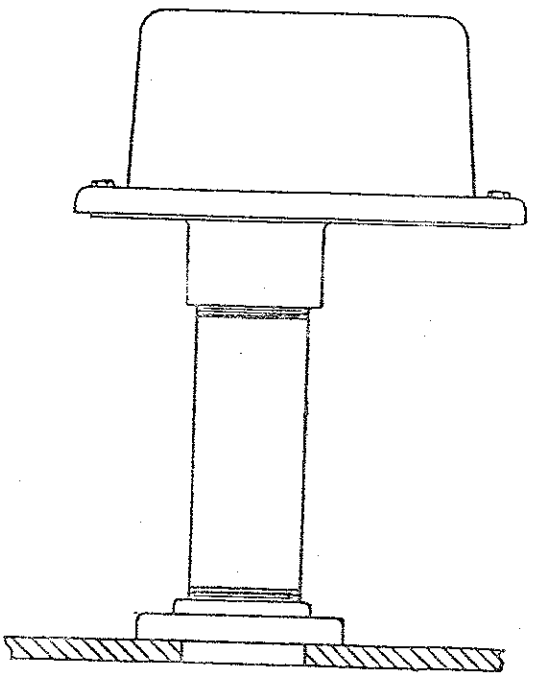
⚠ **WARNING - Reliance on this Manual Could Result in Severe Bodily Injury or Death!**

This manual is out-of-date and is provided only for its technical information, data and capacities. Portions of this manual detailing procedures or precautions in the operation, inspection, maintenance and repair of the product forming the subject matter of this manual may be inadequate, inaccurate, and/or incomplete and cannot be used, followed, or relied upon. Contact Conair at info@conairgroup.com or 1-800-654-6661 for more current information, warnings, and materials about more recent product manuals containing warnings, information, precautions, and procedures that may be more adequate than those contained in this out-of-date manual.

GP Yo-Yo®

Inventory Management System

Installation & Operation Manual



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Spartanburg, SC 29306
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email: sales@bindicator.com

7/01 - Rev. F

LBY280180

GP Yo-Yo®

Installation and Operation Manual
3/98 Rev. E. LBY280180

Important!
Do not dispose of the carton or packing material until the unit has been inspected for damage.
If the unit is received damaged, notify the carrier or the factory for instructions.
Failure to do so may void your warranty.
Thank you!

1.0 INTRODUCTION

The BINDICATOR General Purpose Yo-Yo® inventory control system consists of a vessel mounted sensor and a remote digital readout. The measurement is obtained by pressing the start button on the readout unit. This causes the sensor weight to be lowered to the material. When contact of the weight with the material occurs the count stops and the weight returns into the sensor, that is why these units are known as Yo-Yos®. The length of cable that is dispensed is displayed on the digital readout unit in 1/10 foot (1cm) increments. Standard length of the cable is 75 feet (23m).

The primary use of the General Purpose Yo-Yo® is for inventory control. The General Purpose Yo-Yo® measures on demand, the level of fine powders, granular or lumpy materials, liquids and liquid/solid interface in open or closed vessels.

2.0 APPLICATION/INSTALLATION CONSIDERATIONS

On bulk solids an average level can be obtained by selecting a position on the vessel that will provide an equivalent average. On cylindrical vessels with a center fill and center discharge, this position is 1/3 of the radius from the outside wall. This is shown in ***Figure 1.*** On vessels with other types of fill and discharge or other than round shapes, a point which will provide an average level must be determined.

It is not recommended that the unit be operated when you are filling the vessel. It becomes obvious that if the sensor is lowered and becomes buried the unit will be inoperative. The motor will carry up to 11 pounds and the weight is generally 20-25 ounces. Should the weight not be retrieved the cable will hold it until the tension exceeds 140 lbs. Once this occurs the cable will break and the weight will be lost.

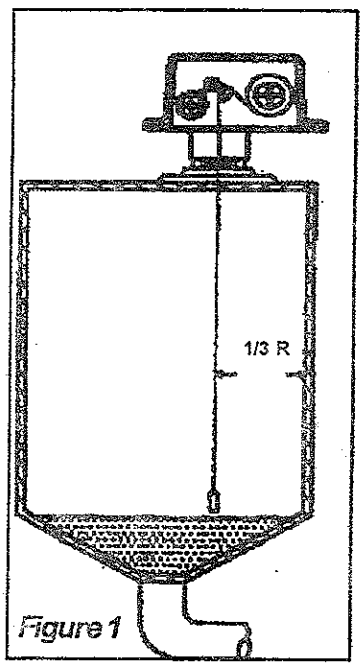


Figure 1

Air flow characteristics should be a consideration. The internal dynamics of bulk solids storage vessels varies drastically. Should your vessel include an air filter that continuously moves the air in the vessel, there could be a problem with the weight returning to the sensor. As the weight is lowered into these air currents, it may start spinning or swinging. The spinning cable twists and creates knots. The swinging could cause the cable to rub on the bottom of the stand pipe and cut the cable-resulting in the weight being lost. A solution to this problem would be to only take readings when all equipment has been shut off.

Liquid applications require that the liquid be compatible with the weight. The float-weight must be used to provide 20-25 ounces and still provide the buoyancy required to stop the cable. The liquid should not have a build up or coating effect. This would change the weight of the float-weight.

3.0 INSTALLATION

Mechanical: The sensor housing is mounted on a 3 inch NPT threaded connector. This could be a nozzle welded to the vessel or a nipple that is threaded into a flange. If a close nipple is used, there is a possibility that the weight will extend into the vessel. This is acceptable when no dynamic conditions in the vessel would cause the weight to blow around or spin. All of BINDICATOR's standard weights will fit into a 3 inch diameter pipe. A 12 inch long pipe nipple is long enough to store the weight out of the vessel.

The sensor housing is rated as NEMA 4/5 for use in nonhazardous areas. With all the screws securing the cover, the sensor will remain weathertight. With the sensing weight in the stored position a seal will prevent the intrusion of product into the enclosure. However, while a measurement is being taken, product can be blown into the housing. To prevent this from happening an air purge option is available.

3.0 INSTALLATION (continued...)

The plastic bottle weight should be filled with approximately 20-25 ounces of the material from the vessel. If this much weight will not fit into the bottle, a compatible material may be used to obtain the 20-25 ounces required. This plastic bottle weight needs to keep the cable taut at all times.

Note: Avoid taking a reading while the vessel is filling or emptying. The weight could become buried resulting in the loss of the weight and/or the inability to obtain a reading.

Electrical Wiring: The readout will provide all of the sensor wiring. (See ***Figure 2 and 3***) The polarity of the wires must be maintained. If the power to the system is not clean and free of interference, an isolation transformer should be used. Refer to the PARTS LIST for the isolation transformer.

Note: The multichannel readout can have up to 14 wires returning from 10 sensors (See ***Figure 3***). A junction box should be used to consolidate the common wires from the different sensors. All wiring should be in conduit and isolated from any high voltage equipment.

Note: Make sure that all wiring is done according to the proper hook-up diagram. Incorrect wiring will damage PC boards and void the warranty. Make certain all power is off until the unit is completely wired and covers are securely in place. The appropriate hook-up drawing is located on the underside of the readout cover.

Single Unit and Timer Readout: All of the wiring for field installation of the sensor unit is brought to the terminal strips in the readout unit. Refer to the Figures 2 or 4 for 110V or 220VAC power input respectively.

Multiple Unit Readout (1-10 Vessels): All of the wiring for field installation of the sensor units are brought to the terminal strips in the readout unit. Refer to the Figures 3 or 5 for 110V or 220VAC power input respectively.

The number of conductors required in wiring a multiple sensor readout unit equals the number of sensor units to be serviced plus four. There are two recommended cable run arrangements:

Arrangement #1.) Run a four-wire cable from each sensor unit and then tie all the identical color or numbered wires together (except #9 wires) before placing them on terminal strip TB-1 at the readout unit. The #9 wires are brought directly to the terminal strip TB2 and wired in sequence as indicated on the wiring diagram.

Arrangement #2.) Run all the sensor wiring to a common terminal block arrangement at the top of the vessels and bring back one 14 conductor cable (the #9 wire for each of the 10 vessel positions, 4 wires for the power and count circuit—numbers 5, 6, 7, and 8).

4.0 SETUP/CALIBRATION

For a standard ***additive readout*** there is no calibration. The pulses from the sensor are accumulated and displayed as they are transmitted from the sensor.

The ***subtractive readout*** must be preset for the height of the vessel prior to operation. When the sensor is activated, the preset height is stored into the memory and displayed. As the pulses are transmitted to the readout, 0.1 ft. is subtracted from the display for each pulse. When the motor reverses, the level shown on the display represents the amount of material (FEET OF PRODUCT) in the vessel.

