

FAIRCHILD 24XS SERIES M/P CONVERTERS

DC PULSE INPUT UNIT

Operating Manual

Table 1. Estimated Full Range Pressure Adjusting Time (seconds) 12 VDC Supply											
		Mode of Operation									
		Full Step - High		Full Step - Low		Half Step - High		Half Step - Low			
		Full Range Adjustment Times (seconds)									
Regulator Model	Pressure Ranges			Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
	psig	[BAR]	(kPa)								
10	.5-30	[.03-2]	(3-200)	25	25	25	188	26	48	48	360
	6-30	[0.4-2]	(40-200)	20	20	20	150	21	38	38	290
	3-27	[0.2-1.8]	(20-180)	17	20	20	149	19	38	38	285
	3-15	[0.2-1.0]	(20-100)	6	10	10	75	8	21	20	150
	3-9	[0.2-.6]	(20-60)	3	6	6	45	4	11	11	80
	9-15	[0.6-1]	(60-100)	3	5	5	38	4	11	11	80
16	Vacuum - 10			Outside of Specs.		64	130	26	43	43	260
80	.5-20	[.03-1.5]	(3-150)	10	14	14	100	11	28	28	200
	1-60	[.07-4]	(7-400)	10	14	14	107	11	28	28	201
	2-100	[.15-7]	(15-700)	13	13	13	105	8	17	17	208
81	0-2	[00-.15]	(0-15)	6	14	14	103	12	28	28	206
	0-5	[00-.35]	(0-35)	8	21	21	150	16	41	41	302
	.5-20	[.03-1.5]	(3-150)	10	14	14	100	11	28	28	200
	1-60	[.07-4]	(7-400)	10	14	14	107	11	28	28	201
	2-100	[.15-7]	(15-700)	13	13	13	105	8	17	17	208

Table 2. Estimated Full Range Pressure Adjusting Time (seconds) 24 VDC Supply											
		Mode of Operation									
		Full Step - High		Full Step - Low		Half Step - High		Half Step - Low			
		Full Range Adjustment Times (seconds)									
Regulator Model	Pressure Ranges			Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
	psig	[BAR]	(kPa)								
10	.5-30	[.03-2]	(3-200)	13	25	25	188	18	48	48	360
	6-30	[0.4-2]	(40-200)	11	20	20	150	15	38	38	290
	3-27	[0.2-1.8]	(20-180)	10	20	20	150	14	38	38	285
	3-15	[0.2-1.0]	(20-100)	4	10	10	75	8	21	20	150
	3-9	[0.2-.6]	(20-60)	2	6	6	45	4	11	11	80
	9-15	[0.6-1]	(60-100)	2	5	5	38	4	11	11	80
16	Vacuum - 10			13	22	22	130	16	43	43	260
80	.5-20	[.03-1.5]	(3-150)	6	14	14	100	12	28	28	200
	1-60	[.07-4]	(7-400)	7	14	14	107	11	28	28	201
	2-100	[.15-7]	(15-700)	4	13	13	105	8	17	17	208
81	0-2	[00-.15]	(0-15)	6	14	14	103	12	28	28	206
	0-5	[00-.35]	(0-35)	8	21	21	150	16	41	41	302
	.5-20	[.03-1.5]	(3-150)	6	14	14	100	12	28	28	200
	1-60	[.07-4]	(7-400)	7	14	14	107	11	28	28	201
	2-100	[.15-7]	(15-700)	4	13	13	105	8	17	17	208

GENERAL INFORMATION

The DC Pulse Input unit allows incremental adjustment of regulator output pressure and provides for various adjustment times for full range operation.

The DC Pulse Input unit contains a Clock Generator/Translator Board which allows for operation with a 12 VDC or 24 VDC pulse input signal for use with an External Controller with a 12 VDC or a 24 VDC output.

ADJUSTMENTS

The following adjustments are provided:

- Full/Half Step Mode
- Normal/Slow Speed Frequency Selection
- Externally/Internally Powered Control Loop
- Limit Switch Adjustment

Full/Half Step Mode Adjustment

NOTE: Remove power from unit when changing SW1-2 from half step mode to full step mode: Switching from half step mode to full step mode when the power is on can result in motor operation at 1/2 its torque capability.

