	ZM2371	ZM2372	ZM2376
Measurement parameters			
Primary parameters	|Z|, |Y|, L, C, R, G For equivalent circuit of L, C, and R, Parallel / Series / Auto Selection are selectable.		
Secondary parameters	Q, D, θ, X, B, Rs, Rp, G, Lp, Rdc		
Auto parameter selection	Primary parameters (including equivalent circuit) and secondary parameters can be selected automatically.		
Measured value display range	*Actual measurement and display ranges of respective parameters are restricted by the measurement range or frequency.		
|Z|	0.000mΩ to 999.999MΩ		
R (R_S,R_P,R_{DC}) , X	0Ω, ±(0.001mΩ to 999.999MΩ)		
|Y|	0.00nS to 9.99999kS		
G, B	0S, ±(0.01nS to 9.99999kS)		
C (C_P,C_S)	0F, ±(0.00001pF to 999.999kF)		0F, ±(0.00001pF to 99.9999kF)
L (L_S,L_P)	0H, ±(0.001nH to 99.9999GH)		0H, ±(0.00001nH to 9.99999GH)
Q, D	0, ±(0.00001 to 99999.9)		
θ	±180.000deg		
Measurement conditions			
Measurement frequency	Setting range:1mHz to 100kHz, Resolution 5 digits (1mHz when < 10Hz)		Setting range:1mHz to 5.5MHz, Resolution 6 digits (1mHz when < 100Hz)
	Accuracy: ±0.01%		
Measurement signal level	Setting range: 10mVrms to 5.00Vrms, Resolution 3 digits (1mVrms when < 100mVrms). RMS values at open output. (ZM2376: Limited by frequency and DC bias.)		
	Accuracy: ±(10%+5mV rms)		Accuracy: ±(8%+5mV rms)≦1MHz, ±(10%+5mV rms)>1MHz
Constant voltage mode / Constant current mode (ALC)	Constant voltage mode / Constant current mode / Disabled		
	Voltage setting range:10mVrms to 5.00Vrms, Resolution: 3 digits(＜100mVrms：1mVrms) Current setting range: 1μArms to 200mArms, Resolution: 3 digits(＜10μArms：0.1μArms)		
Output impedance	5Ω/25Ω/100Ω Automatically selected according to the measurement range.		6Ω/25Ω/100Ω Automatically selected according to the measurement range.
Internal DC bias	Setting range: 0V to +2.50V, Resolution: 0.01V, Accuracy: ±(5%+3mV)		Setting range: 0V to +5V, Resolution: 1mV, Limited by the signal level
	It can be turned on / off at open output.		
Trigger source	INT: Internal (automatic continuous trigger), MAN: Manual, EXT: Handler interface, BUS: Remote control		
Trigger delay time	Setting range: 0.000s to 999.999s, Resolution: 0.001s (Time after input of trigger until start of signal acquisition)		Setting range: 0.0000s to 999.9999s, Resolution: 0.0001s (Time after input of trigger until start of signal acquisition)
Triggered drive	Selectable: Drive only at measurement / Continuous drive		
Measurement speed	RAPid/FAST/MEDium/SLOW/VerySLOw		
Measurement time (reference)	From trigger in to end of measurement signal *1, *2		
Measurement range	8 ranges (1MΩ, 100kΩ, 10kΩ, 1kΩ, 100Ω, 10Ω, 1Ω, 100mΩ)		
Measurement range selection	Auto/Manual		
Measurement accuracy			
Basic accuracy	0.08% Refer to appendix (ZM2371/ ZM2372: P. 5, ZM2376: P. 6)		
Other measurement related functions			
Correction function	Open, Short, Load and Cable Length		
Contact check	—	Detects a contact failure at four contact points Additional time 4ms (reference)	Detects of an abnormally low capacitance or abnormal voltage/current
Averaging	1 to 256 times		
Deviation measurement	Primary parameters/Secondary parameters: Deviation and deviation % from reference value can be displayed.		
Comparator	Primary parameters: Max. 9 bins Original measured value / Deviation / Deviation % can be sorted.	Primary parameters: Max. 14 bins Original measured value / Deviation / Deviation % can be sorted.	
	Secondary parameters: Upper limit and lower limit comparison. Original measured value / Deviation / Deviation % can be sorted.		
Handler interface	—	Signal isolation:All I/O signals are optically isolated (withstand voltage ±42V) Input signal: Trigger, Key lock, Settings/correction value memory designation. Output signal: Comparison result BIN1 to BIN11, NC / BIN12, PHI / BIN13, PLO / BIN14, OUT OF BINS, S-NG, ERR, INDEX, EOM (when BIN10 - BIN14 are used, NC, PHI, and PLO cannot be used).	
Multi-measurement	—		Execute measurement and limit comparison under multiple conditions for the total comparison. Maximum number of steps: 32
Monitor display	Voltage value applied to the DUT and current value flowing in the DUT.		
Remote control interface			
USB	USBTMC , USB1.1 Full-speed		
RS-232	Data rate: 4800bps to 230400bps		
GPIB	—	Conforms to IEEE 488.1 and IEEE 488.2 Standards	
LAN (optional)	—		10BASE-T, 100BASE-TX
General specifications			
Power supply	Voltage: AC 100V to 230V ±10%, but 250V or less		
	Frequency: 50/60Hz, ±2Hz		
	Power consumption: 70VA or less	Power consumption: 75VA or less	Power consumption: 75VA or less
	Overvoltage category II		
Environmental conditions	Operation: Temperature: 0 to +40°C. Humidity: 5 to 85%RH. (Absolute humidity 1 to 25g/m³, non-condensing.) Storage: Temperature: -10 to +50°C. Humidity: 5 to 95%RH. (Absolute humidity 1 to 29g/m³, non-condensing.) Pollution degree 2 (indoor use)		
Settings/correction value memory	32 sets. Settings and correction values can be saved and restore individually or together.		
Resume	Last setting and correction value are restore at power-on.		
External dimensions	260(W)×88(H)×220(D)mm (not including protuberances)		260(W)×88(H)×280(D)mm (not including protuberances)
Weight (without accessories)	Approx. 2.0kg	Approx. 2.1kg	Approx. 2.4kg
Accessories	Power code set (3 pole, 2m), Instruction manual, CD-ROM (application software, sample program), LabVIEW driver (ZM2371/ZM2372) IVI drivers (ZM2376).		

