

JJF1001—1998

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- 1 International Vocabulary of basic and general terms in metrology, 1993
2 Vocabulary of legal metrology, 3rd committee draft, 1997
3 Guide to the expression of uncertainty in measurement, 1993
4 ISO/IEC Guide 25

3

3.1 * measurable quantity

()

1. “ ”

2

3. GB3100 3102

3.2 system of quantities

3.3 base quantity

(3.12)

3. 4 deri ved quanti ty

3.5 dimension of a quantity

[illegible]

3.6 quantity of dimension one
dimensionless quantity

$$\begin{pmatrix} 1 & 0 \\ 0 & 3.1 \end{pmatrix}$$

3.7 unit of measurement

1.
2 ()

3.8 symbol of a unit of measurement

- a) m
- b) A

3.9 system of units of measurement

- a)
- b) CGS

3.10 coherent derived unit of measurement

$$1 \text{ N} = 1 \text{ kg} \cdot \text{m} \cdot \text{s}^{-2} \quad \text{N} (\quad)$$

1.
2

3.11 coherent system of units of measurement

()
 $\text{m} \quad \text{kg} \quad \text{s};$
 $\text{m}^2 \quad \text{m}^3 \quad \text{Hz} \quad \text{s}^{-1} \quad \text{ms}^{-1} \quad \text{ms}^{-2}$
 $\text{kg} \cdot \text{m}^{-3} \quad \text{N} \quad \text{kg} \cdot \text{ms}^{-2}$
 $\text{Pa} \quad \text{kg} \cdot \text{m}^{-1} \cdot \text{s}^{-2} \quad \text{J} \quad \text{kg} \cdot \text{m}^2 \cdot \text{s}^{-2}$
 $\text{W} \quad \text{kg} \cdot \text{m}^2 \cdot \text{s}^{-3}$

3.12 (SI) International System of Units (SI)
(CGPM)

1. SI
2 7

SI

()

m
kg
s
A
K
mol

3.13 base unit of measurement

3.14 derived unit of measurement

N

J

Pa

3.15 off system unit of measurement

- a) ($1.60218 \times 10^{-19} \text{J}$) SI
b) SI

3.16 multiple of a unit of measurement

- a) ()
b)

3.17 submultiple of a unit of measurement

1

3.18 value of a quantity

5.34m 534cm 15kg 10s 40

3.19 true value of a quantity

1.
2.
3.

3.20 conventional true value of a quantity

- a)
b) (CODATA) 1986 $6.0221367 \times 10^{23} \text{mol}^{-1}$

1.

7.7

2

3.21 numerical value of a quantity

3 18 5 34 534 15 10 40

3 22 conventional reference scale
reference-value scale

- a)
- b) pH
- c)

4

4.1 measurement

1.
2

4.2 metrology

4.3 metrology

1.
2
3

4.4 principle of measurement

- a)
- b)
- c)
- d)

4.5 method of measurement

4.6 measurement procedure

()

4.7 measurand

20

()

4.8 influence quantity

- a)
- b)
- c)

4.9

measurement signal

- a)
- b)
- c)

3

5.7 reproducibility of results of measurements

1.

2

3

4.

5.8 experimental standard deviation

$$s = \sqrt{\frac{\sum_{i=1}^n (x_i - \bar{x})^2}{n-1}}$$

x_i i
 \bar{x} n

1.

 n \bar{x} s σ

2

$$\frac{s}{\sqrt{n}}$$

 \bar{x}

3

5.9 uncertainty of measurement

1.

2

3

()

5.10 standard uncertainty

5.11 type A evaluation of uncertainty

A

A

A

5.12 type B evaluation of uncertainty

B

B

B

B

5.13 combined standard uncertainty ()

5.14 expanded uncertainty

5.15 coverage factor

1.
2

5.16 error of measurement

1.
2

(3.19 3.20)

5.17 deviation

5.18 relative error

(3.19 3.20)

5.19 random error

1.
2

5.20 systematic error

1.
2

“ ”(7.25)

5.21 correction

1.
2

5.22 correction factor

6

6.1 measuring instrument

6.2 material measure

- a)
- b) ()
- c)
- d)
- e)
- f)

6.3 measuring transducer

- a)
- b)
- c)
- d) pH

6.4 measuring chain

6.5 measuring system

- a)
- b)

1.
2.

6.6 measuring equipment

6.7 displaying measuring instrument
indicating measuring instrument

- a)
- b)
- c)

1. ()
2.
3.

6.8 recording measuring instrument

- a)
- b)
- c)

1. () ()
 2. ()
 3.

6 9 totalizing measuring instrument

- a)
- b)

6 10 integrating measuring instrument

6 11 analogue measuring instrument
 analogue indicating instrument

6 12 digital measuring instrument
 digital indicating instrument

6 13 displaying device
 indicating device

1.
 2.
 3.

