

User Manual

LSUM 168R0L 0005F EA

Output terminal connection



<Fig. 4> Monitoring connector

| Pin no. | Pin out | Comment |
|---------|---------------------|---|
| 1 | (+) terminal | Power terminal |
| 2 | (+) terminal | |
| 3 | 1/2 Voltage | Voltage monitoring (Do not use power terminal) |
| 4 | (-) terminal | |
| 5 | Thermistor pin 1or2 | Temperature monitoring |
| 6 | Thermistor pin 2or1 | |
| 7 | (-) terminal | Power terminal |
| 8 | (-) terminal | |

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Appendix I

| T(℃) | R _{min} (kΩ) | R _{cent} (kΩ) | R _{max} (kΩ) | DR(%) | DT(℃) |
|------|-----------------------|------------------------|-----------------------|-------|-------|
| -40 | 332.8 | 348.4 | 364.6 | 4.65% | 0.67 |
| -39 | 311.2 | 325.5 | 340.4 | 4.58% | 0.66 |
| -38 | 291.2 | 304.3 | 318.0 | 4.51% | 0.66 |
| -37 | 272.5 | 284.7 | 297.3 | 4.44% | 0.65 |
| -36 | 255.2 | 266.4 | 278.0 | 4.37% | 0.65 |
| -35 | 239.1 | 249.4 | 260.2 | 4.30% | 0.64 |
| -34 | 224.2 | 233.7 | 243.6 | 4.23% | 0.64 |
| -33 | 210.2 | 219.0 | 228.1 | 4.17% | 0.63 |
| -32 | 197.3 | 205.4 | 213.8 | 4.10% | 0.63 |
| -31 | 185.2 | 192.7 | 200.4 | 4.03% | 0.62 |
| -30 | 173.9 | 180.8 | 188.0 | 3.97% | 0.61 |
| -29 | 163.4 | 169.8 | 176.4 | 3.90% | 0.61 |
| -28 | 153.8 | 159.5 | 165.6 | 3.84% | 0.60 |
| -27 | 144.5 | 149.9 | 155.6 | 3.77% | 0.60 |
| -26 | 135.9 | 141.0 | 146.2 | 3.71% | 0.59 |
| -25 | 127.9 | 132.6 | 137.5 | 3.64% | 0.59 |
| -24 | 120.5 | 124.8 | 129.3 | 3.58% | 0.59 |
| -23 | 113.5 | 117.5 | 121.6 | 3.52% | 0.59 |
| -22 | 107.0 | 110.7 | 114.5 | 3.46% | 0.57 |
| -21 | 100.9 | 104.3 | 107.8 | 3.40% | 0.56 |
| -20 | 95.15 | 98.33 | 101.6 | 3.34% | 0.56 |
| -19 | 89.79 | 92.74 | 95.77 | 3.27% | 0.55 |
| -18 | 84.76 | 87.50 | 90.31 | 3.21% | 0.55 |
| -17 | 80.05 | 82.59 | 85.19 | 3.16% | 0.54 |
| -16 | 75.63 | 77.98 | 80.40 | 3.10% | 0.53 |
| -15 | 71.49 | 73.66 | 75.90 | 3.04% | 0.53 |
| -14 | 67.59 | 69.61 | 71.69 | 2.98% | 0.52 |
| -13 | 63.94 | 65.81 | 67.73 | 2.92% | 0.51 |
| -12 | 60.50 | 62.24 | 64.02 | 2.86% | 0.51 |
| -11 | 57.27 | 58.88 | 60.53 | 2.81% | 0.50 |
| -10 | 54.23 | 55.73 | 57.26 | 2.75% | 0.49 |
| -9 | 51.37 | 52.76 | 54.18 | 2.69% | 0.49 |
| -8 | 48.68 | 49.97 | 51.29 | 2.64% | 0.48 |
| -7 | 46.15 | 47.35 | 48.57 | 2.58% | 0.47 |
| -6 | 43.77 | 44.88 | 46.01 | 2.53% | 0.47 |
| -5 | 41.52 | 42.55 | 43.60 | 2.47% | 0.46 |
| -4 | 39.40 | 40.36 | 41.34 | 2.42% | 0.45 |
| -3 | 37.41 | 38.29 | 39.20 | 2.37% | 0.45 |
| -2 | 35.52 | 36.35 | 37.19 | 2.31% | 0.44 |

