

ISO 12764:2017-08 (E)

Measurement of fluid flow in closed conduits - Flowrate measurement by means of vortex shedding flowmeters inserted in circular cross-section conduits running full

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
3.1	Definitions specific to this vortex flowmeter standard	2
3.2	Definitions related to measurement of fluid flow in closed conduits	3
3.3	Definitions related to the vocabulary used in metrology	4
4	Symbols and subscripts	4
4.1	Symbols	4
4.2	Subscripts	5
5	Principle	5
5.1	Bluff body	5
5.2	Shedding vortices detection/sensors	6
5.3	Strouhal number	6
6	Flowmeter description	7
6.1	Physical components	7
6.1.1	Flow tube	8
6.1.2	System output	8
6.2	Marking	9
6.3	Safety issues	9
6.3.1	Pressure and fluid-wetted parts	9
6.3.2	In-line instrumentation, testing	9
6.3.3	Materials	9
7	Application	9
7.1	Sizing	9
7.2	Pressure loss and cavitation	10
7.3	Swirl and undeveloped profile	10
7.4	Flow stability	11
7.5	Vibration	11
8	Installation	11
8.1	General	11
8.2	Installation location	11
8.3	Piping	11
8.3.1	Straight sections	11
8.3.2	Mating pipe	12
8.3.3	Position of valves	12
8.3.4	Dual phase flow	12
8.3.5	Bypass	12
8.3.6	Additional process measurements for compensation	12
8.3.7	Installation orientation, electronics	13
8.3.8	Bluff body orientation	13

8.3.9	Full pipe condition	13
8.3.10	Condensable gas	13
8.3.11	Extreme conditions	13
8.3.12	New installations	14
9	Operation	14
9.1	Operating limits	14
9.2	Start-up procedure	14
9.3	Shift of calibration	14
9.4	Maintenance	14
10	Performance characteristics	14
10.1	Reynolds number range	14
10.2	P-T conditions	14
10.3	Performance disturbing influences	14
11	Calibration (K-factor determination)	15
11.1	Mean K-factor	15
11.2	In situ calibration	15
Annex A (informative) Period jitter and its effects on calibration		16
Annex B (informative) Special considerations for steam		18
Bibliography		22