

**MICROPROCESSOR-CONTROLLED  
E-P REGULATOR**

***ITV2000***

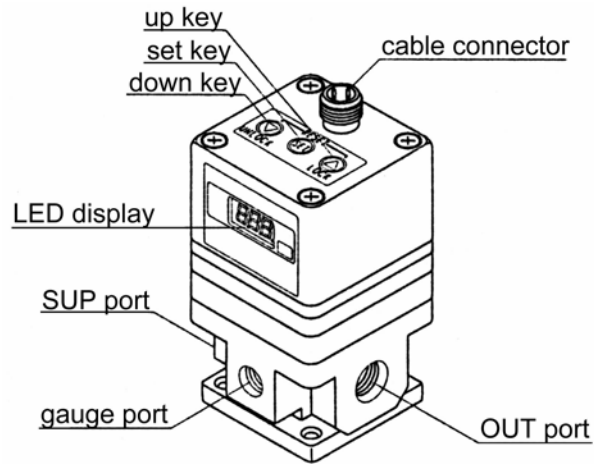


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## EASY PROGRAMMING GUIDE

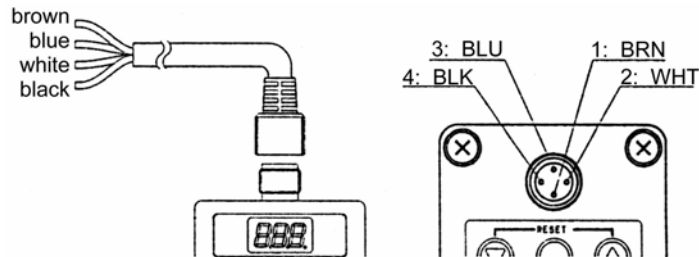
### LAYOUT IDENTIFICATION



### WIRING

Please be careful when connecting the four cable wires. Improper wiring will damage the internal circuitry.

PIN #	WIRE COLOR	DESCRIPTION
1	Brown	Supply Voltage
2	White	Input Signal
3	Blue	Ground
4	Black	Monitor Output



**EASY PROGRAMMING GUIDE****INPUT SIGNAL**

- CURRENT SIGNAL TYPES (ITV20 -0 , ITV20 -1 )

	Supply Voltage VS	Input Signal A
	24VDC (ITV20 0)	4~20mA (ITV20 -0 )
	12VDC (ITV20 1)	0~20mA (ITV20 -1 )

- VOLTAGE SIGNAL TYPES (ITV20 -2 , ITV20 -3 )

	Supply Voltage VS	Input Signal VIN
	24VDC (ITV20 0)	0~5VDC (ITV20 -2 )
	12VDC (ITV20 1)	0~10VDC (ITV20 -3 )

**KEYLOCK FEATURE**

The ITV has a key lock feature, allowing the user to disable the setting keys. This is helpful in preventing unauthorized setting changes. By default, the keys are locked when power is turned on. The keys must be unlocked to modify the setting information. The display will show *LOC* if a key is pressed while the keys are locked.

*To UNLOCK:*

- ← Press and hold the down key for 2 seconds or longer. The display will blink *LOC*.
- ↑ Press the set key to unlock the keys, or
- Press the up key to cancel.

*To LOCK:*

- ← Press and hold the up key for 2 seconds or longer. The display will blink *UNL*.
- ↑ Press the set key to lock the keys, or
- Press the down key to cancel.

**PROGRAMMING THE SET-POINTS**

**3CAUTION:** When setting the minimum pressure and maximum pressure values, the new values take effect as soon as the SET key is pressed. Use caution to avoid damage or injury.

## 1. UNLOCK THE KEYPAD

- Press and hold the down key for 2 seconds or longer. The display will blink *LOC*.
- Press the set key to unlock the keys.
- Press the SET key to continue to the next step.

2. SET THE MINIMUM PRESSURE (*F\_1*)

- Press the UP and DOWN keys until the display shows the desired minimum pressure.
- Press and release the SET key to continue to the next step.

3. SET THE MAXIMUM PRESSURE (*F\_2*)

- Press the UP and DOWN keys until the display shows the desired maximum pressure.
- Press and release the SET key to continue to the next step.

4. SET THE MONITOR PRESSURE (*P\_1*)

- Press the UP and DOWN keys until the display shows the desired monitor pressure.
- Press and release the SET key to continue to the next step.

