ISO 23745:2024-02 (E)

Ships and marine technology - General specification for shipborne meteorological instruments

Contents

Page

Foreword v

Introduction vi

1 Scope 1

2 Normative references 1

3 Terms and definitions 1

4 Requirements 3
4.1 General requirement 3
4.1.1 Appearance and installation 3
4.1.2 Material 3
4.1.3 Cable 3
4.1.4 Battery 3
4.2 Technical specification of meteorological parameter measurement 3
4.3 Safety 4
4.4 Environmental conditions 4
4.5 Enclosure protection 4
4.6 Electromagnetic compatibility 4
4.7 Sampling, algorithm and meteorological data quality control 4
4.7.1 Sampling rate 4
4.7.2 Algorithm and data quality control 5
4.8 Data storage and transmission 5
4.8.1 Data storage 5
4.8.2 Data transmission 5
4.8.3 Communication interface 5
4.8.4 Transmission format 5
4.9 Display 5
4.10 Clock 6
4.10.1 Time error 6
4.10.2 Synchronized time 6
4.11 Power supply 6

5 Test methods 6
5.1 Test ambient conditions 6
5.2 Test standard apparatus 6
5.3 General requirements check 6
5.3.1 Appearance and installation 6
5.3.2 Material 7
5.3.3 Cable 7
5.3.4 Battery 7
5.4 Safety 7
5.5 Environmental conditions 7
5.6 Technical performance of meteorological parameters 7
5.6.1 Atmospheric pressure 7
5.6.2 Air temperature 7
5.6.3 Relative humidity 7
5.6.4 Relative wind direction 7
5.6.5 Apparent wind speed 7

5.6.6 True wind speed and true wind direction 7
5.6.7 Visibility 8
5.6.8 Sea-surface temperature 8
5.7 Data storage and transmission 8
5.7.1 Data storage and integrity 8
5.7.2 Data transmission 9
5.8 Clock 9
5.9 Power supply 9

6 True wind calculation 9

6.1 Principle 9
6.2 Components of the apparent wind (Swa,X and Swa,Y) 9
6.3 Components of the ship's motion (Sm,X and Sm,Y) 10
6.4 Components of the true wind (Swt,X and Swt,Y) 10
6.5 Calculation of the true wind direction and true wind speed (Dwt and Swt) 10

Annex A (informative) Installation requirements 13

Annex B (informative) Requirements of ship motion information 14

Annex C (normative) Observation data and metadata of SMIs 15

Bibliography 17