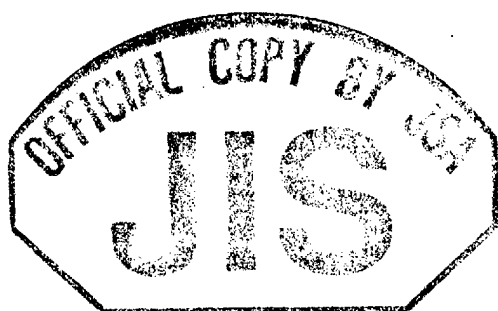


JIS

JAPANESE INDUSTRIAL STANDARD

Glossary of Terms used in Electronic Measuring Apparatus

JIS C 1002—1975



This copy is an English version of Japanese Industrial Standard prepared by Japanese Standards Association, the copyright holder. Any further reproduction without permission is prohibited.

Translated and Published

by

Japanese Standards Association

Printed in Japan

In the event of any doubt arising,
the original Standard in Japanese is to be final authority.

JAPANESE INDUSTRIAL STANDARD

J I S

Glossary of Terms used in Electronic
Measuring ApparatusC 1002-1975
(Reaffirmed: 1983)1. Scope

This Japanese Industrial Standard specifies principal terms and the meaning thereof which are necessary to express performances, functions, etc. of electronic measuring apparatus.

2. Classification

The terms used in electronic measuring apparatus are classified into the following four categories and the category (4) is further divided into three sub-categories:

- (1) General
- (2) Terms relating with performance (general)
- (3) Terms relating with conditions
- (4) Terms relating with function and performance (for individual apparatus)
 - (4.1) Digital electronic voltmeter
 - (4.2) Oscilloscope
 - (4.3) Signal generator

3. Terms used in Electronic Measuring Apparatus

Principal terms are defined as follows:

(1) General

No.	Terms	Meaning	English equivalent (Reference)
1001	DENSHI SOKUTEIKI	An apparatus utilizing electronic device, which measures an electrical quantity or supplies an electrical quantity for measurement. Remarks: 1. The electronic device means a component which utilizes the electron in semiconductor or conduction of hole, the conduction by electron or ion in gas, or the conduction by electron in vacuum, or the assembly of such components. 2. Such devices as cavity frequency meter and standing-wave measuring apparatus which do not include electronic device are also regarded as electronic measuring apparatus. 3. An equipment consisting of plural electronic measuring apparatus is called an electronic measuring equipment.	electronic measuring apparatus
1002	PURAGU IN UNITTO	A component which can be connected with and removed from an apparatus by means of plug and receptacle to change the range of measurement or supply possible by the apparatus, or the function of the apparatus.	plug-in unit
1003	PURŌBU	A separate small unit manufactured as an input device, which is connected to the apparatus by a flexible cable to transmit the signals to be measured, in an adequate way.	probe

No.	Terms	Meaning	English equivalent (Reference)
1004	MEMORI	A group of lines or points marked along a line to indicate the magnitude of a quantity, and some of the lines or points are appended with figures and/or marks as needed.	scale
1005	MEMORI-NO NAGASA	1. The length between scale marks at both ends measured along the scale. Remark: In a circular scale, the length of arc passing through the centres of shortest scale marks. 2. In a chart, the shortest distance between scale lines at both ends.	scale length
1006	MEHABA	The spacing between the centres of adjacent scale marks.	scale spacing
1007	KIKAITEKI REII	The position on the scale at which the pointer of indicator stops when an apparatus is cut off from the power supply and no input is applied across the input terminals. Remark: In an indicator without mechanical returning torque, the mechanical zero is indefinite. In some of indicators with expanded scale, the mechanical zero is shifted outside of the scale range.	mechanical zero
1008	DENKI TEKI REII	The pointed value or indicated value when an apparatus is fed from the power supply, no input is applied across the input terminals, the input terminals are protected from external electric field, and only the external circuit, if specified by the manufacturer, is connected.	electrical zero

