FLOW METER APPLICATION: 1746sc-CTR4/8 automates a filler station in a major household paint manufacturer in Atlanta.

This major brand of household paint is in the process of automating its filling station to make it more efficient. It is critical for a manufacturer of expensive liquid chemicals to maintain as much resolution and accuracy to guarantee repeatability in its filling process.
The Spectrum Controls 1746sc-CTR8 flow meter, in combination with Allen Bradley SLC-500, will help you meet that goal.

Input Modes	DC counter, AC flow meter	
Input Voltage Range	Voltage Category 5 Vdc 12 Vdc 24 Vdc 0-30 Vac	Operating Voltage 8 to 30 Vdc 16 to 30 Vdc 0.050 to 30 Vac 3 to 30 Vdc
Counter Speed	0 to 50 KHz	
Input Frequency	1 to 50 KHz	
Min Pulse Time DC Mode External Enable/Disable	10 µs Enable and Disable setup time = 20 µs	
Accuracy Counter mode Frequency mode	±1 Count +- 1% @ 50KHz, .002% @ 1Hz	
Count Value Range	Low Range ±32K, High Range ±8M	
Nominal Input Impedance	25 Kohms	
Counter Voltage Input	Programmable 5, 12, 24 Vdc, 0-30 Vac	
Channel Update Time		

Counter Mode Frequency Mode	<4 ms per channel <4ms per channel

Technical aspect

Meter Maintenance, a major system integrator in California, has gained recognition as a specialist to design and set up sophisticated turnkey systems in the mechanical flow meter industrial applications.

	The filling machine encompasses six (6) heads, delivering the paint simultaneously into three (3) cans at a time, moving on a conveyor belt. A Micro Motion Coriolis mass flow meter measures the mass of paint delivered to the manifold and generates a pulse frequency output, which in turn is read by the Spectrum Module connected to the SLC-500 PLC.

Initially the mass flow meter is configured for 100 pulses per pound of paint but can easily be brought to 200 pulses per pound for better accuracy although in this application it would be overkill. The **CTR8** features typical flow meter setup parameters such as K (scaling) factor, which makes the scaling for this application a snap. Also, the input range selections for the CTR8 offers maximum connectivity to most flow meter applications including direct connections to turbine flow meters without the need for a Pre-Amplifier. The **1746sc-CTR8** FLOW METER module has three selectable filter frequency settings (15KHz, 30KHz, 50KHz), which can be used to filter out unwanted electrical noise. In this application, the 15KHz frequency was selected to gain maximum noise reduction. The **1746sc-CTR8** configuration necessitates a minimum of logic programming (*see figure below*). With eight (8) channels, the **1746sc-CTR8** offers the cheapest solution per point in the industry. In addition, the multiple channels allow the operator to monitor several filling machines simultaneously or can even add redundancy for safety purposes.

Most installations will also monitor temperature, level, or a voltage application. The Spectrum Controls 1746sc-NI8u universal input module can also handle all these inputs.

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Please call us to discuss your application and see if we can find a solution to it.