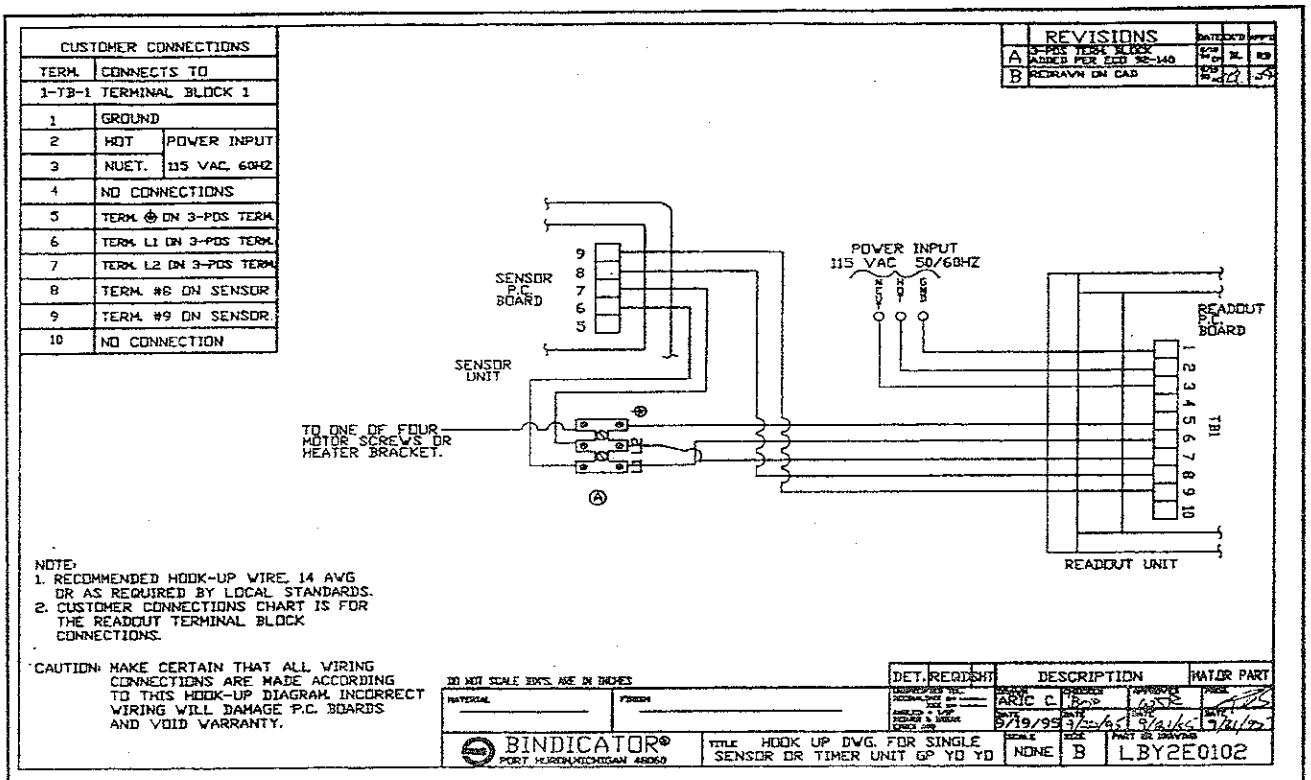


Figure 2 **Hookup of Single Channel Readout 110VAC**

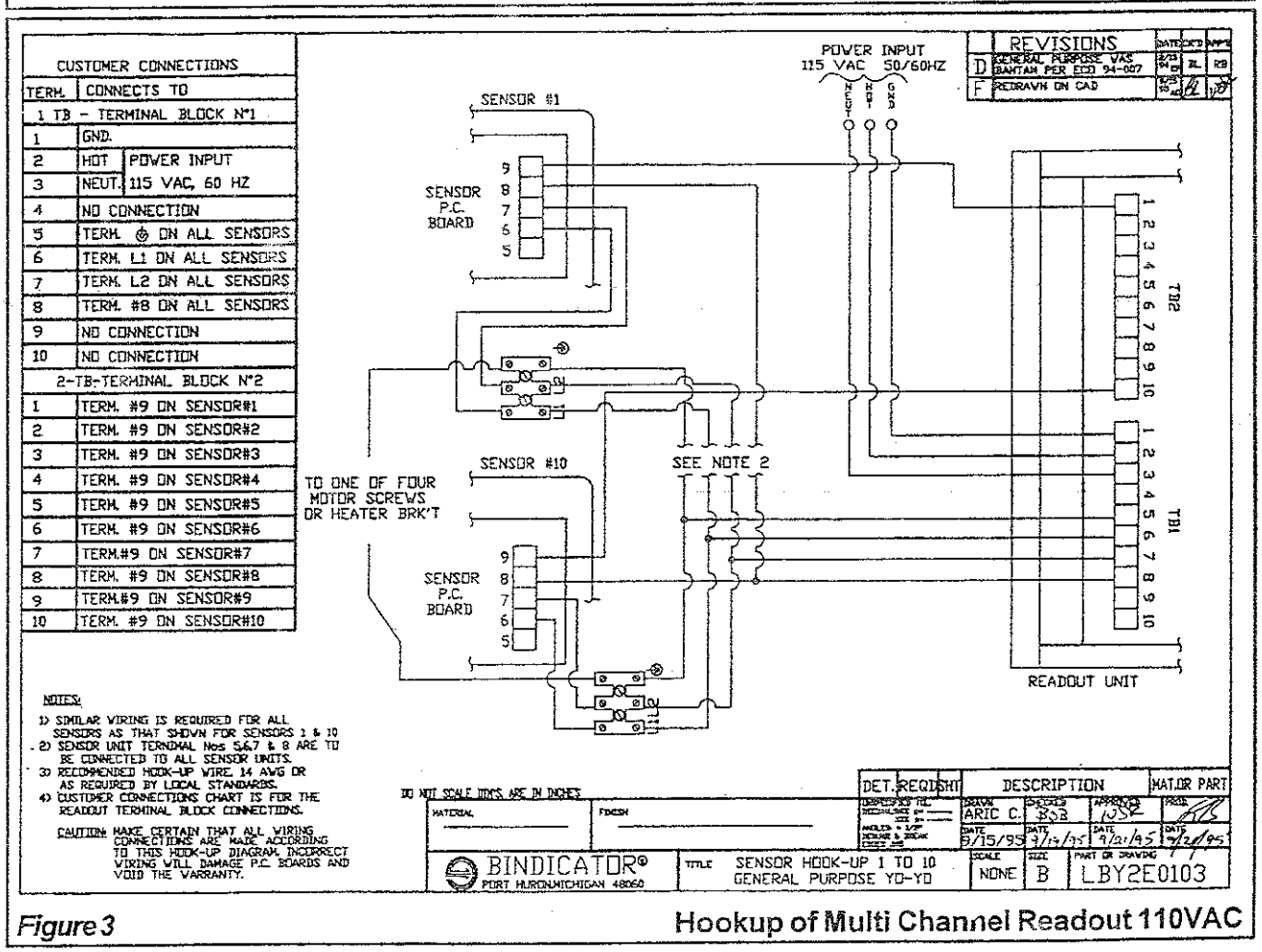


Figure 3 **Hookup of Multi Channel Readout 110VAC**

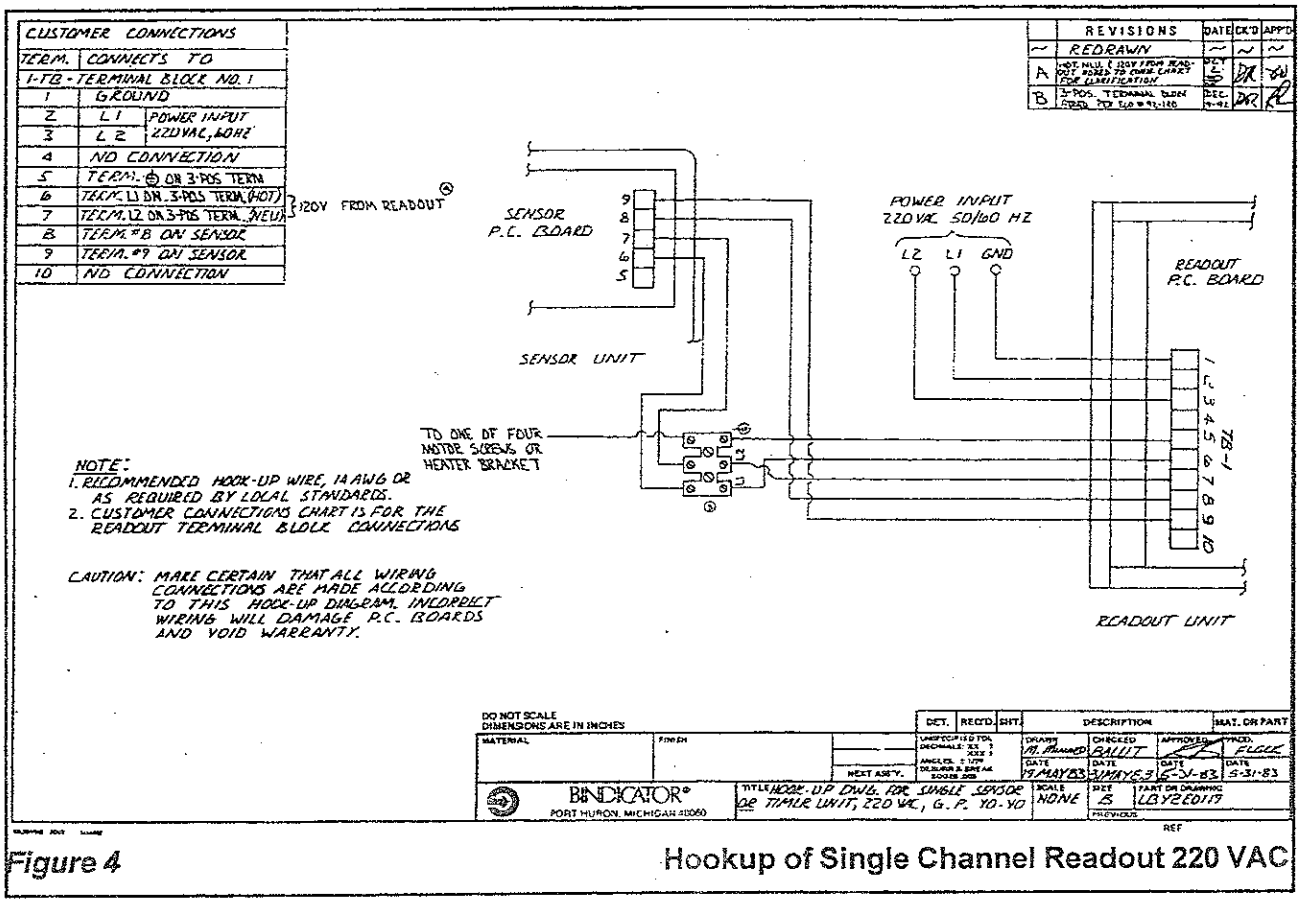


Figure 4 Hookup of Single Channel Readout 220 VAC

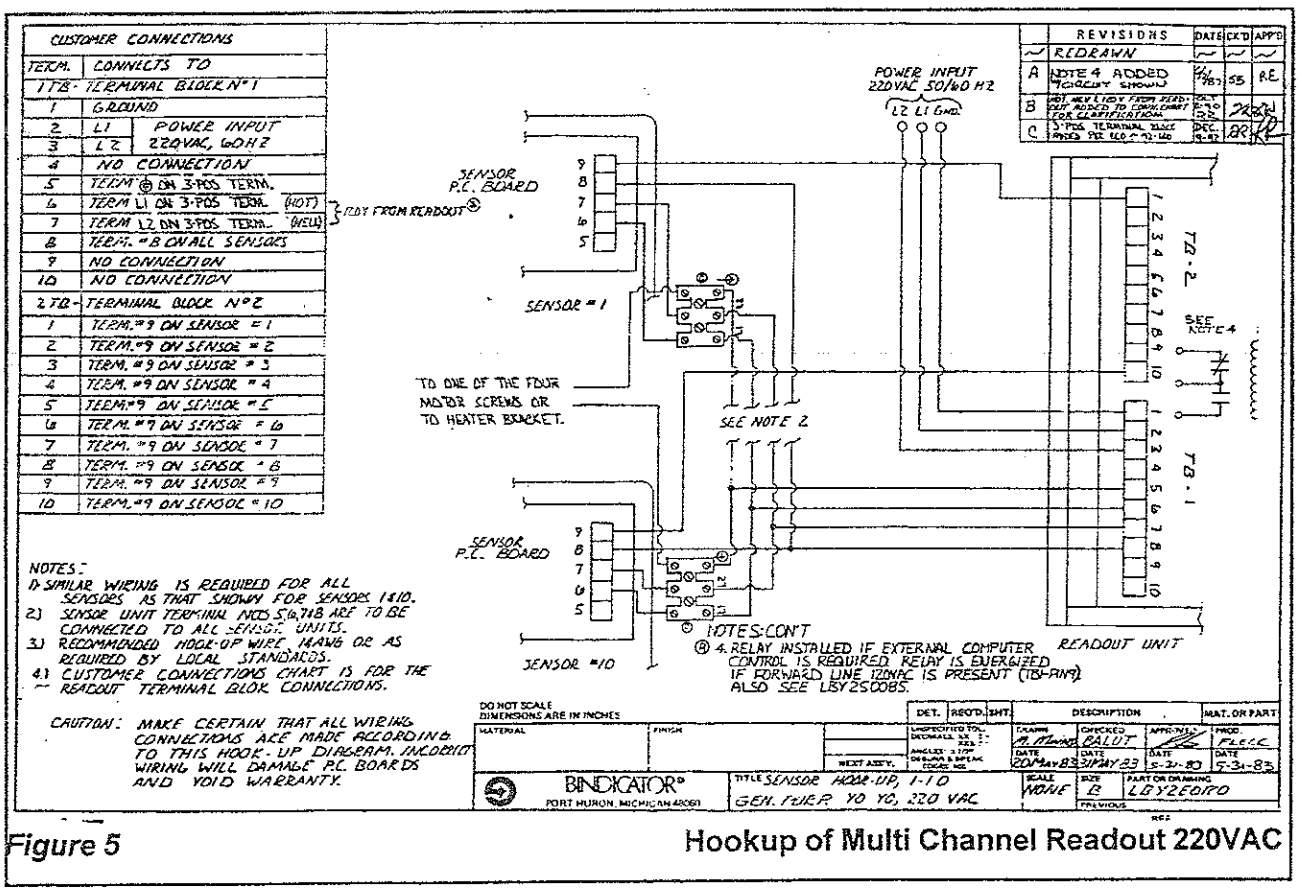


Figure 5 Hookup of Multi Channel Readout 220VAC

Since only one value can be set in the readout, **all vessels in the system with a multi-channel readout must be of the same height.** Use the following steps to set the height of the vessels.

1. Locate the DIP Switches S1, S2, S3, and S4 as shown in ***Figure # 6*** below: Set the switches as in ***Table # 1*** below.
2. The most significant digit, MSD (S4), represents hundreds of feet (or 1000s of cms)
3. The least significant digit, LSD (S1), represents tenths of feet (or single cms)
4. These switches represent a binary coded decimal (BCD) which is equal to the vessel height.