Measurement time (reference) ZM2371, ZM2372 *1: Appendix

Measurement frequency	RAP	FAST	MED	SLOW	VSLO
120 Hz	10 ms	10 ms	26 ms	126 ms	501 ms
1 kHz	2 ms	5 ms	25 ms	121 ms	501 ms
10 kHz	3 ms	5 ms	25 ms	122 ms	502 ms
100 kHz	3 ms	5 ms	25 ms	122 ms	502 ms

Measurement time (reference) ZM2376 *2: Appendix

Measurement frequency	RAP	FAST	MED	SLOW	VSLO
120 Hz	10 ms	10 ms	26 ms	126 ms	501 ms
1 kHz	2 ms	5 ms	25 ms	121 ms	501 ms
10 kHz	2 ms	5 ms	25 ms	121 ms	501 ms
100 kHz	2 ms	5 ms	25 ms	121 ms	501 ms
1 MHz	2 ms	5 ms	25 ms	121 ms	501 ms

Measurement accuracy ZM2371/ZM2372

Impedance measurement accuracy

Zr: Measurement range (100mΩ to 1MΩ)
Zx: Measured value of impedance magnitude |Z|.
With the above definitions, the impedance measurement accuracy is obtained as follows:

Accuracy of impedance magnitude |Z| ±Az [%]

$$Az = (A + B \times U + Kz + Ky) \times V \times K_T + K_B \times U$$

Accuracy of phase angle θ of impedance ±Pz [°] $Pz = 0.573 \times Az$

* The measurement accuracy when Az exceeds 10[%] is a reference.
* The measurement accuracy for the measured value smaller than half the lower limit of each recommended measurement range or larger than twice the upper limit is a reference.

Each parameter value in the expression is listed below.

