

**DEVAR Inc.**



**Model 3020**  
**Configuration Workbook**  
**Book 2**

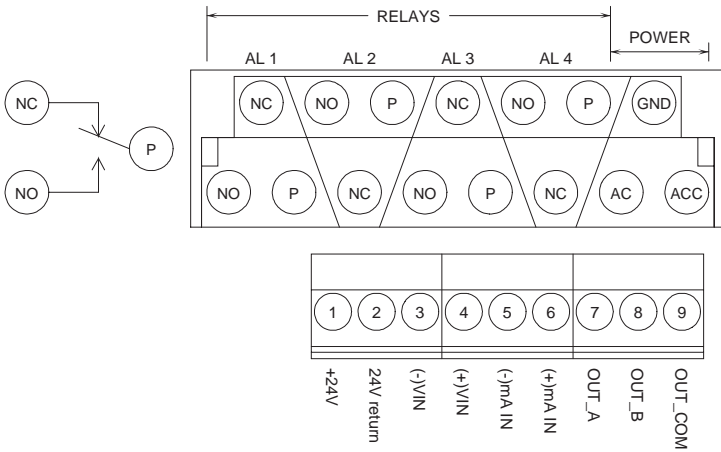
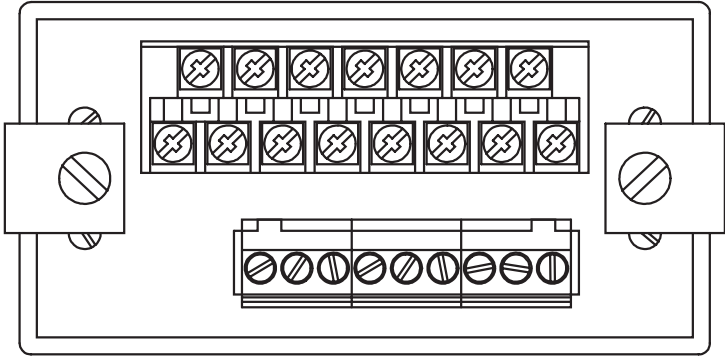
# Table of Contents

Rear Terminal Connections.....	1
Field Wiring.....	2
Menu Flowchart.....	3
Typical Configuration Example.....	4
Typical Configuration Worksheet.....	5
Custom Curve Configuration Example.....	6
Custom Curve Configuration Worksheet.....	7
Notes.....	8

**NOTE:**

For a quick overview of the Configuration Menu, see the Menu Flowchart on page 3.

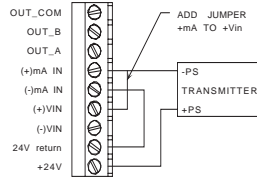
# Rear Terminal Connections



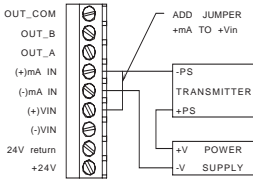
POWER: 90/140 VAC 50/60 Hz OR 130/195 VAC  
 ACC = AC NEUTRAL OR DC RETURN  
 AC = AC HOT OR  $\pm$ DC ( FUSED LINE )

# Field Wiring

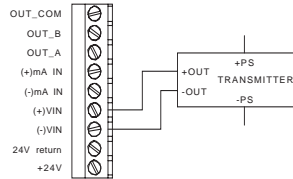
4/20mA INPUT  
2-WIRE TRANSMITTER  
INTERNAL SUPPLY



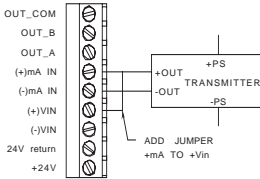
4/20mA INPUT  
2-WIRE TRANSMITTER  
EXTERNAL SUPPLY



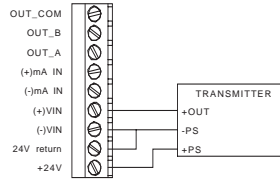
VOLTAGE INPUT  
4-WIRE TRANSMITTER  
EXTERNAL SUPPLY



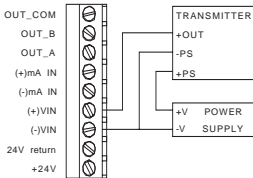
4/20mA INPUT  
4-WIRE TRANSMITTER  
EXTERNAL SUPPLY