5. Locate S5 which controls the readout's additive or subtractive function (see ***Figure #6***). Set the switches as in ***Table #2*** below.

Switch Position				Numeral Displayed									
4	3	2	1	0	1	2	3	4	5	6	7	8	9
0	0	0	0	X									
0	0	0	1		X								
0	0	1	0			X							
0	0	1	1				X						
0	1	0	0					X					
0	1	0	1						X				
0	1	1	0							X			
0	1	1	1								X		
1	0	0	0									X	
1	0	0	1										X

"1" = indicates switch position is closed (ON)
"0" = indicates switch position is open (OFF)

Table # 1

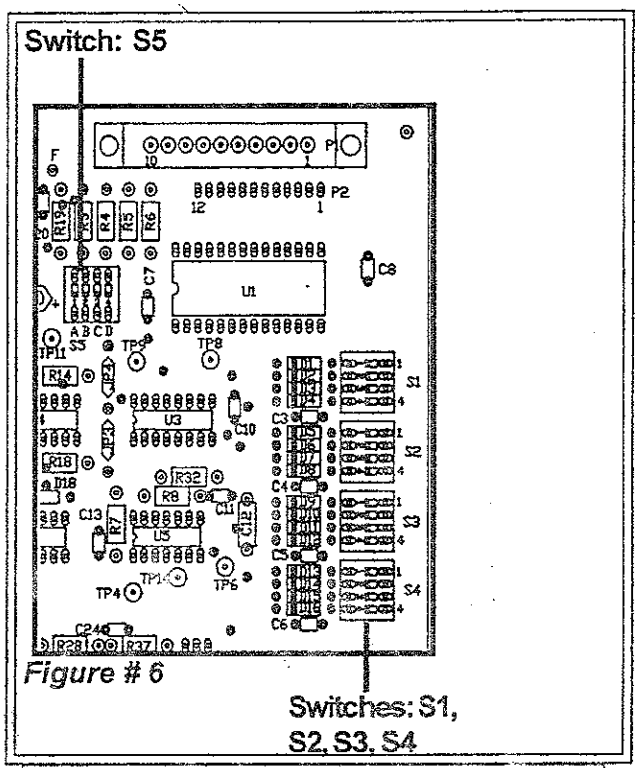


Figure # 6

S5 Switch Postions		
Additive Counter	= Postions 2, 4	- OFF
	Positions 1, 3,	- ON
Subtractive Counter =	Positions 3	- OFF
	Positions 1, 2, 4	- ON

Table # 2

5.0 OPERATION

With all connections made, and power to the readout, press the start button on the readout. The sensor motor will lower the weight into the vessel and the level will be displayed on the readout (See ***Section 8.0 for Specifications and Section 11.0 for Drawings***).

