reset all display programming to the defaults.
5995	Review all stored distributor parameters.
5996	Turn options on and off if applicable including: In position checking Alternate startup prompt
5997	Allow individual adjustment for spout centering at each duct. Available for Swingset distributors only.

MANUAL PROGRAMMING (5993)

It is likely that the default setup is not suitable for logical operation of the distributor. Most often it would be more convenient to access the destination by the bin number rather than the duct number.

Although the programming is straightforward, all of the parameters should be determined before beginning. Function key operation may be programmed at the same time. A chart similar to the sample chart in the back of this manual should be filled out. It indicates the relationship of the duct, bin number and function key if used.

To begin programming, the access number '5993<enter>' is entered instead of a bin number while the control is in the standby mode. This begins a 2 part programming procedure. No spout movement occurs during the programming process. Not all ducts have to be programmed during at this time. The control will ask for duct #1 information. If you do not care to change the existing information simply press the enter key to go to the next duct. After the last duct the control will 'rewind' the display to duct #1. In this way all information may be reviewed without changes.

BefBeffff

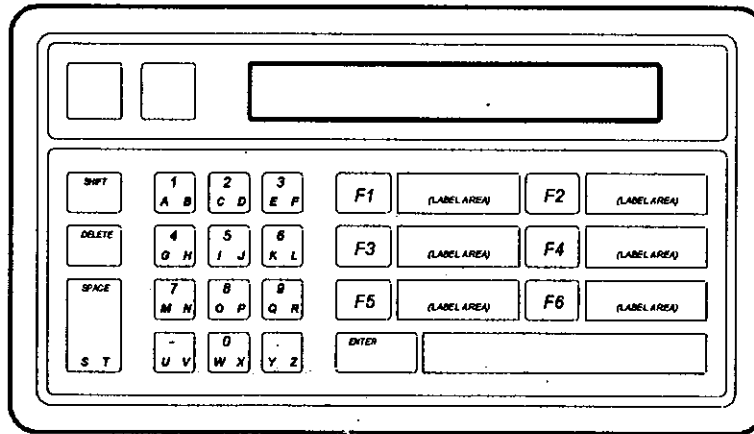


Figure 5. Keyboard and function key layout.

Before you start, fill out the table at the back of the manual with the data to be programmed. Using this table will make it much easier to input the proper data at the right time.

- PART 1: Access number and function key programming.** When you wish to change the way you access a certain position, display that position and enter the new access number (1 through 98) and, if you wish, a function key assignment (.1 through .6).

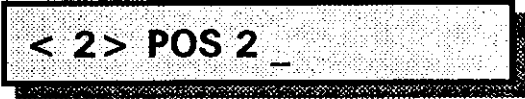


Figure 6. Default display for position 2.

As an example say duct #2 is spouted to bin 42. You would most likely prefer to press '42<enter>' as shown in Fig. 6 rather than the default shown in Fig. 5 to access this position. To program this, repeatedly press the enter key until the display shows "DUCT 2 name" (name would be "POS 2" by default). Then enter the number you wish to access this bin by; '42 <enter>'. If you also wished to access this position by using function key 3 you would instead press '42.3 <enter>'.

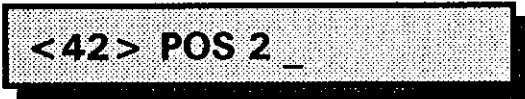


Figure 7. New access number now used for position 2.

Continue to review and/or change any of the other positions, scrolling thru the display with the '<enter>' key.

When you are satisfied with all entries press '99<enter>' to exit the access number part of the programming procedure.

- PART 2: Destination name programming.** The control is now requesting information on name entry. The <enter> key is used to scroll thru the display just as it did in the previous part but with the new access numbers shown on the left side.

Alphabetic characters are selected on the keyboard by using 1 or 2 presses of the <shift> key and one other key as shown in Fig. 4. To enter a "C" press '<shift>2', and "L" would be '<shift><shift>6'.