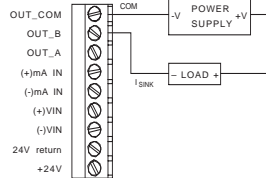
VOLTAGE INPUT  
3-WIRE TRANSMITTER  
INTERNAL SUPPLY



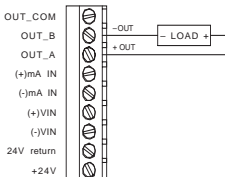
VOLTAGE INPUT  
3-WIRE TRANSMITTER  
EXTERNAL SUPPLY



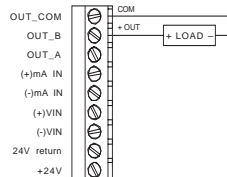
4/20 mA OUTPUT  
EXTERNAL SUPPLY



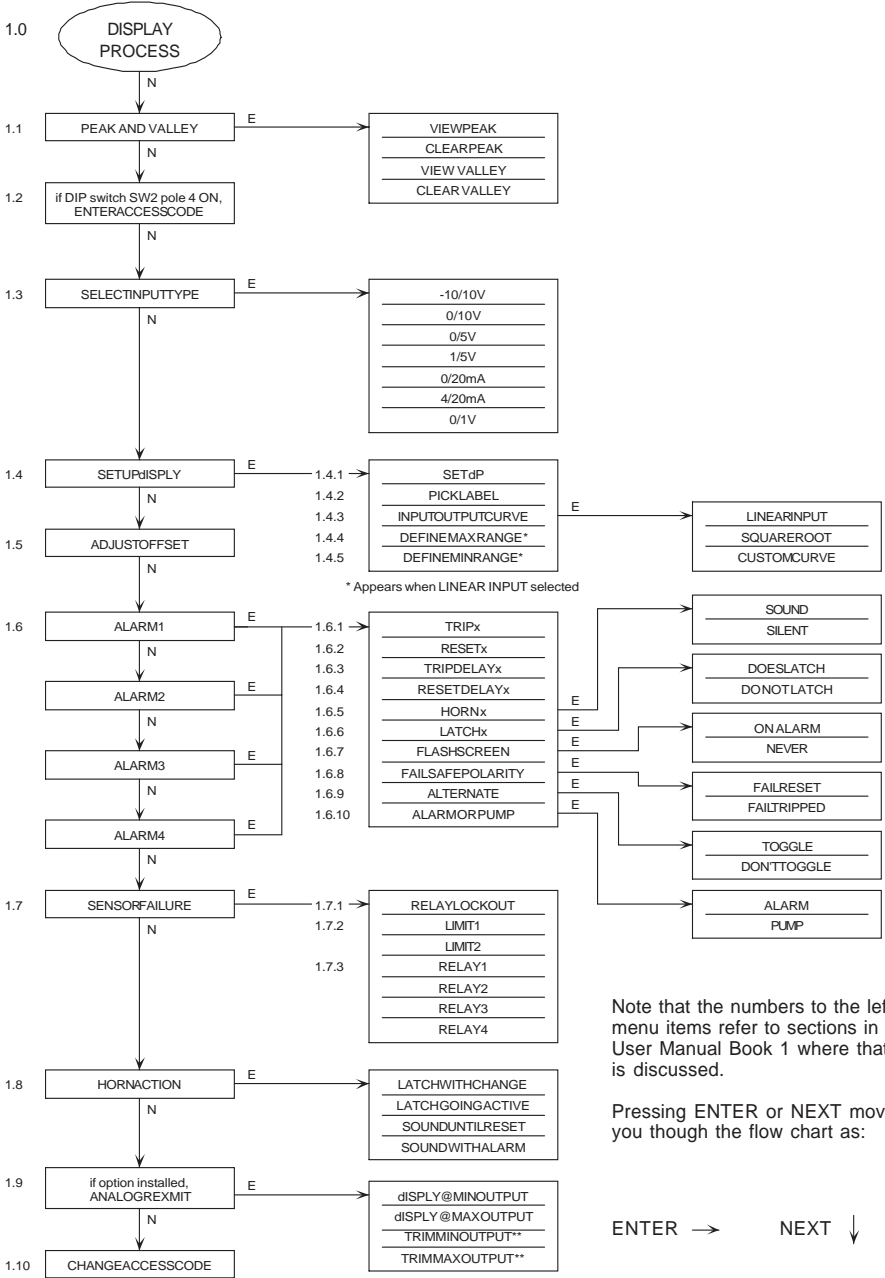
4/20 mA OUTPUT



VOLTAGE OUTPUT



# Menu Flowchart



\*\* only if DIP switch SW2 pole 2 ON

# Typical Configuration Example

## Project Specifications:

1. 10 ft Wet Well, Pump Down Application
2. (1) High and (1) Low Alarm
3. (2) Alternating Pumps
4. 5 lb (11.5 ft H<sub>2</sub>O) Pressure Transmitter, 4 to 20 mA, Two Wire
5. Transmitter Located 1 ft Above Bottom of Well