If the motor does not start or a reading is not displayed, proceed to ***Section 7.0*** **TROUBLESHOOTING.**

The following is the sequence of events for the operation of a digital readout display and the Yo-Yo Sensor

Sequence of Events

1. **Push the Start button on the Digital Display Readout**
   a. The run light is on
   b. The display is reset
   c. The motor starts--sensing weight begins to descend

2. **Count pulses detected in readout unit**
   a. maintain the power to the motor
   b. maintain the power to the run light
   c. counter accumulates and displays count pulses

3. **Weight contacts material and count pulses cease**
   a. Readout unit turns off forward motor voltage
   b. Sensor unit reverses motor
   c. Level indication is complete and retained by counter

4. **Sensing weight contacts housing and stalls the motor**
   a. relay is deactived
   b. motor and run light are shut off

6.0 SELECTABLE OPTIONS

6.1 YO-YO SENSOR

Heater = A heater is required for installation where the temperature will drop below 32°F (0°C)
Metric = A metric unit is required for installation where personnel use metric measurements.
Air Purge = Air purge is necessary for dusty-dirty envrionments, to keep dirt from entering the enclosure.
Note: There are combinations of all of the above, look at your name plate and review the part numbers in Section 9.0 for the description of your unit.

6.2 READOUT DISPLAY

Digital to Analog Convertor at the Readout
The D/A Convertor changes digital signals received from the sensor unit into a proportional 4-20mA DC output suitable for interface with a computer, remote panel meter, or other control equipment.

The output is field selectable to provide a range of 4-20mA DC (for additive readouts) representing distance to product or 20-4mA DC (for subtractive readouts) representing feet of product.

If 4-20 output is desired, move switch S1 located on the D/A Convertor board to the 4-20mA position. In this mode, the output will be 4mA for a full vessel and 20mA for an empty vessel.

If 20-4mA output is desired, move switch S1 to the 20-4mA position. In this mode, the output will be 20mA for a full vessel and 4mA when it is empty. (NOTE: Switch S1 is a three position switch, the middle switch position is the "off" position.)

Generally, the output mode will be the same as the digital readout display; i.e., 4-20mA (additive) corresponds to feet to product, and 20-4mA (subtractive) corresponds to feet of product.

Calibration

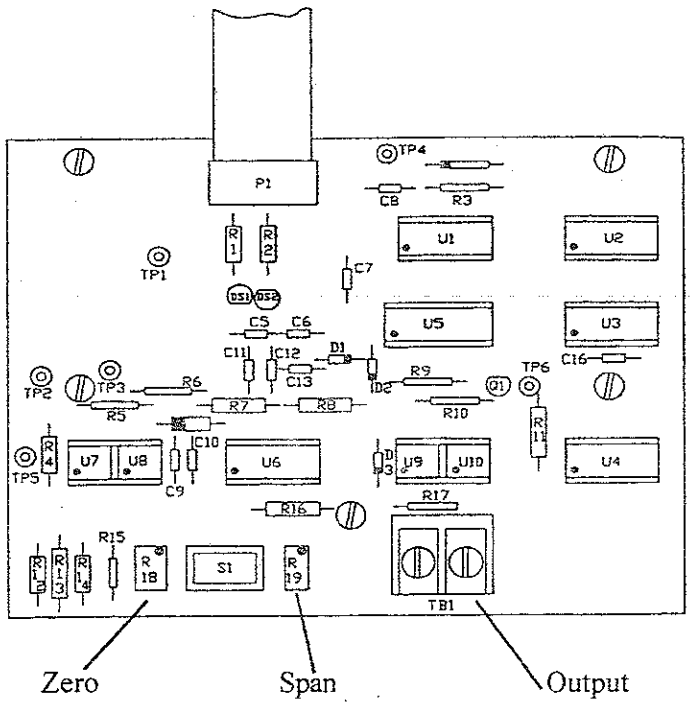
The D/A converter is precalibrated by the factory to the customer's vessel dimensions, if given on the order. In certain cases it may be necessary to change the calibration in the field. The following field calibration instructions assumes that the vessel is empty. If it is not possible to empty the vessel, consult the factory for assistance.

4-20mA Mode

1. Disconnect the equipment from the output terminals of the D/A board. Connect a portable DC current meter to the output terminals.
2. Apply power to the readout unit.
3. Adjust the zero potentiometer on the D/A board so the output reads exactly 4mA.
4. Depress the start button at the readout. When the sensor motor reverses, the analog output will update to a greater current value.
5. After the readout run light goes out, adjust the span potentiometer so that the output reads exactly 20mA
6. Repeat steps 2 through 5 to verify initial calibration.
7. Reconnect customer equipment to output terminals.

20-4mA Mode

1. Disconnect the equipment from the output terminals of the D/A board. Connect a portable DC current meter to the output terminals.
2. Apply power to the readout unit.
3. Adjust the zero potentiometer on the D/A board so the output reads exactly 20mA.
4. Depress the start button at the readout. When the sensor motor reverses, the analog output will update to a greater current value.
5. After the readout run light goes out, adjust the span potentiometer so that the output reads exactly 4mA
6. Repeat steps 2 through 5 to verify initial calibration.
7. Reconnect customer equipment to output terminals.



7.0 TROUBLESHOOTING

Sympton	*Probable Cause*	*Check For...*
No lights on display	Faulty Wiring	Check field wiring and proper input power at TB1, Position 2 & 3
	Blown Fuse	Check Fuse
Run light will not go out	Shorted wire connections	Check TB1, Position 9 (Single Readout) or all wires to TB2 (Multichannel Readout) for short circuits with reference to TB1, Positions 6 & 8
Counter will not reset	DIP Switch set improperly	Check S5 for proper setting of switches
Motor will not run	Loss of wire continuity	Check for continuity between Position 9 on TB1 and the readout unit
		Check motor wiring on PC Board for open circuits
Display does not count	Lost sensor weight	Replace weight
	Wire #8 on TB1 open or shorted	Check for opens or shorts
	Cable not taut	Check pulley, check for proper weight in bottle
	Misalignment of interrupter wheel on PC board	Check for alignment
	Loss of supply power on sensor(s)	Check for input power at positions 6 & 7 on TB1
Motor will not reverse	Improper motor wiring	Check for open circuits between motor & PC Board
	No power at sensor(s)	Check for voltage at positions 6 & 7 on TB1
Sensor will not shut off	Improper alignment of interrupter wheel	Check interrupter wheel mounting screw for secure fastening
Cable comes off pulley	Sticking sensing arm	Ensure sensing arm is free to travel and spring is properly in place
	Improper amount of weight in sensor weight bottle	Ensure proper weight in bottle (20 to 25 ounces)
	Loose storage wheel shaft	Tighten the allen screw on shaft
Sensor short cycles	Misaligned interrupter wheel	Check interrupter wheel alignment
	Insufficient amount of weight in bottle weight	Add to amount of weight in bottle (up to 35 ounces)
Readout count slow, erratic; or can't start sensor (s)	Line voltage may contain electrical "noise"	May need isolation transformer (See Parts List)

8.0 SPECIFICATIONS

GENERAL PURPOSE YO-YO® SENSOR

Enclosure Rating:	General Purpose NEMA 4/5
Enclosure Material:	Frame - Minlon, Cover - Low Density Polyethylene
Weight:	13 Lb (4.85 kg)
Mounting:	3" NPT Female Threads
Quiescent Power:	120VAC, ± 10%, 50/60 Hz, 4 Watts; with heater add 10 watts
Operating Power:	120VAC, ± 10%, 50/60 Hz, 27 Watts (If power is going below as recommended an isolation transformer is required. See Parts List.) (With Heater Option add 10 Watts to above)
Temperature Limits:	32°F to +120°F (0°C to +49°C)
Temperature Limits/Heater:	-40°F to +120°F (-40°C to +49°C)
Pressure:	Atmospheric
Sounding Rate:	33 ft/minute Minimum (10M/minute) 56 ft/minute Maximum (17M/minute)
Maximum Range:	100 ft (30M); 75 feet (23M) is standard unless noted otherwise on the order
Resolution:	± 0.1 ft
Repeatability:	± 1 count (0.05% of 100 feet)
Measuring Cable:	Braided Polyester (140 lb test)
Sensing Weights:	Polyethylene bottle weight (To be filled with 20-25 ounces of material), SS Float weight, SS Bob Weight, Plastic Spike Weight

GENERAL PURPOSE YO-YO® READOUT

Construction:	Table or Panel Mount NEMA 1 Wall Mount NEMA 4
Weight:	5 Lbs. (approx) (1.87kg)
Operating Temperature:	-30°F to +120°F (-34°C to +49°C)
Power Consumption:	5 Watts
Voltage:	120VAC ± 10%, 50/60 Hz 240VAC ± 10%, 50/60 Hz (If power is going below as recommended an isolation transformer is required. See Parts List.)
Resolution:	± 0.1 Feet (1.0cm)
Repeatability:	± 0.1 Feet (1.0cm)

Sensor to Readout Distance: 1 Mile (1.6 km) Maximum

9.0 MODEL CODE/PART NUMBERS

SENSOR UNITS

Product Code	Description
LBY206065-20	Standard Unit (English)
LBY206066-20	Standard Unit (English) with Heater
LBY206067-20	Standard Unit (Metric)
LBY206068-20	Standard Unit (Metric) with Heater
LBY206069-20	Standard Unit (English) with Air Purge
LBY206070-20	Standard Unit (English) with Air Purge & Heater
LBY206071-20	Standard Unit (Metric) with Air Purge
LBY206072-20	Standard Unit (Metric) with Air Purge & Heater