Any name of up to 8 characters may be used as long as the first character is 'A' thru 'Z'. In our example we will want the name used with access number '42' to be "SOYBEANS" as shown in Fig. 7.



Figure 8. New name for position 2.

Use the '<enter>' key to scroll to destination "<42> POS 2" then enter "SOYBEAN" using the method described above. Press '<enter>' when finished.

Continue to review and/or change any of the other names, scrolling thru the display with the '<enter>' key.

When you are satisfied with all entries press '99<enter>' to exit the last part of the programming procedure. You are now asked to confirm that you want to save your changes. Enter 1 to save your changes in permanent memory or 2 to discard your changes.

Programming is now complete.

SPECIAL OPTIONS (5996)

Certain EDI controls have ROMs that allow options to be turned on and off. These controls have ROMs that are identified with the version number V22x. BY DEFAULT, ALL OPTIONS ARE OFF AND MUST BE TURNED ON IF THE OPERATOR WISHES TO USE THEM.

After pressing '5996'<enter>, the prompt 'OPTIONS = xxx ?'. The xxx is replaced with the current 'sum' of the options selected (see below) and is waiting for a new 'sum' to be entered. Pressing <enter> without a value leaves the options unchanged.

Up to 8 options could be turned on or off with this single 'sum' number. The 'sum' is determined by adding the values of all of the options you want to have on. If you want the option with a value of 4 and the option with a value of 1 turned on and all other options turned off the 'sum' would be 4+1 so a 5 would be entered at the prompt.

Only some of the 8 options are available at this time so room is left for future enhancements. An explanation of each option and activation value follow.

FINAL POSITION CHECK (Value = 1)

This patented feature allows the control to check that the spout not only found the proper duct but is also centered over it. Once the distributor has been set up and centered properly this option may be turned on. The most obvious use would be to warn the operator if the brake on the drive motor failed and the spout coasted by center when it turned off. It would also alarm if the spout jammed just after it read the proper position but before it stopped at center.

The alarm is a display saying 'POSITION ERROR' alternating with the standard output showing the location and location name, ie; '<12> Bin 12'. To turn off the alarm or to move the distributor again the operator must press any key to return the display to normal. Then standard control procedures are possible.

Relay or speaker alarms are also available and may be added at any time. Please call us for additional information.

To activate this option enter the special access code 5996<enter>. The display will show 'OPTIONS=x ?'. 'x' indicates the option number now in effect. Entering a 1 at this point will turn on the FINAL POSITION CHECK alarm and return the display to normal. The options in effect may also be reviewed (not changed) using the 5995<enter> parameter review.

Note: If you are installing a large Swingset distributor and intend to use this option, please see the next section for special adjustments that may be

necessary.

RESTART PROMPT (Value = 2)

When power is interrupted and restored the standard reset prompt that appears on the keyboard display terminal is:

RESET=0 NEW=1

This may be confusing to an operator not familiar with the control and he may inadvertently press '1' and overwrite the installation parameters. To eliminate some of this confusion the prompt can be changed to a more understandable:

ENTER=RESTART

The '0' and '1' are still functional as with the original prompt but pressing 'enter' will have the same effect as pressing '0'.

INDIVIDUAL SPOUT ADJUSTMENT (5997)

(Swingset Distributors only.)

OVERVIEW

Standard EDI ROMs used with Swingset distributors ignore a subtle and usually meaningless physical anomaly of spout positioning; that of the weight and inertia of the spout adding to or opposing the ability of the brake motor to stop the spout in a predetermined time. Round distributors and smaller swinging spouts are not affected by this influence but large lined swinging spouts can be heavy enough overcome some of the breaking force and stop slightly long on the downswing and short on the upswing. This difference is small and usually does not effect the operation of the distributor.