1. Turn the **Full/Half Step Switch (SW1-2)** to the **Off/Open** position for half step operation. Turn the switch to the **On/Closed** position for full step operation.

Normal/Slow Speed Frequency Selection

2. Refer to Tables 1. and 2. on page 1, to select the required Full Range Adjustment Time.

3. Turn the **Normal/Slow Switch (SW1-3)** to the **Off/Open** position to achieve adjustment of pressure over the full range when the stepper motor is running at high speed.

4. Adjust the **R11 Speed Control** to fine-tune the adjustment time. Refer to the column “**High**” of the appropriate table on page 1 for the specific regulator model and pressure range.

5. Turn the **Normal/Slow Switch (SW1-3)** to the **On/Closed** position to achieve adjustment of pressure over the full range when the stepper motor is running at low speed.

6. Adjust the **R11 Speed Control** to fine-tune the adjustment time. Refer to the column “**Low**” of the appropriate table on page 1 for the specific regulator model and pressure range.

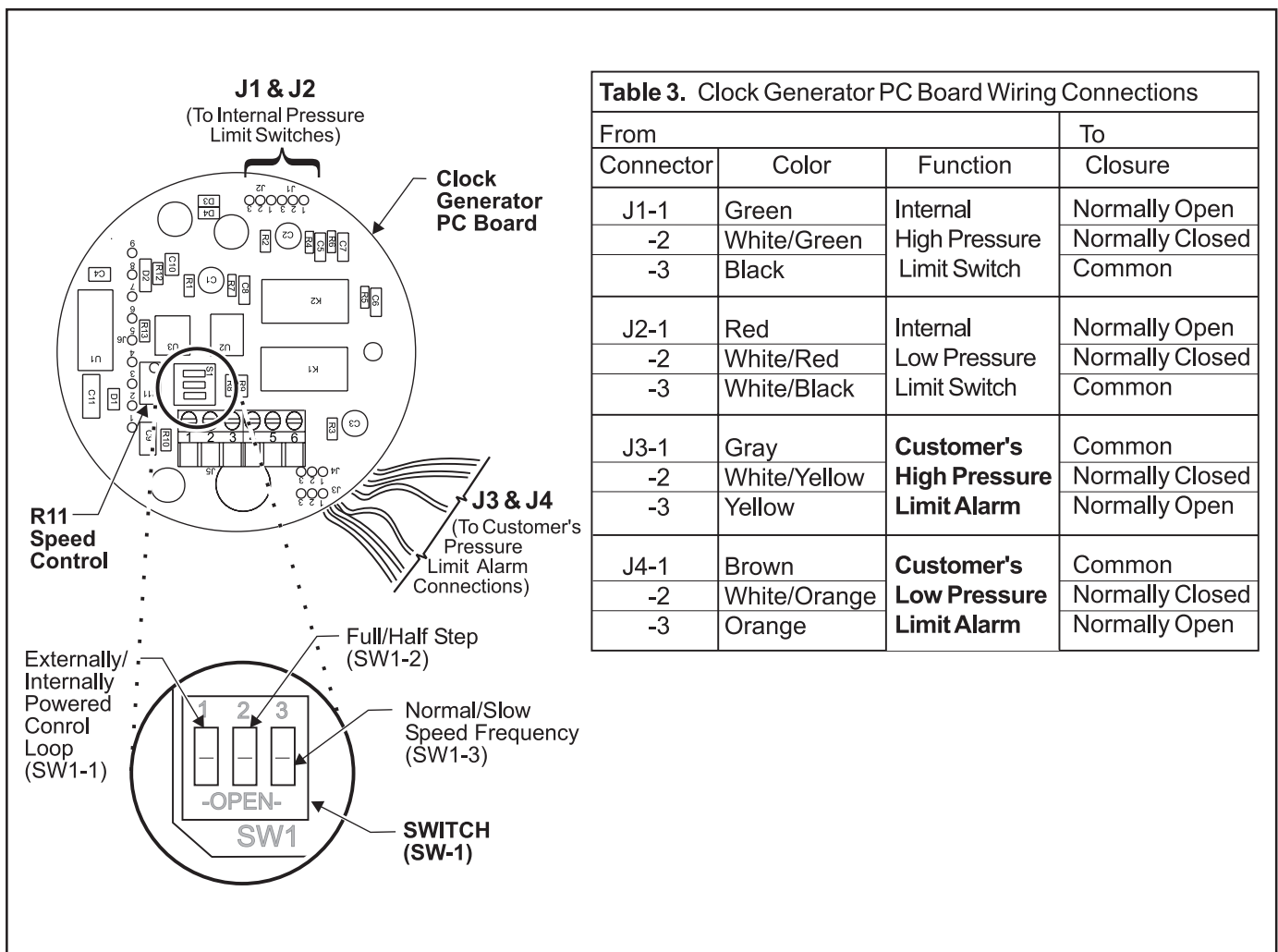


Figure 1. Clock Generator PC Assembly

Adjustments (continued)

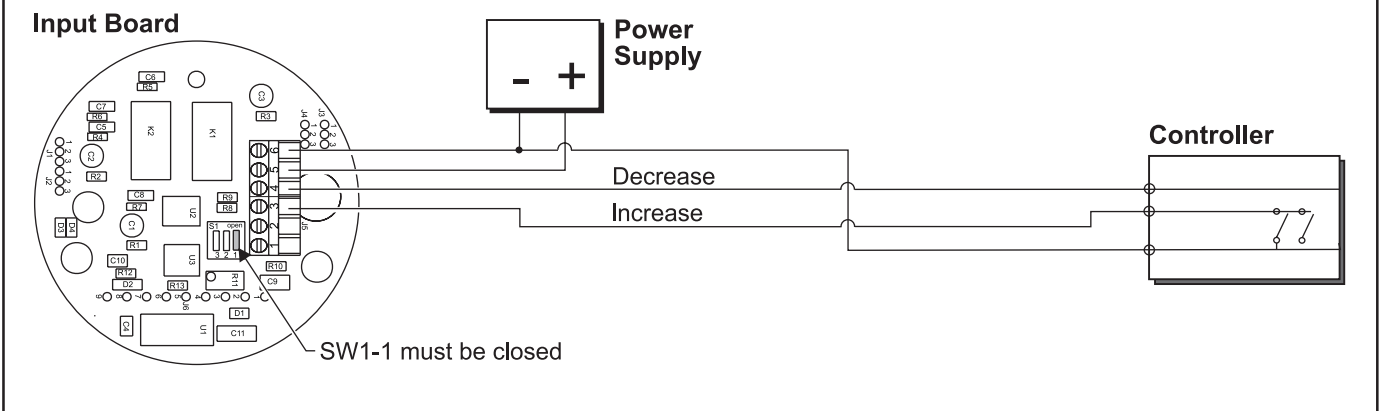
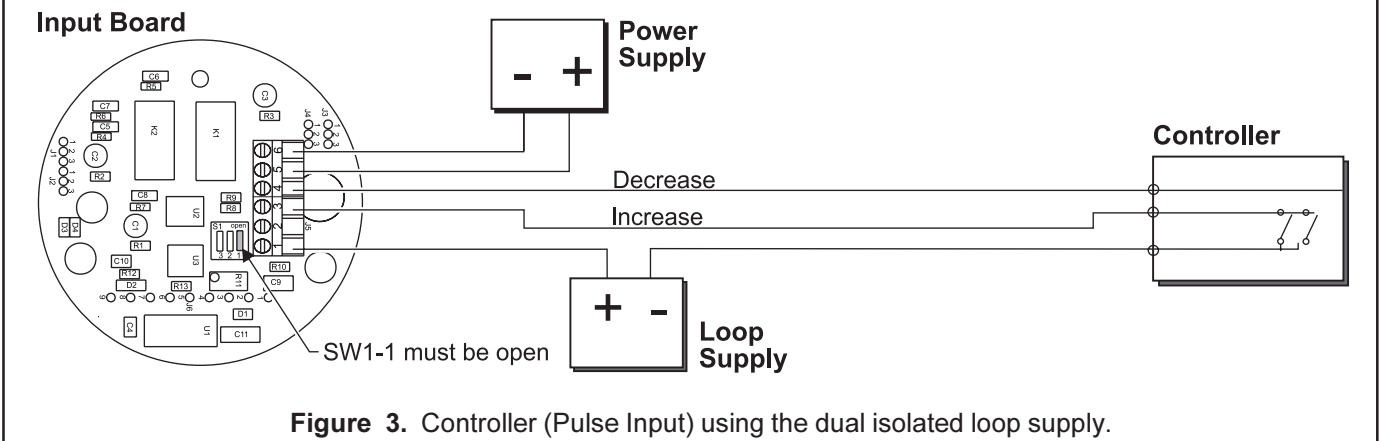
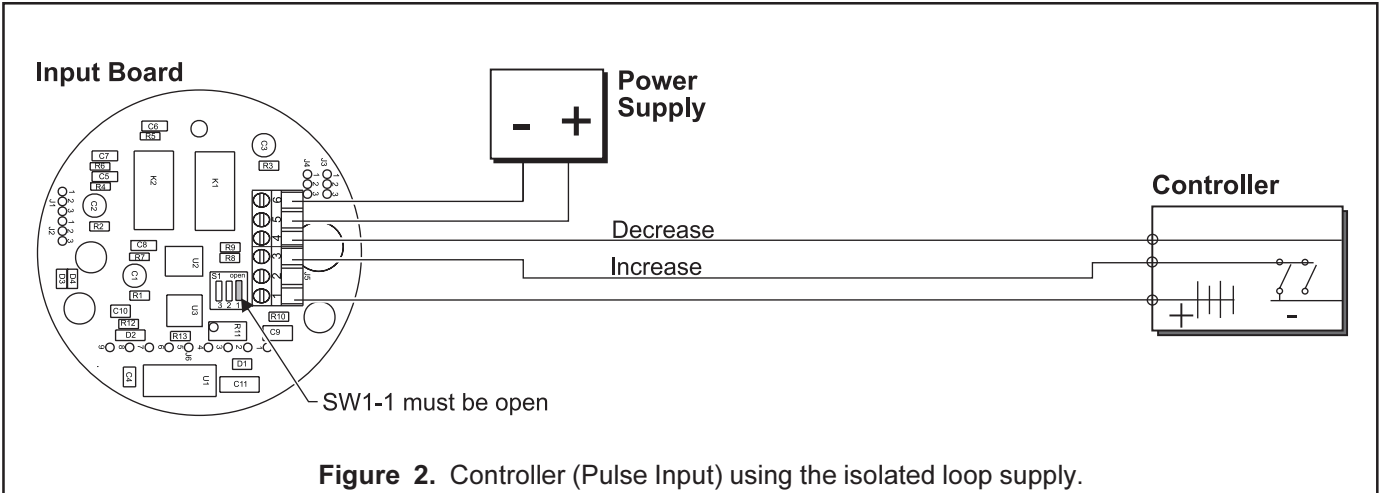
Externally/Internally Powered Control Loop

