The function of auto range and auto mode are equipped



- Measuring range : L···0.1 μ H~199.9H
  C···0.1pF~1999 μ F
  R···1m Ω~1999k Ω
  D···0.001~1.999
- L,C,R 3½ digit, D 3½ digit, LED display
- Sampling time : 10 times/sec. approx.
- (Auto range changeover time:1 step 100 milli second)
- L,C,R and d, analog voltage output (full scale DC2V)

## Specifications

L $0.1 \mu H \sim 199.9 H$ $\pm (0.5\% \text{ of } rdg + 2digit + 0.2 \mu H) TYP$ C $0.1pF \sim 1999 \mu F$ $\pm (0.3\% \text{ of } rdg + 2digit + 0.2pF) TYP$ R $1m \Omega \sim 1999 \mu \Omega$ $\pm (0.3\% \text{ of } rdg + 2digit + 2m \Omega) TYP$ D $0.001 \sim 1.999$ $\pm (0.3\% \text{ of } rdg + 2digit + 2m \Omega) TYP$ Measuring frequency $1kHz \pm 5\%$ Measuring signal levelL $10mA \sim 1 \mu A$ C $1V \sim 0.01V$ Differs according to the range.R100mA $\sim 1 \mu A$ Differs according to the range.R $100mA \sim 1 \mu A$ Differs according to the range.Range changeover $L (C, R 3\% digit, D 3\% digit, LED display)$ Measurement time $L (C, R 3\% digit, D 3\% digit, LED display)$ Sampling time $L$ and D, C and D, R are selectable from push-button switchChangeover of measuring itemL and D, C and D, R are selectable from push-button switchMeasuring mode $200pF, 2nF, 20nF, 20nF, 20nF, 20nF range (parallel equivalent circuit)2 \mu F, 20 \mu F, 200 \mu F range (series equivalent circuit)RResistance, parallel resistance in series equivalent circuit)RResistance, parallel $	The following accuracy is representative value				
Measuring range and Accuracy (at23°C±5°C)C $0.1pF~1999  \mu$ F $\pm (0.3\% \text{ of } rdg+2digit+0.2pF)$ TYPR $1m \Omega \sim 1999 k \Omega$ $\pm (0.3\% \text{ of } rdg+2digit+2m \Omega)$ TYPD $0.001~1.999$ $\pm (0.5\% \text{ of } rdg+2digit)$ TYPMeasuring frequencyL $10mA\sim1\mu A$ Differs according to the range.Measuring signal levelL $100mA\sim1\mu A$ Differs according to the range.RI00mA~1 $\mu$ ADiffers according to the range.RI00mA~1 $\mu$ ADiffers according to the range.RI00mA~1 $\mu$ ADiffers according to the range.DisplayL, C, R 3½ digit, D 3½ digit, LED displayMeasurement timeLess than one second to stabilize the measured valueSampling timeL and D, C and D, R are selectable from push-button switchLSeries equivalent circuitC $200pF, 2nF, 20nF, 20nF, 20nF$ range (parallel equivalent circuit)RResistance, parallel resistance in series equivalent circuitRResistance, parallel resistance in series equivalent circuitMeasuring terminalUSterminalsOutput signalL, C, R and D, analog voltage output (full scale DC2V)	Measuring range and Accuracy (at23°C±5°C)	L	0.1 μ H∼199.9H	$\pm$ (0.5% of rdg+2digit+0.2 $\mu$ H) TYP	
$ \begin{array}{ c c c c c } \hline R & 1m \Omega \sim 1999 k \Omega & \pm (0.3\% \ of \ rdg + 2digit + 2m \Omega) \ TYP \\ \hline D & 0.001 \sim 1.999 & \pm (0.5\% \ of \ rdg + 2digit) \ TYP \\ \hline D & 0.001 \sim 1.999 & \pm (0.5\% \ of \ rdg + 2digit) \ TYP \\ \hline Measuring \ frequency & 1kHz \pm 5\% \\ \hline Measuring \ signal \ level & \hline L & 10mA \sim 1 \mu A \\ \hline C & 1V \sim 0.01V & Differs \ according \ to \ the \ range. \\ \hline R & 100mA \sim 1 \mu A \\ \hline Range \ changeover & Auto \ or \ manual \\ \hline Display & L,C,R \ 3\% \ digit, D \ 3\% \ digit, \ LED \ display \\ \hline Measurement \ time & Less \ than \ one \ second \ to \ stabilize \ the \ measured \ value \\ \hline Sampling \ time & 10 \ times \ per \ second \ approx. \\ \hline (Auto \ range \ changeover \ time: 1 \ step \ 100 \ msec.) \\ \hline Changeover \ of \ measuring \ term & L \ and D, C \ and D, R \ are \ selectable \ from \ push-button \ switch \\ \hline Measuring \ mode & L \ and D, C \ and D, R \ are \ selectable \ from \ push-button \ switch \\ \hline Measuring \ term \ R & Resistance, \ parallel \ resistance \ in \ series \ equivalent \ circuit) \\ \hline R & Resistance, \ parallel \ resistance \ in \ series \ equivalent \ circuit \\ \hline Measuring \ terminal & 0 \ L, C, R \ and D, \ analog \ voltage \ output \ (full \ scale \ DC2V) \\ \hline \end{array}$		С	0.1pF∼1999µF	$\pm$ (0.3% of rdg+2digit+0.2pF) TYP	