The exception is when the 'In Position Check' option is used. In this case, the spout must always stop within a critical 'window' that checks for proper brake motor adjustment and final positioning of the spout. If, after stopping, the spout is not within the window, the spout will backup and retry the position. If the spout is still outside the window, an error message is sent. See the separate instructions for setting up and using this option.

The term 'window' used in these instructions refer to the special slot in the code plate on the distributor that the sensors read and indicates when the spout is centered over the duct. This window opening may be observed inside the control by viewing the barrier relay lights K1 and K2. The spout is within the window whenever the spout is stopped, K1 is **OFF** and K2 is on.

PREPARATION

The distributor must be installed and operating normally before starting this adjustment procedure and the operator must be familiar with the centering process used during installation. **The brake on the motor must also be checked and adjusted if necessary for proper operation.** If you are unsure about any of this, please contact us.

ADJUSTMENT THEORY

When centering the spout you could stop before the window or after the window and in both cases K1 will be on. You could also stop inside the window but very close to one side or the other. In this case K1 will be off (as desired) but repeated stops near this edge may sometime be outside the window leaving K1 on. The idea is to stop near the center of the window and to be able make this adjustment from the control.

This ROM has a special function that allows you to make individual centering adjustments for each spout position. Once you have started this function you may center the spout in the window by entering a series of adjustment numbers and watching the K1,K2 lights as described above. Here's how...

Let's assume the spout is in position, K1 is off and '75' is the present centering number. First we want to find the 2 edges of the window. Start by re-entering lower centering numbers until K1 stays on. Let's say 60 is off...50 is off...40 is on...45 is on...50 is off. We now know that 50 is the beginning edge of the window. Now find the far edge in the same way starting with a number higher than the original 75. 90 is off...110 is off...120 is off...130 is on...125 is off. We now know the edges of the window are at 50 and 125. The average of these two numbers is $(50+125)/2=87.5$ so setting the centering number to 90 will stop the spout in the center of the window. Each position can be adjusted individually using this **averaging method**.

EXAMPLE

The following example assumes a working installation of a 10 duct distributor and duct 1 has been properly centered in the window (it does not have the individual adjustment capability except at installation).

You now have the ability to adjust re-adjust any of the remaining 9 positions ...here's how:

First move the spout to the duct you wish to center.

Then start the centering function by entering [5997<enter>].

Now use the averaging method to obtain a new centering number as before.

When satisfied press [0<enter>].

The distributor returns to normal operation.

You may repeat this at any position (except #1) at any time you wish. It is always a good idea to make a physical check of all positions at the distributor to confirm the spout is centering before putting the distributor back in service.

It is also a good idea to make a chart for future reference showing the limits and final centering number in case it needs to be re-entered. It should look something like this:

Duct Number	Start	End	Center
1	200	280	240
2	50	125	90
...
10	85	145	115

Remember that the 'In Position Check' option is off by default and must be enabled by the user before automatic checking is performed.

PROGRAM CHART

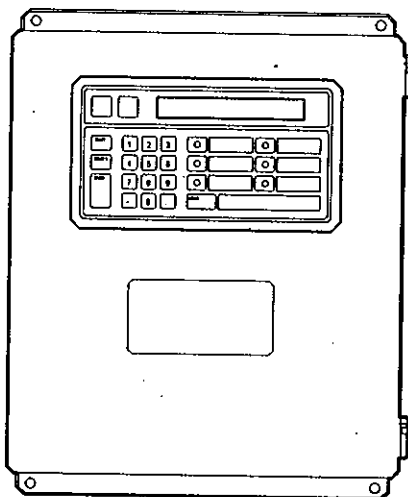
DUCT NUMBER	PART 1 PROGRAMMING		PART 2 PROGRAMMING
	ACCESS NUMBER	FUNCTION KEY	NAME
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
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EDI DISTRIBUTOR

**QUICK START
INSTALLATION
MANUAL**

US AND FOREIGN PATENTS GRANTED

V22x[F] ROMS



This manual describes the wiring and setup for EDI distributors and is a supplement to the EDI Operation Manual.

