

# ISO 15212-2:2002-03 (E)

## Oscillation-type density meters - Part 2: Process instruments for homogeneous liquids

---

| <b>Contents</b> |  | <b>Page</b> |
|-----------------|--|-------------|
| <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>2</b>    |
| <b>4</b>        | <b>Principle and functional units .....</b>                        | <b>2</b>    |
| <b>4.1</b>      | <b>Measuring principle .....</b>                                   | <b>2</b>    |
| <b>4.2</b>      | <b>Functional units .....</b>                                      | <b>2</b>    |
| <b>5</b>        | <b>Density sensor .....</b>  | <b>4</b>    |
| <b>5.1</b>      | <b>Sensor material .....</b>                                       | <b>4</b>    |
| <b>5.2</b>      | <b>Sensor design .....</b>   | <b>4</b>    |
| <b>6</b>        | <b>Requirements and tests .....</b>                                | <b>4</b>    |
| <b>6.1</b>      | <b>General .....</b>   | <b>4</b>    |
| <b>6.2</b>      | <b>Density measuring transducer .....</b>                          | <b>4</b>    |
| <b>6.3</b>      | <b>Liquid temperature measurement .....</b>                        | <b>6</b>    |
| <b>6.4</b>      | <b>Display and output of results .....</b>                         | <b>7</b>    |
| <b>6.5</b>      | <b>Auxiliary units and data transfer .....</b>                     | <b>7</b>    |
| <b>6.6</b>      | <b>Safety requirements .....</b>                                   | <b>8</b>    |
| <b>6.7</b>      | <b>Electromagnetic compatibility .....</b>                         | <b>8</b>    |
| <b>7</b>        | <b>Preadjustment and adjustment .....</b>                          | <b>8</b>    |
| <b>7.1</b>      | <b>Preadjustment of process density meters .....</b>               | <b>8</b>    |
| <b>7.2</b>      | <b>Preadjustment of density measuring transducers .....</b>        | <b>8</b>    |
| <b>7.3</b>      | <b>Adjustment of installed density measuring transducers .....</b> | <b>8</b>    |
| <b>7.4</b>      | <b>Adjustment of processing units .....</b>                        | <b>8</b>    |
| <b>8</b>        | <b>Calibration .....</b>   | <b>9</b>    |
| <b>8.1</b>      | <b>Laboratory calibration .....</b>                                | <b>9</b>    |
| <b>8.2</b>      | <b>In-situ calibration .....</b>                                   | <b>11</b>   |
| <b>9</b>        | <b>Process density meter accuracy .....</b>                        | <b>13</b>   |
| <b>9.1</b>      | <b>Accuracy requirements .....</b>                                 | <b>13</b>   |
| <b>9.2</b>      | <b>Laboratory conformity test .....</b>                            | <b>13</b>   |
| <b>9.3</b>      | <b>In-situ tests .....</b>   | <b>14</b>   |
| <b>9.4</b>      | <b>Test procedure and conformity assessment .....</b>              | <b>14</b>   |
| <b>10</b>       | <b>Installation .....</b>  | <b>15</b>   |
| <b>11</b>       | <b>Operating manual .....</b>                                      | <b>15</b>   |
| <b>12</b>       | <b>Marking .....</b>   | <b>16</b>   |