

Control of carburizing gas in vacuum carburizing furnaces

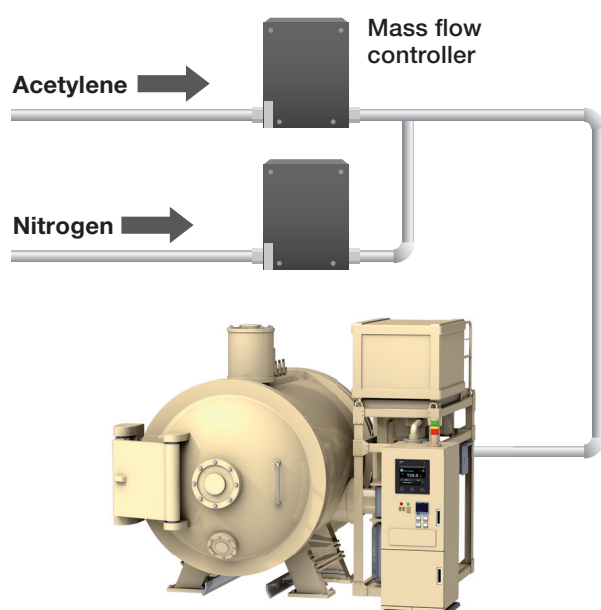
Even at a manufacturing site where the temperature changes greatly, this controller supplies gas with high accuracy, helping to stabilize carburization quality



Product	Process sensor Digital Mass Flow Controller	Process/ equipment	[Combustion & resistance furnaces] Gas carburizing furnaces
Model No.	F4Q_____		

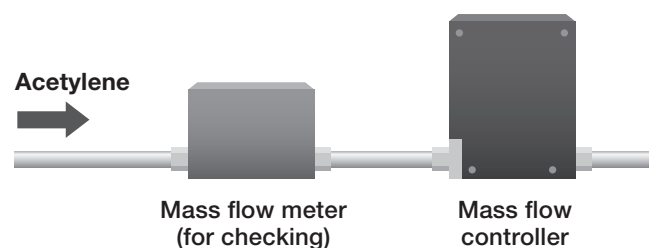
Current Situation

- Because the atmosphere in the furnace is not measured or checked, the accuracy of the flow rate directly affects the quality of carburization.
- The mass flow controller is located where there is no air conditioning, and the temperature changes greatly.
- Mass flow meters are necessary to check the accuracy of the mass flow controller.



Current Problems

- To guarantee carburization quality, high-accuracy gas flow rate control is needed.
- Most mass flow controllers have small operating temperature ranges that does not cover the temperature range at the site.
- If a mass flow controller and mass flow meter with large pressure loss are installed, the acetylene pressure must be raised in order to achieve the desired flow rate.



Solution 1

High accuracy of 1 % of the SP in a wide range of flow rates

A controller with high accuracy of 1 % of the SP in a wide range of flow rates can control the flow rate with high accuracy even when the set rate is changed.

Solution 2

Usable in a wide range of temperatures from -10 to $+60$ °C

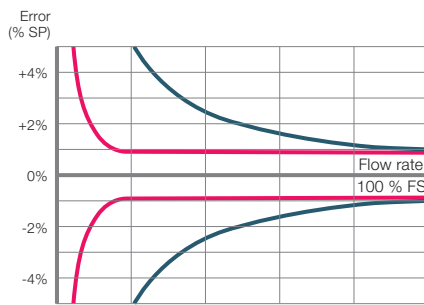
The operating temperature range of most mass flow controllers is small, but the range of model F4Q is from -10 to $+60$ °C, and the effect of ambient temperature changes on the flow rate is small. The flow rate is stable even in an environment in which the temperature greatly changes, so the quality of carburization is also stable.

Solution 3

Flow path with low pressure loss is optimum for low-pressure acetylene

Both a mass flow controller and a mass flow meter with a straight flow path and low pressure loss are available. There is no need to raise the pressure of the acetylene.

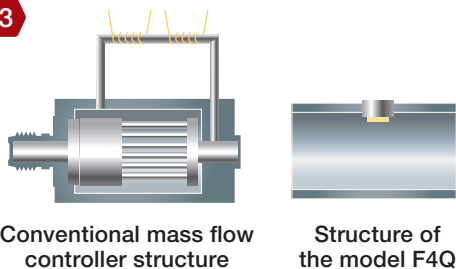
Solution 1



Solution 2



Solution 3



Related products



Network Instrumentation Module Smart Device Gateway* Model NX-SVG

Program-less communication can markedly reduce development time.

* A communication gateway that allows the interchange of information between various kinds of control device without programming, enabling smarter development work.



Mass flow meter for gas Model CMS_ _ _ _

Straight flow path and low pressure loss are optimum for measuring low-pressure gas.

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