Before using this manual please read and understand the warnings and cautions in the Operation Manual to avoid serious personal injury.

PRE- INSTALLATION INFORMATION

What Are the Power Requirements?

The control requires 120 volt 50/60 Hz control power, .5 amp max., and a motor power supply, usually 230 volt or 480 volt for the ½ HP motor with brake. Contact us if you will be using voltages other than these. If the optional cold weather package is used, 115 volt must also be available at the brakemotor.

Where Should the Control Be Mounted?

Most installations place the control at the most convenient location for the operator, often the office, control room or scale room. The control enclosure is NEMA 12 (dust tight) but the display is not weather proof or dust tight. Some dust won't hurt the display but water certainly will. **The control enclosure or the display terminal are not rated for placement in a hazardous environment.**

What Kind of Sensor Wire must Be Used?

There are 2 sensors for each driven spout on the distributor and each sensor requires 2 wires. These sensors are intrinsically safe so the 4 wires can be as light as 26 ga., unshielded and up to 1000' long. Door bell or thermostat wire is just fine if you are so inclined.

Do Sensor Wires Have to Be Run in Conduit?

There is no electrical reason to put it in conduit but most do to protect it from mechanical damage. **Do not run sensor wires in a conduit with any power wiring.**

Why Does it Use a Reversing Starter?

The EDI control uses a reversing motion control even on full round distributors. It's purpose is to not only select the closest path to the newly selected duct but also to back up and re-read the spout location on power up or if there were a reading error. It also eliminates the need for the electrician to check the motor for proper rotation.

Can We Use a Different Starter?

The starter supplied with the control has been tested extensively to operate more than 500,000 cycles while generating only a minimum amount of electrical noise. In addition, keeping the starter in the control box simplifies troubleshooting if it becomes necessary. If the starters are moved to a different location it is advisable to keep them in the same area as the control. We recommend using the starter we supply.

What about Cold Weather Operation?

All drives are filled with Mobil 1 synthetic oil rated for -20°(F). If the distributor is installed in an area that is subject to freezing we recommend that the optional motor heater be used. This is a 115v, 25w unit that fits on the back end of the brakemotor and can be left on year around.

What Is the Learn Mode Program?

Only once, at the initial installation, the control must learn certain details about the distributor it is connected to. Information such as the number of ducts, read timing elements and spout centering information must be gathered and put into permanent memory. Most of the information will be obtained automatically but you must enter the spout centering data. This information is saved in battery backed memory.

What Happens If Power Is Lost?

When power is restored, all programmed information is recalled from the battery backed memory so the setup program doesn't have to be run again. The control/distributor must then be reset from the keypad.

Can the Display Be Placed in Another Location?

The display may be removed from the control and placed up to 50' away. We can supply the cable if you wish to do this.

Can the Distributor Be Controlled from a PLC?

Yes. Call us for more information.

WIRING THE CONTROL

Observe Figure 1 and note the location of the wiring. It is very important to keep the high voltage wires away from the electronic components.

