

Application Note: Math Modules: Flow: Dilution Percentage of Total Flow for Dosing

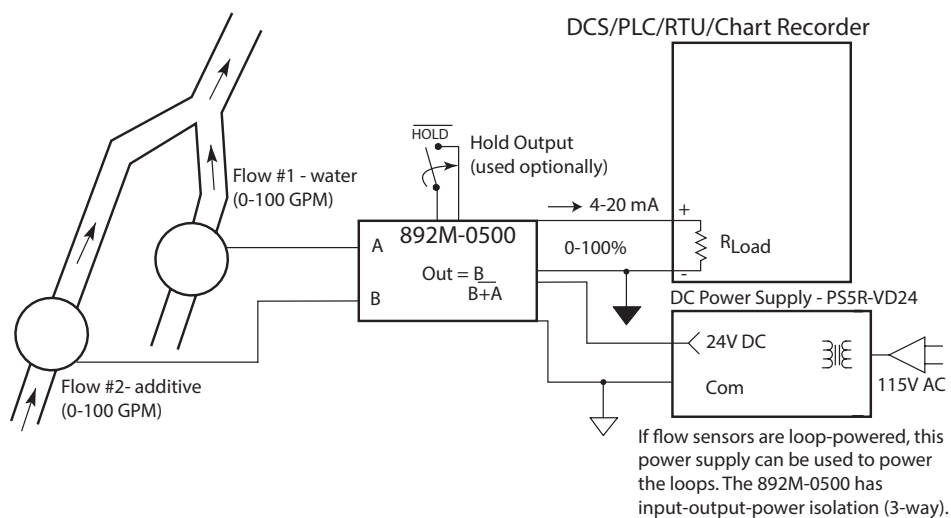
Defining the Problem:

Transmitting the dosing percentage (ratio) of an additive based upon total flow of effluent.

Solution:

Model 892M-0500 dual-input math module
Model 800C-SIP software interface package
Optional: Model PS5R-VD24 power supply

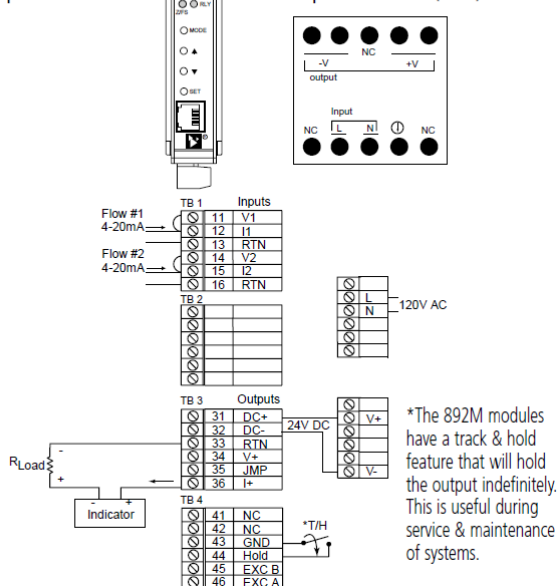
System Diagram:



Wiring Diagram:

Model No: 892M-0500
Input(s): 4-20mA
Output: 4-20mA

Model No: PS5R-VD24
Input: 120V AC
Output: 24V DC (50W)



Scaling & Equation:

IntelliPack Configuration - 892M-0500 - RatioCalculation*

File Module Settings Help

General Xmrtr Configuration Test Input 1-2 Calibration Output Calibration

I/O	Equation Symbol	Zero Signal Value	Zero Engr. Unite Value	Full Scale Signal Value	Full Scale Engr. Unite Value	Engr. Units
Input 1	A	4. C mADC	0	20.0 mADC	100	gpm
Input 2	B	4. C mADC	0	20.0 mADC	100	gpm
Output 1		4. C mADC	0	20.0 mADC	100	%

Equation:
Output 1 = $[(MAX(B,0))/(MAX(A,0)+MAX(B,0)+0.0000001)]*100$

Show Simulator

For Help, press F1

Output Equation:

$$(MAX(B,0)/(MAX(A,0)+MAX(B,0)+0.0000001))*100$$

Using the "MAX" function guarantees that 0 GPM will be used for calculation purposes in the event of an open/shorted input fault (0 mA). The use of .0000001 in the denominator protects against a "divide by zero" condition.