SPECIFICATION OF PYROELECTRIC PASSIVE INFRARED SENSOR

MODEL NO. RE200B
PART NO. 

6) BALANCE OUTPUT
   MAX. 15%

   \[
   \frac{BO}{SA + SB} \leq 0.15
   \]

   \[
   BO : \text{BALANCE OUTPUT}
   \]

   \[
   SA : \text{SIGNAL OUTPUT ON ELEMENT A}
   \]

   \[
   SB : \text{SIGNAL OUTPUT ON ELEMENT B}
   \]

   BALANCE OUTPUT IS MEASURED AT CHOPPER FREQUENCY OF 1 Hz WHEN CONNECTED TO THE AMPLIFIER OF GAIN 72.5 dB (AT 1 Hz) AND SUBMITTED TO THE EMISSION OF INFRARED ENERGY OF 13 \mu W/cm² FROM 420 K BLACK BODY. SEE FIGURE 3

7) FREQUENCY RESPONSE
   0.3 Hz TO 3.0 Hz /± 10 dB

OPTICAL CHARACTERISTICS

1) FIELD OF VIEW
   138° FROM CENTER OF ELEMENT ON AXIS X
   125° FROM CENTER OF ELEMENT ON AXIS Y

   SEE FIGURE 1-A

2) FILTER SUBSTRATE
   SILICON

3) CUTOFF (5 % ABS)
   5.0 ± 0.5 \mu m

4) TRANSMISSION
   ≥ 70 % AVERAGE 7~14 \mu m

ENVIRONMENTAL REQUIREMENTS

1) OPERATING TEMPERATURE
   -30 °C TO +70 °C

2) STORAGE TEMPERATURE
   -40 °C TO +80 °C

3) RELATIVE HUMIDITY
   THE SENSOR SHALL OPERATE WITHOUT INCREASE IN NOISE OUTPUT WHEN EXPOSED TO 90 ~ 95 % RH AT 30 °C CONTINUOUSLY.

4) HERMETIC SEAL
   THE SENSOR SHALL BE SEALED TO WITHSTAND A VACUUM OF 160 MILLIMETERS OF MERCURY.
**NOTES**

1. **DESIGN RESTRICTIONS/PRECAUTIONS**
   FOR OUTDOOR APPLICATIONS, BE SURE TO APPLY SUITABLE SUPPLEMENTARY OPTICAL FILTER AND DIP-PROOF. ANTI-DEW CONSTRUCTION. THIS SENSOR IS DESIGNED FOR INDOOR USE.
   IN CASES WHERE SECONDARY ACCIDENTS DUE TO OPERATION FAILURE OR MALFUNCTIONS CAN BE ANTICIPATED, ADD A FAIL SAFE FUNCTION TO THE DESIGN.

2. **USAGE RESTRICTIONS/PRECAUTIONS**
   TO PREVENT SENSOR MALFUNCTIONS, OPERATIONAL FAILURE OR ANY DETERIORATION OF ITS CHARACTERISTICS, DO NOT USE THIS SENSOR IN THE FOLLOWING, OR SIMILAR, CONDITIONS.
   A. IN RAPID ENVIRONMENTAL TEMPERATURE CHANGES.
   B. IN STRONG SHOCK OR VIBRATION.
   C. IN A PLACE WHERE THERE ARE OBSTRUCTING MATERIALS (GLASS, FOG, ETC.) THROUGH WHICH INFRARED RAYS CANNOT PASS WITHIN DETECTION AREA.
   D. IN FLUID, CORROSIVE GASES AND SEA BREEZE.
   E. CONTINUAL USE IN HIGH HUMIDITY ATMOSPHERE.
   F. EXPOSED TO DIRECT SUN LIGHT OR HEADLIGHTS OF AUTOMOBILES.
   G. EXPOSED TO DIRECT WIND FROM A HEATER OR AIR CONDITIONER.

3. **ASSEMBLY RESTRICTIONS/PRECAUTIONS**
   SOLDERING -------
   A. USE SOLDERING IRONS WHEN SOLDERING.
   B. AVOID KEEPING PINS OF THIS SENSOR HOT FOR A LONG TIME AS EXCESSIVE HEAT MAY CAUSE DETERIORATION OF ITS QUALITY (E.G. WITHIN 5 SEC. AT 350 °C)

   WASHING -------
   A. BE SURE TO WASH OUT ALL FLUX AFTER SOLDERING AS REMAINDER MAY CAUSE MALFUNCTIONS.
   B. USE A BRUSH WHEN WASHING. WASHING WITH AN ULTRASONIC CLEANER MAY CAUSE OPERATIONAL FAILURE.

4. **HANDLING AND STORAGE RESTRICTIONS/PRECAUTIONS**
   TO PREVENT SENSOR MALFUNCTIONS, OPERATIONAL FAILURE, APPEARANCE DAMAGE OR ANY DETERIORATION OF ITS CHARACTERISTICS, DO NOT EXPOSE THIS SENSOR TO THE FOLLOWING OR SIMILAR, HANDLING AND STORAGE CONDITIONS.
   A. VIBRATION FOR A LONG TIME.
   B. STRONG SHOCK.
   C. STATIC ELECTRICITY OR STRONG ELECTROMAGNETIC WAVES.
   D. HIGH TEMPERATURE AND HUMIDITY FOR A LONG TIME.
   E. CORROSIVE GASES OR SEA BREEZE.
   F. DIRTY AND DUSTY ENVIRONMENTS THAT MAY CONTAMINATE THE OPTICAL WINDOW.

SENSOR TROUBLES RESULTING FROM MISUSE, INAPPROPRIATE HANDLING OR STORAGE ARE NOT THE MANUFACTURER'S RESPONSIBILITY.

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<th>MODEL NO. : RE200B</th>
<th>DRAWING NO.</th>
<th>REV.</th>
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<tr>
<td></td>
<td>1707982</td>
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<tr>
<td>PART NO. :</td>
<td>NIPPON CERAMIC CO., LTD.</td>
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