MOUNTING FLANGES

Product Code	Description
LBY221622	3" 150# ASA Flange, Aluminum
LBY221625	3" 150# ASA Flange, Mild Steel
LBY221626	3" 150# ASA Flange, Stainless Steel

STANDPIPES

Product Code	Description
LBY231030	3" X 3" Aluminum Standpipe
LBY231020	3" X 12" Aluminum Standpipe
LBY231090	3" X 3" Stainless Steel Standpipe
LBY231100	3" X 12" Stainless Steel Standpipe
LBY231110	3" X 3" Mild Steel Standpipe
LBY231120	3" X 12" Mild Steel Standpipe

10.0 REPLACEMENT PARTS

Plastic Weight Assembly with Spike	LBY211269
Plastic Weight Assembly	LBY211182
Stainless Steel Bob Weight Assembly	LBY211188
Double Wrap Wheel	LBY211406
Count Wheel & Shaft Assembly - English/Metric	LBY211296
Count Wheel & Shaft Assembly - Metric only	LBY211306
[b]Sensing Arm Assembly	LBY211416
[b]Sensor Printed Circuit Board	LBY211417
Shaft Seal	LBY230380
Motor (120V - 50/60 Hz)	LBY211375
[b]Measuring Cable - Polyester (Specify Length)	LBY231290
Storage Wheel	LBY233204
Storage Wheel Drive Shaft	LBY221645
Frame Gasket	LBY233116
[b]Sensing Arm Spring	LBY233122
[b]Cover Gasket	LBY233131
[b]10-Slot Interrupter Wheel	LBY233138
Isolation Transformer (Plugs into Wall Outlet)	LUC035683
Isolation Transformer (Hard-Wired)	LUC036139
Heater Kit	LBY211403

[b]Recommended Spare Parts plus appropriate weight, count weight and shaft assembly.

11.0 DRAWINGS

LBY2E0104	Outline Dimensions & Mounting GP Yo-Yo Sensor Unit
LBY2E0100	Outline Dimensions for Single Vessel Readout
LBY2E0101	Outline Dimensions for Multiple (1-10) Vessel Readout
LBY2E0113	Outline Dimensions for NEMA 4 (1-10) Vessel Readout
LBY2E0169	Hookup, Heater GP Yo-Yo
LBY2P0033	Procedure, GP Yo-Yo

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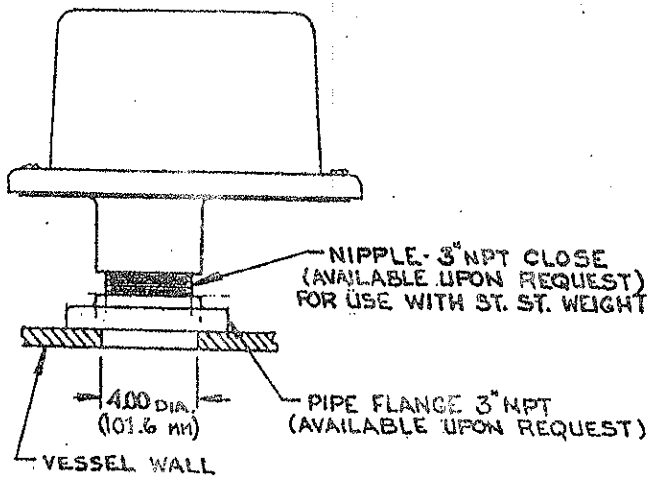
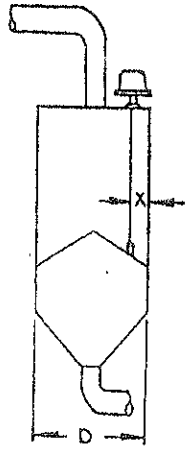
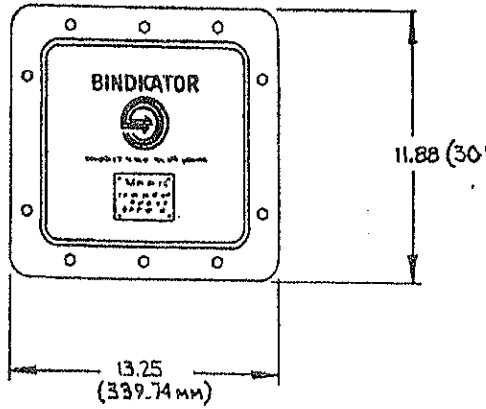
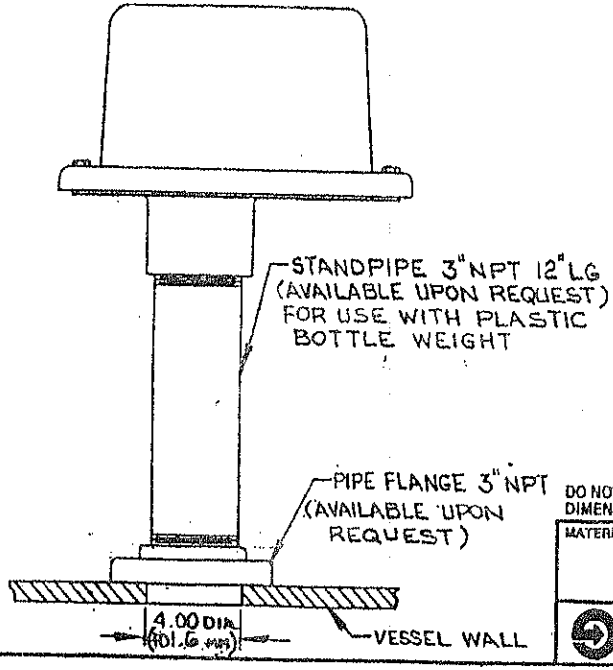


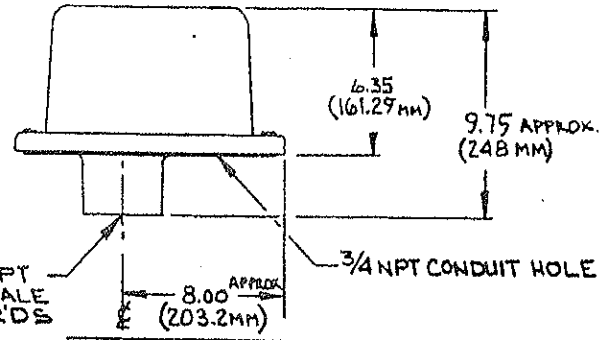


YO-YO SENSOR MOUNTING FOR CENTER FILL CENTER EMPTY APPLICATIONS

FOR ACCURATE REPEATABILITY MOUNT SENSOR SO THAT:
X = 1/6 D
X = (1.59 MM D)







DO NOT SCALE
DIMENSIONS ARE IN INCHES

DET.	REQ'D.	SHT.	DESCRIPTION	MAT. OR PART

MATERIAL | FINISH

NEXT ASS'Y.