<b>Configuration Worksheet</b>				
Transmitter Signal Range	0 To 11.5 ft of Water			
Select Input Type (1.3)	4 to 20 mA			
Set Decimal Point (1.4.1)	0 1 2 . 3 4 5			
Select Process Label (1.4.2)	FT			
Select Input/Output Curve (1.4.3)	Linear			
Define Maximum Range (1.4.4)	11.50 ft			
Define Minimum Range (1.4.5)	0.00 ft			
Adjust Offset (1.5)	1.00 ft			
Set Control/Alarm Points (1.6)	CHANNEL 1	CHANNEL 2	CHANNEL 3	CHANNEL 4
Trip Settings (1.6.1)	8.00 ft	8.50 ft	8.75 ft	1.50 ft
Reset Settings (1.6.2)	2.00 ft	2.00 ft	8.00 ft	2.00 ft
Trip Delay Settings (1.6.3)	0 sec	0 sec	15 sec	15 sec
Reset Delay Settings (1.6.4)	0 sec	0 sec	0 sec	0 sec
Horn Settings (1.6.5)	Silent	Silent	Sound	Sound
Latching Alarm Settings (1.6.6)	Never	Never	On Alarm	On Alarm
Fail Safe Polarity Settings (1.6.8)	Fail Reset	Fail Reset	Fail Tripped	Fail Tripped
Alternation Settings (1.6.9)	Toggle	Toggle	Don'tToggle	Don'tToggle
Alarm/Pump Settings (1.6.10)	Pump	Pump	Alarm	Alarm
Sensor Failure, Limit Settings (1.7)	Limit 1 = 0.5 ft    Limit 2 = 13.0 ft			
Sensor Failure, Relay Setting (1.7)	Reset	Reset	Tripped	Tripped
Access Code (1.10)	000000			

# Typical Configuration Worksheet

Project Specifications:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

<b>Configuration Worksheet</b>				
Transmitter Signal Range				
Select Input Type (1.3)				
Set Decimal Point (1.4.1)	0 1 2 3 4 5			
Select Process Label (1.4.2)				
Select Input/Output Curve (1.4.3)				
Define Maximum Range (1.4.4)				
Define Minimum Range (1.4.5)				
Adjust Offset (1.5)				
Set Control/Alarm Points (1.6)	CHANNEL 1	CHANNEL 2	CHANNEL 3	CHANNEL 4
Trip Settings (1.6.1)				
Reset Settings (1.6.2)				
Trip Delay Settings (1.6.3)				
Reset Delay Settings (1.6.4)				
Horn Settings (1.6.5)				
Latching Alarm Settings (1.6.6)				
Fail Safe Polarity Settings (1.6.8)				
Alternation Settings (1.6.9)				
Alarm/Pump Settings (1.6.10)				
Sensor Failure, Limit Settings (1.7)	Limit 1 =		Limit 2 =	
Sensor Failure, Relay Setting (1.7)				
Access Code (1.10)				

# Custom Curve Configuration Example

## Project Specifications:

1. 5000 Gallon, 8 ft Diameter, Horizontal Tank
2. Contents: Fuel Oil, Specific Gravity = 0.875
3. 5 lb (11.5 ft H<sub>2</sub>O) Pressure Transmitter, Located at Bottom of Tank
4. Linearize to display Process In Gallons

$$\% \text{ TRANSMITTER OUTPUT} = (\% \text{ TANK LEVEL}) \times (8 \text{ Ft}/11.5 \text{ Ft})$$

$$\% \text{ OUTPUT CORRECTED FOR SPECIFIC GRAVITY} = (\% \text{ TRANSMITTER OUTPUT}) \times (0.875)$$

Tank Level		Transmitter Output	
%	FEET	% (H <sub>2</sub> O)	% (OIL)
0	0.00	0.00	0.00
3	0.24	2.09	1.83
6	0.48	4.17	3.65
10	0.80	6.96	6.09
15	1.20	10.43	9.13
20	1.60	13.91	12.17
25	2.00	17.39	15.22
35	2.80	24.35	21.30
65	5.20	45.22	39.57
75	6.00	52.17	45.65
80	6.40	55.65	48.70
85	6.80	59.13	51.74
90	7.20	62.61	54.78
94	7.52	65.39	57.22
97	7.76	67.49	59.04
100	8.00	69.57	60.87

TABLE (2.3.2) Custom Curve Configuration		
BP	% INPUT @ BP	DISPLAY @ BP
0	0.00	0000
1	1.83	0044
2	3.65	0122
3	6.09	0260
4	9.13	0470
5	12.17	0712
6	15.22	0978
7	21.30	1560
8	39.57	3440
9	45.65	4022
10	48.70	4288
11	51.74	4530
12	54.78	4740
13	57.22	4878
14	59.04	4956
15	60.87	5000
16		



# Custom Curve Configuration Worksheet

Project Specifications:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

TABLE (2.3.2) Custom Curve Configuration		
BP	% INPUT @ BP	DISPLAY @ BP
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		