U: Ratio coefficient

Zx	U
>100Ω	Zx/Zr (1 when Zx / Zr < 1)
≦100Ω	Zr/Zx (1 when Zr / Zx < 1)

A (upper row): Basic coefficient[%] B (lower row): Proportional coefficient[%]

- Each values in column "Left side" is FAST Mode, "Right side" is MED/SLOW/VSLO Mode.
- At RAP Mode: Measurement frequency ≦ 250Hz: Use FAST value, > 250Hz: Multiply FAST value by 1.3.

V: Signal level coefficient

Measurement signal level [Vrms]	V(Zr=1MΩ, 100kΩ (>20kHz))			V(Zr=100kΩ (≦20kHz), 10kΩ, 1kΩ, 100Ω)			V(Zr=10Ω, 1Ω)			V(Zr=100mΩ)		
2<Level≦5	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	3	2	1.3
1<Level≦2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.8	1.5	1.2
1	1	1	1	1	1	1	1	1	1	1	1	1
0.5<Level<1	1.4	1.2	1.2	1.4	1.2	1.2	1.5	1.5	1.2	2.5	2	1.2
0.2<Level≦0.5	1.4	1.3	1.3	1.4	1.3	1.3	2.5	2.2	1.3	3	3	1.3
0.1<Level≦0.2	2.2	2.2	1.4	1.4	1.4	1.4	3.5	3.5	1.4	×(0.5Vrms/ Measurement signal level [Vrms])		
0.05<Level≦0.1	2.5	2.5	1.6	1.8	1.6	1.6	×(0.2Vrms/ Measurement signal level [Vrms])					
0.02<Level≦0.05	×(0.1Vrms/ Measurement signal level [Vrms])			4	2.8	2						
0.01≦Level≦0.02				8	5	3						

Three coefficients in each column are applied to the measurement speeds RAP, FAST, MED from the left in order.
The coefficient for measurement speeds SLOW and VSLO is same as MED.
For FAST, the coefficient of MED is applied when measurement frequency≦40Hz.
For RAP, the coefficient of FAST when measurement frequency≦250Hz, or that of MED when measurement frequency≦40Hz is applied.
The coefficient varies depending on the frequency when measurement range Zr = 100kΩ.
At all times, V = 1 for the direct-current resistance Rdc.

Measurement range Zr	Measurement frequency Hz																	
	0 (DC)		99.999 ↗ 1m		999.99 ↗ 100		1k		1.9884k ↗ 1.0001k		10k ↗ 1.9885k		20k ↗ 10.001k		50k ↗ 20.001k		100k ↗ 50.001k	
1 MΩ	0.14 0.02	0.14 0.02	0.50 0.30	0.50 0.30	0.15 0.025	0.15 0.025	0.12 0.03	0.10 0.02	0.15 0.03	0.15 0.03	0.25 0.03	0.25 0.03	0.25 0.03	0.25 0.03	—	—	—	—
100kΩ	0.12 0.01	0.12 0.01	0.25 0.04	0.25 0.04	0.15 0.02	0.15 0.02	0.09 0.01	0.09 0.01	0.10 0.015	0.10 0.015	0.20 0.025	0.20 0.025	0.25 0.03	0.25 0.03	0.30 0.03	0.30 0.03	0.80 0.03	0.80 0.03
10kΩ	0.09 0.01	0.09 0.01	0.20 0.03	0.20 0.03	0.15 0.02	0.15 0.02	0.08 0.01	0.07 0.01	0.09 0.01	0.09 0.01	0.16 0.015	0.16 0.015	0.20 0.02	0.20 0.02	0.25 0.03	0.25 0.03	0.80 0.03	0.80 0.03
1kΩ	0.09 0.01	0.09 0.01	0.20 0.03	0.20 0.03	0.15 0.02	0.15 0.02	0.08 0.01	0.07 0.01	0.09 0.01	0.09 0.01	0.16 0.015	0.16 0.015	0.20 0.02	0.20 0.02	0.25 0.03	0.25 0.03	0.30 0.03	0.30 0.03
100Ω	0.09 0.01	0.09 0.01	0.20 0.03	0.20 0.03	0.15 0.02	0.15 0.02	0.08 0.01	0.07 0.01	0.09 0.01	0.09 0.01	0.16 0.015	0.16 0.015	0.20 0.03	0.20 0.02	0.25 0.03	0.25 0.03	0.30 0.03	0.30 0.03
10Ω	0.12 0.02	0.12 0.02	0.25 0.03	0.25 0.03	0.17 0.02	0.17 0.02	0.13 0.015	0.12 0.01	0.15 0.02	0.15 0.015	0.20 0.02	0.20 0.017	0.40 0.08	0.40 0.03	0.45 0.08	0.45 0.05	0.50 0.08	0.50 0.06
1Ω	0.14 0.05	0.14 0.05	0.40 0.06	0.40 0.06	0.30 0.02	0.30 0.02	0.22 0.025	0.20 0.02	0.25 0.03	0.25 0.02	0.35 0.03	0.35 0.02	0.60 0.20	0.60 0.03	0.70 0.20	0.70 0.08	0.90 0.20	0.90 0.10
100mΩ	0.14 0.30	0.14 0.30	0.60 0.40	0.60 0.40	0.30 0.15	0.30 0.10	0.30 0.06	0.30 0.04	0.30 0.06	0.30 0.04	0.40 0.06	0.40 0.03	0.80 0.80	0.60 0.06	1.0 0.80	0.90 0.10	1.0 0.80	0.90 0.10