No.	Terms	Meaning	English equivalent (Reference)
1009	SOKUTEIYŌ SETUCHI TANSHI	The terminal which is directly connected with the measuring circuit, control circuit or shielding conductor, and which is earthed at the time of carrying out measurement.	measuring earth terminal
1010	HOGO SETUCHI TANSHI	The earth terminal which is located for the purpose of safety and which is connected with the conductive part of an apparatus. Remark: This terminal is to be connected with external earth system provided for the purpose of safety.	protective earth terminal
1011	HITAISHŌ NYŪRIYOKU	A three-terminal input circuit system where the nominal values of the impedances between the common terminal and each of the other two terminals are different.	asymmetrical input
1012	TAISHŌ NYŪRIYOKU	A three-terminal input circuit system where the nominal values of the impedances between the common terminal and each of the other two terminals are equal. Remarks: 1. This input circuit system is intended to receive the signals of equal amplitude and of opposite phase with respect to the common point substantially. 2. This is sometimes called "balanced input".	symmetrical input
1013	SADŌ NYŪRIYOKU	A two-terminal input circuit system where the electrical quantity applied between the two terminals can be measured, irrespective of the voltages applied between the common point and each of the other two terminals.	difference input

No.	Terms	Meaning	English equivalent (Reference)
1014	SETUCHI NYŪRIYOKU	An input circuit system in which one of the two input terminals is directly connected to measuring earth. Remarks: 1. In many cases, the terminal directly connected to measuring earth is the common point terminal. 2. This is sometimes called "unbalanced input".	grounded input
1015	FURŌCHINGU NYŪRIYOKU	An input circuit system which is isolated from the enclosure, from the supply source and from any of the output terminals.	floating input
1016	ZETSUENSARE- TA KYŌTSŪ- TENWO MOTSU NYŪRIYOKU	An input circuit system in which one of the input terminals is connected to one of the output terminals but isolated from the enclosure and the power supply.	input with isoalted common point
1017	GĀDOTSUKI NYŪRIYOKU	An input circuit system having a shield which is insulated from the earth and from the common point terminal and becomes the same electric potential as that of one of the conductor for transmission of signals.	guarded input
1018	NYŪRIYOKU INPĪDANSU	The impedance of the input circuit looking into the apparatus, measured between the input terminals of the apparatus under operating conditions. Remarks: 1. The input impedance is generally expressed equivalently by the values of the resistance and capacitance connected in parallel. 2. In measuring apparatus of some kinds, the impedance can be different according to the time when it is determined before, during or after the measuring time.	input impedance

No.	Terms	Meaning	English equivalent (Reference)
1019	TŌKA NYŪRIYOKU INPĪDANSU	Where the instantaneous value of the current flowing into the input terminals of an apparatus is a nonlinear function of the instantaneous value of the input voltage under given conditions of frequency and voltage, the combination of resistance which absorbs the same active power as the input circuit and the reactance which passes a reactive current equal to the fundamental frequency component of the current flowing into the actual input circuit of the apparatus, is called equivalent input impedance.	equivalent input impedance
1020	NYŪRIYOKU INPĪDANSU- NO SAISHŪCHI	The value of input impedance of an apparatus measured at completion of measurement. Remark: When only one value is assigned for an input impedance, the value means the final value.	final value of the input impedance
1021	SHŪTURIYOKU INPĪDANSU	The impedance of the output circuit looking into the apparatus, measured between the output terminals of the apparatus under operating conditions. Remark: In an oscillator, the output impedance and the signal source impedance (4306) are sometimes different.	output impedance