6 14 recording device

6 15 sensor

- a)
- b)
- c)
- d)
- e)

6 16 detector

- a)
- b)

1.
2

6 17 i n d e x

- a)
- b)
- c)
- d)

6 18 s c a l e o f a m e a s u r i n g i n s t r u m e n t

6 19 s c a l e l e n g t h

1.
2

6 20 r a n g e o f i n d i c a t i o n

1.
2
100

200
3 7. 2

6 21 s c a l e d i v i s i o n

6 22 s c a l e s p a c i n g

6 23 s c a l e i n t e r v a l

6 24 l i n e a r s c a l e

6 25 n o n l i n e a r s c a l e

7.6 limiting conditions

1.
2

7.7 reference conditions

7.8 instrument constant

1.
2

1

7.9 response characteristic

1.
2

()

7.10 sensitivity

7.11 discrimination threshold

()

7.12 resolution of a displaying device

1.
2

7.13 dead band

1.
2

7.14 stability

1.

2

7.15 transparency

a)
b)

7.16 drift

7.17 response time

7.18 accuracy of a measuring instrument

7.19 accuracy class

7.20 error of indication of a measuring instrument

1. (3.19 3.20)
2
3

7.21 maximum permissible errors of a measuring instrument

7.22 datum error of a measuring instrument

7.23 zero error of a measuring instrument

7.24 intrinsic error of a measuring instrument

7.25 bias of a measuring instrument

7.26 freedom from bias of a measuring instrument

7.27 repeatability of a measuring instrument

1.

2

7.28 fiducial error of a measuring instrument

8

8.1 measurement standard, etalon

- a) 1kg
- b) 100Ω
- c)
- d)
- e)
- f)

1.

2

8.2 international measurement standard

8.3 national measurement standard

8.4 primary standard

8.5 secondary standard

8.6 reference standard

8 7 working standard

1.
2

8 8 transfer standard

8 9 travelling standard

8 10 traceability

1.
2

“ ”

8 11 calibration

1.
2
3

8 12 conservation of a measurement standard

8 13 reference material (RM)

8

8 r M

fi

9

9.1 legal metrology

9.2 legal unit of measurement

9.3 service of legal metrology

9.4 metrological assurance

9.5 metrological control

9.6 control of measuring instruments

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9.7 metrological supervision

9.8 metrological assessment

9.9 pattern approval

) () (

9.10 pattern evaluation

9.11 examination for conformity with approved pattern

Q M

Q M

9.25 Laboratory accreditation

9.26 Laboratory assessment

9.27 calibration measurement capability

$k = 2$ i

A
B

C

8.1
5.10
8.1
8.13
9.17
5.11
5.12

8.6
7.7
7.7
8.13
3.20
7.7
3.22
4.1
8.12
5.9
4.6
6.3
5.16
7.4
4.5
5.1
6.5
5.5
6.4
6.5
6.6
4.9
6.1
7.18
7.20

7.21
4.4
7.15
8.8
8.8
5.6
7.27
5.6
8.5

D

3.7
3.7
3.8
3.8
3.9
3.9
3.14
3.14
3.4
7.19
9.10
6.28

E

7.5
9.2

F

9.3

9. 1
7. 2
5. 14
6. 25
7. 12
6. 23
3. 17
3. 17
9. 11
8. 5
5. 15
5. 7

G

6. 2

12

7. 12

”

6 2

	7. 11
	8. 11
	8. 11
	8. 11
	5. 5
K	
	7. 26
	8. 10
	5. 14
	6. 27
L	
	6. 9
	3. 1
	7. 2
	3. 5
	3. 6
	3. 18
	3. 2
	7. 10
	4. 5
	7. 23
M	
	6. 15
	6. 15
	6. 11
	6. 11
	6. 13
P	
	5. 17
	7. 25
	7. 16
	5. 8
	5. 8
Q	
	9. 20
S	
	6. 2
	5. 8
9.	26
9.	25
	6. 31
	9. 19
	5. 2
	6. 20
	9. 13
	6. 12
	6. 12
	6. 13
	3. 21
	7. 13
	5. 19
	9. 29
	8. 10
	8. 10
T	

	4. 5
	3. 1
	6. 30
	3. 1
	3. 1
	7. 15
W	
	4. 5
	5. 3
	7. 14
	5. 16
	5. 16
	3. 6
X	
	5. 20
	6. 24
	5. 18
	4. 9
	7. 17
	7. 9
	6. 13
	6. 7
	9. 9
	9. 10
	5. 22
	5. 21
Y	
	3. 11
	3. 10
	3. 10
	3. 11
	7. 8
	5. 4
	6. 26
	7. 28
	7. 28
	4. 8
	8. 14
	8. 14
	8. 4
	3. 22
	3. 20
	3. 20
Z	
	5. 14
	3. 19
	5. 2
	3. 20
	6. 13
	6. 17
	6. 7
	3. 15
	3. 15
	9. 15
	7. 19
	7. 21
	9. 27

	3. 20
A	5. 11
B	5. 12
Q M	9. 21
Q M	9. 22
Q M	9. 23
Q M	9. 24