The measurement range "---" is not used.

KB: DC bias coefficient

Internal DC bias	Measurement range Zr	KB[%]		
		Frequency≦1kHz	1kHz<Frequency ≦10kHz	Frequency>10kHz
Disabled	Full range	0	0	0
Enabled*1	1MΩ	0.005	0.02	0.02
	100kΩ	0.002	0.003	0.01
	100Ω, 1kΩ, 10kΩ	0.001	0.002	0.01
	10Ω	0.01	0.01	0.02
	100mΩ, 1Ω	0.05	0.1	0.2

*1: When open compensation and short compensation are performed at the conditions of internal DC bias enabled and the bias voltage 0V.
At all times, KB=0 for the direct-current resistance Rdc.

KT: Temperature-dependent coefficient

Ambient temperature (T℃)	KT
0 to +18	1+0.1×(18-T)
+18 to +28	1
+28 to +40	1+0.1×(T-28)

Ky: Residual admittance coefficient

Frequency range	Ky [%]
DC, frequency≦120Hz	Zx[Ω]/(3×10⁸)
120Hz<frequency≦100kHz	Zx[Ω]×frequency[kHz]/(3×10⁷)

Kz: Residual impedance coefficient

Frequency range	Kz [%]
DC, frequency≦120Hz	(0.003+Kc)/Zx[Ω]
120Hz<frequency≦1kHz	(0.005+Kc)/Zx[Ω]
1kHz<frequency≦10kHz	(0.005+0.002×frequency[kHz]+Kc)/Zx[Ω]
10kHz<frequency≦100kHz	(0.0025×frequency[kHz]+Kc)/Zx[Ω]

Cable length coefficient Kc=0.001×Frequency[kHz]×(Cable length[m])²

Other conditions

- Warm-up: 30 min or more
- Zero correction: Execute open correction and short correction
- Cable length correction: Execute according to the connection cable length.
- Calibration cycle 1 year

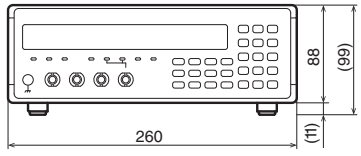
Cable length	Applicable frequency range
0m, 1m	Full range including DC
2m	DC, frequency≦20kHz
4m	DC, frequency≦1kHz

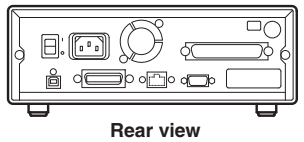
The measurement accuracy is not guaranteed for frequencies out of these ranges.

