

DIN EN 17075:2024-12 (E)

Water quality - General requirements and performance test procedures for water monitoring equipment - Continuous measuring devices (includes Amendment :2023)

Contents		Page
European foreword.....		4
Introduction		5
1	Scope.....	6
2	Normative references.....	6
3	Terms and definitions.....	6
4	Symbols.....	12
5	Principles.....	12
6	General requirements.....	13
6.1	Requirements for $\overline{A_1}$ CMDs $\overline{A_1}$	13
6.2	Requirements for $\overline{A_1}$ CMDs $\overline{A_1}$ associated documents.....	14
7	Performance characteristics.....	15
7.1	Performance characteristics determined by laboratory testing.....	15
7.2	Performance characteristics determined by field testing.....	16
8	Performance testing.....	17
8.1	Quality requirements for testing.....	17
8.2	General requirements for testing.....	18
8.3	Test conditions.....	19
8.4	Reporting	20
9	Laboratory test procedures.....	20
9.1	Guidance for establishing a test plan.....	20
9.2	Verification by inspection.....	21
9.3	Performance tests.....	22
9.3.1	Response time	22
9.3.2	Bias, linearity, repeatability and LOQ.....	25
9.3.3	Interference effects	25
9.3.4	Ambient temperature and relative humidity	29
9.3.5	Sample temperature	30
9.3.6	Sample flow-rate	31
9.3.7	Sample pressure.....	31
9.3.8	Output impedance	31
9.3.9	Supply voltage	32
9.3.10	7-day drift	33
9.3.11	Loss of power.....	33
9.3.12	Warm-up drift.....	34
10	Field test procedures.....	34
10.1	Objective of field test	34
10.2	Planning for the field test.....	35
10.3	Error under field test conditions.....	37
10.4	Response time	37
10.5	Variation in sensitivity.....	38
10.6	Maintenance.....	39
10.7	Up-time	39

Annex A (informative) Example values for performance characteristics for a selection of $\overline{A_1}$ CMDs $\overline{A_1}$ for monitoring waste water effluents and receiving waters 41

Annex B (normative) Evaluation of performance test data..... 46

B.1 Introduction 46

B.2 Bias..... 46

B.3 Repeatability 47

B.4 Linearity..... 47

B.5 Estimation of LOQ..... 48

B.6 7 Day drift (test 9.3.10) 48

B.7 Effect of influence conditions (tests 9.3.3.2 to 9.3.9.4) 48

B.8 Combined performance characteristic measurement uncertainty..... 50

Annex C (informative) Example calculations..... 52

C.1 General 52

C.2 Worked example – Laboratory tests..... 52

C.2.1 Bias, repeatability, linearity and LOQ 52

C.2.2 Influence conditions 56

C.2.3 Calculation of combined performance characteristic measurement uncertainty..... 58

C.3 Worked example — Field tests..... 59

Annex D (informative) Uncertainty of the reference quantity and error calculations 61

Annex E (informative) Example test report 63

Bibliography 67