

# ISO 22804:2023-08 (E)

## Marine technology - General technical requirement of marine conductivity-temperature-depth (CTD) measuring instrument

---

| <b>Contents</b>    |   | <b>Page</b> |
|--------------------|---|-------------|
| Foreword .....     |   | v           |
| Introduction ..... |   | vi          |
| <b>1</b>           | <b>Scope .....</b>  | <b>1</b>    |
| <b>2</b>           | <b>Normative references .....</b>                               | <b>1</b>    |
| <b>3</b>           | <b>Terms and definitions .....</b>                              | <b>1</b>    |
| <b>4</b>           | <b>Technical specifications .....</b>                           | <b>3</b>    |
| 4.1                | General .....   | 3           |
| 4.2                | Instrument appearance .....                                     | 3           |
| 4.2.1              | Cosmetic requirements .....                                     | 3           |
| 4.2.2              | Product identification .....                                    | 3           |
| 4.2.3              | Instrument fastener .....                                       | 3           |
| 4.3                | Measuring performance of instrument and product .....           | 3           |
| 4.4                | Instrument and product environmental adaptability .....         | 4           |
| 4.5                | Instrument and product interface and data format .....          | 4           |
| <b>5</b>           | <b>Test methods .....</b>                                       | <b>4</b>    |
| 5.1                | Test instrument and equipment .....                             | 4           |
| 5.2                | Appearance inspection .....                                     | 5           |
| 5.3                | Instrument and product interface and data format checking ..... | 5           |
| 5.4                | Measurement performance test .....                              | 5           |
| 5.4.1              | Test requirements .....   | 5           |
| 5.4.2              | Selected test points .....                                      | 5           |
| 5.4.3              | Test preparation .....  | 6           |
| 5.4.4              | Accuracy measurement of temperature and conductivity .....      | 6           |
| 5.4.5              | Temperature and conductivity accuracy test .....                | 6           |
| 5.4.6              | Pressure accuracy test .....                                    | 7           |
| 5.4.7              | Resolution test .....   | 8           |
| 5.4.8              | Stability test .....  | 8           |
| 5.5                | Environmental adaptability test .....                           | 8           |
| <b>6</b>           | <b>Test requirements .....</b>                                  | <b>9</b>    |
| 6.1                | Number of instruments to be tested .....                        | 9           |
| 6.2                | Test process .....  | 9           |
| 6.3                | Qualification requirements .....                                | 9           |
| 6.4                | Delivery requirements .....                                     | 9           |
| 6.5                | Supporting documents .....                                      | 9           |
| <b>7</b>           | <b>Marking, packaging, transportation, storage .....</b>        | <b>10</b>   |
| 7.1                | Marking .....   | 10          |
| 7.1.1              | Nameplate mark .....  | 10          |
| 7.1.2              | Packing mark .....  | 10          |
| 7.2                | Packaging .....   | 10          |
| 7.2.1              | Packaging requirements .....                                    | 10          |
| 7.2.2              | Supporting items .....  | 10          |
| 7.3                | Transportation .....  | 10          |
| 7.3.1              | Means of transport .....  | 10          |

|   |                              |    |
|---|------------------------------|----|
| 7.3.2   | Transport requirement .....  | 11 |
| 7.4   | Storage .....                | 11 |
| 7.4.1   | Storage environment .....    | 11 |
| 7.4.2   | Storage requirements .....   | 11 |
| 8   | User software .....          | 11 |
| 8.1   | General .....                | 11 |
| 8.2   | Measurement management ..... | 11 |
| 8.3   | Parameter calculation .....  | 11 |
| 8.4   | Data processing .....        | 12 |
| Annex A (informative) Examples of record tables for CTD measuring instrument accuracy test data ..... |                              | 13 |
| Annex B (informative) Calculation of practical salinity .....   |                              | 16 |
| Annex C (informative) Pressure to depth conversion .....  |                              | 19 |
| Bibliography .....  |                              | 20 |