<Recommended measurement range>

Measurement range	Recommended range	Measurement range
1MΩ	1MΩ to 11MΩ	≧900kΩ
100kΩ	100kΩ to 1.1MΩ	≧90kΩ
10kΩ	10kΩ to 110kΩ	≧9kΩ
1kΩ	1kΩ to 11kΩ	≧0.9kΩ
100Ω	9Ω to 1.1kΩ	No limitation
10Ω	0.9Ω to 10Ω	≦11Ω
1Ω	90mΩ to 1Ω	≦1.1Ω
100mΩ	9mΩ to 100mΩ	≦110mΩ

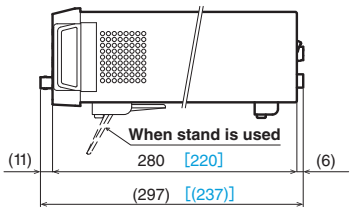
External Dimensions ZM2376





Rear view

*LAN interface (optional) mounted model.



Blue values in [ ] are ZM2371/ZM2372 dimensions. All remaining values are common specification in three models.

Unit: mm

Measurement range ZM2376

Impedance measurement accuracy

Zr: Measurement range (100mΩ to 1MΩ)
Zx: Measured value of impedance magnitude |Z|.
With the above definitions, the impedance measurement accuracy is obtained as follows:
Accuracy of impedance magnitude |Z| ±Az [%]

Signal level ≦ 1V $Az = (A + B \times U + Kz + Ky) \times K_T + (Kv + KB) \times U$

Signal level > 1V $Az = (A + B \times U + Kz + Ky) \times K_T + Kv + KB \times U$

Accuracy of phase angle θ of impedance ±Pz [°] **$Pz = 0.573 \times Az$**

U: Ratio coefficient

Zx	U
>100Ω	Zx/Zr (1 when Zx / Zr < 1)
≦100Ω	Zr/Zx (1 when Zr / Zx < 1)

* The measurement accuracy when Az exceeds 10 [%] is a reference.

* Excluding the highest and the lowest ranges available for each frequency, the measurement accuracy for the measured value smaller than half the lower limit of each recommended measurement range or larger than twice the upper limit is a reference.

Each parameter value in the expression is listed below.

* If the measureable range for the 10Ω range becomes unlimited depending on the minimum output impedance setting,the following values should be used.

Zx	U
>10Ω	Zx/Zr (1 when Zx / Zr < 1)
≦10Ω	Zr/Zx (1 when Zr / Zx < 1)

A (upper row): Basic coefficient [%]
B (lower row): Proportional coefficient [%]

・For the measurement speeds, MED, SLOW, and VSLO, the coefficient is as shown in the table below.
・For the measurement speeds, RAP and FAST, the coefficient is 1.1 times of the value shown below.

Measurement range Zr	Measurement frequency Hz												
	0 (DC)	999.999 ↑ 1m	1k	20k ↑ 1.00001k	50k ↑ 20.0001k	100k ↑ 50.0001k	200k ↑ 100.001k	500k ↑ 200.001k	1M ↑ 500.001k	2M ↑ 1.00001M	3M ↑ 2.00001M	4M ↑ 3.00001M	5.5M ↑ 4.00001M
1MΩ	0.20 0.15	0.15 0.10	0.12 0.15	0.30 0.30	— —	— —	— —	— —	— —	— —	— —	— —	— —
100kΩ	0.06 0.03	0.06 0.03	0.06 0.03	0.06 0.06	0.08 0.08	0.20 0.08	0.20 0.08	0.30 0.10	1.00 0.30	— —	— —	— —	— —
10kΩ	0.06 0.03	0.06 0.03	0.06 0.03	0.06 0.03	0.07 0.03	0.10 0.04	0.15 0.04	0.20 0.05	0.80 0.10	1.50 0.80	1.50 1.00	1.50 1.20	2.00 2.00
1kΩ	0.06 0.03	0.06 0.03	0.05 0.03	0.05 0.03	0.06 0.03	0.10 0.04	0.12 0.04	0.15 0.05	0.30 0.06	0.50 0.20	0.60 0.30	0.60 0.30	1.50 0.30
100Ω	0.09 0.03	0.12 0.02	0.05 0.03	0.06 0.03	0.06 0.03	0.06 0.03	0.12 0.03	0.14 0.03	0.15 0.04	0.30 0.05	0.40 0.08	0.40 0.08	1.50 0.08
10Ω	0.08 0.04	0.12 0.06	0.10 0.06	0.12 0.08	0.12 0.08	0.12 0.10	0.12 0.10	0.12 0.20	0.12 0.20	0.12 0.60	0.12 0.80	0.15 0.80	0.20 2.00
1Ω	0.20 0.05	0.20 0.05	0.20 0.03	0.30 0.08	0.30 0.08	0.30 0.08	0.30 0.08	0.30 0.50	0.30 0.50	0.60 0.60	— —	— —	— —
100mΩ	0.30 0.40	0.30 0.30	0.20 0.20	0.30 0.40	0.30 0.40	0.40 0.40	0.40 0.40	0.50 1.00	0.50 1.00	— —	— —	— —	— —