No.	Terms	Meaning	English equivalent (Reference)
1022	HIZUMI RITSU	A factor which shows the degree of distortion in waveform, and it is generally expressed by the ratio of the r.m.s. value of higher harmonics to the r.m.s. value of fundamental wave. i.e. $\frac{\text{r.m.s. value of higher harmonics}}{\text{r.m.s. value of fundamental wave}}$ Remarks: 1. Noise and the like are included in a distorted wave, therefore the factor which is measured normally is the factor of higher-harmonic content or the overall distortion factor. 2. The distortion factor is generally expressed in percentage or dB. 3. When the distortion factor is 10 % or less, the value measured by a distortion factor meter may be regarded as the distortion factor.	distortion factor
1023	KŌCHŌHA GANYŪ RITSU	The ratio of the r.m.s. value of a specified higher harmonic or a group of higher harmonics included in a distorted wave to the r.m.s. value of the fundamental wave. i.e. $\frac{\text{r.m.s. value of a specified higher harmonic or a group of higher harmonics}}{\text{r.m.s. value of fundamental wave}}$ Remarks: 1. In general this quantity is measured by using an analyzer which can measure each higher harmonic separately. 2. When a higher harmonic is specified, this is called the second (third) relative harmonic content corresponding to the order of the higher harmonic.	relative harmonic content

No.	Terms	Meaning	English equivalent (Reference)
1024	ZEN HIZUMI RITSU	The ratio of the r.m.s. value of the distorted wave from which the fundamental wave is removed, to the r.m.s. value of the original distorted wave. i.e. $\frac{\text{r.m.s. value of distorted wave from which fundamental wave is removed}}{\text{r.m.s. value of distorted wave}}$ Remark: In general, this quantity is measured by using a distortion factor meter. The said meter shows the rate of the r.m.s. value of all such components as the higher harmonics, power source ripple and other non-higher harmonic distortions, by eliminating the fundamental wave.	total distortion factor
1025	SEIGENHANI CHIKAI HAKEI	A waveform in which the total distortion factor is small and does not exceed a specified value. Remark: A waveform in which the total distortion factor is not exceeding 5 %, if the limit is not specified.	substantially sinusoidal waveform
1026	KOMON MŌDO DENATSU	The algebraic mean value of the instantaneous values of two voltages existing between the third terminal and each of the two input terminals. The third terminal means the enclosure or measuring earth terminal.	common mode voltage
1027	SHIRĪSU MŌDO DENATSU	An unwanted part of the input voltage which is superimposed on the voltage intended to be measured. Remarks: 1. Examples of a series mode voltage are thermoelectromotive force of measuring leads, induced voltage, etc. 2. This is sometimes called "normal mode voltage".	series mode voltage
1028	KOMON MŌDO KANSHŌ	The change in the output information due to existence of the common mode voltage.	common mode interference

No.	Terms	Meaning	English equivalent (Reference)
1029	SHIRĪSU MŌDO KANSHŌ	The change in the output information due to existence of the series mode voltage.	series mode interference
1030	KOMON MŌDO JOKYOHI	This ratio shows the degree of ability of an apparatus to eliminated the common mode interference, and it is expressed as the ratio of the peak value of signal applied between a specified point and two input terminals connected together by a specified circuit, to the peak value of signal required between the input terminals to produce the same information output. Remark: The common mode rejection ratio is usually expressed in dB and the value may depend upon frequency.	common mode rejection ratio
1031	SHIRĪSU MŌDO JOKYOHI	This ratio shows the degree of ability of an apparatus to eliminate the series mode interference, and it is expressed as the ratio of the peak value of interference voltage causing a given change in output information to the value of increment in the input signal which would produce the same change. Remark: The series mode rejection ratio is usually expressed in dB, and the value may depend upon frequency.	series mode rejection ratio
1032	DENDŌ BŌGAI	The interference produced by the unwanted current transmitted through the power supply wires or control wires from the inside of an apparatus in operation.	conducted interference
1033	HŌSHA BŌGAI	The interference produced by the unwanted electromagnetic field radiated from the inside of an apparatus in operation, due to incomplete shielding.	radiated interference
1034	RŌEI BŌGAI	The generic name of conducted interference and radiated interference.	leakage interference
1035	DENDŌ BŌGAI KANJUSEI	The degree of interference which is received by an apparatus from the unwanted signals or impulse voltages through the power supply wires or control wires.	conducted susceptibility

