

# ISO 1088:2007-07 (E)

## Hydrometry - Velocity-area methods using current-meters - Collection and processing of data for determination of uncertainties in flow measurement

---

<b>Contents</b>		<b>Page</b>
Foreword .....		iv
Introduction .....		v
1	Scope .....	1
2	Normative references .....	1
3	Symbols and abbreviated terms .....	2
4	Types of errors and procedure for estimating the uncertainties in flow measurement .....	3
4.1	Principle .....	3
4.2	Occurrence of error .....	4
4.3	Sources of error .....	5
4.4	Determination of the individual components of the uncertainty .....	6
4.5	Total uncertainty in discharge .....	7
5	Collection and processing of data for the investigation of component uncertainties - type A evaluation of uncertainties .....	8
5.1	Data on the local point velocity .....	8
5.2	Data on the average velocity .....	9
5.3	Data on the velocity-area method .....	10
5.4	Integration method .....	11
5.5	Calibration curves .....	11
5.6	Distance measurements .....	11
5.7	Depth measurements .....	12
6	Data processing .....	12
6.1	General .....	12
6.2	Error-type i .....	13
6.3	Error-type ii -- Approximation of mean velocity in the vertical .....	15
6.4	Error-type iii -- Limited number of verticals .....	17
Annex A (informative) Characteristics of rivers from which data were collected .....		21
Annex B (normative) Effect of increasing measuring time on uncertainty .....		26
Annex C (normative) Local point velocity measurements - Report form .....		27
Annex D (normative) Average velocity measurements -- Report form .....		31
Annex E (normative) Velocity-area method -- Report form .....		34
Annex F (informative) Examination of Error Types i, ii, and iii .....		38
Annex G (informative) Uncertainties in velocity-area measurement components .....		41
Annex H (informative) Calculation of the uncertainty in a current-meter gauging .....		45
Bibliography .....		48