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| T(°C) | Rmin(kΩ) | Rcent(kΩ) | Rmax(kΩ) | DR(%) | DT(°C) |
|-------|----------|-----------|----------|-------|--------|
| -1 | 33.74 | 34.51 | 35.29 | 2.26% | 0.43 |
| 0 | 32.07 | 32.78 | 33.50 | 2.21% | 0.43 |
| 1 | 30.48 | 31.14 | 31.81 | 2.15% | 0.42 |
| 2 | 28.99 | 29.60 | 30.22 | 2.10% | 0.41 |
| 3 | 27.57 | 28.14 | 28.72 | 2.05% | 0.40 |
| 4 | 26.24 | 26.76 | 27.30 | 2.00% | 0.40 |
| 5 | 24.97 | 25.46 | 25.96 | 1.95% | 0.39 |
| 6 | 23.78 | 24.23 | 24.69 | 1.90% | 0.39 |
| 7 | 22.64 | 23.07 | 23.49 | 1.85% | 0.37 |
| 8 | 21.57 | 21.96 | 22.36 | 1.80% | 0.37 |
| 9 | 20.56 | 20.92 | 21.29 | 1.75% | 0.36 |
| 10 | 19.60 | 19.94 | 20.27 | 1.70% | 0.35 |
| 11 | 18.69 | 19.00 | 19.31 | 1.65% | 0.34 |
| 12 | 17.83 | 18.12 | 18.41 | 1.60% | 0.34 |
| 13 | 17.01 | 17.28 | 17.54 | 1.55% | 0.33 |
| 14 | 16.24 | 16.48 | 16.73 | 1.51% | 0.32 |
| 15 | 15.50 | 15.73 | 15.96 | 1.46% | 0.31 |
| 16 | 14.80 | 15.01 | 15.22 | 1.41% | 0.30 |
| 17 | 14.14 | 14.33 | 14.53 | 1.36% | 0.30 |
| 18 | 13.51 | 13.69 | 13.87 | 1.32% | 0.29 |
| 19 | 12.91 | 13.08 | 13.24 | 1.27% | 0.29 |
| 20 | 12.35 | 12.50 | 12.65 | 1.23% | 0.27 |
| 21 | 11.81 | 11.95 | 12.09 | 1.18% | 0.26 |
| 22 | 11.29 | 11.42 | 11.55 | 1.13% | 0.25 |
| 23 | 10.81 | 10.92 | 11.04 | 1.09% | 0.24 |
| 24 | 10.34 | 10.45 | 10.56 | 1.04% | 0.24 |
| 25 | 9.900 | 10.00 | 10.10 | 1.00% | 0.23 |
| 26 | 9.472 | 9.572 | 9.671 | 1.04% | 0.24 |
| 27 | 9.064 | 9.164 | 9.264 | 1.09% | 0.25 |
| 28 | 8.677 | 8.776 | 8.875 | 1.13% | 0.26 |
| 29 | 8.308 | 8.406 | 8.505 | 1.18% | 0.27 |
| 30 | 7.957 | 8.054 | 8.153 | 1.22% | 0.29 |
| 31 | 7.622 | 7.719 | 7.817 | 1.26% | 0.30 |
| 32 | 7.304 | 7.400 | 7.496 | 1.30% | 0.31 |
| 33 | 7.000 | 7.095 | 7.191 | 1.35% | 0.32 |
| 34 | 6.711 | 6.805 | 6.900 | 1.39% | 0.33 |
| 35 | 6.436 | 6.528 | 6.622 | 1.43% | 0.35 |
| 36 | 6.173 | 6.265 | 6.357 | 1.47% | 0.36 |
| 37 | 5.922 | 6.013 | 6.104 | 1.52% | 0.37 |
| 38 | 5.683 | 5.772 | 5.862 | 1.56% | 0.38 |
| 39 | 5.455 | 5.543 | 5.631 | 1.60% | 0.40 |
| 40 | 5.237 | 5.324 | 5.411 | 1.64% | 0.41 |
| 41 | 5.030 | 5.114 | 5.200 | 1.68% | 0.42 |
| 42 | 4.831 | 4.915 | 4.999 | 1.72% | 0.44 |
| 43 | 4.641 | 4.724 | 4.807 | 1.76% | 0.45 |
| 44 | 4.460 | 4.541 | 4.623 | 1.80% | 0.46 |

