



॥ अविक्त जल प्रदाय ॥



CWPRS CERTIFICATION 450 MM DIA.



GOVERNMENT OF INDIA
 Ministry of Jal Shakti
 Department of Water Resources, River Development &
 Ganga Rejuvenation
Central Water & Power Research Station
 Khadakwasla, Pune- 411024



HYDRAULIC MACHINERY AND CAVITATION DIVISION TEST CERTIFICATE FOR DIAPHRAGM TYPE CONTROL VALVE

CERTIFICATE No: CWPRS/HMC/19-20/G- 037

TEST DATE: 14.08.2019

1	Calibration referred by	M/s Allied Electro Mechanicals Pvt. Ltd., Pune
2	Calibrated for	M/s Suzhou Alpine Flow Control Co. Ltd. PRC, through M/s Alpine Flowtech, Thane
3	Project	Wardha WSS (SCADA Automation of ESR), Wardha Municipal Council; PMC: Maharashtra Jeevan Pradhikaran
3	Type of Valve	ALPINE Brand Double Solenoid Hydraulically Operated Diaphragm Type Automatic Flow Control Valve (AFCV)
4	Instruments installed in Testing rig	
	a) PLC Drive Concord AFCV RTU & Kokhan Automation ABB	b) Flow transmitter (Make-Adept,Pune; Ultrasonic)
	c) Pressure Sensor (Make - Electronet, Pune)	d) Level Transmitter (Make - Baumer)
5	Reference standard	Gravimetric method with an uncertainty + 0.3%
6	Line Size & Valve Size	450 mm NB
7	Fluid media	Clear cold water
8	Flow Range calibrated	0 - 900 m ³ /hr

OBSERVATION TABLE

REGULAR TEST READINGS AT VARIOUS SET POINTS

Sr. No.	Inlet Pressure P ₁ (bar)	Reference flow rate Q (m ³ /hr)	FCV Set Point	Outlet Pressure P ₂ (bar)	ΔP (P ₁ - P ₂)	Response time (in Secs)	$K_v = \frac{Q\sqrt{G}}{\Delta P}$	$C_v = K_v \times 1.156$
1	Differential Pressure transducer installed	898.900	100%	Differential Pressure transducer installed	0.2470		1808.685	2090.84
2		679.282	75%		0.3810	220	1100.494	1272.171
3		430.339	50%		0.3780	206	699.9464	809.1381
4		235.552	25%		0.4840	200	338.5822	391.401
5		0	0%		0.5638	465	0	0

RANDOM TEST READINGS AT VARIOUS SET POINTS

1	-	283.642	Random	-	0.4350	68	430.0569	497.1458
2	-	543.432	Random	-	0.3800	59	881.5631	1019.087
3	-	809.931	Random	-	0.1980	80	1820.185	2104.133

REMARKS

- PLC command, Input Signal from flow transmitter and flow control valve response were in proper synchronization mode. Valve operation is linear during the variation of flow at various set points with different valve openings. At 100% set point (Full Opened Position) 0.2470 bar pressure drop was observed in the circuit.
- A level indicator and Pressure Transmitter are also synchronized to observe the flow control response during the test and the operations were found to be satisfactory.

K_v = Flow Coefficient (General use in Europe), C_v = Valve Coefficient (General use in USA), G = Specific Gravity of Water = 1

TEST PARTICIPANTS.

TESTED BY CWPRS	WITNESSED BY
Shri Shobhit Singh, RA	Shri Zalke, EE, MJP, Nagpur Shri Bandewar, Wardha Municipal Council Shri Prabal Dabey, Er., Alpine Flowtech Shri Prasad Gadkari, Allied Electro Mechanicals, Pune Shri Govind Hamdapurkar, Concord Technologies Shri S. Kulkarni, Pristine Automation

(Signature)
 (K U Farande)
 Asst Research Officer

(Signature)
 (Dr K Kumar)
 Scientist 'C'