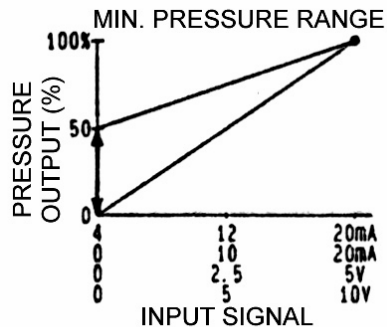
5. SET THE MONITOR PRESSURE (*P\_2*)

- Press the UP and DOWN keys until the display shows the desired monitor pressure.
- Press and release the SET key to finish the setup.
- The display returns to the current pressure.

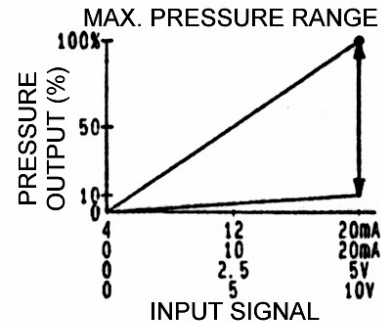
**ADJUSTING THE MINIMUM AND MAXIMUM PRESSURES**

The ITV allows the user to customize the minimum pressure (zero point) at 0% input signal and the maximum pressure (span) at 100% input signal. The minimum pressure can be set as low as 0% and as high as 50% of the full span. The maximum pressure can be set as low as 10% and as high as 100% of the full span.

For example, an ITV203 could be set to output 35 PSI at 0% input signal, and 43 PSI at 100% input signal (there must be at least 8 PSI separation). Similarly, the same ITV203 could be set to output 0 PSI at 0% input signal, and 8 PSI at 100% input signal.



minimum pressure (zero) adjust



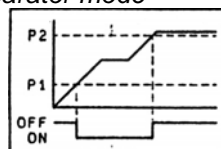
maximum pressure (span) adjust

**MONITOR OUTPUT**

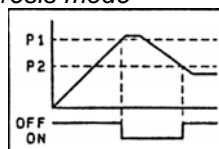
The ITV is available with one of three different monitor output signals:

- ANALOG (ITV20 -□ 1): Linear analog pressure monitor signal (1~5VDC). Input impedance: 100KΩ or greater
- NPN DIGITAL (ITV20 -□ 2): NPN open-collector output. Maximum load current: 30mA
- PNP DIGITAL (ITV20 -□ 3): PNP open-collector output. Maximum load current: 30mA

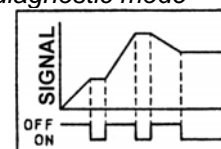
The NPN and PNP digital monitor outputs can be set to function in one of three different ways:

*comparator mode*when  $P1 < P2$ 

- The output is on whenever the outlet pressure is greater than P1 but less than P2.

*hysteresis mode*when  $P1 \geq P2$ 

- The output comes on once the outlet pressure reaches P1. The output will remain on until the outlet pressure drops to P2.

*self-diagnostic mode*when  $P1 = P2 = 0$ 

- The output is on whenever the outlet pressure equals the commanded pressure. The output is off whenever the input signal changes.

**EASY PROGRAMMING GUIDE****ERROR MESSAGES**

ERROR #	DESCRIPTION	LED DISPLAY
1	Input signal exceeds the input signal range	ER1
2	EPROM read/write error	ER2
3	Memory read/write error	ER3
4	Internal solenoid valve malfunction	ER3
0	Other	ER0

\*Simultaneously press and hold the UP and DOWN keys for 3 seconds or longer to reset.

**SPECIFICATIONS**

Supply Pressure	[set pressure + 14.5psi] to 145psi <sup>1</sup>
Output Pressure	0.725~14.5psi (ITV201) 0.725~72.5psi (ITV203) 0.725~130.5psi (ITV205)
Maximum Flow	52.5 SCFM
Supply Voltage	24VDC±10% (ITV20 0) 12VDC±10% (ITV20 1)
Input Signal	4~20mADC (ITV20 -0) 0~20mADC (ITV20 -1) 0~5VDC (ITV20 -2) 0~10VDC (ITV20 -3)
Input Impedance	250Ω or less (ITV20 -0 & -1) approx. 6.5KΩ (ITV20 -2 & -3)
Linearity	±1% FS
Hysteresis	0.5% FS
Repeatability	±0.5% FS
Monitor Output	1~5VDC analog transistor (NPN, PNP), max. 30mA

<sup>1</sup>Except ITV201, which is 29PSI.

FOR TECHNICAL SUPPORT PLEASE CALL 1-800-762-7621