D $0.001 \sim 1.999$ $\pm (0.5\% \text{ of rdg} \pm 2 \text{digit}) \text{ TYP}$ Measuring frequencyL $10\text{mA} \sim 1 \mu \text{ A}$ IkHz $\pm 5\%$ Measuring signal levelL $10\text{mA} \sim 1 \mu \text{ A}$ Differs according to the range.Range changeoverR $100\text{mA} \sim 1 \mu \text{ A}$ Differs according to the range.Display $-100\text{ mA} \sim 1 \mu \text{ A}$ Auto or manualDisplay $-100\text{ mA} \sim 1 \mu \text{ A}$ Image changeoverAuto or manualSampling timeLess than one second to stabilize the measured valueSampling time $-10$ times per second approx. (Auto range changeover time: 1 step 100 msec.)Changeover of measuring itemL and D, C and D, R are selectable from push-button switchL $200\text{ pF}$ , $2n\text{ F}$ , $200\mu$ F, $200\mu$ F, $200\mu$ F range (parallel equivalent circuit)Reasuring modeL $200\text{ pF}$ , $2n\text{ F}$ , $200\mu$ F, $200\mu$ F range (series equivalent circuit)Reasuring terminalU $5 \text{ terminals}$ Output signalL, C, R and D, analog voltage output (full scale DC2V)		R	1mΩ~1999kΩ	$\pm$ (0.3% of rdg+2digit+2m $\Omega$ ) TYP	
Measuring frequency $\begin{tabular}{lllllllllllllllllllllllllllllllllll$		D	0.001~1.999	$\pm$ (0.5% of rdg+2digit) TYP	
L $10mA \sim 1 \mu A$ Differs according to the range.Measuring signal levelL $10mA \sim 1 \mu A$ Differs according to the range.Range changeoverR $100mA \sim 1 \mu A$ Differs according to the range.Display $- \sum L = 2 \sum L = L = 2 \sum L = L = L = 2 \sum L = L = L = L = L = L = L = L = L = L$	Measuring frequency	1kHz±5%			
Measuring signal levelC $1V\sim0.01V$ Differs according to the range.Range changeoverRange changeoverAuto or manualDisplay $  -$ Measurement time $  -$ Sampling time $   -$ Changeover of measuring item $   -$ Measurement free $    -$ Measurement time $     -$ Sampling time $      -$ Changeover of measuring item $      -$ Measuring mode $        -$ Measuring mode $         -$ Measuring terminal $         -$ Output signal $         -$ Output signal $         -$ Display $         -$ Measuring mode $             -$ <t< td=""><td rowspan="3">Measuring signal level</td><td>L</td><td>10mA∼1µA</td><td rowspan="3">Differs according to the range.</td></t<>	Measuring signal level	L	10mA∼1µA	Differs according to the range.	
R100mA~1 μ ARange changeoverAuto or manualDisplayL,C,R 3½ digit, D 3½ digit, LED displayMeasurement timeLess than one second to stabilize the measured valueSampling time10 times per second approx. (Auto range changeover time:1 step 100 msec.)Changeover of measuring itemL and D, C and D, R are selectable from push-button switchMeasuring modeLC200pF, 2nF, 20nF, 20nF, range (parallel equivalent circuit) 2 μ F, 20 μ F, 200 μ F, range (series equivalent circuit)Measuring terminalS terminalsOutput signalL		С	1V~0.01V		
Range changeover    Auto or manual      Display    L,C,R 3½ digit, D 3½ digit, LED display      Measurement time    Less than one second to stabilize the measured value      Sampling time    10 times per second approx. (Auto range changeover time:1 step 100 msec.)      Changeover of measuring item    L and D, C and D, R are selectable from push-button switch      Measuring mode    L      QuopF, 2nF, 20nF, 20nF, 20nF range (parallel equivalent circuit)      2μ F, 20μ F, 200μ F, 200μ F, 2000μ F range (series equivalent circuit)      R    Resistance, parallel resistance in series equivalent circuit      Measuring terminal    L      Output signal    L, C, R and D, analog voltage output (full scale DC2V)		R	100mA~1 μ A		
Display    L,C,R 3% digit, D 3% digit, LED display      Measurement time    Less than one second to stabilize the measured value      Sampling time    10 times per second approx. (Auto range changeover time:1 step 100 msec.)      Changeover of measuring item    L and D, C and D, R are selectable from push-button switch      Measuring mode    L    Series equivalent circuit      C    200pF, 2nF, 20nF, 20nF range (parallel equivalent circuit)    2 μ F, 20 μ F, 200 μ F, 2000 μ F range (series equivalent circuit)      Measuring terminal    C    Sterisstance, parallel resistance in series equivalent circuit      Measuring terminal    L    Sterinals      Output signal    L, C, R and D, analog voltage output (full scale DC2V)	Range changeover	Auto or manual			