- Turn the Externally/Internally Switch (SW1-1) to its appropriate configuration in accordance with how the customer has his controller wired to the Clock Generator Board. For more information, see Figures 2, 3 & 4 below.

Additional Adjustments

Limit Switch Adjustment

Adjust the Low and High Limit Pressure Switches by removing the Motor Assembly Cover and tuning the adjustment screw on the top of the Motor Assembly. *Decals indicate the direction in which to turn the screws to change the High and Low output limit pressures.*



TROUBLE-SHOOTING

Table 4. Trouble-Shooting	
Problem	Solution
Leakage	Check Body Screw tightness. Check Diaphragm.
High Bleed	Check Relief Pintle and Relief Seat for damage or contamination.
Difficult to adjust	Check Adjusting Screw and Ball lubrication.

MAINTENANCE

Table 5. For replacement of all elastomers and internal filters install the following Service Kits:	
Model	Service Kits
Model 10	19495-1
Model 16	19494-1
Model 80	15704-1, -2, -3
Model 81	15705-1, -2

**WARNING: Do Not attempt to repair circuit boards.
Unauthorized repair will void warranty.**

LEGAL NOTICE:

The information set forth in the foregoing Installation, Operation and Maintenance Instructions shall not be modified or amended in any respect without prior written consent of Fairchild Industrial Products Company. In addition, the information set forth herein shall be furnished with each product sold incorporating Fairchild's unit as a component thereof.