

CONTENTS

1. Why measure flow	1
2. Historical perspective	5
3. Physical properties of fluids	27
4. Fundamentals of flow measurement	51
5. Linearization , compensation and totalization of flow signals	73
6. Field calibration	91
7. Installation and maintenance	103
8. Differential pressure flowmeters	115
9. Magnetic flowmeters	175
10. Mass flowmeters	221
11. Open channel flow measurement	249
12. Oscillatory flowmeters	295
13. Positive displacement flowmeters for liquid measurement	315
14. Target flowmeters	323
15. Thermal mass flowmeters and controllers	335
16. Tracer dilution measurement of flow	347
17. Turbine flowmeters	373
18. Ultrasonic flowmeters	415
19. Variable area flowmeters	443
20. Insertion ( sampling ) flow measurement	465
21. Custody transfer measurement	503
22. Sanitary flowmeters	519
23. Flowmeter selection	539
24. Flow metrology standards , calibrations ,and traceabilities	575
25. Standards in flow measurement	589
26. Flowmeter specifications	613
Index	627