

ISO 2714:2017-11 (E)

Liquid hydrocarbons - Volumetric measurement by displacement meter

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Normative references	1
3	Terms, definitions, symbols and abbreviated terms	1
3.1	Terms and definitions	1
3.2	Symbols and abbreviated terms	5
4	Design and operation of positive displacement meters	5
4.1	Basic characteristics and mode of operation	5
4.2	Reciprocating displacement types	7
4.3	Rotating displacement types	7
4.4	Intermeshing screw spindle type	8
4.5	Oscillating displacement types	9
4.6	Disc type meters	9
5	Performance aspects	9
5.1	General	9
5.2	Factors affecting meter performance	9
5.3	General performance characteristics	9
5.4	Pressure drop and back pressure considerations	11
5.5	Flow profile	11
6	Liquid property effects	11
6.1	General	11
6.2	Effect of viscosity	11
6.3	Effect of temperature	13
6.4	Effect of pressure	13
6.5	Lubricity and liquid cleanliness	14
6.6	Two-phase flow and air elimination	14
6.7	Two-component operation	14
6.8	Pulsating and fluctuating flow	14
7	System design	15
7.1	Design considerations	15
7.2	Selection of displacement meter type	16
7.3	Ancillary equipment	17
7.3.1	General	17
7.3.2	Mechanical accessories	18
7.3.3	Pulse generators and secondary electronic instrumentation	18
7.4	Flow algorithms	19
8	Installation aspects	20
8.1	General	20
8.2	Installation pipework	20
8.3	Flow pulsation	22
8.4	Electrical installation	22
8.5	Pulse security	23

9	Environmental considerations	23
9.1	General	23
9.2	Electrical interference	23
9.3	Humidity	23
9.4	Safety	23
10	Calibration	24
10.1	Proving and verification	24
10.2	General considerations	24
10.3	Proving conditions	24
10.4	Proving methods	24
10.5	Proving frequency	25
11	Operation and maintenance	25
11.1	General	25
11.2	Initial start-up	25
11.3	Meter maintenance	26
11.4	System diagnostics and control charts	26
	Annex A (informative) Specification of performance	28
	Bibliography	35