The measurement accuracy is not guaranteed for "---". The basic coefficient A of the 100Ω range is increased 1.5 times, when the output impedance is 25Ω or 6Ω below 1MHz.

Kv: Signal level coefficient

* For the DC resistance Rdc, V = 0. The measurement accuracy is not guaranteed for signal levels < 100mV. The measurement accuracy is not guaranteed for frequency > 2MHz, range = 10kΩ, and signal level > 2V. For other measurement parameters, the coefficient is as shown in the table below.

Measurement range Zr		Signal level [Vrms]					
		200m ↑ 100m	500m ↑ 201m	999m ↑ 501m	1	2 ↑ 1.01	5 ↑ 2.01
1MΩ	frequency≦120Hz	0.40	0.10	0.10	0	0.10	0.15
	120Hz<frequency≦100kHz	0.40	0.10	0.10	0	0.10	0.20
100kΩ	frequency≦120Hz	0.10	0.02	0.02	0	0.03	0.10
	120Hz<frequency≦100kHz	0.20	0.05	0.05	0	0.02	0.10
	100kHz<frequency	4.00	1.00	0.10	0	0.10	0.15
10kΩ	frequency≦120Hz	0.10	0.02	0.02	0	0.03	0.10
	120Hz<frequency≦100kHz	0.10	0.02	0.02	0	0.03	0.20
	100kHz<frequency	4.00	1.00	0.10	0	0.10	0.15
1kΩ	frequency≦120Hz	0.10	0.01	0.01	0	0.03	0.10
	120Hz<frequency≦100kHz	0.10	0.02	0.02	0	0.03	0.20
	100kHz<frequency	0.80	0.10	0.10	0	0.30	1.50
100Ω	frequency≦120Hz	0.10	0.03	0.03	0	0.03	0.15
	120Hz<frequency≦100kHz	0.15	0.05	0.05	0	0.10	0.20
	100kHz<frequency	0.20	0.05	0.05	0	0.50	3.00
10Ω	frequency≦120Hz	0.20	0.03	0.01	0	0.04	0.04
	120Hz<frequency≦100kHz	0.15	0.05	0.05	0	0.10	0.10
	100kHz<frequency	0.20	0.05	0.05	0	0.10	1.00
1Ω	frequency≦120Hz	0.40	0.10	0.02	0	0.03	0.03
	120Hz<frequency≦100kHz	0.10	0.01	0.01	0	0.01	0.01
	100kHz<frequency	0.10	0.01	0.01	0	0.01	0.20
100mΩ	frequency≦120Hz	3.50	0.80	0.50	0	0.03	0.03
	120Hz<frequency≦100kHz	1.50	0.20	0.10	0	0.01	0.01
	100kHz<frequency	1.50	0.20	0.10	0	0.01	0.01

KB: DC bias coefficient

* For the DC resistance Rdc, KB = 0 [%]. When the internal DC bias is disabled, KB = 0 [%]. When the internal DC bias is enabled, KB [%] is as shown in the table below.