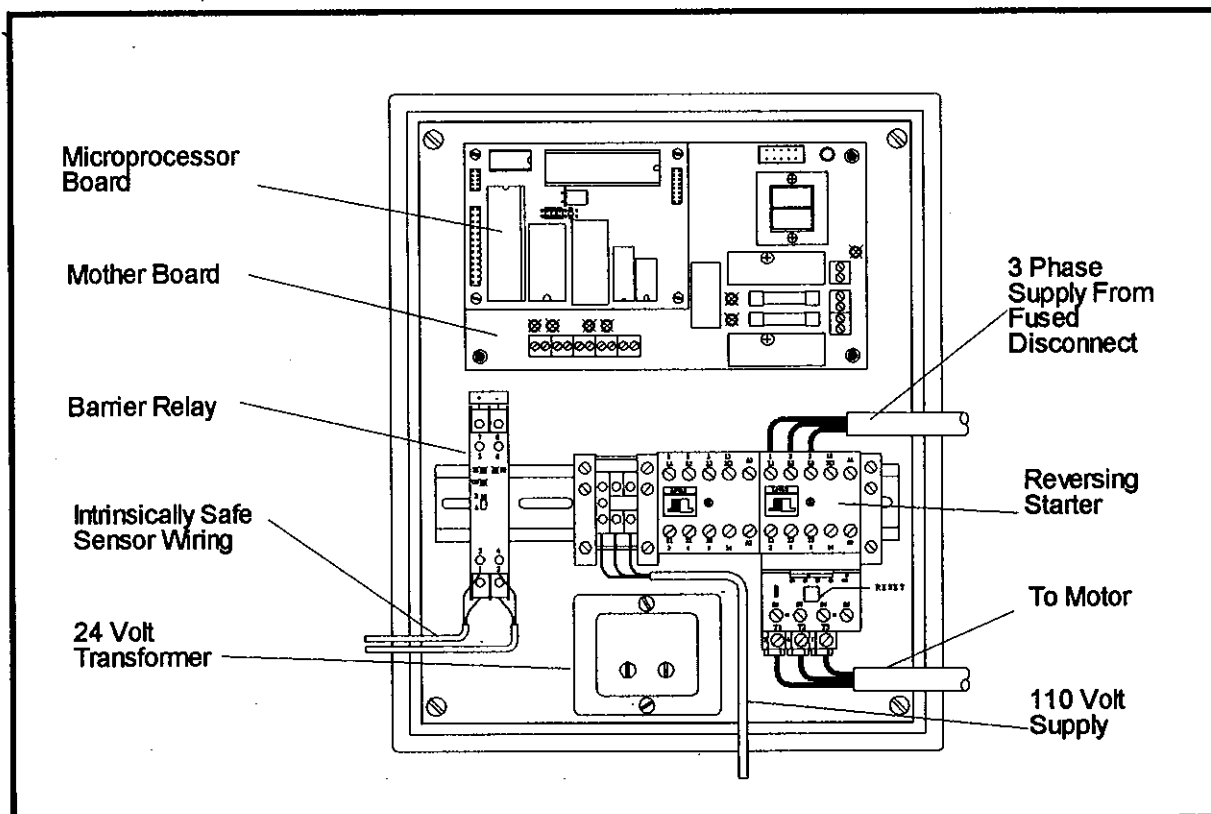


Figure 1. Note that the high voltage wiring enters and exits the lower-right quadrant of the control. Do not loop this wiring near the electronics board. The sensor wiring should enter the lower-left quadrant of the control.

110 VOLT CONTROL POWER

Place the branch circuit breaker in a close location.

Bring wiring into the 110v terminal strip.

Provide good ground bonding at each end.

CHECKOUT

Apply power to the panel.

24 vac lamp must be lit on the right side of the control board.

3 PHASE MOTOR CIRCUIT

Most EDI drives use 1/2 HP 3 phase 230/460 volt motors with an electric brake.

The brake must be wired properly within the motor. The instructions for this wiring is on the motor.

Special order motors will be indicated on the packing slip.

Current draw in AMPS for various voltages. (Motor & Brake)

	115 V 1 Phase	230V 1 Phase	208 V 3 Phase	230V 3 Phase	480V 3 Phase	575V 3 Phase
1/2 HP	9.8	4.6	2.0	1.8	0.9	0.8
3/4 HP				2.5	1.25	1.1

Standard overloads are adjustable from .9 to 1.8 amps.

Provide power from a fused disconnect to the starter on terminals **L1,L2,L3**.

Supply power to the distributor motor from terminals **T1,T2,T3**.

Adjust thermal overload to full motor load current. You may order a different overload if the standard unit does not cover the required amp range.