UNSPECIFIED TOL.
DECIMALS: XX ±.
XXX ±.
ANGLES: ±1/2°
DEBURR & BREAK EDGES .005

DRAWN	CHECKED	APPROVED	PROD.
BRENTON	BANT	D.R.	FLETCH
DATE 28 JUNE 78	DATE 21 JUNE 78	DATE 10 AUG 78	DATE 10 AUG 78

BINDICATOR®
PORT HURON, MICHIGAN 48060

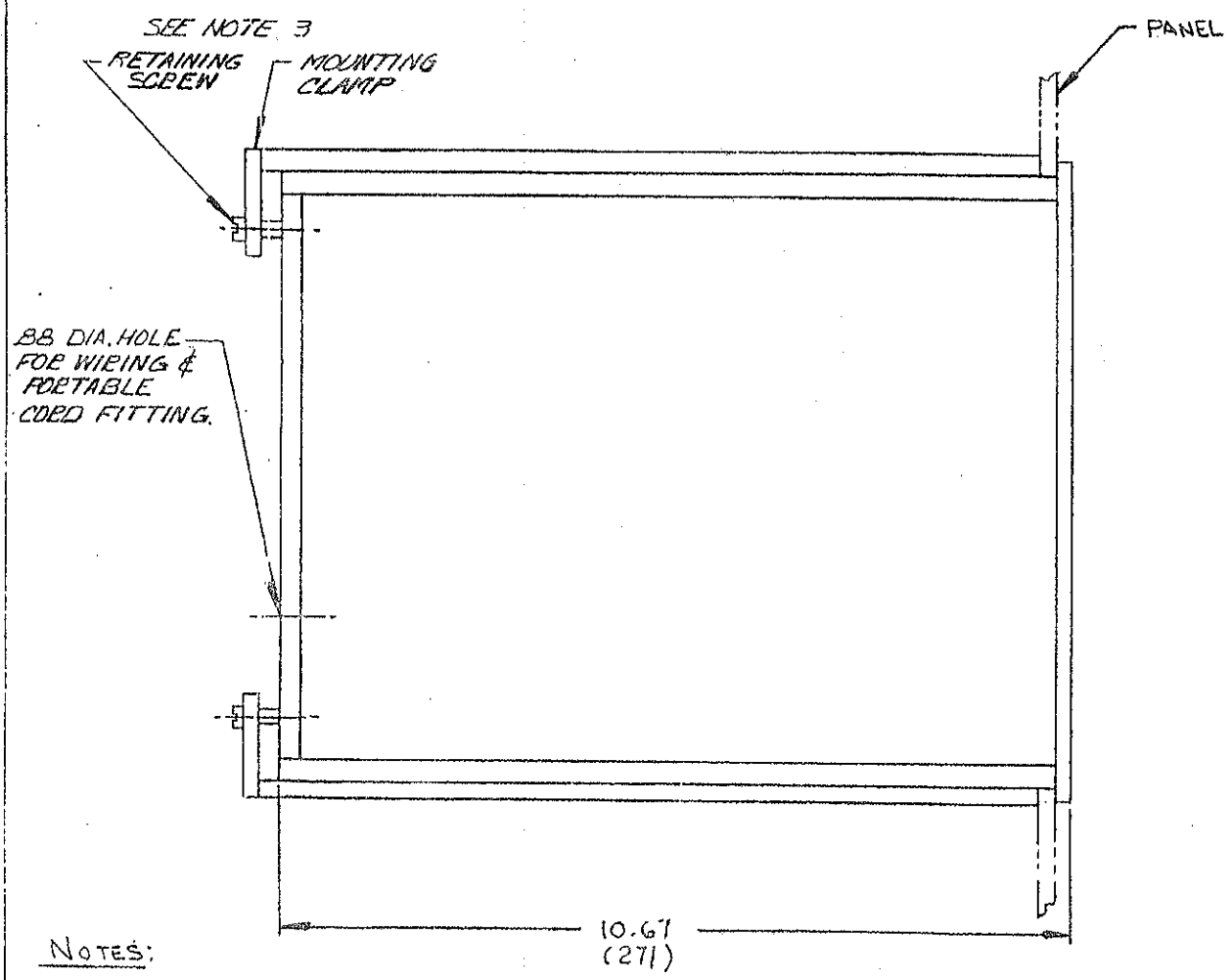
TITLE OUT LINE, DIMENSIONS & MOUNTING
GENERAL PURP. YO-YO SENSOR UNIT

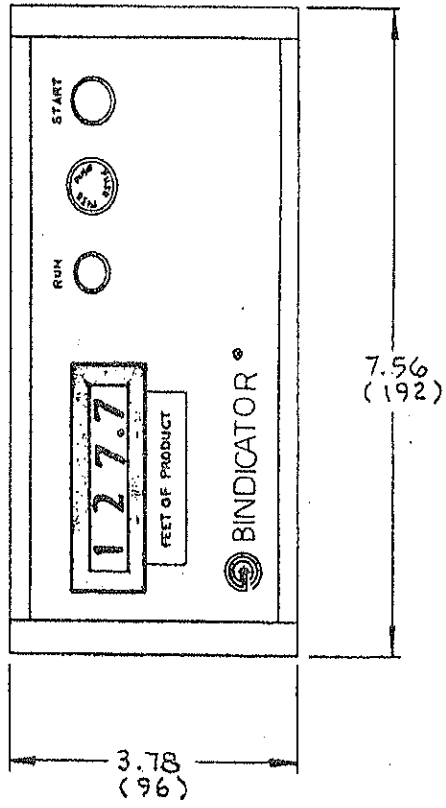
SCALE	SIZE	PART OR DRAWING
NONE	B	LBY2E0104

PREVIOUS

REF.

	REVISIONS	DATE	CK'D	APP'D





NOTES:

(1) PANEL MOUNTING DIMENSIONS,
3.62 (92) X 7.32 (186) PANEL CUTOUT.
16" (406.4) MIN. CLEARANCE BEHIND PANEL.

(2) BRACKETED ( ) DIMENSIONS ARE IN MILIMETERS

(3.) PANEL MOUNTED UNITS ONLY.

DO NOT SCALE
DIMENSIONS ARE IN INCHES

DET.	REQ'D.	SHT.	DESCRIPTION	MAT. OR PART

MATERIAL	FINISH	NEXT ASS'Y.	UNSPECIFIED TOL. DECIMALS: XX ±. XXX ±. ANGLES: ±1/2° DEBURR & BREAK EDGES .005	DRAWN	CHECKED	APPROVED	PROD.
				BRENTON	BALUT	D.R.	FLECK
				DATE 22 MAR 78	DATE 22 MAR 78	DATE 6 JUL 78	DATE 9 AUG 78

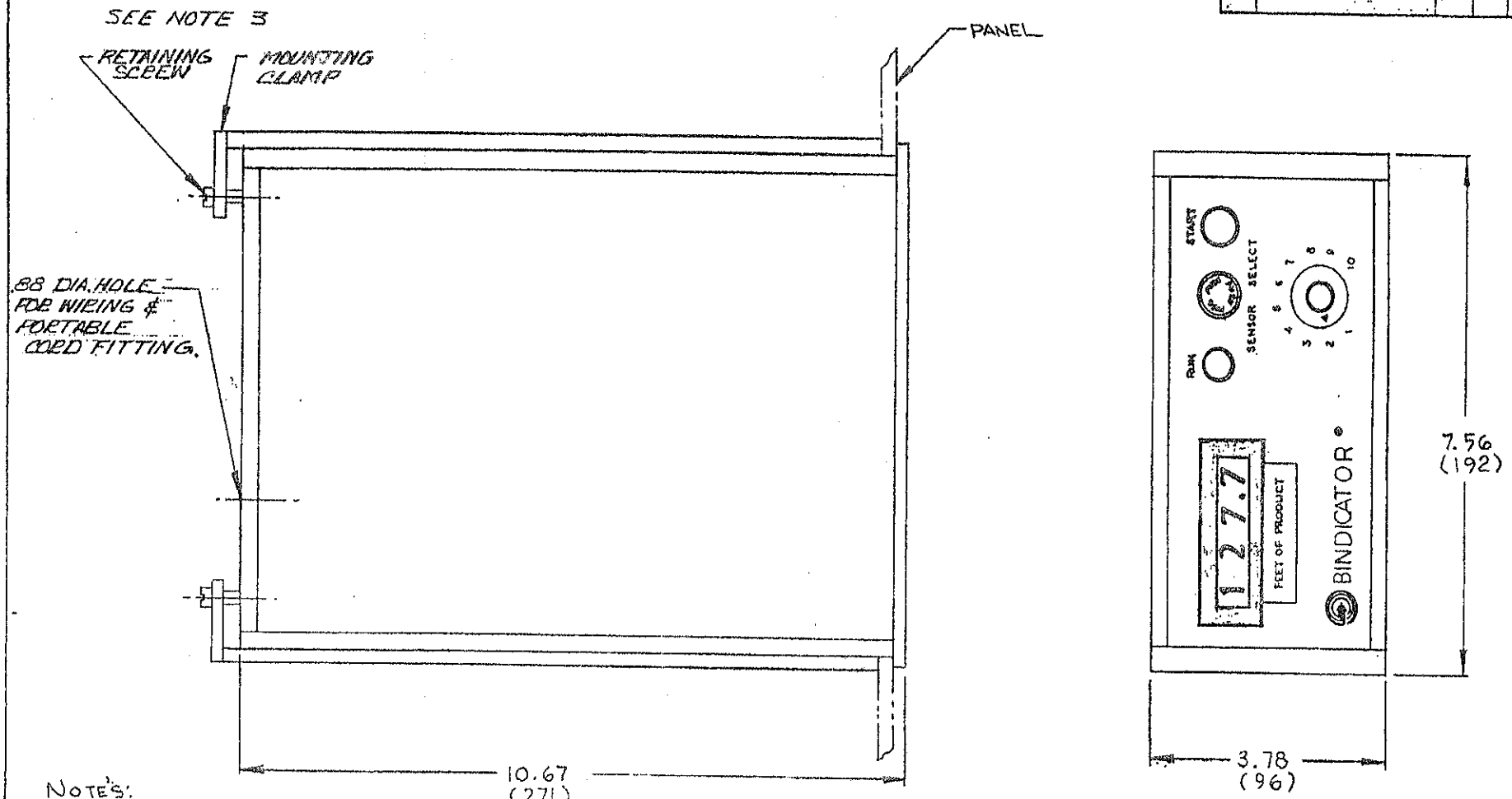
BINDICATOR®
PORT HURON, MICHIGAN 48060

TITLE OUTLINE DIM'S FOR SINGLE VESSEL READOUT - BANTAM YO-YO

SCALE	SIZE	PART OR DRAWING
NONE	B	LBY 2E0100

PREVIOUS

	REVISIONS	DATE	CK'D	APP'D



NOTES:

(1) PANEL MOUNTING DIMENSIONS,
3.62 (92) x 7.32 (186) PANEL CUTOUT
16" (406.4) MIN. CLEARANCE BEHIND PANEL
(2) BRACKETED ( ) DIMENSIONS ARE IN MILIMETERS
(3) PANEL MOUNTED UNITS ONLY