10
C 1002-1975

No.	Terms	Meaning	English equivalent (Reference)
1036	HŌSHA BŌGAI KANJUSEI	The degree of interference which is received by an apparatus from the unwanted electromagnetic field.	radiated susceptibility
1037	BŌGAI KANJUSEI	The degree of interference which is received by an apparatus due to the conducted interference, radiated interference, etc.	susceptibility
1038	KYOYŌ NYURIYOKU DENATSU	The maximum value of voltage applicable across the input terminals without causing any trouble.	allowable input voltage
1039	DENGEN TAIDENATSU	The value of voltage which can be applied safely between the short circuited power supply terminals and the protective earth terminal or enclosure.	withstand voltage of main
1040	DENGEN ZETSUEN TEIKŌ	The insulation resistance measured by applying a specified d.c. voltage between the short circuited power supply terminals and the protective earth terminal or enclosure.	insulation resistance of main
1041	YONETSU JIKAN	The time interval required of an apparatus from the switching-in of power supply to the instant at which all the performances of the apparatus satisfy the specified standard.	warm-up time
1042	YOBI CHŌSEI	Adjustments, specified by the manufacturer, that must be made before using the apparatus so that it will operate with the specified accuracy, without disassembling the apparatus and without using other apparatus than the attached ones.	preliminary adjustment
1043	SAI CHŌSEI	Adjustments, specified by the manufacturer, that must be made during the use of the apparatus so that it will continue to operate with the specified accuracy, without disassembling the apparatus and without using other apparatus than the attached ones.	readjustment

No.	Terms	Meaning	English equivalent (Reference)
1044	HOSEI	To add a value to the read value, set value or calculated value to obtain a value further close to the true value; or the value to be added.	correction
1045	KŌSEI	To obtain the relationship between the true value and the pointed value indicated value or set value of an apparatus by using standard instruments and others. Remark: the calibration sometimes means to adjust the calibration adjuster to minimize the error of an apparatus by using the standard instrument accommodated in the apparatus in preliminary adjustment or readjustment.	calibration
1046	KATASHIKI KENSA	The inspection carried out on several samples representing a kind of apparatus, to decide whether the apparatus of this type satisfies all the requirements shown in the relevant standard or not.	type test
1047	UKEWATASHI KENSA	The inspection carried out to decide whether the product of the same design and manufacturer as that already passed the type test satisfies the requirements of the relevant standard considered as necessary at the time of acceptance or not.	delivery test, delivery inspection, acceptance test, acceptance inspection
1048	ZENSŪ KENSA	The inspection carried out on all the product of a production lot or acceptance lot of a certain kind of apparatus.	100 % test, 100 % inspection
1049	NUKITORI KENSA	The inspection carried out on the samples sampled from a production lot or acceptance lot of a certain kind of apparatus.	sampling test, sampling inspection

(2) Terms Relating with Performance (General)

No.	Terms	Meaning	English equivalent (Reference)
2001	SEINŌ	The degree to which the intended functions of an apparatus are accomplished.	performance
2002	SEINŌ RIYŌ	One of the quantity of measurement, quantity of supply, or quantity of setting assigned to an apparatus to make the performance of the apparatus clear by means of the value, tolerance, range, etc. Remark: The quantities given below are regarded as the quantity of measurement, supply, or setting. (1) Frequency of a.c. voltmeter (2) Voltage, current, power factor and frequency of wattmeter, voltmeter, and phase meter. (3) Source impedance of a signal generator. (4) Output and input impedances, input power and frequency of an attenuator.	performance characteristic
2003	EIKYŌ SEINŌ RIYŌ	The influencing performance, among influencing performances, the change of which affects one or more other influencing performances.	influencing characteristic
2004	TEIKAKUCHI	The value of a quantity which can be measured, supplied or set, that is declared by the manufacturer. Remark: Sometimes there are two or more rated values on one kind of quantity. For example, an apparatus with measuring range selector has one rated value for each range, and some apparatus have different rated values according to the service conditions.	rated value