IO: 4-20mA Output

Safety

30 VDC maximum on field wiring terminals. 24 VDC maximum on internal card surfaces.

1.1 Installation

Services

The IO driver provides one or two, DC isolated, loop powered 4-20mA outputs. Up to two dual, 4-20mA output 'IO' drivers may be installed in an Aegis controller. The current output level 0% to 100% is logged by the controller.

Card Installation

- 1. Turn OFF the controller AC power
- 2. IO driver cards may be installed in either the Sensors 'C' & 'D' or Sensors 'E' & 'F' slot.
- 3. Turn ON the controller after installing the IO Driver and the controller will auto-configure, displaying the current output, on the LCD display and browser.

Current Loop Wiring



1.1 Installation cont.

Current Loop Wiring

AWG22 / 0.25 mm², current loop cabling may be extended several hundred feet or meters without causing measurement errors. The maximum cable length is determined by the open loop voltage and the cable gauge.

Do not install current loop cabling in the same conduit as AC power cabling.

Current loop cabling may share a common conduit with other sensors, water meter and contact set cabling.

1.2 Configuration - Operation

Diagnostics

Parameter	LCD	Browser	Value : Use	
	Display			
Sensor Location		OK	Installation slot. LCD displays slot letter on screen.	
Input Card Type	OK	OK	4-20mA Output: verifies driver card type	
Status	OK	OK	Manual / Auto Loop open alarm	
Displayed Value	OK	OK	12.0 mA & 50.0%:	
			Displays both current mA level & % of span	
			Displayed with user set resolution	
Period Maximum		OK	52.6% Data from current log interval. Used to assess controls.	
Period Minimum		OK	48.1%:	
Period Average		OK	50.2%:	
Sample Size		OK	48: Samples in Period Max. Min. & Average	
Current Period		OK	21 minutes: Elapsed time in current log period	
Log Period		OK	60 minutes: User set log period 5 to 1440 minutes	
Trim Span	OK	OK	950: 20mA span. Keypad adjustable	
Trim Zero	OK	OK	9: 4mA zero. Keypad adjustable	
Input Card ID	OK	OK	2467 mV: Design level = 2460mV.	

Manual - Auto

A 4-20mA output may be switched from Auto control to Manual.

Manual mode allows the user to set an output from 0% to 100% to base feed, set up feed rates and verify monitoring inputs.

On return to Auto the 4-20mA span and controlling sensor or relay are restored, unchanged.

1.2 Configuration - Operation cont.

Hardware Calibration



Hardware Calibration is used to compensate for component level errors. It's only available via the keypad and forces the current loop to 20mA to adjust SPAN and to 4mA to adjust ZERO. Trim Zero default = 9 Trim Span default = 950

1.3 Specifications

Function		Notes
Resolution & Accuracy	0.1% & +/- 0.15%	
DC Isolated	Terminals 1+ & 1- DC isolated from 2+ & 2-	Outputs DC isolated from electrical ground – controller common.
Loop Polarity	Auto-correcting	Driver input terminals are not sensitive to polarity.
Max Loop Voltage	30VDC.	Current loops powered by the controller unregulated 15VDC supply do not exceed 24VDC.
Minimum Loop Termination	10 ohms.	LMI solenoid drive pump, proportional control input = 22 ohms