Measurement range Zr	Measurement range Hz					
	0 (DC)	120 ↑ 1m	20k ↑ 120.001	100k ↑ 20.0001k	1M ↑ 100.001k	5.5M ↑ 1.00001M
1MΩ	0	0.02	0.02	—	—	—
100kΩ	0	0.01	0.01	0.01	0.01	—
10kΩ	0	0.01	0.01	0.01	0.01	0.20
1kΩ	0	0.01	0.01	0.01	0.01	0.20
100Ω	0	0.01	0.01	0.01	0.01	0.30
10Ω	0	0.05	0.05	0.05	0.20	0.50
1Ω	0	—	0.20	0.20	0.50	0.50
100mΩ	0	—	—	—	—	—

The measurement range is not guaranteed for "---".

Ky: Residual admittance coefficient

* When the cable length is 0m, the coefficient is as shown in the table below. When an extension cable (1m 2m, or 4m) is used on the frequency of more 20kHz, the coefficient is 10 times of the value shown below.

Frequency range	Ky [%]
DC, frequency≦50kHz	$Zx[\Omega] / (2\times10^{7})$
50kHz<frequency≦500kHz	$Zx[\Omega]\times(frequency[kHz])^{2}/(2\times10^{10})$
500kHz<frequency≦5.5MHz	$Zx[\Omega] / (1\times10^{5})$

Kz: Residual impedance coefficient

Frequency range	Kz [%]
DC, frequency≦20kHz	(0.02 + Kc) / Zx[Ω]
20kHz <frequency≦100kHz	(0.05 + Kc) / Zx[Ω]
100kHz <frequency≦5.5MHz	(0.5 + Kc) / Zx[Ω]

Kc: Cable length coefficient

Frequency range	Kc [%]
DC, frequency≦1kHz	0.01×(Cable length [m])
1kHz<frequency≦100kHz	0.2×(Cable length [m])
100kHz<frequency≦1MHz	$0.5\times(\text{Cable length [m]})^{2}$
1MHz<frequency	$20\times(\text{Cable length [m]})^{2}$

*Restriction on measurement frequency and signal level depending on cable length.

Cable length	Applicable frequency range	Applicable signal level
0m	Full range including DC	Full range
1m	DC, frequency≦2MHz	Full range
2m	DC, frequency≦2MHz	Full range
4m	DC, frequency≦1MHz	Full range for DC and frequency ≦ 500kHz ≦ 2V for frequency > 500kHz

The measurement accuracy is not guaranteed for frequencies and signal levels out of these ranges.

KT: Temperature-dependent coefficient

Ambient temperature (T[℃])	KT	
	frequency≦20kHz	frequency>20kHz
0 to +18	1+0.1×(18-T)	1+0.15×(18-T)
+18 to +28	1	1
+28 to +40	1+0.1×(T-28)	1+0.15×(T-28)

Other conditions

・Warm-up: 30 min or more ・Zero correction: Execute open correction and short correction
・Cable Length Correction: Execute according to the connection cable length.
・Calibration cycle 1 year

<Recommended measurement range>

Measurement range	Recommended range	Measurement range	Output impedance
1MΩ	1MΩ to 11MΩ	≧900kΩ	100Ω
100kΩ	100kΩ to 1.1MΩ	≧90kΩ	100Ω
10kΩ	10kΩ to 110kΩ	≧9kΩ	100Ω
1kΩ	1kΩ to 11kΩ	≧0.9kΩ	100Ω
100Ω	9Ω to 1.1kΩ	No limitation	100Ω*1
10Ω	0.9Ω to 10Ω	≦11Ω	100Ω*1
1Ω	90mΩ to 1Ω	≦1.1Ω	25Ω/6Ω
100mΩ	9mΩ to 100mΩ	≦110mΩ	25Ω/6Ω

The output impedance may be restricted depending on the frequency and signal level.

*1 For the 10Ω and 100Ω ranges, the output impedance may become 25Ω or 6Ω depending on the minimum output impedance setting. In this case, the recommended range and the measureable range for the 10Ω and 100Ω ranges change as follows:

Measurement range	Recommended range	Recommended range
100Ω	100Ω to 1.1kΩ	≧90Ω
10Ω	0.9Ω to 110Ω	No limitation