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|-------|-----------------------|------------------------|-----------------------|-------|--------|
| 45 | 4.287 | 4.367 | 4.447 | 1.84% | 0.47 |
| 46 | 4.122 | 4.200 | 4.279 | 1.88% | 0.49 |
| 47 | 3.964 | 4.040 | 4.118 | 1.92% | 0.50 |
| 48 | 3.812 | 3.887 | 3.964 | 1.96% | 0.51 |
| 49 | 3.668 | 3.741 | 3.816 | 2.00% | 0.53 |
| 50 | 3.529 | 3.601 | 3.675 | 2.04% | 0.54 |
| 51 | 3.397 | 3.468 | 3.540 | 2.08% | 0.55 |
| 52 | 3.270 | 3.339 | 3.410 | 2.11% | 0.57 |
| 53 | 3.149 | 3.217 | 3.286 | 2.15% | 0.58 |
| 54 | 3.032 | 3.099 | 3.167 | 2.19% | 0.59 |
| 55 | 2.921 | 2.986 | 3.053 | 2.23% | 0.61 |
| 56 | 2.814 | 2.878 | 2.944 | 2.27% | 0.62 |
| 57 | 2.712 | 2.775 | 2.839 | 2.30% | 0.64 |
| 58 | 2.614 | 2.675 | 2.738 | 2.34% | 0.65 |
| 59 | 2.520 | 2.580 | 2.642 | 2.38% | 0.66 |
| 60 | 2.430 | 2.489 | 2.549 | 2.41% | 0.68 |
| 61 | 2.344 | 2.401 | 2.460 | 2.45% | 0.69 |
| 62 | 2.261 | 2.317 | 2.375 | 2.49% | 0.71 |
| 63 | 2.181 | 2.237 | 2.293 | 2.52% | 0.72 |
| 64 | 2.105 | 2.159 | 2.214 | 2.56% | 0.74 |
| 65 | 2.032 | 2.085 | 2.139 | 2.60% | 0.75 |
| 66 | 1.962 | 2.013 | 2.066 | 2.63% | 0.77 |
| 67 | 1.894 | 1.945 | 1.997 | 2.67% | 0.78 |
| 68 | 1.829 | 1.879 | 1.930 | 2.70% | 0.80 |
| 69 | 1.767 | 1.815 | 1.865 | 2.74% | 0.81 |
| 70 | 1.707 | 1.755 | 1.803 | 2.77% | 0.83 |
| 71 | 1.650 | 1.696 | 1.744 | 2.81% | 0.84 |
| 72 | 1.594 | 1.640 | 1.686 | 2.84% | 0.86 |
| 73 | 1.541 | 1.586 | 1.631 | 2.88% | 0.87 |
| 74 | 1.490 | 1.534 | 1.578 | 2.91% | 0.89 |
| 75 | 1.441 | 1.483 | 1.527 | 2.95% | 0.90 |
| 76 | 1.394 | 1.435 | 1.478 | 2.98% | 0.92 |
| 77 | 1.348 | 1.389 | 1.431 | 3.01% | 0.93 |
| 78 | 1.304 | 1.344 | 1.385 | 3.05% | 0.95 |
| 79 | 1.262 | 1.301 | 1.341 | 3.08% | 0.96 |
| 80 | 1.222 | 1.260 | 1.299 | 3.11% | 0.98 |
| 81 | 1.183 | 1.220 | 1.258 | 3.15% | 1.00 |
| 82 | 1.145 | 1.181 | 1.219 | 3.18% | 1.01 |
| 83 | 1.109 | 1.144 | 1.181 | 3.21% | 1.03 |
| 84 | 1.074 | 1.109 | 1.145 | 3.25% | 1.04 |
| 85 | 1.040 | 1.074 | 1.110 | 3.28% | 1.06 |
| 86 | 1.008 | 1.041 | 1.076 | 3.31% | 1.08 |
| 87 | 0.9765 | 1.009 | 1.043 | 3.34% | 1.09 |
| 88 | 0.9464 | 0.9785 | 1.011 | 3.38% | 1.11 |
| 89 | 0.9174 | 0.9488 | 0.9811 | 3.41% | 1.12 |
| 90 | 0.8894 | 0.9201 | 0.9517 | 3.44% | 1.14 |

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Appendix II

Drawing