Make sure reset button is pushed in.

CHECKOUT

Manually operate the starter thru either window at the top of the starter. Confirm distributor rotation in both directions. There is no need to check for proper motor direction.

CONNECTING THE SENSORS

The sensors are part of an intrinsically safe circuit. There are 2 sensors, thus 4 wires required for each drive. Use 26 ga. or heavier, stranded or solid, shielded or unshielded wire up to 1000' in length. (Thermostat wire is fine.) Do not run sensor wires with power wiring. Keep sensor wiring to the left side of the control box, power wiring on the right.

Note: Sensors are polarity sensitive but will not be damaged by a temporary reversal. You can't smoke anything by hooking it up backwards...it just won't work!

Make sure the small switch on the relay is in the **R** position.

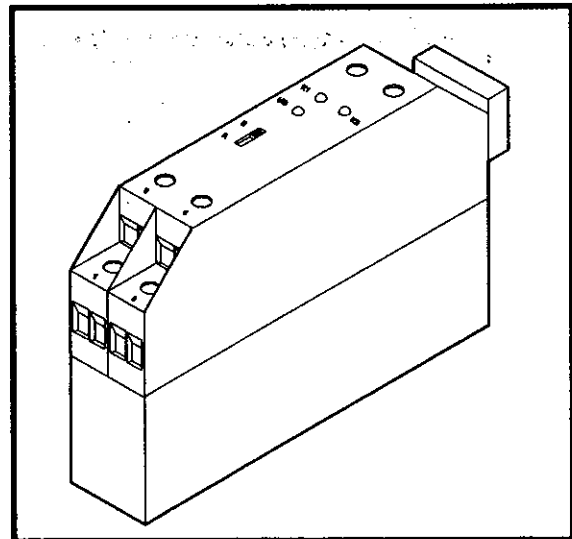


Figure 2. Turck MK1 barrier relay.

Apply 110v control power to the panel. At least the green lamp on the relay marked **UB** should light. **K1** & **K2** will probably be on also.

From the sensor marked **1**, connect the **BROWN** wire to terminal **2** and the **BLUE** wire to **4**.
From the sensor marked **2**, connect the **BROWN** wire to terminal **1** and the **BLUE** wire to terminal **3**.

CHECKOUT

Apply motor power to the panel.

Manually engage either side of the starter.

The lamps on the **RIGHT** side of the relay **K2** should blink off rapidly in sets of 5 blinks per burst.

The lamps on the **LEFT** side **K1** should blink off intermittently during each burst.

If the blink pattern is opposite exchange terminal **2** with **1** and **3** with **4** and try again.

If one side or the other does not blink, correct the wiring problem before going further.

INSTALLATION CHECKLIST

Before you startup the control, use this checklist to make sure everything is ready.

- a. 110 volt control supply is on.
- b. 3 phase motor supply is on and fused. It is not necessary to check for proper rotation.
- c. The reset on the starter is set.
- d. The barrier lamps K1 & K2 have been checked for the proper blink pattern.
- e. The brake on the motor has been wired and is working. Instructions are usually inside the motor conduit box and on the outside of the motor or brake housing.
- f. The distributor spout has been fully turned and has been checked for free movement.
- g. The sensors are properly spring loaded and shimmed. This should only be necessary if they have been moved from the factory setting.

LEARN MODE - FULL ROUND DISTRIBUTORS

Turn the control power off then on.

