

# 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**