

Hysteresis and Linearity Error Check of Control Valve

Input Signal		True Value Stem Travel	Actual Stem Travel		Hysteresis Error	Linear Error	Acceptance Criteria	Pass/Fail
%	mA	inch	Up	Down	%	%		
0	4		.....inch	.....inch				
25	8		.....inch	.....inch				
50	12		.....inch	.....inch				
75	16		.....inch	.....inch				
100	20		.....inch	.....inch				

to calculate hysteresis error:

$$((\text{Actual Stem Travel Up}) - (\text{Actual Stem Travel Down})) / \text{Maximum True Value Stem Travel} * 100$$

to calculate linear error:

$$((\text{Actual Stem Travel Up}) - (\text{True Value Stem Travel})) / \text{Maximum True Value Stem Travel} * 100$$

Deadband Error Check of Control Valve

Input Signal		True Value Stem Travel	Actual Stem Travel	Dead Band Error	Acceptance Criteria	Pass/Fail
%	mA	inch	inch	%		
5	4.8					
50	12					
95	19					

Maximum stem travel (inch):

to calculate deadband error:

$$((\text{Actual Stem Travel Up}) - (\text{True Value Stem Travel})) / \text{Maximum True Value Stem Travel} * 100$$