DO NOT SCALE
DIMENSIONS ARE IN INCHES

MATERIAL	FINISH	NEXT ASS'Y.	UNSPECIFIED TOL. DECIMALS: XX ±. XXX ±. ANGLES: ± 1/2° DEBURR & BREAK EDGES .005

DET.	REQ'D.	SHT.	DESCRIPTION	MAT. OR PART

DRAWN	CHECKED	APPROVED	PROD.
BRENTON	BAUT	D.R.H	FLECK
DATE 23 MAR 78	DATE 29 MAR 78	DATE 6 JUL 78	DATE 9 AUG 78

BINDICATOR®
PORT HURON, MICHIGAN 48060

TITLE OUTLINE DIM'S. FOR 1 TO 10 READOUT YO-YO

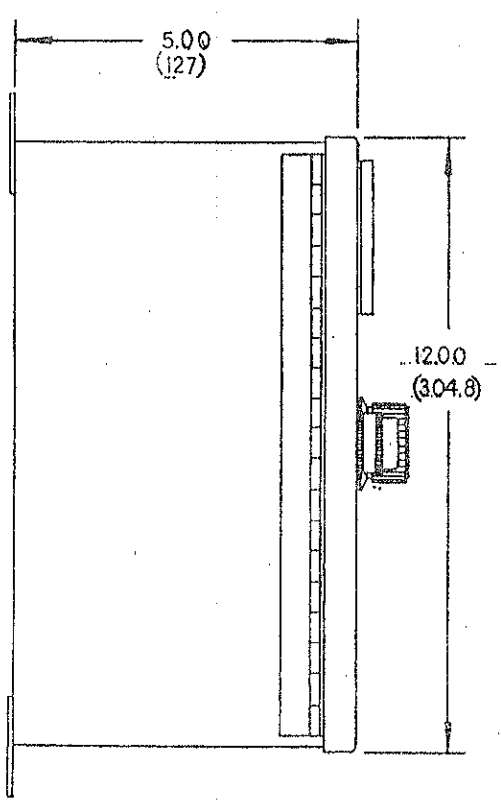
SCALE	SIZE	PART OR DRAWING
NONE	B	LBY 2E0101

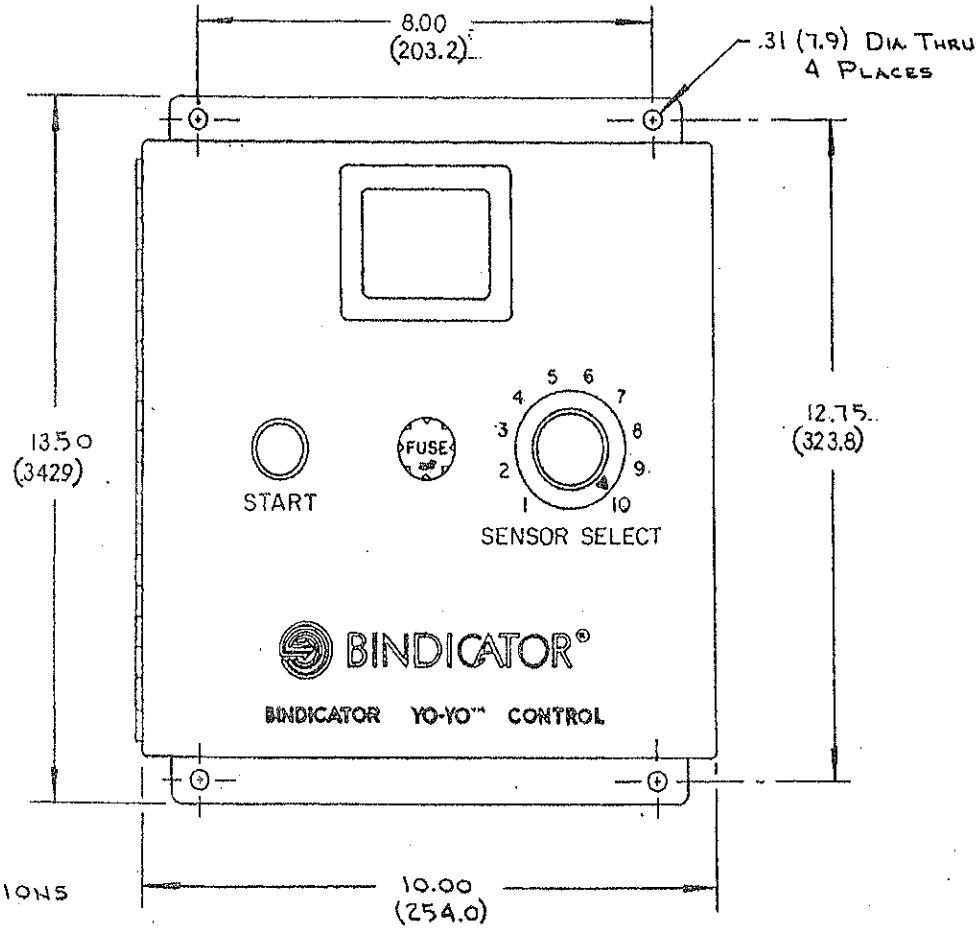
PREVIOUS

REF.

NJH731

	REVISIONS	DATE	CK'D	APP'D





NOTE:
BRACKETED ( ) DIMENSIONS ARE IN MILLIMETERS.

DO NOT SCALE
DIMENSIONS ARE IN INCHES

DET.	REC'D.	SHT.	DESCRIPTION	MAT. OR PART

MATERIAL	FINISH		NEXT ASSY.	UNSPECIFIED TOL. DECIMALS: XX ±.0 XXX ±.0 ANGLES: ± 1/2° DEBURR & BREAK EDGES .005	DRAWN G.B.K.	CHECKED D.R.H.	APPROVED WRS	PROD. MGR.
					DATE 24 MAR 77	DATE 24 MAY 77	DATE 9/12/77	DATE 9/21/77

BINDICATOR®
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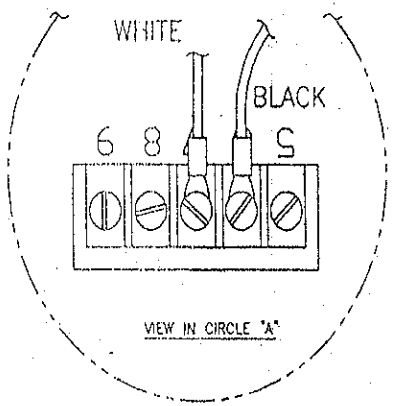
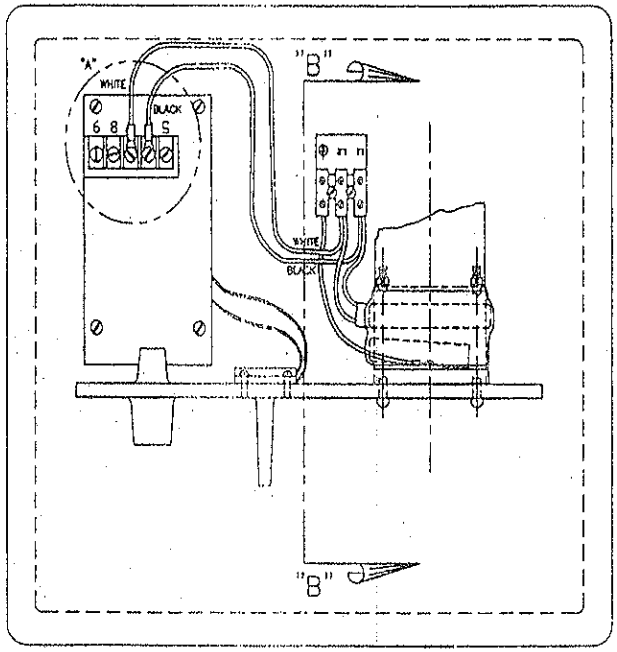
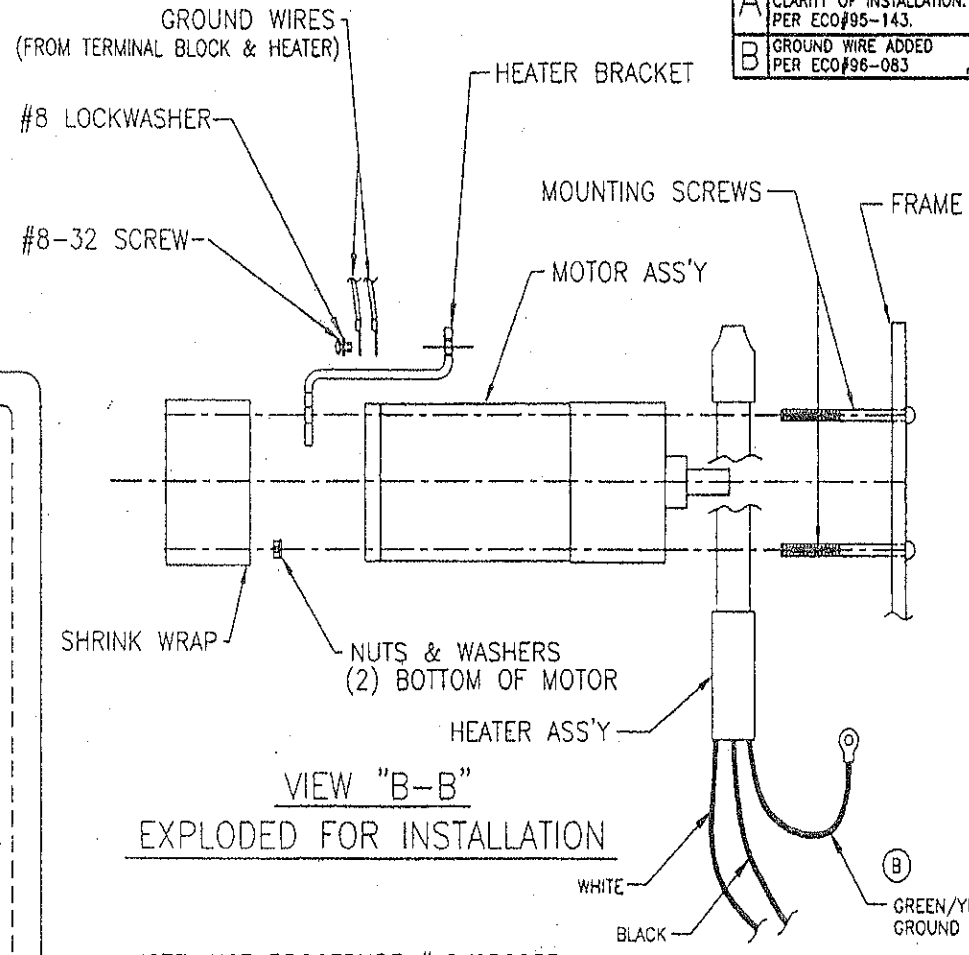
TITLE	SCALE	SIZE	PART OR DRAWING
READOUT, 1:10 SELECTOR, NEMA 4 & 12, OUTLINE DIMENSIONS	NONE	B	LBY2E01.13

