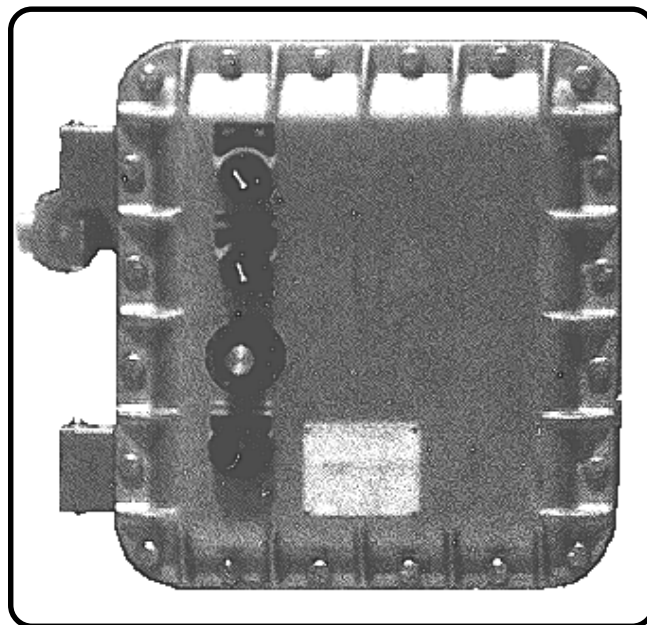


# MORGAN PRODUCTS

## ELECTRONIC CONTROL MODULE

### TYPICAL APPLICATIONS:

- A. Used as an integral part of Morgan Products automatic flow tracking odorizers and chemical injection systems.
- B. Used to control output volume of Morgan Products pneumatic chemical injection pumps when flow rates of the process line fluctuate.



Model ECM/4-20/110/X explosion proof shown.

### DESCRIPTION OF OPERATION:

When used in conjunction with Morgan Products pneumatic chemical injector pumps, you will obtain a chemical injection rate proportional to the flow rate of a process line.

The Electronic Control Module (ECM) converts a 4-20mA or 1-5 VDC, to a pulsed pneumatic signal. The pneumatic signal varies from 0 - 50 pulses per minute or strokes per minute (SPM). The operating range of 0 - 50 SPM can be set to obtain a minimum of 0 - 10 (zero) and a maximum of 30 - 50 (span).

#### EXAMPLE:

With a control signal of 4 mA the zero setting is 5 SPM and the span setting is 40 SPM. When the control signal is 4mA the SPM = 5 at 20mA SPM = 40, at any point of the control signal range the output pulse will be totally linear.

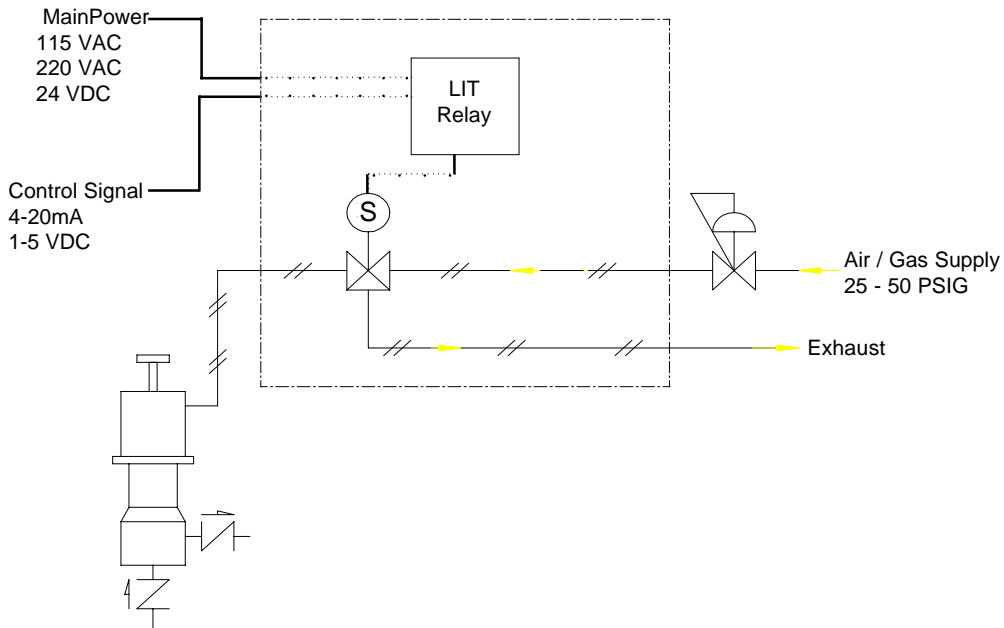
If the control signal drops below 4mA and is not totally lost the SPM = 0.

Other standard features included are automatic electronic backup, to provide a fixed rate if the control signal is lost and a manual rate override.

**MORGAN PRODUCTS INC.** 28103 Ave. Stanford / Valencia, CA 91355

(805) 257-3022 - (800) 421-8910 - FAX (805) 257-3385

# TYPICAL ECM FLOW CHART



## OPTIONS:

Inclosure - General Purpose NEMA 12  
Explosion Proof NEC Class 1, Division 1, Groups C & D

Input Signal - 4 - 20mA  
1 - 5 VDC

Power Requirement - 115 VAC, 50 / 60 Hz  
220 VAC, 50 / 60 Hz  
24 VDC, 2A

## PART NUMBER EXAMPLE:

ECM/4-20/110/GP  
Electronic control \_\_\_\_\_  
4-20mA control signal \_\_\_\_\_  
General Purpose Enclosure  
115 VAC power

## CONTROL DESCRIPTION:

On - Off-----Main Power Switch  
Main Power ----Main Power Indicator Light  
Man - Auto-----Manual or Automatic Mode Select  
Rate Control ---Manual Rate Adjustment  
Preset Back up Rate  
Adjustment of Zero And Span  
Signal Fail -----Signal Failure / Manual Operation Indicator Light  
Zero -----Adjustment of Minimum Pulse Rate  
Span -----Adjustment of Maximum Pulse Rate