Measurement time    Less than one second to stabilize the measured value      Sampling time    10 times per second approx. (Auto range changeover time:1 step 100 msec.)      Changeover of measuring item    L and D, C and D, R are selectable from push-button switch      Measuring mode    L      Series equivalent circuit    C      200pF, 2nF, 20nF, 20nF, 200nF range (parallel equivalent circuit)      2μF, 20μF, 200μF, 200μF, range (series equivalent circuit)      R    Resistance, parallel resistance in series equivalent circuit      Measuring terminal    U      Output signal    L, C, R and D, analog voltage output (full scale DC2V)	Display	L,C,R 3½ digit, D 3½ digit, LED display			
Sampling time    10 times per second approx. (Auto range changeover time:1 step 100 msec.)      Changeover of measuring item    L and D, C and D, R are selectable from push-button switch      Measuring mode    L    Series equivalent circuit      C    200pF, 2nF, 20nF, 20nF range (parallel equivalent circuit)      R    Resistance, parallel resistance in series equivalent circuit      Measuring terminal    Sterminals      Output signal    L, C, R and D, analog voltage output (full scale DC2V)	Measurement time	Less than one second to stabilize the measured value			
Changeover of measuring item    L and D, C and D, R are selectable from push-button switch      Measuring mode    L    Series equivalent circuit      C    200pF, 2nF, 20nF, 20nF range (parallel equivalent circuit)      2 μ F, 20 μ F, 200 μ F, 2000 μ F range (series equivalent circuit)      R    Resistance, parallel resistance in series equivalent circuit      Measuring terminal    5 terminals      Output signal    L, C, R and D, analog voltage output (full scale DC2V)	Sampling time	10 times per second approx. (Auto range changeover time:1 step 100 msec.)			
LSeries equivalent circuitMeasuring modeC200pF, 2nF, 20nF, 20nF range (parallel equivalent circuit) 2μF, 20μF, 200μF, 2000μF range (series equivalent circuit) RResistance, parallel resistance in series equivalent circuitResistance, parallel resistance in series equivalent circuitMeasuring terminal	Changeover of measuring item	L and D, C and D, R are selectable from push-button switch			
Measuring mode    C    200pF, 2nF, 20nF, 20nF, 200nF range (parallel equivalent circuit)      2μF, 20μF, 20μF, 200μF, 2000μF range (series equivalent circuit)    Resistance, parallel resistance in series equivalent circuit      Measuring terminal    5 terminals      Output signal    L, C, R and D, analog voltage output (full scale DC2V)	Measuring mode	Ц	Series equivalent circuit		
R  Resistance, parallel resistance in series equivalent circuit    Measuring terminal  5 terminals    Output signal  L, C, R and D, analog voltage output (full scale DC2V)		С	200pF, 2nF, 20nF, 200nF range (parallel equivalent circuit) 2 $\mu$ F, 20 $\mu$ F, 200 $\mu$ F, 2000 $\mu$ F range (series equivalent circuit)		
Measuring terminal  5 terminals    Output signal  L, C, R and D, analog voltage output (full scale DC2V)		R	Resistance, parallel resistance in series equivalent circuit		
Output signal L, C, R and D, analog voltage output (full scale DC2V)	Measuring terminal	5 terminals			
	Output signal	L, C, R and D, analog voltage output (full scale DC2V)			
External bias 0 to 50V DC, 0.1A max. (capacitance measurement)	External bias	0 to 50V DC, 0.1A max. (capacitance measurement)			
Power supply AC100V~240V selectable, 50/60Hz, about 15VA	Power supply	AC100V~240V selectable, 50/60Hz, about 15VA			
Outer dimension about 260(W) × 90(H) × 250(D)mm (excluding protruding parts such as rubber legs, etc.)	Outer dimension	about $260(W) \times 90(H) \times 250(D)$ mm (excluding protruding parts such as rubber legs, etc.)			
Weight about 2.2kg	Weight	about 2.2kg			

## The Outline

The Digital LCR Meter, Model AX-221N offers easy measurement of contact resistance of electric components such as a coil, condenser, resistor, switch, relay etc., of inner resistance of a battery, of junction capacity of semiconductor and of any kind of elements. Auto range and auto mode functions select automatically an optimum range for the measuring object with unknown value. Also, manual range changeover is possible and thus unnecessary time for range changeover can be eliminated. The display unit displays LCR value in 3½ digit and in case of the measurement of L or C, the value of D (loss coefficient) is also displayed in 3½ digit. Analog voltage proportional to the measured value is output, too, for the connection to an analog recorder, analog comparator, etc.