PREVIOUS REF.





ELECTRICAL HOOKUP



VIEW "B-B"
EXPLODED FOR INSTALLATION

NOTE: USE PROCEDURE #LBY2P0033 FOR INSTALLATION.

	REVISIONS	DATE	CK'D	APP'D
A	REDRAWN FOR BETTER CLARITY OF INSTALLATION. PER ECO#95-143.	12/5/95	GR	RE
B	GROUND WIRE ADDED PER ECO#96-083 mod	11/13/96	BB.	RR

DO NOT SCALE DIM'S. ARE IN INCHES

DET.	REQD	SHT	DESCRIPTION	MAT.OR PART

MATERIAL	FINISH	UNSPECIFIED TOL. DECIMAL: .XX ± .XXX ± ANGLES: ± 1/2° DEBURR & BREAK EDGES .005	DRAWN	CHECKED	APPROVED	PROD.	MARKETING
			PORTER	G.R.	R.R.	R.B.	R.Z.
			DATE 8/27/93	DATE 9/07/93	DATE 9/07/93	DATE 9/07/93	DATE 12/05/95

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TITLE	SCALE	SIZE	PART OR DRAWING
HOOKUP, HEATER KIT GP YC-YO	NONE	B	LBY2E0169

	REVISIONS	DATE	CK'D	APP'D
A	Changed Step 6 per ECO 96-083. GR	10 Apr 97		

LBY2P0033

1. Remove sensor from vessel and place on bench, if necessary, for reworking.

2. Remove storage wheel. Disconnect motor connector from sensor board. Cut tie-wraps so motor wire pigtail hangs free. Disconnect the black and white wires from the three-pin terminal block on frame and from TB1 on sensor board. Discard those wires.

3. Detach ground wire from motor. Remove upper two motor mounting nuts and washers. Replace them with motor bracket, but attach to screws very loosely. Pull motor wires from capacitor.

4. Take heater tape wire ass'y and work it under bracket so that the beginning and end of the tape are both under the bracket, and the black/white wires are pointing towards the circuit board. Press the tape against the remaining three sides of the motor until the tape is snug; then tighten upper motor screws.

5. Take large piece of heat shrink tubing and, after pulling through it the motor and heater wiring, place it around heat tape and bracket; and shrink.

6. Connect motor and heater ground wires to bracket with the #8-32 screw and #8 washer in the kit.

7. Connect the black/white wire double connection to the three-pin terminal block at L1 and L2, respectively. Connect motor wires to capacitor.

8. Connect the black/white single connection to TB1 on sensor board, pins 6 and 7, respectively.

9. Re-attach storage wheel to motor coupling. Re-attach motor connector to power board.

10. Temporarily connect L1 and L2 to 120 VAC and wait about ten minutes. Check the motor gearhead for warmth by cradling hand around it.

NOTE: These instructions are for heater kit LBY211403.

BINDICATOR® PORT HURON, MICHIGAN 48060	DRAWN	CHECKED	APPROVED	PROD.
	GR	D. Stokes	RE	RB
	DATE 30 Nov 95	DATE 5 Dec 95	DATE 5 Dec 95	DATE 5 Dec 95

TITLE	SCALE	SIZE	PART OR DRAWING
Procedure, Installation, GP Yo-Yo Sensor Heater Kit	NONE	A	LBY2P0033

GENERAL TERMS AND CONDITIONS OF SALE

1. PAYMENT Terms of payment are Net 30 days and are effective from the actual date of invoice. If, in the Seller's opinion, the financial condition of the Buyer at any time-or any other circumstances do not justify the incurrence of production costs or shipment on the terms of payment specified, the Seller may require partial or full payment in advance.

2. F.O.B. All shipments are F.O.B. Seller's factory in Port Huron, Michigan, unless otherwise stated in the quotation.

3. QUOTATION AND PRICES Quoted prices are firm for thirty days and are subject to change without notice after expiration of this period. Orders calling for future deliveries will be invoiced according to prices in effect at the time of shipment.

4. TAXES Any applicable sales, use, revenue, excise or other taxes not specifically stated in the quotation are to be remitted by the Buyer directly to the appropriate regulatory agency.

5. EQUIPMENT WARRANTY/LIMITATION The following Bindicator products are warranted for a period of two years from date of shipment against defective materials and workmanship: RF Series, Flo-Guard, Mark III Yo-Yo, General Purpose Yo-Yo, MS-2000 Series, Eagle, Mach One, Leveldata, Tracker, and Levelite Series. All other Bindicator products are warranted for a period of one year from date of shipment against defective materials and workmanship. WE MAKE NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WHICH EXCEEDS THE FOREGOING IS HEREBY DISCLAIMED AND EXCLUDED FROM THIS CONTRACT. If the products are being acquired for resale, Buyer will make, in connection with any such resale, only those warranties contained herein and will indemnify us against any claims, causes of actions and judgements which arise from any representations, warranties or agreements made by or entered into by Buyer, other than those contained herein.

6. BUYER'S EXCLUSIVE REMEDY In the event of any breach of warranty, the sole and exclusive remedy of Buyer (or any person claiming through Buyer) shall be limited to the repair or replacement of defective products or parts, at our plant or at Seller's option, to the refund of the purchase price, provided that notice of such defects is given within six months after shipment. In no event will our liability include any incidental or consequential damages.

7. DELIVERY The Seller shall not be liable for loss or damage of any kind resulting from delay or inability to deliver on account of flood, fire, strike, labor troubles, riot, civil disturbances, accidents, acts or orders or regulations of civil or military authorities, shortages of materials, or any other cause or causes (whether or not similar in nature to any of these enumerated) beyond Seller's control.

8. PRODUCT CHANGES In keeping with our continuing policy of product improvement, we reserve the right to make changes in our products at any time, without incurring an obligation to change equipment previously shipped.

9. RETURN OF GOODS In no case may products or parts be returned without Seller's prior written permission. Products or parts returned under the aforementioned Equipment Guarantee must be shipped with transportation charges prepaid. All other returns must be shipped with transportation charges prepaid and will be subject to a restocking charge. Only products of standard Bindicator manufacture will be accepted for return. Products which are specially modified or produced to the Buyer's specifications will not be accepted for return.

10. CONTRACT FORMATION A binding contract shall not be effective until a written purchase order is received at Seller's office in Port Huron, Michigan and accepted in writing by an authorized employee of the Seller at its Port Huron office. The terms and conditions in our quotation or acknowledgment shall govern the contract and any different or additional terms in Buyer's purchase order, unless approved by Seller writing, are hereby objected to.

11. CONSTRUCTION Any agreement arrived at shall be considered to be a Michigan contract and shall be construed under the laws of the State of Michigan.

12. CANCELLATION Request for cancellation must be in writing and referred to Bindicator. No orders will be accepted with the understanding that they may later be cancelled. If and when cancellation is approved by Bindicator, it is with the understanding that Bindicator will be fully reimbursed by payment of cancellation charges which are to be determined by Bindicator.

13. CERTIFICATION OF NONSEGREGATED FACILITIES Our firm does not maintain facilities of a segregated nature contrary to the provision of 41 CFR 60-1.8, and further that if we have 50 or more employees and our contractual arrangements of $50,000 or more we have complied with 41 CFR 60-1.7 concerning the annual filing of a report on Standard Form 100 (EEO-1) and with 41 CFR 60-1.40 by developing a written Affirmative Action Compliance Program.

For information, specification, and engineering assistance with any BINDICATOR® product...

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- RF-17000
- RF-18000

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