Display reads:	Your action:	Comment:
RESET=0 NEW=1 or ENTER=RESET WAIT... COUNT=x	1	Wait while the distributor runs thru an automatic setup sequence that counts the number of ducts. During this time the display shows the count as each position found on the distributor. When finished, this number must match the actual number of positions on the distributor. It then moves the spout to duct number 1 for the centering adjustment.
75 ADJ #	100<enter> (Example only)	You now enter numbers from 1 to 1000 followed by <enter> until you are satisfied that the spout centers properly. Each time the spout will re-center it self using your new number. A beginning default centering number of 75 is used by the control. Let's assume it's a little short of centering on the duct. Spout will re-center itself on duct 1 using 100 as the centering number.
100 ADJ #	90<enter> (Example only)	Now, assume it went a little too far. Spout will re-center itself once more on duct 1.
90 ADJ #	0<enter>	Looks good. The '0' tells the control that you're satisfied with the centering for duct 1.
RESET MEMORY 1=YES 2=NO	1	The control will now setup the display with default names & numbers if you press '1'. The control stores all this information into permanent memory and does some house keeping chores. The lights on the display will blink as default bin numbers and names are put into memory.
< n> POS n		You're done. Go ahead and use the distributor. Read the Operation Manual on how to program the control in order to use your custom numbers and names.

LEARN MODE - FLATBACK OR SWINGSET DISTRIBUTORS

Turn the control power off then on.

Display reads:	Your action:	Comment
RESET=0 NEW=1 or ENTER=RESET	1	The spout starts in motion. Wait while it runs thru an automatic setup sequence to find duct 1. When the spout stops it is not properly centered. You will adjust this in the next sequence.
200 ADJ #1	400<enter> (Example only)	You can now enter numbers from 1 to 2000 followed by <enter> until you are satisfied that it is centered properly. Each time the spout will re-center it self using your new number. Let's assume it's a little short of centering on the duct. The spout will backup up and re-center itself on duct 1 using 400 as an adjustment number.
400 ADJ #1	350<enter> (Example only)	Now, assume it went a little too far. The spout will backup up and re-center itself on duct 1 using 350 as an adjustment number.
350 ADJ #1	325<enter> (Example only)	The spout will backup up and re-center itself on duct 1 using 325 as an adjustment number. Let's assume this looks good.
325 ADJ #1	0<enter>	The '0' tells it you're satisfied with the centering for duct 1. The spout will now go into motion searching for the last duct, counting the number of ducts as it moves. When it finds the last duct it will stop and request a centering number while also displaying the last duct number.
75 ADJ #n	90<enter> (Example only)	Proceed as with duct number 1 keeping in mind that the centering number used for the last duct is also automatically used for all other ducts except duct 1. #n = Number of ducts on your distributor. Keep entering numbers until you are satisfied with the centering.
95 ADJ #n	0<enter>	Looks good.
RESET MEMORY 1=YES 2=NO	1	The control will now setup the display with default names & numbers if you press '1'. The control stores all this information into permanent memory and does some house keeping chores. The lights on the display will blink as default bin numbers and names are put into memory.
< n> POS n		You're done. Go ahead and use the distributor. Read the Operation Manual on how to program the control in order to use your custom numbers and names.

INSTALLATION TROUBLESHOOTING

Before You Call for Help, Please Check the Following:

Most start up problems occur because the K1, K2 Barrier Relay lamps are wired improperly or are are wired backward (left/right).

Both lamps must blink during spout movement.

The K2 (right) lamp must show a burst of 5 blinks then a quiet period before the 5 blinks repeat.

The K1 (left) lamp must blink intermittently.

As soon as the '1' key is pressed for the LEARN MODE you should hear the starter pull in. If it doesn't check the reset on the starter overload.

After the starter pulls in you can detect spout motion when the K1, K2 lamps blink. If they both don't blink there may be a problem with:

- the motor supply power
- a mechanical blockage in the path of the spout
- miswired or damaged sensor wiring
- sensors not positioned properly.

After checking the above and you have not corrected the problem, please call us for technical support. It is very helpful if you can be at the control with a phone.

HOW TO CONTACT US

Schlagel, Inc.
491 No. Emerson St.
Cambridge MN 55008

PHONE: 612-689-5991 800-328-8002

FAX: 612-689-5310

E-MAIL: sales@schlagel.com